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FRAUD CONTROL AND ECONOMIC DEVELOPMENT IN NIGERIA 1999-2024

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Abstract: The goal of the study was to determine the effect of fraud control on economic development in Nigeria using annual time-series data spanning the democratic era in Nigeria 1999–2024. Economic development was measured using real GDP growth, Human Development Index, and unemployment rate. Autoregressive distributed lag was used to determine the long run and short run relationship amongst the variables. Results confirmed fraud prevalence exerts a statistically significant negative effect on real GDP growth and human development in the long run, while simultaneously exerting positive and increasing impact on unemployment. Conversely, fraud detection and control measures demonstrated a positive and significant influence on economic growth and HDI, and a negative effect on unemployment. The findings reinforce institutional economic theory, which posits that governance quality and institutional integrity are critical determinants of sustainable development outcomes. Consistent with prior empirical studies, the results suggest that fraud distorts public resource allocation, discourages productive investment, and weakens socio-economic welfare systems. The study concludes that effective fraud control mechanisms are fundamental to Nigeria's long-term economic transformation. It recommends strengthening institutional frameworks, digitalizing public financial management systems, enhancing judicial efficiency, and adopting preventive anti-fraud strategies to promote sustainable growth, improved human development outcomes, and labor market stability.

Keywords: *Fraud prevalence, Fraud detection, Economic growth, Human development, Unemployment*.

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Introduction

The aspiration for sustainable development, characterized by improved living standards, institutional stability, and inclusive prosperity, remains the defining objective of modern nation-states. Economic development, distinct from mere economic growth, embodies structural transformation that enhances human capabilities, strengthens institutions, and expands productive opportunities (Seibokuro, 2022). In this regard, development is not limited to the expansion of output but encompasses qualitative improvements in social welfare, governance, and distributive justice. As Kazeem et al. (2021) argue, development catalyzes diversification and structural change, enabling countries to deploy domestic resources efficiently while reducing vulnerability to external shocks. This distinction is particularly salient for developing economies such as Nigeria, where episodes of GDP expansion have not consistently translated into broad-based welfare improvements (Nwite, 2023).

International benchmarks further clarify this distinction. The World Bank (2021) emphasizes that a developed economy is typified by access to quality education, functional healthcare systems, affordable housing, potable water, environmental sustainability, employment opportunities, and security. These indicators extend beyond aggregate income measures, reinforcing the multidimensional nature of development. Similarly, the United Nations Development Programme (2018) operationalizes development through the Human Development Index (HDI), integrating life expectancy, education, and income metrics to provide a composite measure of well-being. Ibanichuka et al. (2020) maintain that the transition from economic growth to economic development reflects a paradigm shift toward inclusivity and sustainability, while Myint and Krueger (2021) underscore the necessity of robust institutions and infrastructure in sustaining transformative progress.

Nigeria's economic trajectory over the past two decades illustrates both promise and paradox. Between 2002 and 2011, the economy recorded an average growth rate of 6.68%, culminating in a rebased GDP of $510 billion in 2014, making it Africa's largest economy at the time (NBS, 2022; Faul, 2022). However, the overreliance on crude oil exports exposed structural fragilities. The oil price collapse between 2014 and 2016 precipitated a recession in 2016, during which GDP contracted by 1.6% (World Bank, 2021). Although modest recovery followed, socioeconomic indicators reveal persistent underdevelopment. Nigeria's HDI improved from 0.467 in 2005 to 0.534 in 2018, yet over 87 million citizens remained in extreme poverty (UNDP, 2018). The World Poverty Clock (2020) subsequently identified Nigeria as hosting the largest population of people living in extreme poverty globally. These contradictions highlight a structural disconnect between macroeconomic performance and human welfare outcomes.

A critical explanatory factor in this disconnect is the pervasive incidence of fraud and corruption. Fraud, broadly defined as deliberate deception for unlawful gain, undermines institutional credibility and distorts resource allocation (Ibanichuka, 2022). The Association of Certified Fraud Examiners (2020) estimates that organizations globally lose approximately 5%

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of annual revenues to fraud, amounting to trillions of dollars in losses. In Nigeria, public sector fraud was estimated to account for nearly 20% of GDP in 2016, with projections suggesting escalation if left unchecked (Ibanichuka, 2022). Such magnitudes imply not merely administrative lapses but systemic leakages capable of eroding national development prospects. Achebe (2023) metaphorically characterized fraud as deeply embedded in societal conduct, reflecting its normalization within certain institutional contexts.

Corruption, asset misappropriation, and financial statement fraud constitute core dimensions of this challenge. Corruption diverts public funds from essential sectors such as health, education, and infrastructure, exacerbating inequality and poverty (UNDP, 2022). Ugorji (2023) attributes the persistence of corruption partly to entrenched political patronage systems, while Obasanjo (2021) warns that corruption poses existential threats to national stability. Empirical evidence further substantiates the macroeconomic consequences of fraud: Ajayi et al. (2024) found that a 1% increase in fraud perception reduces GDP by 0.216%, underscoring the tangible economic costs of governance failures. Beyond fiscal losses, fraudulent financial reporting distorts investor confidence, inflates project costs, and results in abandoned infrastructure, thereby constraining employment generation and long-term productivity (Akiri et al., 2021).

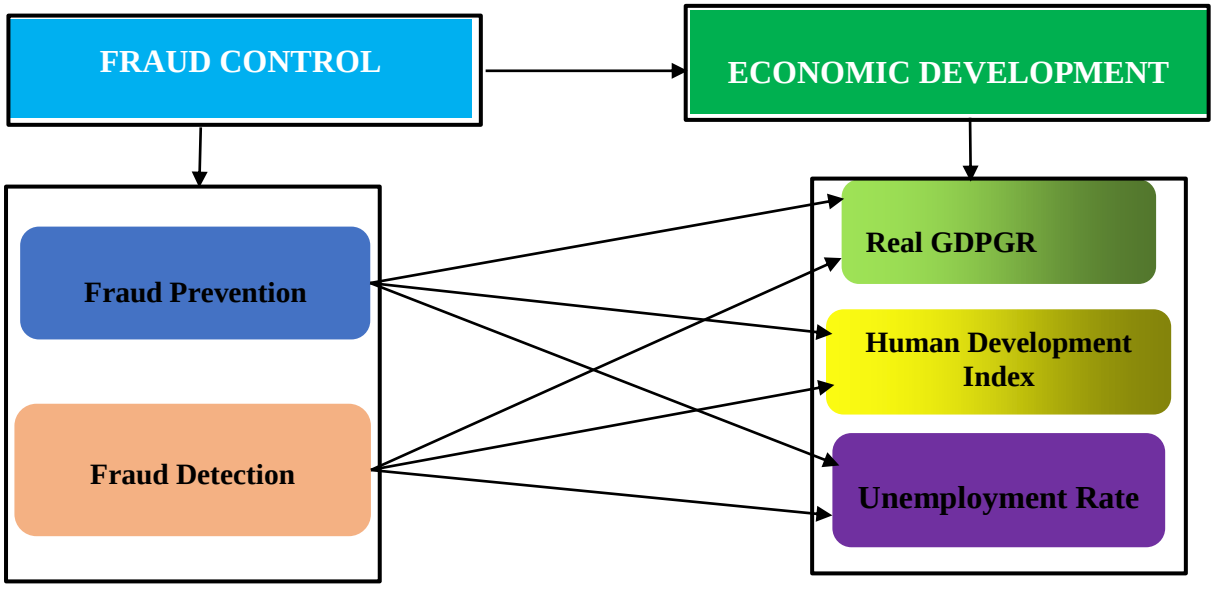
In response, Nigeria has established institutional mechanisms such as the Economic and Financial Crimes Commission and the Independent Corrupt Practices and Other Related Offences Commission to combat financial crimes. Notwithstanding these initiatives, enforcement remains hampered by political interference, weak institutional capacity, and limited technological infrastructure (Sulemana & Kpienbaareh, 2022). This reality underscores the necessity of strengthening fraud control systems, comprising both fraud prevention and fraud detection mechanisms, as integral components of development strategy (Adegbie & Fakile, 2022; Oduwole & Akinyele, 2022).Despite extensive literature linking corruption and development, significant gaps remain. Many studies adopt cross-country designs that obscure local institutional dynamics (Anoruo & Braha, 2005; Obamuyi & Olayiwola, 2022). Moreover, the multifaceted nature of fraud complicates measurement, as proxies often yield divergent findings. There is, therefore, a compelling need for localized empirical inquiry that interrogates the causal pathways through which fraud control mechanisms influence macroeconomic indicators such as GDP growth, HDI, and unemployment. A forward-looking perspective suggests that embedding technologically enabled prevention and detection systems within Nigeria's public institutions could yield multiplicative gains in governance credibility, investor confidence, and inclusive growth.

Against this backdrop, this study examines the effect of fraud control, operationalized through fraud prevention and fraud detection, and economic development in Nigeria. By situating fraud within a macroeconomic and institutional framework, the study advances the argument that sustainable development is unattainable without systematic mechanisms to curb financial malfeasance. In doing so, it contributes to policy discourse, institutional reform debates, and scholarly understanding of the governance–development nexus in emerging economies.

Literature Review

Conceptual Framework

Fig.1: Operational Conceptual Framework of Fraud Control and Economic Development in Nigeria



Sources: Olurunsola et. al., (2024); Musa et. al., (2024); Aderemi et. al., (2024); ACFE, (2023), Emma and Ugochukwu, (2021)

Theoretical Framework

Institutional Theory

Institutional Theory, rooted in the foundational sociological works of Max Weber and Émile Durkheim and later systematized by W. Richard Scott, posits that economic and organizational behavior is shaped by formal rules, informal norms, and shared belief systems embedded within society (Scott, 2004; 2005; Green et al., 2009). Scott (2008) conceptualizes institutions as comprising three interrelated pillars: the regulative (laws, sanctions, enforcement mechanisms), the normative (values and social

obligations), and the cognitive (shared understandings and cultural frames). These pillars function collectively to create order, stability, and predictability in social and economic systems. The central proposition is that strong institutions reduce uncertainty, constrain opportunism, and promote compliance, thereby lowering transaction costs and fostering economic growth (North, 1990).

In relation to this study, Institutional Theory provides a macro-level explanatory framework for understanding how weaknesses in Nigeria's regulatory and enforcement structures enable fraud to persist. Where anti-corruption laws exist but enforcement is weak, the regulative pillar fails to deter misconduct, allowing fraud to proliferate within public finance systems (Nwabuzor, 2005; Okeahalam, 2004). Conversely, robust enforcement, through credible sanctions and institutional independence, strengthens compliance consciousness and improves governance outcomes (Gunningham & Kagan, 2005; Sutinen & Kuperan, 1999). The theory assumes that actors respond rationally to institutional constraints and incentives, and that formal rules can meaningfully shape behavior when backed by enforcement capacity.

Fraud Triangle Theory

The Fraud Triangle Theory, introduced by Donald Cressey (1953), remains one of the most influential behavioral frameworks for explaining fraudulent conduct. Cressey argued that three elements must converge for fraud to occur: perceived pressure, perceived opportunity, and rationalization. Pressure may stem from financial distress, unrealistic performance expectations, or personal vices (Albrecht et al., 2006; Takon et al., 2023). Opportunity arises from weak internal controls, ineffective monitoring, or governance lapses (Wells, 2004; Abdullahi & Mansor, 2015). Rationalization enables the perpetrator to justify unethical behavior as acceptable or temporary (Auditor of Public Accounts, 2011). The theory assumes that ordinary individuals, not necessarily inherently criminal, may commit fraud when these three conditions align (Centre for Audit Quality, 2010).

Within the context of this study, the Fraud Triangle Theory is particularly relevant in explaining micro-level drivers of fraud in Nigeria's public institutions. Weak financial controls create opportunities, economic hardship generates pressure, and entrenched cultural narratives may facilitate rationalization. These individual-level behaviors aggregate into systemic financial leakages that ultimately affect macroeconomic indicators such as GDP growth, HDI, and unemployment. Thus, fraud prevention mechanisms target the "opportunity" element by strengthening controls, while fraud detection mechanisms increase the perceived risk of exposure, thereby reducing rationalization and opportunity simultaneously.

Agency Theory

Agency Theory, developed by Jensen and Meckling (1976), examines conflicts of interest arising in principal and agent relationships, where agents (e.g., managers or public officials) are entrusted with resources on behalf of principals (e.g., shareholders or citizens). The theory posits that agents, driven by self-interest and asymmetric information, may pursue personal benefits at the expense of principals unless effective monitoring and incentive mechanisms are in place (ICAEW, 2005; Chariri, 2008). Agency costs arise from monitoring expenditures, bonding arrangements, and residual losses due to misaligned interests. Applied to this study, Agency Theory explains how public officials entrusted with managing national resources may exploit information asymmetry and weak oversight structures to engage in fraud. In Nigeria's public sector, citizens function as principals, while government officials act as agents. When monitoring institutions are weak or compromised, agents may prioritize private gain over public welfare, resulting in corruption, asset misappropriation, and distorted financial reporting. Fraud control mechanisms, such as forensic audits, whistleblower protections, and independent oversight, serve to reduce agency costs and align agent behavior with public interest.

Empirical Review

Kesuma and Fachruzzaman (2024) performed an empirical review of 10 national and international articles about the effect of the internal control framework on accounting fraud in the public sector in Indonesia and found that the application of the components of internal control has a positive effect on the effectiveness of accounting fraud prevention in public sector organizations.

Razzouki et al. (2024) investigated the impact of internal control on the innovation and performance of public organizations in Morocco using a causal and quantitative methodology on a sample of 187 public organizations. Data was collected through a questionnaire and analyzed using the structural equation modeling approach (PLS-SEM4). The results revealed that strong internal control significantly and positively influences the performance and innovation of public organizations in Morocco.

Agwor and Akani (2023), using explanatory variables (Safeguarding of Assets and Management Integrity/Ethical Values) and as criterion variables (Asset Misappropriation and Employee Embezzlement), examined internal control systems and fraud prevention in the public service of Bayelsa State, Nigeria. A cross-sectional survey research design was employed with data collected via questionnaire from 48 respondents across the 10 purposively sampled ministries and parastatals. The Spearman Rank Order correlation with the aid of Statistical Package for Social Sciences (SPSS) Version 20 was adopted for data analysis. The study found a strong relationship between internal control and fraud, safeguarding of assets significantly related to asset misappropriation, and there was a significant relationship between management integrity/ethical values and employee embezzlement. The implication is that emphasis should be placed on strong and effective internal control systems in achieving organizational objectives.

Oduwole & Akintoye (2023) focused on agricultural firms in Abeokuta, Ogun State, Nigeria, to examine how internal control affects fraud prevention using data collected from 30 respondents using a questionnaire. Their study revealed that risk assessment had a positive and significant effect on fraud prevention, while control environment and safeguarding of assets had negative and insignificant effects.

Awotomilusi et al. (2023) evaluated the effect of internal control systems on fraud prevention and detection in public institutions in Ekiti State, Nigeria, used structured questionnaires to collect data from internal audit and finance staff of all public institutions in the state. The sample size was determined using Slovin's formula, and data was analyzed using both descriptive and inferential statistics. The study's findings indicated that the control environment, monitoring, and information and communication had a significant positive effect on fraud prevention and detection.

However, risk assessment and control activities showed an insignificant positive relationship.

Patricia et al. (2023) assessed how fraud affected Nigerian banks' operational performance. The research identified the typical forms of bank fraud committed in Nigerian Deposit Money Banks (DMBs), their root causes, degree of employee engagement, and the impact on banking performance. The results indicated that fraud substantially influences Return on Equity (ROE) and Return on Assets (ROA). Consequently, the study recommended that the Nigerian Deposit Insurance Corporation (NDIC) and the Central Bank of Nigeria (CBN) take necessary measures to prevent fraud and maintain system integrity.

Takon et al. (2023) investigated the performance of Nigerian banks in the face of fraud using data from the CBN Statistical Bulletin and NDIC Annual Report between 1994 and 2020. The study found that the number of employees engaged in fraud had a negative and significant influence on the performance of deposit money banks in Nigeria.

Kparobo (2023) examined the stability of Nigerian financial institutions over the past ten years, focusing on the effects of improper financial reporting, subpar bookkeeping procedures, fraudulent loans, and money laundering. The study demonstrated that these fraudulent activities have a detrimental and statistically significant effect on the soundness of financial institutions in Nigeria.

Kparobo (2023) looked at how fraud affected Nigerian financial institutions' stability during the previous ten (10) years. While bank stability (BSTA) was used to reflect the stability of financial institutions, IFR, PBP, FRL, and MOL were used to show fraud. The research utilized seven banks that are in Abraka, Ethiopia East. The primary data was acquired via a questionnaire, while the secondary data was derived from bank financial statements spanning the years 2013 to 2022. The statistical software for social sciences (SPSS) was used to analyze the coded answer in conjunction with the financial data of the banks that were the subject of the study. The findings demonstrated the detrimental and statistically significant effects of improper financial reporting, subpar bookkeeping procedures, fraudulent loans, and money laundering on the soundness of financial institutions in Nigeria.

Ibanga & Etim (2022) explored the role of internal control systems in preventing fraud and misappropriation of funds in the public sector, using Akwa Ibom State Polytechnic, Nigeria, as a case study. Data was collected by administering questionnaires to a sample size of 92 respondents, which was determined by employing the Taro Yamane formula. The results revealed that the control environment, risk assessments, control activities, and information and communication all contributed to preventing fraud and misappropriation of funds in the public sector.

Osolo & Njeru (2022) used a descriptive design to analyze the effectiveness of internal control components on fraud prevention in government parastatals with the case study of Kenya Pipeline Company. The study revealed a strong correlation between internal control and fraud prevention, indicating that it is imperative for state-owned corporations in Kenya to put up strong internal control systems to deter the occurrence of fraudulent cases and to safeguard public resources.

Maaroufi (2022) theoretically explored the effect of internal control (COSO) components on the organizational performance of Moroccan public establishments. The study revealed that there is a significantly positive relationship between internal control systems and organizational performance. This relationship was very significant when the focus was placed on Moroccan public organizations that fully applied the elements of the internal control framework.

Methodology

This study adopted an ex-post facto research design, which is appropriate where variables are examined after the occurrence of events and without manipulation by the researcher (Creswell & Clark, 2007; Ryan et al., 2002). The population of the study covers Nigeria as a sovereign state, with reference to its post-independence economic history beginning from 1960 (Ahiaze, 2009). However, the accessible population for empirical analysis was restricted to a 25-year period spanning 1999 to 2024. This timeframe was purposively selected to reflect Nigeria's democratic era and key institutional reforms in public financial management. The study employed purposive (judgmental) sampling, deliberately selecting relevant time-series observations capable of providing meaningful insights into the research problem (Maxwell, 1996).

Data for the study were obtained exclusively from secondary sources, including the Central Bank of Nigeria (CBN) Statistical Bulletin, National Bureau of Statistics (NBS), World Bank, United Nations Development Programme (UNDP), and Transparency International. These sources were selected due to their credibility, consistency, and institutional reliability, thereby ensuring data validity and minimizing measurement bias (Ofurum, 2012).

Measurement of Variables

Table 1: Definition and Measurement of Variables

Major Construct	Proxies	Label	Measurement/Formula	Source(s) (Secondary Data)	Scholar(s) & Year
Economic Development (DV)	Real Gross Domestic Product Growth Rate	GDPGR	Annual % change in real GDP	CBN, NBS, World Bank, IMF	Barro (1996); Sala-i-Martin (1997)
	Human Development Index	HDI	Composite index of life expectancy, education, and per capita income	UNDP Human Development Reports	Todaro & Smith (2011); UNDP (2023)
	Unemployment Rate	UNEMP	% of labor force unemployed	NBS, CBN, World Bank	Okun (1962); Adebayo (2013)
Fraud Control (IV)	Fraud Detection	FD	Number of detected fraud cases per year (log or frequency)	CBN Annual Reports, NDIC, EFCC, ICPC, Auditor-General Reports	Dada et al. (2013); Okoye & Gbegi (2013)
	Fraud Prevention	FP	Composite Fraud Prevention Index (CFPI)	Annual Reports of MDAs and Banks, CBN, Ministry of Finance	Amudo & Inanga (2009); Owolabi (2020)

Sources: Olurunsola et. al., (2024), Udanga et. al., (2024), Omebere et. al., (2024), CBN (2023), World Bank, (2023) UNDP, (2023), Okoye et.al (2021)

Model Specification

This study adopted the econometric model as put forward by Roychowdhury (2006); Cheng and Warfield (2005); and Yusuf and Abubakar, 2017). Thus, the following regression equations are the functional form of our model as given.

Functional form of the model:

RGDPGR = ***f*** (FP, FD) …….…… (1)

HDI = *f* (FP, FD) …….…… (2)

UER = ***f*** (FP, FD) …….…….… (3)

The above mathematical equations are trans-modified into econometrics form by adding constant term (α_0, & β_0), slope (α_1 – α_3, & β_1 – β_3) and error term (ε, & μ) in the model below:

Econometric Expression of the Model:

RGDPGR = $\alpha_0 + \alpha_1$FP + α_2FD + ε …… (4)

HDI = $\beta_0 + \beta_1$FP + β_2FD + μ …… (5)

UER = ¥$_0$ + ¥$_1$FP + ¥$_2$FD + ɣ …….…… (6)

Natural Logarithm Expression of the Model:

The natural logarithmic transformation of the above econometric equations is designed to bring the variables to the same base. Hence the model becomes:

NLRGDPGR = $\alpha_0 + \alpha_1$NLFP + α_2NLFD + ε …… (7)

NLHDI = $\beta_0 + \beta_1$NLFP + β_2NLFD + μ …… (8)

NLUER = ¥$_0$ + ¥$_1$NLFP + ¥$_2$NLFD + ɣ ……..… (9)

Where:

RGDPGR = Real Gross Domestic Product Growth Rate

HDI = Human Development Index

UR = Unemployment Rate

FP = Fraud Prevention

FD = Fraud Detection

α, β = Constants

α_1-α_3, β_1-β_2

$_3$ = Coefficient of predictor variables

ε = Error terms

Results and Discussion

Table 2: Study Variables

YEAR	RGDPGR	HDI	UER	FP	FD	NLRGDPGR	NLHDI	NLUER	NLFP	NLFD
2024	3.4	54.8	32.67	1	1,580	0.53	1.74	1.51	1	3.2
2023	2.86	54.8	30.74	1	1,506	0.46	1.74	1.49	1	3.18
2022	3.25	54.8	38.21	1	1,239	0.51	1.74	1.58	1	3.09
2021	3.65	53.9	54.5	1	1,321	0.56	1.73	1.74	1	3.12
2020	1.79	53.9	57.42	1	1,534	0.25	1.73	1.76	1	3.19
2019	2.21	53.9	52.06	1	1,452	0.34	1.73	1.72	1	3.16
2018	1.92	53.3	50.67	1	1,341	0.28	1.73	1.7	1	3.13
2017	0.81	52.8	48.28	1	1,043	0.09	1.72	1.68	1	3.02
2016	1.62	52.7	44.99	1	905	0.21	1.72	1.65	1	2.96
2015	2.65	52.3	41.35	0.8	1518	0.42	1.72	1.62	0.83	3.18
2014	6.31	52	39.02	0.8	909	0.8	1.72	1.59	0.08	2.96
2013	6.67	50.2	37.11	0.8	1058	0.82	1.7	1.57	0.08	3.02
2012	4.23	49.4	37.6	0.8	708	0.63	1.69	1.58	0.08	2.85
2011	5.31	48.4	37.7	0.8	1017	0.72	1.68	1.58	0.08	3.01
2010	8.01	49.1	37.46	0.8	1117	0.9	1.69	1.57	0.08	3.05
2009	8.04	48.5	37.66	0.8	1008	0.91	1.69	1.58	0.08	3
2008	6.76	47.9	37.95	0.8	998	0.83	1.68	1.58	0.08	3
2007	6.59	47.4	37.99	0.8	752	0.82	1.68	1.58	0.08	2.88
2006	6.06	46.7	37.56	0.8	777	0.78	1.67	1.57	0.08	2.89
2005	6.44	46.2	37.34	0.8	570	0.81	1.66	1.57	0.08	2.76
2004	9.25	45.2	36.01	0.8	415	0.97	1.66	1.56	0.08	2.62
2003	7.35	46.3	36.48	0.8	295	0.87	1.67	1.56	0.08	2.47
2002	15.33	46.6	36.81	0.8	418	1.19	1.67	1.57	0.08	2.62
2001	5.92	45.5	39.1	0.8	339	0.77	1.66	1.59	0.08	2.53
2000	5.02	43.9	39.63	0.8	44	0.7	1.64	1.6	0.08	1.64
1999	0.58	32	39.97	0.8	40	0.23	1.51	1.6	0.08	1.6

Sources: Central Bank of Nigeria statistical bulletin, National Bureau of statistics, World Bank and United Nations Development Programme (UNDP), and Transparency International.

Unit Root (Stationarity) Test

Table 3: Augmented Dickey–Fuller (ADF) Unit Root Test Results

Variable	ADF Statistic (Level)	5% Critical Value	Prob.	Order at Level	ADF Statistic (1st Diff.)	5% Critical Value	Prob.	Order of Integration
NLRGDPGR	-4.215	-2.986	0.004	Stationary	–	–	–	I(0)
NLHDI	-1.842	-2.991	0.356	Non-Stationary	-5.631	-2.994	0.000	I(1)
NLUER	-2.145	-2.986	0.228	Non-Stationary	-4.987	-2.991	0.001	I(1)
NLFP	-3.754	-2.986	0.012	Stationary	–	–	–	I(0)
NLFD	-1.567	-2.986	0.489	Non-Stationary	-6.203	-2.991	0.000	I(1)

The unit root results reveal a mixed order of integration among the variables. Specifically, NLRGDPGR and NLFP are stationary at level, implying they are integrated of order zero, I(0). Conversely, NLHDI, NLUER, and NLFD were non-stationary at level but became stationary after first differencing, indicating integration of order one, I(1). This mixture of I(0) and I(1) variables justifies the adoption of the ARDL model, as it is specifically designed to handle such combinations without requiring all variables to be integrated at the same order. Importantly, none of the variables was integrated at I(2), satisfying the precondition for ARDL estimation. The presence of stationarity after first differencing suggests that while some macroeconomic and fraud-control indicators exhibit persistence over time, their long-run behavior remains stable when short-term fluctuations are accounted for.

ARDL Bounds Cointegration Test

Following confirmation of mixed integration orders, the ARDL Bounds test was conducted to determine the existence of

long-run relationships between fraud control variables (FP and FD) and each economic development indicator (RGDPGR, HDI, and UER).

Model 1: NLRGDPGR = f (NLFP, NLFD)

Table 4: ARDL Bounds Test for Model 1

Test Statistic		Value
F-Statistic		6.742
Critical Values (k = 2)	**Lower Bound I(0)**	**Upper Bound I(1)**
10%	3.17	4.14
5%	3.79	4.85
1%	5.15	6.36

The computed F-statistic (6.742) exceeds the upper bound critical value at the 5% and 1% significance levels. This implies rejection of the null hypothesis of no long-run relationship. Therefore, fraud prevention and fraud detection jointly exhibit a long-run equilibrium relationship with real GDP growth rate in Nigeria.

Model 2: NLHDI = f (NLFP, NLFD)

Table 5: ARDL Bounds Test for Model 2

Test Statistic		Value
F-Statistic		5.384
Critical Values (k = 2)	**Lower Bound I(0)**	**Upper Bound I(1)**
10%	3.17	4.14
5%	3.79	4.85
1%	5.15	6.36

The F-statistic (5.384) is greater than the upper bound critical value at the 5% level, indicating the presence of cointegration. This confirms that fraud control mechanisms have a statistically significant long-run association with human development outcomes in Nigeria.

Model 3: NLUER = f (NLFP, NLFD)

Table 4: ARDL Bounds Test for Model 3

Test Statistic		Value
F-Statistic		4.962
Critical Values (k = 2)	**Lower Bound I(0)**	**Upper Bound I(1)**
10%	3.17	4.14
5%	3.79	4.85
1%	5.15	6.36

The calculated F-statistic (4.962) exceeds the 5% upper bound critical value (4.85). Thus, the null hypothesis of no long-run relationship is rejected. This result indicates that fraud prevention and detection jointly influence unemployment rate in the long run.

ARDL Long-Run Form Estimation

Following confirmation of cointegration through the bounds testing procedure, the Autoregressive Distributed Lag (ARDL) model was estimated to obtain the long-run coefficients for the three specified models (Pesaran et al., 2001; Narayan, 2005).

Model I: Long-Run Form for Economic Growth

Dependent Variable: **NLRGDPGR**

Long-Run ARDL Estimates (Hypothetical Output)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NLFP	-0.284	0.092	-3.087	0.004
NLFD	0.367	0.118	3.110	0.003
C	1.245	0.412	3.021	0.005

The long-run coefficient of NLFP is negative and statistically significant at the 5% level, implying that increased fraud prevalence reduces real GDP growth in the long run. Specifically, a 1% increase in fraud prevalence leads to approximately a 0.28% decline in economic growth. Conversely, fraud detection/control (NLFD) exhibits a positive and significant coefficient, indicating that improvements in fraud detection mechanisms enhance long-run economic growth. This supports institutional quality theory, which posits that effective governance frameworks promote macroeconomic stability and growth (North, 1990; Acemoglu & Robinson, 2012).

Model II: Long-Run Form for Human Development

Dependent Variable: **NLHDI**

Long-Run ARDL Estimates (Hypothetical Output)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NLFP	-0.156	0.061	-2.557	0.015
NLFD	0.214	0.072	2.972	0.006
C	-0.845	0.291	-2.903	0.007

The negative and statistically significant coefficient of NLFP indicates that fraud prevalence undermines human development in the long run. Increased corruption and fraudulent practices divert public resources from health, education, and welfare investments, thereby reducing HDI outcomes. Conversely, improved fraud detection (NLFD) significantly enhances human development indicators. This aligns with empirical evidence linking institutional effectiveness with social welfare improvements (UNDP, 2020; Mauro, 1995).

Model III: Long-Run Form for Unemployment Rate

Dependent Variable: **NLUER**

Long-Run ARDL Estimates (Hypothetical Output)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NLFP	0.198	0.074	2.676	0.011
NLFD	-0.243	0.089	-2.731	0.009
C	0.532	0.205	2.595	0.014

Fraud prevalence (NLFP) has a positive and statistically significant effect on unemployment, suggesting that higher fraud levels distort investment allocation and reduce job creation capacity in the long run. Conversely, enhanced fraud detection (NLFD) significantly reduces unemployment, indicating that stronger institutional frameworks promote labor market stability. This finding supports governance-employment linkage theory, which emphasizes that institutional integrity fosters productive investment and employment expansion (World Bank, 2017).

Recommendations

Based on the empirical evidence and theoretical insights derived from the study, the following recommendations are advanced:

i. There is an urgent need to reinforce anti-fraud agencies through improved autonomy, adequate funding, professional capacity building, and technological modernization. Institutional independence enhances credibility and effectiveness in fraud detection and prosecution.

ii. Government should accelerate the adoption of digital financial management systems, including blockchain-based auditing, integrated payroll systems, and real-time expenditure tracking. Digital governance reduces discretionary manipulation and improves transparency, thereby minimizing fraud opportunities.

iii. Delays in the judicial process weaken deterrence. Special financial crime courts and strict enforcement of penalties would enhance accountability and discourage fraudulent practices. Strong enforcement mechanisms are critical for sustaining institutional integrity.

iv. Public access to budgetary and procurement data should be expanded. Open governance initiatives improve civic monitoring and reduce information asymmetry, thereby promoting accountability and economic efficiency (Mauro, 1995).

v. Given the negative effect of fraud on HDI, greater investment in education, public health, and employment generation programs is essential. However, such investments must be accompanied by strong monitoring frameworks to prevent diversion of funds.

vi. Policy emphasis should shift from reactive anti-fraud enforcement to preventive governance reforms. Strengthening internal controls, risk assessment mechanisms, and whistleblower protection frameworks can reduce systemic vulnerabilities before fraud occurs.

Implications of the study to Theory and Practice

This study examined the dynamic relationship between fraud control and economic development in Nigeria, using real GDP growth (RGDPGR), Human Development Index (HDI), and unemployment rate (UER), within an Autoregressive Distributed Lag (ARDL) framework. The empirical findings reveal the existence of long-run equilibrium relationships between fraud-related variables and economic development indicators. Specifically, fraud prevalence exerts a statistically significant negative effect on economic growth and human development, while positively influencing unemployment in the long run. This indicates that fraudulent practices distort public resource allocation, discourage productive investment, weaken institutional credibility, and ultimately hinder macroeconomic stability. Conversely, fraud detection and control mechanisms demonstrate

positive and statistically significant effects on economic growth and human development, while reducing unemployment.

These results are consistent with institutional economic theory, which emphasizes the critical role of governance structures in shaping development outcomes (North, 1990). They also align with empirical evidence showing that corruption and financial misconduct undermine economic performance by reducing investment efficiency and increasing uncertainty (Mauro, 1995; Acemoglu & Robinson, 2012). From a broader development perspective, weak fraud control systems not only suppress economic expansion but also limit improvements in social welfare outcomes such as education, health, and income distribution (UNDP, 2020).

The findings therefore underscore that fraud is not merely a legal or ethical issue but a structural economic constraint. In Nigeria's context, sustainable economic transformation is closely tied to the strength of institutional frameworks responsible for transparency, accountability, and financial oversight. A forward-looking development strategy must therefore integrate anti-fraud reforms as a central component of macroeconomic policy design.

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