



MINIMIZING BANKS INVESTMENT FINANCIAL RISKS THROUGH MODERN CAPITAL PROJECT APPRAISAL TECHNIQUES

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ABSTRACT

The rapid expansion of financial environments has escalated investment risks in the banking industries across the globe, motivating this study to investigate the capability of modern capital project appraisal techniques on minimizing banks' investment financial risks in Nigeria. Specifically, the study examines the influence of sensitivity analysis and net present value (NPV) on investment financial risks reduction in Nigerian banks. The research employs descriptive quantitative approach to obtain primary data through the questionnaires administered to 1,200 Bank Managers, Accountants, Finance Managers, Investment and financial analysts of the 10 purposively selected banks in Nigeria. The collected data were analyzed using descriptive statistics and multiple regression technique. Findings reveal significant positive influence of both NPV and sensitivity analysis techniques on investment financial risks reduction in Nigerian banks. The research concludes that applying NPV and sensitivity analysis for project appraisal will reduce banks' exposure to investment financial risks, and recommends that Nigerian banks stakeholders should invest more in capacity building to close knowledge gaps of their investment analysts in order to minimize investment financial risks. This study's findings inform the banks' managers that while NPV facilitates viable capital projects selection, the sensitivity analysis assists in assessing the financial risk profiles of such project in managing the uncertainties in financial investment decision-making.

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1. Introduction

Investment financial risks have become the order of the days due to investment losses by many banks and other business organizations across the globe. The investment decision making may be greatly influenced by financial managers who transform the strategic goals of banks into sound investment guidelines, ensuring that every proposed project contributes significantly to investment objectives like market growth and financial risks reduction. However, making investment decisions is a vital administrative task that involves the allocation of investment funds in the face of uncertainty and increase organizational value (Andrew et al., 2020). During a project implementation phase, bank' managers often assign resources, establish investment budgets and schedules, and track the progress toward achieving performance objectives so that they can identify changes in the early stage and make remedial actions to achieve the expected benefits and align target with the strategic goal of the banks through the stakeholders' involvement and variance analysis frequency (Ayodele & Olaleye, 2021).

Getting the greatest alternatives that best fit the investment objectives and the interests of

a bank or other businesses is the main emphasis of the preferred firms' decisions (Oke & Okeniyi, 2020). Given the persistent shift in the economic landscape, the choice of investment opportunities and the appropriate investment appraisal methods are among the major roadblocks facing some banks in emerging markets (Haque & Rahman, 2023). To make effective strategic decision on banks' investment portfolios, banks managers need to comprehend the nuances of the proposing investment appraisal techniques. However, the type of investment, the current state of the economy and the required degree of accuracy all influence the choice of appraisal technique.

As an important sector in Nigeria's financial system, banking sector still works in a frequently unstable investment economic and dynamic investment environment (Ali et al., 2024). Investment selection in the banks goes beyond conventional investment appraisal to include investment risk management systems, like net present value, sensitivity analysis, credit portfolio expansion, financial instruments, and digital transformation projects (Purnamasari & Adriza, 2024). Employment of modern investment assessment to evaluate the viability and possible profitability is essential for the

growth of banking industry (Olaniyan et al., 2020). That is why banks in the developing countries need to evaluate investments effectively because of its direct impact on their investment decision-making.

The modern investment appraisal methods such as net present value (NPV), internal rate of return (IRR), decision tree analysis (DTA), discounted back pay period (DPBD) and sensitivity analysis are used in the banks to improve investment decision-making efficiency. These appraisal techniques ensures the upfront of capital expenditures and infrastructure build-out to produce returns over long stretches of time, and frequently spanning several accounting cycles (Adekunle et al., 2023). Bank financial controllers have significant influence on bank investment decisions by converting bank's strategic goals into investment precise decision, making sure that every proposed investment supports the long term objectives of market expansion and investment risk reduction (Rabiu, 2023).

Besides, bank managers set project budgets schedules, assign resources and keep a close eye on the progress concerning the performance goals throughout the projects implementation phase in such ways to generate expected gains and align investment

budgets with the bank's strategic goal by identifying implementing remedial steps and deviations early through the regular stakeholder communication and the investment variance analysis (Fontes et al., 2020). However, the need to strike a balance between liquidity or solvency and profitability requirements couple with the regulatory restrictions, and macroeconomic instability, make decisions on investment to be intrinsically complicated (Andrew et al., 2020).

Although many investment appraisal methods are widely used for some strategic financial decision-making, but their true efficacy in reducing investment risk and improving performance of businesses is still unclear, especially in the banking sector (Abugre et al., 2022). Besides that, the empirical data specific to Nigerian banks is still limited (Grozdic et al., 2023). A review of previous studies indicated the limitation of studies that have investigated impact of NPV appraisal technique and sensitivity analysis techniques in reducing Nigerian banks' investment financial risks, hence this research.

For instance, Ohonba and Aigienohuwa (2024) focused on how credit management affected Nigerian deposit money banks

financial results, but not on how NPV and sensitivity analysis appraisal techniques minimize financial investment risks in Nigerian banks. The research by Odukwu et al. (2023) on the effect of asset investment on financial performance in Nigerian deposit money banks uncovered the influence of modern appraisal techniques on investment risks reduction in Nigerian banks. The study by Inyang et al. (2020) on the impact of capital investment methods focused on the Nigerian public capital projects not on the Nigerian banks which is a private industry. The research by Kengatharan and Clamenthu (2017) on the impact of capital investment assessment procedures on the efficacy of investment decisions was conducted in the Sri Lankan listed manufacturing enterprises not in the Nigerian listed banks.

Addressing the above identified gaps, this research examines the capability of modern capital project appraisal techniques on minimizing banks' investment financial risks in Nigeria. The study specifically compares the recent usage frequency of NPV and sensitivity analysis technique with other techniques like internal rate of return and decision tree analysis for investment appraisal in Nigerian Banks; and evaluates the influence of net present value and

sensitivity analysis on investment financial risks reduction in Nigerian banks. The findings from this research inform the banks' managers that while NPV facilitates viable capital projects selection, the sensitivity analysis assists in assessing the risk profiles of such project to manage investment decision-making uncertainties.

Based on the above identified gaps and the specific objectives, this research hypothesizes that there is no significant positive influence of NPV technique on investment financial risks reduction in Nigerian banks. Sensitivity analysis technique has no significant positive influence on investment financial risks reduction in Nigerian banks.

2. Literature Review

2.1 Bank Investment Financial Risk

Bank Investment financial risk is a risk that banks may incur investment loss in the long run due wrong investment decision. Investment decision is the process through which financial organizations like banks analyze and select the most suitable investment opportunities to optimize returns and minimize risks (Liu, 2024). Any decision to be made in today's banks needs the consideration of risk-adjusted approach and

quantitative models (Odukwu et al., 2023). Investment decisions risks are increasing necessitating the application of modern appraisal techniques to improve decision-making accuracy in the use of NPV and sensitivity testing (Andrew et al., 2020). Banks can appraise the profitability and viability of their investments by using modern investment appraisal methods as the vial instruments in investment decision-making. (Siraj et al., 2024)

2.2 Modern Appraisal Techniques

Modern appraisal techniques are the methods of examining the viability and otherwise of the proposing capital projects (Sharma, 2025). The modern appraisal techniques commonly use for capital projects evaluation include but not limited to net present value (NPV), (Shou, 2022); internal rate of return (IRR); decision tree analysis (DTA), (Maseer & Flayyih, 2021); discounted back pay period (DPBD) and sensitivity analysis (Pageler & Palma, 2022), (Kadkhodazadeh, 2023). However, the coverage of this research is limited to the NPV and the sensitivity analysis techniques which are among the investment evaluation methods banks could apply to evaluate the proposed capital projects and reduce risks in investment decision-making.

2.2.1 Net Present Value

The net present value (NPV) technique evaluates the investment viability by figuring out the present value of its expected cash inflows and outflows (Ohonba & Aigienohuwa, 2024). NPV reflects that a country's currency now is worth more than its value tomorrow by accounting for time value of the money (Shou, 2022). NPV formula is applied by deducting the initial outlay and discounting the future cash flows to their present value (Pageler & Palma, 2022). When evaluating banks' projects, the one with the highest NPV is typically regarded as more viable than the others because it indicates the greatest opportunity for increasing shareholder value (Andrew et al., 2020). NPV is employed in this research as a modern appraisal technique.

2.2.2 Sensitivity Analysis

Sensitivity analysis (SA) is another modern investment appraisal technique in capital budgeting which is vital for determining how changes in the essential factors would affect an investment results and minimize investment decision risks (Kadkhodazadeh, 2023). This investment appraisal analysis technique is a methodically changes in the values of important factors to determine how project metrics like NPV are affected.

However, banks decision-makers can evaluate their investments' risks and resilience under various conditions through the sensitivity of their projects to the various factors (Wangchuk, 2022). This research also uses sensitivity analysis as a modern appraisal technique.

2.3 Theoretical Review

This research is pinned on the contemporary capital budgeting theory developed by Modigliani and Miller in 1958 (Šlamiaková, 2025). This theory requires that all expected investment future cash flows should be discounted with the investment cost of capital that would account for both the investment's inherent risk and the opportunity cost for investors instead of depending on just payback period and or accounting-profit metrics (Grozdic et al., 2023). The theory states that the investment life duration influences the horizon over which the cash flows are estimated and compared for the assets with a longer life-span, economic changes, and technical, regulatory which need to be forecasted carefully (Cohen, 2021).

The theory assumed that all the expected investment future cash flows should be discounted with the investment cost of capital to account for investment uncertainty

opportunity cost and ensure that banks effectively allocate their resources to achieve long-term project viability and militates against capital project financial risks (Sharma, 2025). The theory affirms that the salvage value of an investment is its terminal cash inflow in the discounted cash flow method that estimates the investment residual value of assets at the end of their useful lives, such as scrap or revenues from the resale of investment (Sharma, 2025). The cost of capital is applied as the discount rate to show the required returns for both equity and debt and holders and on which to base the appraisal of overall investment risk profile of the company (Andrew et al., 2020). The theory affirms that a project is considered a real value when its present value in term of operational cash flows plus residual value above its initial investment at a return rate higher than the weighted average cost of capital (Andrew et al., 2020).

However, integrating modern investment appraisal techniques into the investment risk assessment will assist banks to allocate project resources in the most likely way to improve long-term project decision-making reducing investment decision risks and improve shareholder value in Nigerian banks and other business organizations.

2.4 Empirical Review

The effect of capital budgeting techniques on different dependent variables has been the focus of various researchers. For instance, Ohonba and Aigienohuwa (2024) examined how credit management affected Nigerian deposit money banks financial results, using an ex post facto research design and OLS regression for data analysis, and found that capital adequacy ratio has a positive insignificant effect on return on assets but a negative and significant effect on the non-performing loan ratio, while the study recommended that firms should apply strict credit risk assessment methods to lower the possibility of default.

In addition, Odukwu et al. (2023) examined the relationship between Nigerian deposit money banks' financial performance and asset investment utilizing secondary data and discovered that strategic asset investment would greatly enhance the financial performance of banks, showing the vitality of effective asset management and control in getting maximum returns.

More so, James (2022) investigated how systemic risk affected Nigerian industrial products manufacturing companies' capital investment choices, using panel data and

fixed effect for data analysis. The research found that exchange rate risk had a negative and substantial impact, interest rate risk was positive significant, and consumer price risk was positive but insignificant, and recommended that businesses implement strategic systemic risk management strategies, such as regulatory changes to stabilize exchange rates and deregulate financial market interest rates.

Also, Inyang et al. (2020) investigated the effectiveness of capital investment budgeting methods for Nigerian government capital projects, highlighting how MDAs' Research and Statistics Units could be used in context-specific strategies to lower the risks associated with capital projects. The study found that one of the main reasons for inadequate funding and capital project abandonment is the inefficient use of capital budgeting procedures and recommended that to reduce such failures, project-specific appraisal techniques should be applied.

Kengatharan and Clamenthu (2017) examined the association between capital investment assessment procedures and the efficacy of investment decisions among Sri Lankan listed manufacturing enterprises, using a randomly selected 20 businesses for field survey through the self-administered

questionnaires and found that NPV and IRR application have positive significant impact on the effectiveness of investment decisions, while the discounted payback Period has a negative impact on the efficacy of investment decisions in Sri Lankan listed manufacturing enterprises.

Many gaps were identified based on the empirical review above. For instance, Ohonba and Aigienohuwa (2024) focused on how credit management affected Nigerian deposit money banks financial results, but not on how NPV and sensitivity analysis appraisal techniques minimize investment financial risks in Nigerian banks. Besides, the research by Odukwu et al. (2023) examined the effect of asset investment on financial performance of Nigerian deposit money banks, but not on the influence of modern appraisal techniques on investment risks reduction in Nigerian banks; while the study by Inyang et al. (2020) investigated the impact of capital investment methods on Nigerian government capital projects, not on Nigerian banks. Finally, the research by Kengatharan and Clamenthu (2017) on the association between capital investment assessment procedures and the efficacy of investment decisions was conducted in the

Sri Lankan listed manufacturing enterprises not in Nigerian listed banks.

3. Methodology

This study employed descriptive quantitative approach to obtain primary data evidence from Nigerian banks through the questionnaires to investigate the capability of modern appraisal techniques, particularly the net present value (NPV) and sensitivity analysis on banks' investment financial risks reduction. The questionnaires were administered online to a purposively and stratifying selected 1,200 Bank Managers, Accountants, Finance Managers, Investment and financial analysts of the ten (10) selected banks in Nigeria. All the administered copies of the questionnaire were returned and fully filled. This study used a five likert terms of strongly agree (SA=5), agree (A=4), strongly disagree (SD=2), disagree (D=1), and neutral (N=3) to structure the questionnaire. The data collected was analyzed using multiple regression technique and descriptive statistics comprising the mean, standard deviation and frequency distribution. The Cronbach's Alpha test was also applied to determine the reliability of the instrument using a universal threshold of 0.70 (Zhao, 2023).

Table 1: Cronbach Alpha Reliability Test

Test Cluster	Cronbach's Alpha	Range of Items	Remark
Cluster I: Frequency of NPV and sensitivity analysis techniques usage in the banks	0.7512	Items 1 to 10	Reliable
Cluster II: Relevance of NPV and sensitive analysis in reducing banks global investment decision risk	0.7322	Items 11 to 20	Reliable
Cluster III: How NPV and sensitivity analysis reduce banks investment decision risk	0.82541	Items 21 to 30	Reliable

Note: Valid cases: 1,200 (100%), excluded cases: 0(0%)

Source: Field Survey, 2026

Table 1 presents reliability test result of the research instrument. The item clusters 1 to 10 reports the alpha coefficients of 0.7512 on the frequency of NPV and sensitivity analysis techniques usage in the banks for items 1 to 10 cluster which above the threshold of 0.70. Also, the alpha coefficients of 0.7322 on the relevance of NPV and sensitive analysis on reducing banks global investment decision risk above the threshold of 0.70. Additionally, the alpha coefficients of 0.82541 on how NPV and sensitivity analysis

reduce banks investment decision risk also is above the threshold of 0.70. These alpha values establish that the study's instrument is reliable

4. Result and Discussion

This section demonstrated how primary data collected for this study were analyzed and discussed to draw statistical decisions on the capability of modern capital project appraisal techniques on minimizing banks' investment financial risks in Nigeria.

Table 2: Questionnaire Distribution

Firm	Administered Number of Questionnaires	Completed and Received Number of Questionnaires	Response Rate %
Access Bank	140	130	92.9
FCMB	100	080	80.0
First Bank	140	120	85.7
GTB	140	100	71.4
Polaris Bank	100	100	100.0
Sterling Bank	100	080	80.0

UBA	140	110	78.6
Union Bank	100	080	80.0
Wema Bank	100	080	80.0
Zenith Bank	140	120	85.7
Total	1200	1000	83.3

Source: Field Survey, 2026

Table 2 discloses the modality for the distribution of questionnaire to the staff of the selected banks, showing that the response rate of 83.3% is a demonstration that the dataset's high degree of involvement and dependability. While some banks, like GTB, had comparatively lesser involvement, others, like Polaris Bank, attained a complete response rate, indicating significant institutional cooperation. Overall, the distribution shows a fair representation of the main Nigerian banks, which improves the findings' generalizability. The bio-data of respondents, comprising their educational background and positions in office were considered in the questionnaire section. The research experts examined the research instrument (questionnaires) to guarantee its validity. All the participants were ensured the confidentiality of information they supplied.

Table 3: Bio-data of Respondent

	Freq. Distribution	%	Valid %	Cumulative %
Valid BSC,	320	32%	32%	32%
MSC & MBA	470	47%	47%	79%
PHD	40	4%	4%	83%
<u>OTHERS</u>	<u>170</u>	<u>17%</u>	<u>17%</u>	100%
No of Total	<u>1000</u>	<u>100%</u>	<u>100%</u>	
Accountant	260	26 %	26 %	26%
Bank Manager	170	17%	17%	43%
Finance	230	23%	23%	66%
Manager	190	19%	19%	85%
Investment and Financial Analyst	150	15%	15%	100%
No of Total	1000	100%	100%	

Source: Field Survey, 2026

Table 3 reports the bio-data of respondents, showing that the 32% of respondents have a B. Sc degree and 47% have an M. Sc or

MBA. This suggests that most responders are highly educated and have the analytical skills needed to evaluate investments. Despite

being small (4%), the presence of PhD holders enhances the responses' trustworthiness. Respondents hold a variety of financial roles, with accountants (26%) and finance managers (23%) making up the majority, according to the table displaying

the distribution of office occupations. This enhances the study's validity because it shows that the data came from experts who are actively involved in investment decisions analysis.

Table 4: Recent Usage Frequency of NPV and Sensitivity Analysis Techniques for Investment appraisal in Nigerian Banks

Appraisal Technique	1 Never	2 Rarely	3 Occasionally	4 Frequently	5 Always
NPV	6 (6.0%)	13 (13.0%)	27 (27.0%)	36 (36.0%)	18 (18.0%)
IRR	5 (5.0%)	9 (9.0%)	30 (30.0%)	32 (32.0%)	24 (24.0%)
SA	7 (7.0%)	8 (8.0%)	24 (24.0%)	40 (40.0%)	21 (21.0%)
DTA	8 (8.0%)	10 (10.0%)	21 (21.0%)	43 (43.0%)	18 (18.0%)

Source: Field Survey, 2026

Table 4 reports the comparative recent usage frequency of the NPV and sensitivity analysis (SA) techniques internal rate of return (IRR) and the decision tree analysis (DTA) in Nigerian banks. The results indicate that many respondents chose "frequently" and "always," for NPV and SA indicating that NPV and sensitivity analysis are commonly

being employed more often than IRR and the DTA. This indicates a move away from the last two techniques and a broad acceptance of the first two appraisal techniques in Nigerian banks. This demonstrates their applicability in banking operations. Strong institutional adoption is suggested by the high "frequent" and "always" responses.

Table 5: NPV Capability in Reducing Bank Investment Financial Risks in Nigerian Banks

Variable	SD=1 (%)	D=2 (%)	N =3 (%)	A=4 (%)	SA=5 (%)	Mean	Std. Dev.
Application of NPV has enhanced investment decision and reduced investment risks in your bank.	0 (0.0)	0 (0.0)	24 (24.0)	43 (43.)	33 (33.0)	4.09	0.75
Investment decisions have become more data-driven and financially viable and less-risky in the bank.	0 (0.0)	0 (0.0)	8 (8.0)	48 (48.)	44 (44.0)	4.36	0.65
There is a strong relationship between NPV and sensitivity analysis and investment decision making of the bank.	0 (0.0)	1 (1.0)	17 (17.0)	47 (47.)	35 (35.0)	4.16	0.71
The NPV and sensitivity analysis appraisal techniques improve efficiency and reduce financial waste in the banks.	0 (0.0)	2 (2.0)	7 (7.0)	57 (57.0)	34 (34.0)	4.24	0.70

Source: Field Survey, 2026

Table 5 presents the results of the NPV in reducing banks' investment decision-making risks, showing that all the mean values which range from 4.09 to 4.36 are greater than 2.5 minimum standards,, indicating the ability of

NPV technique reducing banks investment financial risks as all the respondents agreed that this technique can helps in making effective investment decisions that minimize bank investment decision-making risks.

Table 6: Sensitive Analysis Capability in Reducing Bank Investment Financial Risks in Nigerian Banks

Variable	1 SD (%)	2 D (%)	3 N (%)	4 A (%)	5 SA (%)	Mean	Std. Dev.
Sensitivity analysis appraisal techniques has It is used in evaluating long-term projects in the banks	0 (0.0)	0 (0.0)	7 (7.0)	46 (46.0)	47 (47.0)	4.40	0.66
Sensitivity analysis leads to improved investment decision	0 (0.0)	0 (0.0)	10 (10.0)	52 (52.0)	38 (38.0)	4.28	0.68

making and minimizing projects implementation risks in banks							
Sensitivity analysis helps in selecting viable less-risky projects for banks	0 (0.0)	0 (0.0)	15 (15.0)	34 (34.0)	51 (51.0)	4.36	0.71
Sensitivity analysis helps evaluate how changes in variables assist investment decision and reducing financial risks of banks	0 (0.0)	3 (3.0)	19 (19.0)	55 (55.0)	23 (23.0)	3.98	0.75
Sensitivity analysis assists in identifying and managing project financial risks in the banks.	0 (0.0)	4 (4.0)	20 (20.0)	58 (58.0)	18 (18.0)	3.90	0.74
Use of sensitivity analysis contributes to better investment decision of banks.	0 (0.0)	4 (4.0)	31 (31.0)	49 (49.0)	16 (16.0)	3.77	0.73

Source: Field Survey, 2026

Table 6 reports the capability of sensitive analysis on minimizing investment financial risk in Nigerian banks. The result shows that the high mean scores (over 4.0) demonstrate the widespread consensus that sensitive analysis technique improves investment decision making.

According to respondents, the technique

enhances long-term assessment and project selection, demonstrating its applicability investment financial risks reduction. The mean values between 3.77 and 3.98 also indicate that sensitivity analysis is important in investment decision-making risk reduction assessment.

Table 7: Regression Analysis Result

SERIES: IFRR, NPV, SA				
Dependent Variable: IFRR				
Study's Model	Unstandardized Coefficients	Standard Error	t	P-value
Constant	1.806	0.319	3.785	0.00
NPV	0.544	0.087	6.253	0.00
SA	0.488	0.089	5.485	0.00
R ² = 0.6432 Adj. R ² = 0.6143				

Source: Authors' Computation, 2026

Table 7 reports the multiple regression results, supporting the descriptive analysis results and serving as a base for testing the study's hypotheses. The R-square is 0.6432) and the adjusted R-square is 0.6143, indicating that the models overall goodness-of-fit is outstanding, implying that the study's model explains more than 61.4% of the variation in the investment financial risks reduction in Nigerian banks. The co-efficient of NPV is positive ($\beta=0.544$) and statistically significant ($p=0.00$), implying that a unit increase in the application of NPV for capital project appraisal leads to 5.5% reduction in the investment financial risks of Nigerian banks. Thus, the null hypothesis that there is no significant positive influence of NPV technique on investment decision-making risks reduction in Nigerian banks is rejected. Additionally, the co-efficient of sensitivity analysis is positive ($\beta=0.488$) and statistically significant ($p=0.00$), also rejecting the null hypothesis that sensitivity analysis application has no significant positive influence on investment decision-making risks reduction in Nigerian banks. The finding implies that a unit increase in the application of sensitivity analysis minimizes Nigerian bank investment decision-making risks by 49%.

4.1 Discussion of Findings

This research obtained evidence from Nigerian banks to investigate the capability of modern capital project appraisal techniques, particularly the NPV and sensitivity analysis, on minimizing banks' investment financial risks. The results of The R-square and the adjusted R-square, indicating that the model explains more substantial variation in the investment financial risks reduction in Nigerian banks and its overall goodness-of-fit showed that the model employed is outstanding. The descriptive analysis results revealed that NPV and sensitivity analysis techniques are being used more frequently than the IRR and the decision tree analysis techniques, indicating a move away from the IRR and the decision tree analysis techniques and a broad acceptance of the NPV and sensitivity analysis by banks.

The descriptive analysis results also indicated that both NPV and sensitivity analysis are capable of minimizing banks' exposure to investment financial risks in Nigerian banks, because the more banks apply these techniques for investment appraisal the stronger their safety in investment decisions, as the majority of the respondents agreed that NPV technique enhances effective decision

quality while sensitivity analysis technique aids in identifying investment decision-making uncertainties. The result affirms the ability of NPV and sensitivity analysis to minimize banks investment decision risks as all the respondents agreed that these techniques can assist in making effective investment decisions that will minimize bank investment financial risks.

The regression analysis results revealed that both net present value and sensitivity analysis have positive significant influence on investment financial risks reduction in Nigerian banks. The findings are support the assumption of contemporary capital budgeting theory coined by Modigliani and Miller, saying that all expected investment future cash flows should be discounted with the investment cost of capital to account for investment uncertainty opportunity cost and ensure that banks effectively allocate their resources to achieve long-term project viability and militates against investment risks. These results are consistent with the research outcomes of scholars like Kengatharan and Clamenthu (2017), who found positive significant impact of that NPV and IRR techniques, and a negative impact of discounted payback Period on the efficacy of investment decisions in Sri Lankan listed

manufacturing enterprises. Also, the study by Inyang et al. (2020) discovered that inefficient use of capital budgeting procedures lead to inadequate funding and capital project abandonment in Nigerian government capital projects.

Generally, result reports the widespread consensus among the respondents that while NPV enhances long-term investment assessment and selection, the sensitivity analysis is effective in risk assessment and identification of uncertainties. Generally, result reports the widespread consensus among the respondents that while NPV enhances long-term investment assessment and selection, the sensitivity analysis is effective in risk assessment and identification of uncertainties. This necessitates the need for significant improvement in banks' decision policies that institutionalize these techniques among others for investment appraisal.

5. Conclusion and Recommendations

The research concludes that applying NPV and sensitivity analysis for project appraisal will reduce banks' exposure to investment financial risks. The findings highlight the vitality of evaluating capital investments through sensitivity analysis and NPV in the

banking sector before proceed to ember on such investment having discovered significant positive influence of both NPV and sensitivity analysis techniques on investment financial risks reduction in Nigerian banks. The result indicates that NPV and sensitivity analysis are being used more often than the internal rate of return and the decision tree analysis. While NPV enhances long-term investment selection, the sensitivity analysis assesses investment risk and identifies uncertainties in investment decision. This necessitates the need for significant improvement in decision policies that will include the two techniques among other appraisal techniques for banks investment appraisal.

This study's findings inform the banks' managers that while NPV facilitates viable capital projects selection, the sensitivity analysis assists in assessing the financial risk profiles of such project in managing the uncertainties in financial investment decision-making. The research creates awareness for bank managers on the need to invest more on regular training of their investment analysts on the usage of contemporary investment techniques to standardize long-term investments frameworks and minimize investment risks.

This study adds to the body of literature on banks investment risk avoidance or minimization strategies. The study incorporates the contemporary capital budgeting theory to advance theory on investment decisions risks and outcome. The research showed how NPV and sensitivity analysis could complement each other to reduce banks investment financial risks across the globe.

This research recommends that Nigerian banks stakeholders should invest more in investment appraisal capacity building, specifically the application of NPV and sensitivity analysis to close knowledge gaps of investment analysts and standardized capital projects evaluation frameworks to in turn improve investment decision and minimize investment financial risks. The bank regulatory authorities in in Nigeria should institutionalize the application of NPV and sensitivity analysis as part of banks investment appraisal techniques and the finding discovered that their frequent usage will minimize investment financial risks in Nigerian banks

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