ISLAMIC UNIVERSITY JOURNAL OF SOCIAL SCIENCES VOL 5, NO 3
ISSN: 2709-2429(Print), 2709-2437(Online)-Published 31st July 2026

Institutional Quality and the Manufacturing Subsector Growth Nexus: Empirical Evidence from Nigeria

[1]OMOJUWA O. Michael., [2]OMITOGUN O., & [3]ONANUGA A. Toyin
[1-3]Department of Economics, Olabisi Onabanjo University, Ago-Iwoye, Nigeria
Corresponding Author's Email: ojotopejoshua@gmail.com

Abstract

This study evaluates the impact of institutional quality on the growth of Nigeria's manufacturing subsector over the period 1991-2024. After adjusting for loan interest rates, inflation rates, and currency rates, the study creates a composite Institutional Quality Index (IQI) using Principal Component Analysis of six governance characteristics and investigates its correlation with manufacturing subsector development (Msg). Due to the mixed integration order of the series, secondary time-series data from the World Bank, the Central Bank of Nigeria, and the researcher's calculations were analysed using descriptive statistics, correlation based and variance inflation factor diagnostics, Augmented Dickey-Fuller unit root tests, and the ARDL bounds testing procedure. The limits test confirmed a long-term equilibrium connection between the variables. The short-run findings show that institutional quality has a positive and statistically significant effect on the growth of the manufacturing subsector, while the long-run coefficient is negative but not statistically significant. The considerable and negative error correction term indicates that around 44% of the short-run disequilibrium is corrected within a year. Diagnostic tests verify that the model is normally distributed, free of heteroscedasticity and serial correlation, and structurally stable over the review time. The study comes to the conclusion that institutional quality improves Nigeria's manufacturing subsector in a transient rather than long-term manner and suggests extensive, long-term governance changes aimed at enhancing the working conditions of manufacturing firms.

Keywords: Institutional quality; manufacturing subsector; Nigeria

JEL Codes: O17; L60; O55

1. Introduction

The manufacturing subsector occupies a central position in the process of structural transformation, as it drives value addition, technological advancement, employment generation, and export diversification, particularly within developing economies (Yeboua, 2025The subsector increases its overall developmental impact by creating strong backward and forward links with other economic sectors in addition to directly contributing to output (Nnadozie et al., 2020). Despite these established advantages, the sector's contribution to global output continues to be relatively small and has recently trended lower in several scenarios (World Bank, 2024). Furthermore, Nigeria's experience reflects this worldwide trend, but in a much more noticeable way. The manufacturing subsector's share of the GDP decreased between 1991 and 2024, from 19.49 percent in 1991 to 15.36 percent in 2023 (World Bank, 2024). Even after several administrations implemented programs and reforms aimed at reviving the industry, such as financial sector reforms, trade liberalisation policies, and industrial development plans, this decline continued. Firm closures, low capacity utilisation, and muted output growth are examples of the subsector's ongoing poor performance, which suggests a mismatch between the goals of these reforms and their actual results.

A progressively growing body of research connects these discrepancies, at least partially, to the calibre of the institutional framework in which economic reforms are carried out (Ijaz et al., 2023). The degree to which policy modifications result in positive outcomes is determined by institutions, which are widely defined as the laws, customs, and enforcement systems that govern economic and political interaction (Douglas, 1991). The transmission of even well-planned measures to firm-level efficiency and sectoral growth can be seriously hindered in weak institutions, which are defined by poor governance, a weak rule of law, high levels of corruption, and unpredictable regulatory environments (Nguyen et al., 2022). In comparison to international standards, Nigeria's institutional environment has typically been deemed inadequate, which has been connected to substandard results in a number of economic sectors (Ologbenla, 2023). The manufacturing subsector in particular has received relatively little attention, and fewer studies have used a composite, multidimensional measure of institutional quality with the potential of

measuring the breadth of the governance construct, despite the fact that a respectable amount of empirical work has investigated the association between institutional quality and aggregate economic growth or broad industrial output in Nigeria and other developing economies (Aminu et al., 2019; Shikur, 2024). Instead, a large portion of the work currently in publication depends on discrete governance metrics, such as political stability or perceived levels of corruption, which may underestimate the combined impact of institutional surroundings on sectoral performance (Ijaz et al., 2023).

Against this backdrop, this article isolates and empirically investigates the specific objective of assessing the impact of institutional quality on the growth of Nigeria's manufacturing subsector, drawing on data spanning 1991 to 2024 and a composite Institutional Quality Index (IQI) derived through Principal Component Analysis. The corresponding hypothesis under investigation is that the expansion of Nigeria's manufacturing subsector is not much impacted by institutional quality. Therefore, a wide spectrum of participants can benefit from the study's findings. The results assist more efficient institutional and industrial policy sequencing by providing policymakers with evidence-based insight into whether and over what time horizon governance reforms materialise into quantifiable benefits for the manufacturing subsector. Investors can make better investment selections in the industry by having a better grasp of the institutional aspect of the business environment. In a field of study that has mostly depended on governance fragmentation indicators, the study offers the academic community a sector-specific empirical application of a composite institutional quality measurement.

2. Literature Review

Manufacturing subsector growth denotes the sustained expansion in output, productivity, employment, and investment recorded within industries engaged in transforming raw materials into finished products (Nnadozie et al., 2020). As a component of the broader industrial sector, manufacturing is widely regarded as a central driver of structural transformation, enabling economies to diversify away from primary commodity dependence, reduce import reliance, and generate durable employment opportunities (Yeboua, 2025). For Nigeria, whose manufacturing contribution to GDP has fluctuated without a clear upward trend over more than three decades, revitalising the subsector remains a key developmental priority (World Bank, 2024). In this study,

manufacturing subsector growth is measured as manufacturing output expressed as a percentage of gross domestic product (Msg).

Institutional quality refers to the effectiveness with which an economy defines and enforces the rules that govern economic and political behaviour, encompassing government regulation, legislative structures, and the protection of individual and property rights (Douglas, 1991). Strong institutions are associated with well-functioning legal systems, effective regulatory frameworks, credible control of corruption, and stable political environments, conditions that collectively reduce transaction costs and uncertainty for economic agents (Nguyen et al., 2022). Weak institutions, in contrast, are linked with poor economic performance, as they raise the cost of doing business, discourage investment, and undermine the credibility of policy commitments (Meniago & Asongu, 2018; Nirola & Sahu, 2019).

Institutions have also been conceptualised as routines and norms that constrain human behaviour and provide predictable guidance for economic and social interaction (Yildirim & Gokalp, 2016). Through these functions, institutional quality shapes business scale, industrial flexibility, and resilience to external shocks, with strong institutions generally associated with sustained long-term growth (Okoye et al., 2018; Naplava, 2020). Because institutional quality is inherently multidimensional, spanning governance, regulatory, and political domains, single-indicator proxies are widely regarded as insufficient to capture its full effect on sectoral outcomes, motivating the use of composite indices in more recent empirical work (Ijaz et al., 2023).

Early growth theories, notably the Harrod-Domar framework and the neoclassical growth model of Solow and Swan, explained output expansion primarily through capital accumulation, savings behaviour, and factor productivity, with limited explicit attention to institutional or governance considerations (Robert & Barbara, 2008). These frameworks have been critiqued for their narrow treatment of the structural and institutional determinants that shape how efficiently accumulated resources are converted into sustained output growth.

This study is instead anchored on the endogenous growth framework, whose foundations were laid by Arrow (1962), Uzawa (1965), and Sidrauski (1967), and later extended by Romer (1986). Unlike the neoclassical approach, endogenous growth theory situates the drivers of long-run growth within the economic system itself, particularly innovation, human capital, and institutional efficiency, rather than treating them as exogenously determined (Jhingan, 2016).

Within this framework, well-functioning institutions are viewed as central to the efficient mobilisation and allocation of resources across productive sectors, including manufacturing (Pagano, 1993; King & Levine, 1993). Applying this reasoning to the manufacturing subsector, institutions are regarded as one of the deepest determinants of sustained industrial development because they shape the structure of economic incentives faced by firms (Shikur, 2024). Where institutional quality is high, manufacturing enterprises face more predictable regulatory conditions, stronger contract enforcement, and lower corruption-related costs, all of which support capital accumulation and productivity gains within the sector (Imoughele & Okoro, 2021). This theoretical linkage between institutional quality and sectoral performance, integrated within the endogenous growth framework, provides the anchor for the model specification adopted in this study.

Empirical evidence on the relationship between institutional quality and industrial or economic performance in Nigeria and comparable economies remains mixed. At the aggregate level, Ologbenla (2023) examined the influence of institutional quality on Nigeria's output performance between 1996 and 2021 using an ARDL framework incorporating labour force dynamics, foreign direct investment, inflation, institutional quality, and capital formation. The results indicated that institutional quality exerted an adverse effect on long-run growth, alongside inflation, suggesting that Nigeria's institutional arrangements, in their prevailing form, may not function as effective growth-enhancing mechanisms.

Adopting a more disaggregated approach, Babasanya et al. (2021) analysed industrial output growth in relation to multiple governance indicators between 1996Q1 and 2018Q4 using VAR, VECM, and Toda-Yamamoto-Dolado-Lütkepohl causality techniques. Their results revealed limited short-run causality running from institutional variables to industrial performance, although long-run associations emerged between industrial output and selected governance dimensions, such as government effectiveness and corruption control. This finding underscores the uneven and multidimensional nature of institutional influence on industrial outcomes.

Utile et al. (2021) reported that Nigeria's growth performance between 2001 and 2019 was significantly and negatively affected by institutional quality, with persistent short-run disequilibrium suggesting that institutional constraints are embedded structurally rather than transiently within the economic system. In a related study spanning a longer horizon, Abubakar

(2020) documented a positive, though in some specifications statistically weak, association between contract-intensive institutional structures and economic growth between 1979 and 2018, with the estimated speed of adjustment suggesting that institutional effects unfold gradually rather than immediately. Also, at a regional level, Ogbuabor et al. (2020) examined thirteen West African economies and found that institutional quality negatively affected economic growth, an outcome attributed to entrenched governance weaknesses, including weak regulatory enforcement, political instability, and limited accountability. Taken together, these studies point to a lack of consensus on the direction and significance of institutional effects, with outcomes varying according to model specification, proxy choice, sample period, and the level of sectoral aggregation examined.

Conversely, the reviewed literature reveals three principal gaps that this study addresses. First, a measurement gap is evident, as most existing studies represent institutional quality through isolated governance indicators, such as rule of law, corruption control, or political stability, considered independently rather than as a unified construct (Ologbenla, 2023; Babasanya et al., 2021; Utile et al., 2021; Aminu et al., 2019; Shikur, 2024). Although informative, this fragmented approach may not adequately capture the overall institutional environment confronting manufacturing firms. To address this, the present study constructs a composite Institutional Quality Index using Principal Component Analysis, integrating six governance dimensions into a single measure. Similarly, a sectoral gap exists, as the bulk of empirical work on institutional quality in Nigeria concentrates on aggregate economic growth or broad industrial output rather than the manufacturing subsector specifically. This is a significant omission because the channels through which institutions affect manufacturing performance, including contract enforcement in supplier relationships, regulatory compliance costs, and the predictability of trade policy, may differ from those shaping aggregate growth (Ijaz et al., 2023). Lastly, a temporal gap is apparent, as several existing studies rely on comparatively dated series that do not capture more recent institutional and macroeconomic developments in Nigeria. This study addresses this by extending the empirical coverage to 1991-2024, thereby capturing both long-standing structural patterns and recent developments in the country's institutional and manufacturing landscape. Collectively, these gaps motivate the model specification and estimation strategy adopted in the following section.

3. Methodology

This study adopts an ex post facto research design, appropriate for examining cause-and-effect relationships using existing secondary data that are not subject to manipulation by the researcher. This design enhances the credibility and validity of the empirical results and is well suited to the time-series nature of the relationship between institutional quality and manufacturing subsector growth investigated in this study.

The study is anchored on the endogenous growth framework advanced by Romer (1986) and related contributions from Arrow (1962), Uzawa (1965), and Sidrauski (1967), as extended to the finance-growth and institutions-growth literature by Pagano (1993) and King and Levine (1993). Following Adamopoulos (2010), the relationship between the efficiency of resource intermediation and sectoral performance can be expressed as msg = f(A\u03b8s - \u03b4), where msg denotes manufacturing subsector performance, A represents total factor productivity, \u03b8s captures the share of savings channelled into productive investment net of intermediation losses, and \u03b4 is the depreciation rate.

Because institutions are recognised as one of the deepest determinants of sustained industrial development, shaping the very structure of economic incentives within which resource allocation occurs (Shikur, 2024), institutional quality (IQ) is introduced into the framework, yielding msg = f(A\u03b8s - \u03b4; IQ). This general specification underlies the empirical model developed in the next subsection, consistent with the theoretical treatment of institutional quality as a determinant of manufacturing output within the endogenous growth paradigm (Imoughele & Okoro, 2021).

Model Specification

The empirical specification adapts the model developed by Edame and Okoi (2015), whose original formulation is expressed as:

$$MAO = \beta_0 + \beta_1 CSL + \beta_2 PCN + \beta_3 GCS + \beta_4 CIM + \beta_5 CPI + \beta_6 ECF + \varepsilon_t$$

In adapting this model to the objective of this study, the manufacturing sector-to-GDP ratio (Msg) is retained as the dependent variable, while the original fragmented institutional proxies (including corruption perception and economic freedom indices) are replaced with a single composite Institutional Quality Index (IQI) derived through Principal Component Analysis, which better captures the multidimensional nature of governance quality. Contract-intensive

money, petroleum consumption, and industrial power usage are excluded as they are not germane to the present objective, while the lending interest rate (LIT) and inflation rate (INF) are retained as control variables well established in the endogenous growth literature as determinants of manufacturing performance, alongside the exchange rate (EXR) to capture the cost of imported industrial inputs. The resulting model, addressing the objective of this study, is specified as:

$$Msg_t = \delta_t + \beta_1 IQI_t + \beta_2 LIT_t + \beta_3 INF_t + \beta_4 EXR_t + \varepsilon_t$$

where Msg_t is manufacturing subsector output at time t; IQI_t is the Institutional Quality Index; LIT_t, INF_t, and EXR_t are the lending interest rate, inflation rate, and exchange rate, respectively, included as control variables; δ_t is the intercept; β_1 to β_4 are the parameters to be estimated; and ε_t is the stochastic error term. The corresponding ARDL representation, estimated in Section 4, decomposes this relationship into short-run and long-run dynamics with an associated error correction mechanism.

Table 1 presents the theoretically expected direction of the relationship between the explanatory variables and manufacturing subsector growth.

Table 1: A Priori Expectations of the Variables

Variable	Notation	Expected Sign	Justification
Institutional Quality	IQI	$\beta_1 > 0$	Stronger institutions are expected to enhance manufacturing performance
Lending Interest Rate	LIT	$\beta_2 > 0$ or < 0	Higher borrowing costs may raise investment costs (negative) or reflect credit-market adjustments (positive)
Inflation Rate	INF	$\beta_3 > 0$ or < 0	Moderate inflation may stimulate demand; high inflation raises input costs
Exchange Rate	EXR	$\beta_4 < 0$	Currency depreciation raises the cost of imported raw materials and machinery

Source: Adapted from the study's model specification, following Pagano (1993) and Edame and Okoi (2015).

The Institutional Quality Index (IQI) is constructed through Principal Component Analysis (PCA) applied to six governance dimensions: voice and accountability, government effectiveness, regulatory quality, rule of law, control of corruption, and political stability (Gazdar & Cherif, 2014). PCA is a dimensionality-reduction technique that condenses correlated indicators into a smaller set of composite components while retaining most of the informational content of the

original series, and is particularly useful where multiple indicators must be summarised into a single composite measure (Jean et al., 2024). In this study, the first principal component, with an eigenvalue exceeding one and accounting for approximately 82.7 percent of the total variance across the six governance indicators, is retained as the Institutional Quality Index used in estimation.

Table 2: Description of Study Variables and Data Sources

Variable Type	Variable	Notation	Unit	Source
Dependent	Manufacturing Subsector Growth	Msg	% of GDP, annual	World Bank Development Indicators, 2024
Independent	Institutional Quality Index	IQI	Index (PCA)	Computed by the researcher
Control	Lending Interest Rate	LIT	% per annum	CBN Statistical Bulletin, 2024
Control	Inflation Rate (CPI)	INF	% per annum	World Bank Development Indicators, 2024
Control	Exchange Rate	EXR	₦ per annum	World Bank Development Indicators, 2024

Note. Researcher's compilation, 2026.

The estimation strategy proceeds in three stages. The pre-estimation stage comprises descriptive statistics, multicollinearity diagnostics (correlation matrix and variance inflation factors), and the Augmented Dickey-Fuller (ADF) unit root test, undertaken to determine the order of integration of the series and to guard against spurious regression (Gujarati & Porter, 2009). Given the mixed order of integration typically encountered in macroeconomic time series, the Autoregressive Distributed Lag (ARDL) bounds testing approach developed for cointegration analysis is adopted, as it accommodates variables integrated of order zero, order one, or a combination of both. Optimal lag length is selected using standard information criteria prior to estimation. The main estimation stage reports the ARDL short-run and long-run coefficients together with the error correction term, while the post-estimation stage subjects the residuals to normality, serial correlation, heteroscedasticity, and structural stability diagnostics to confirm the reliability of the estimated parameters.

4. Results and Discussion

Table 3: Descriptive Statistics Result

Statistic	Msg	IQI	LIT	INF	EXR
Mean	12.7513	-0.9034	18.3735	18.2381	1995.2060
Median	11.9350	-1.0475	17.7000	13.1300	2059.5500
Maximum	20.9300	1.8100	31.6000	72.8400	2585.7000
Minimum	6.5500	-2.1600	11.5000	1.4700	1390.5000
Std. Dev.	4.3489	0.8939	4.2519	15.9044	445.7112
Skewness	0.3997	1.5312	0.8361	2.1692	-0.1713
Kurtosis	1.8428	5.3554	4.2805	6.8998	1.3495
Jarque-Bera	2.8023	21.1450	6.2840	48.2112	4.0257
Probability	0.2463	0.0000	0.0432	0.0000	0.1336
Observations	34	34	34	34	34

Source: Researcher's computation, 2026.

The manufacturing subsector recorded a mean value of 12.75 percent over the sample period, with a median of 11.94 percent, indicating mild positive skewness and a standard deviation of 4.35, reflecting substantial fluctuation in sectoral performance across the study period. Institutional quality (IQI) records a negative mean of -0.90, indicating that Nigeria's institutional environment remained, on average, below the global benchmark of zero across the review period. The variable is positively skewed (1.53) and leptokurtic (5.36), and the Jarque-Bera statistic (21.15; p = 0.0000) confirms that the series departs from normality, consistent with the observed volatility of Nigeria's governance indicators.

The lending interest rate averages 18.37 percent, reflecting relatively high borrowing costs over the period, while inflation averages 18.24 percent with considerable dispersion (standard deviation of 15.90), consistent with Nigeria's history of episodic inflationary pressure. The exchange rate averages ₦1,995.21, with the Jarque-Bera statistic (4.03; p = 0.134) indicating that the series is approximately normally distributed, unlike the other variables in the model.

Table 4: Correlation Matrix Result

Variable	IQI	LIT	INF	EXR
IQI	1.0000	—	—	—
LIT	-0.0730	1.0000	—	—
INF	-0.1525	0.4547	1.0000	—

Variable	IQI	LIT	INF	EXR
EXR	-0.1198	-0.7062	-0.3948	1.0000

Source: Researcher's computation, 2026.

All pairwise correlation coefficients among the explanatory variables fall below the conventional 0.8 threshold, indicating an absence of serious multicollinearity. This is corroborated by the centred variance inflation factors, which stand at 1.94 for IQI, 2.66 for LIT, 1.64 for INF, and 3.10 for EXR, all comfortably below the conventional threshold of 5, confirming that multicollinearity does not compromise the reliability of the estimated coefficients.

Table 5: Augmented Dickey-Fuller Unit Root Test Result

Variable	Model Specification	ADF @ Level	ADF @ 1st Diff.	Order of Integration
Msg	None	-0.5477	-2.4392*	I(1)
IQI	Constant	-3.1120*	-	I(0)
LIT	Constant, Trend	-5.4239*	-	I(0)
INF	Constant, Trend	-1.0401	-5.8456*	I(1)
EXR	None	0.9335	-2.6166*	I(1)

*Source: Researcher's computation, 2026. * denotes significance at the 5% level.*

The findings show a mixed order of integration: growth in the manufacturing subsector, inflation, and the exchange rate are only stationary after initial differencing, I(1), but institutional quality and the lending interest rate are stationary at level, I(0). This is because the ARDL bounds testing strategy lacks the need for variables to share a common order of integration, this combination of I(0) and I(1) series validates its suitability for estimating the link between institutional quality and manufacturing subsector growth.

On the other hand, lag length selection based on the Akaike Information Criterion, the Final Prediction Error, and the Hannan-Quinn criterion consistently identified a lag length of three as optimal for the model, offering the best balance between model fit and parsimony. The ARDL bounds test for cointegration, reported in Table 6, was subsequently conducted using this lag specification.

Table 6: ARDL Bounds Test for Cointegration Result

Significance Level	Lower Bound I(0)	Upper Bound I(1)	Computed F-Statistic
10%	2.20	3.09	
5%	2.56	3.49	F = 8.559

Significance Level	Lower Bound I(0)	Upper Bound I(1)	Computed F-Statistic
2.5%	2.88	3.87	
1%	3.29	4.37	

Source: Researcher's computation, 2026.

The null hypothesis of no cointegration is rejected since the calculated F-statistic of 8.559 is greater than the upper bound critical value at all traditional significance thresholds. This supports the estimation of both the short-run and long-run ARDL coefficients given in the next paragraph by confirming the presence of a long-run equilibrium connection between institutional quality and the growth of the manufacturing subsector.

Table 7: ARDL Error Correction Model Estimates (Short-Run Estimates)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(Msg(-1))	0.3409	0.1119	3.0445	0.0227
D(Msg(-2))	0.7845	0.1225	6.4029	0.0007
D(IQI(-1))	1.0389	0.2281	4.5552	0.0039
D(IQI(-2))	0.4714	0.1575	2.9932	0.0242
D(LIT)	-0.2192	0.0535	-4.0990	0.0064
D(LIT(-1))	0.5389	0.0801	6.7259	0.0005
D(LIT(-2))	0.5321	0.0833	6.3947	0.0007
D(LIT(-3))	0.3021	0.0579	5.2121	0.0020
D(INF)	-0.0910	0.0239	-3.7950	0.0090
D(INF(-1))	-0.0573	0.0164	-3.4836	0.0131
D(INF(-2))	0.0512	0.0135	3.7943	0.0090
D(EXR(-1))	-0.0126	0.0025	-5.0626	0.0023
D(EXR(-3))	-0.0099	0.0022	-4.4341	0.0044
ECM(-1)*	-0.4445	0.0458	-9.7034	0.0001
Long-Run Estimates				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
IQI	-3.5405	3.0978	-1.1429	0.2966
LIT	-1.1364	0.3427	-3.3161	0.0161
INF	-0.2741	0.1561	-1.7560	0.1296
EXR	-0.0140	0.0044	-3.1659	0.0194
C	64.6822	14.4144	4.4873	0.0042

Adjusted R-squared: 0.8639; Durbin-Watson statistic: 2.58.
Source: Researcher's computation, 2026.

The short-run results show that manufacturing subsector growth is significantly influenced by its own lagged values, with both D(Msg(-1)) and D(Msg(-2)) positive and statistically significant, indicating strong persistence and momentum effects in sectoral output, plausibly reflecting the cumulative influence of investment cycles and industrial policy interventions.

Institutional quality exerts a positive and statistically significant influence on manufacturing performance in the short run. Specifically, D(IQI(-1)) carries a coefficient of 1.039 ($p = 0.0039$), while D(IQI(-2)) carries a coefficient of 0.471 ($p = 0.0242$), indicating that improvements in institutional quality translate into a measurable expansion of manufacturing output within one to two years. This finding is consistent with the theoretical expectation that stronger institutions, through improved contract enforcement, regulatory predictability, and reduced corruption-related costs, support more efficient allocation of resources within the manufacturing subsector (Imoughele & Okoro, 2021).

Among the control variables, the immediate effect of the lending interest rate, D(LIT), is negative and significant, consistent with the expectation that higher borrowing costs initially suppress manufacturing activity; however, its lagged values, D(LIT(-1)) through D(LIT(-3)), are positive and significant, suggesting a delayed adjustment through improved credit allocation over time. Inflation shows a similarly mixed short-run pattern, with contemporaneous and first-lag effects negative but the second lag positive, while the exchange rate exerts a consistently negative effect at the first and third lags, reflecting the adverse consequences of currency depreciation on the cost of imported industrial inputs. The model exhibits strong explanatory power, with an adjusted R-squared of 0.864, and the Durbin-Watson statistic of 2.58 indicates the absence of serious serial correlation.

The error correction term, ECM(-1), is negative and statistically significant, with a coefficient of -0.4445, confirming the existence of a valid long-run equilibrium relationship among the variables. The magnitude of the coefficient indicates that approximately 44 percent of any deviation from long-run equilibrium is corrected within a single year, reflecting a moderate speed of adjustment. This implies that while temporary shocks disturb the short-run dynamics of manufacturing subsector growth, the system gradually converges towards its long-run equilibrium path over roughly two years.

In the long run, institutional quality carries a negative coefficient of -3.5405, but this relationship is not statistically significant, indicating that institutional quality does not exert a statistically confirmed influence on manufacturing subsector performance over an extended horizon. This insignificant long-run outcome, contrasted against the significant positive short-run effect, suggests that the benefits of institutional improvements in Nigeria may be immediate but not self-sustaining, possibly reflecting inconsistent implementation of governance reforms or transitional adjustment costs associated with institutional change.

The control variables, by contrast, exhibit significant negative long-run effects. A one-unit increase in the lending interest rate is associated with a 1.14-unit decline in manufacturing subsector growth, consistent with the expectation that higher borrowing costs discourage industrial investment. Similarly, a one-unit increase in the exchange rate (indicating currency depreciation) is associated with a 0.014-unit decline in manufacturing output, reflecting the higher cost of imported raw materials and capital goods. The coefficient on inflation, while negative, is not statistically significant at the 5 percent level.

Table 8: Post-Estimation Diagnostic Tests Result

Test	Statistic	P-value	Decision (5%)	Interpretation
Jarque-Bera	0.6828	0.7107	Fail to reject H0	Residuals normally distributed
Serial Correlation (LM)	5.9067	0.0640	Accept H0	No evidence of serial correlation
ARCH Test	0.9384	0.5889	Accept H0	No heteroscedasticity detected
CUSUM Test	-	-	Within bounds	Model is structurally stable
CUSUM of Squares	-	-	Borderline	No strong evidence of instability

Source: Researcher's computation, 2026.

The diagnostic results confirm that the model residuals are normally distributed, free of serial correlation and heteroscedasticity, and that the estimated parameters are structurally stable over the review period, supporting the reliability and robustness of the reported ARDL coefficients.

However, the finding that institutional quality exerts a positive and significant short-run effect but a statistically insignificant long-run effect on manufacturing subsector growth aligns partially with, and diverges from, existing evidence. Consistent with the long-run insignificance reported here, Ologbenla (2023) found that institutional quality exerted an adverse effect on Nigeria's aggregate output performance, while Utile et al. (2021) similarly reported a significant negative

long-run relationship between institutional quality and economic growth in Nigeria, attributing this to structural institutional weaknesses. In their study of West African economies, Ogbuabor et al. (2020) also documented a negative and significant long-run effect of institutional quality on growth, lending broader regional support to the view that weak institutional persistence constrains sustained industrial and economic performance in the sub-region.

By contrast, the significant positive short-run effect of institutional quality found in this study diverges from the results of Babasanya et al. (2021), whose analysis of Nigerian industrial output revealed no significant short-run causal relationship running from institutional variables to industrial performance. This divergence may plausibly reflect differences in sectoral focus, the specific institutional proxy employed, or the frequency and length of the estimation period. The pattern identified in this study, however, resonates with Abubakar (2020), who reported a positive but statistically weak long-run effect of governance quality alongside evidence that institutional influence unfolds gradually rather than immediately, a temporal dynamic broadly consistent with the short-run-significant, long-run-insignificant pattern established here.

Therefore, the weight of comparable Nigerian and West African evidence supports the interpretation that institutional quality, when it does exert influence on industrial performance, tends to do so unevenly across time horizons, and that sustained long-run institutional dividends for manufacturing remain elusive in Nigeria's prevailing governance environment (Ologbenla, 2023; Utile et al., 2021; Ogbuabor et al., 2020). This reinforces the conceptual gap identified in Section 2, namely, that institutional reforms in Nigeria appear capable of generating short-lived improvements without translating into a durable growth-enhancing mechanism for the manufacturing subsector.

5. Conclusion and Recommendations

This study assessed the impact of institutional quality on the growth of Nigeria's manufacturing subsector over the period 1991-2024, using a composite Institutional Quality Index derived through Principal Component Analysis and an Autoregressive Distributed Lag estimation framework anchored on endogenous growth theory. The ARDL bounds test confirmed a long-run equilibrium relationship among institutional quality, the lending interest rate, inflation, the exchange rate, and manufacturing subsector growth. The empirical results show that institutional quality exerts a positive and statistically significant effect on manufacturing subsector growth in

the short run, but this effect does not persist into the long run, where the relationship, though negative, is statistically insignificant. The error correction term confirms that approximately 44 percent of short-run deviations from equilibrium are corrected annually, while post-estimation diagnostics affirm the reliability, stability, and robustness of the model.

These findings lead to the rejection of the null hypothesis in the short run, suggesting that institutional quality does exert a measurable, positive influence on Nigeria's manufacturing subsector, at least within an immediate time horizon, though its long-run effectiveness as a standalone growth-enhancing mechanism remains statistically unconfirmed within the period reviewed. The results therefore suggest that institutional reforms in Nigeria generate real but transient benefits for the manufacturing subsector, a pattern most plausibly linked to inconsistent implementation, policy reversals, or weak enforcement continuity rather than to institutional reform being inherently ineffective. However, based on these findings, the following recommendations are proposed:

Given the demonstrated short-run responsiveness of the manufacturing subsector to institutional improvements, policymakers should prioritise comprehensive and, crucially, sustained governance reforms, rather than episodic interventions. Particular emphasis should be placed on strengthening legal enforcement mechanisms, curbing corrupt practices, enhancing regulatory transparency, and improving the operational efficiency of government institutions directly engaged with the manufacturing sector, such as agencies responsible for business registration, customs administration, and industrial standards enforcement.

Because the long-run effect of institutional quality was found to be statistically insignificant, deliberate efforts should be directed at institutionalising reform continuity, for instance through legally binding regulatory frameworks and multi-year industrial policy commitments that are insulated from abrupt policy reversals across political administrations. This would help convert the observed short-run institutional gains into a more durable, long-run growth-enhancing mechanism for the manufacturing subsector.

given the significant adverse long-run effects of the lending interest rate and the exchange rate on manufacturing subsector growth identified alongside the institutional quality relationship, monetary and exchange rate management should be coordinated with institutional reform efforts, ensuring that improvements in governance quality are not undermined by a high-cost credit

environment or persistent currency depreciation, both of which raise the operating costs faced by manufacturing enterprises.

References

Abubakar, S. (2020). Institutional quality and economic growth: Evidence from Nigeria. *African Journal of Economic Review, 8*(1), 48-64.

Adamopoulos, A. (2010). The relationship between credit market development and economic growth. *American Journal of Applied Sciences, 7*(4), 518.

African Export-Import Bank. (2024). *Transforming Africa's trade.* https://media.afreximbank.com/afrexim/Promoting-Manufacturing-Export-A-Study-of-Africas-Manufacturing-Landscape.pdf

Agu, C., Ifeoma, C. M., Jonathan, E. O., & Ezinne, N. O. (2024). Globalisation and manufacturing sector performance: The role of institutional quality in Nigeria. *International Journal of Sustainable Economy, 16*(4), 403-429.

Akinmulegun, S. O., & Akinde, J. A. (2020). Financial deepening and manufacturing sector performance in Nigeria (1981-2017). *Journal of Economics and Finance, 10*(4), 18-27.

Aminu, A., Raifu, I. A., & Oloyede, B. D. (2019). Financial development and manufacturing output growth nexus in Nigeria: The role of institutional quality. *DBN Journal of Economics and Sustainable Growth, 1*(2), 1-43. https://ssrn.com/abstract=3332385

Arrow, K. J. (1962). The economic implications of learning by doing. *The Review of Economic Studies, 29*, 155-173. https://doi.org/10.2307/2295952

Babasanya, A., Adelowokan, O., & Oyebamiji, F. (2021). Institutional quality and industrial growth: A causality analysis. *Asian Journal of Education and Social Studies*, 34-45. https://doi.org/10.9734/ajess/2021/v24i330579

Douglas, C. N. (1991). Institutions. *The Journal of Economic Perspectives, 5*(1), 97-112.

Edame, G. E., & Okoi, O. B. (2015). Fiscal deficits and economic growth in Nigeria: A chow test approach. *International Journal of Economics and Financial Issues, 5*(3), 748-752.

Gazdar, K., & Cherif, M. (2014). The quality of institutions and financial development in MENA countries: An empirical investigation. *Risk Governance and Control: Financial Markets & Institutions, 4*(4), 65-80. https://doi.org/10.22495/rgcv4i4c1art1

Gujarati, D. N., & Porter, D. C. (2009). *Basic econometrics* (5th ed.). McGraw-Hill.

Ijaz, U., Ismailov, D., Balbaa, M., Akhmedov, A., Khasanov, S., & Haq, M. (2023). Enhancing institutional quality to boost economic development in developing nations: New insights from the CS-ARDL approach. *Research in Globalization, 7*, 100137. https://doi.org/10.1016/j.resglo.2023.100137

Imoughele, L. E., & Okoro, G. E. (2021). Fiscal policy: Institutional quality and the quest for growth of the manufacturing sector in Nigeria. *International Journal of Current Research in the Humanities, 2*(1), 105-133.

Jean, C. K., Sunday, A. O., Ogbebor, P. I., & Nduka, M. M. (2024). Financial development and real gross domestic product in Rwanda. *International Journal of Economics, Finance and Management Sciences, 12*(2), 101-112. https://doi.org/10.11648/j.ijefm.20241202.15

Jhingan, M. L. (2016). *Macroeconomic theory* (13th ed.). Vrinda Publications.

King, R. G., & Levine, R. (1993). Finance and growth: Schumpeter might be right. *Quarterly Journal of Economics, 108*, 717-737.

Meniago, C., & Asongu, S. A. (2018). Revisiting the finance-inequality nexus in a panel of African countries. *Research in International Business and Finance, 46*, 399-419. https://doi.org/10.1016/j.ribaf.2018.04.012

Naplava, R. (2020). Institutional quality and income inequality: Evidence from post-Soviet countries. *European Journal of Business Science and Technology, 6*(2), 100-112.

Nguyen, C. P., Su, T. D., & Nguyen, T. V. H. (2022). Institutional quality and economic growth: The case of emerging economies. *Theoretical Economics Letters, 8*, 1943-1956.

Nirola, N., & Sahu, S. (2019). The interactive impact of government size and quality of institutions on economic growth: Evidence from the states of India. *Heliyon, 5*, e01352. https://doi.org/10.1016/j.heliyon.2019.e01352

Nnadozie, O. O., Raifu, I. A., & Afolabi, J. A. (2020). *Infrastructure and manufacturing sector performance in Sub-Saharan African countries.* https://www.researchgate.net/publication/340676313

Ogbuabor, J. E., Onuigbo, F. N., Orji, A., & Anthony-Orji, O. I. (2020). Institutional quality and economic performance in Nigeria: New evidence. *International Journal of Economics and Statistics, 8*, 38-49.

Okoye, E. I., Nwoye, U. J., Ekesiobi, C., & Obiorah, J. (2018). Repositioning democratic governance in Nigeria: Implications on national economy. *Asian Journal of Economics, Business and Accounting, 8*(3), 1-20. https://doi.org/10.9734/AJEBA/2018/44731

Ologbenla, P. (2023). Institutional quality and output performance in Nigeria. *European Journal of Science, Innovation and Technology, 3*(6), 356-374.

Pagano, M. (1993). Financial markets and growth: An overview. *European Economic Review, 37*(2-3), 613-622. https://doi.org/10.1016/0014-2921(93)90051-B

Robert, W. D., & Barbara, J. S. (2008). *Trevor Swan and the neoclassical growth model* (NBER Working Paper No. 13950). National Bureau of Economic Research.

Romer, P. M. (1986). Increasing returns and long-run growth. *Journal of Political Economy, 94*, 1002-1037.

Shikur, Z. H. (2024). Economic freedom, institutional quality, and manufacturing development in African countries. *Journal of Applied Economics, 27*(1), 1-21. https://doi.org/10.1080/15140326.2024.2321084

Sidrauski, M. (1967). Rational choice of patterns of economic growth in a monetary economy. *American Economic Review, 57*, 534-544.

Utile, V. I., Ijirshar, V. U., & Sem, A. (2021). Impact of institutional quality on economic growth in Nigeria. *Gusau International Journal of Management and Social Sciences, 4*(3), 157-177.

Uzawa, H. (1965). Optimum technical change in an aggregate model of economic growth. *International Economic Review, 6*(1), 18-31.

World Bank. (2024). *Manufacturing, value added (% of GDP).* https://data.worldbank.org/indicator/NV.IND.MANF.ZS

Yeboua, K. (2025). *Manufacturing: Thematic futures.* https://futures.issafrica.org/thematic/07-manufacturing/

Yildirim, A., & Gokalp, M. (2016). Institutions and economic performance: A review on the developing countries. *Procedia Economics and Finance, 38*, 347-359. https://doi.org/10.1016/S2212-5671(16)30207-6