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POST-ACQUISITION PERFORMANCE OF ELECTRICITY DISTRIBUTION COMPANIES IN NIGERIA: IMPLICATIONS FOR POWER SUPPLY RELIABILITY IN AN EMERGING ECONOMY

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ABSTRACT

Nigeria's electricity distribution assets were acquired to enhance operational efficiency, attract private investment, minimise technical, commercial, and collection losses, and improve the reliability of electricity delivered to end-users. However, over a decade since distribution companies were handed over to core investors, their performance remains inconsistent and, in some areas, structurally fragile. This paper analyses the post-acquisition performance of Nigerian electricity distribution companies and explores the effects of this performance on power supply stability in an emerging economy. It contends that ownership transfer alone does not guarantee utility performance unless issues such as network deterioration, inaccurate customer enumeration, metering gaps, poor collection discipline, tariff deficiencies, foreign-exchange risks, and regulatory inconsistencies are addressed. Using recent quarterly data from the Nigerian Electricity Regulatory Commission, the study shows that aggregate ATC&C losses remained significantly above the 2025 MYTO target, with weighted average losses of 37.92% in Q2 2025, 33.27% in Q3, and 34.90% in Q4. In Q4 2025, DisCos billed NGN 795.06 billion but only collected NGN 630.93 billion, resulting in an estimated revenue loss of NGN 139.19 billion due to excessive ATC&C losses. The paper emphasises that post-acquisition performance should be evaluated on tangible improvements in energy accountability, metering, network investment, collection efficiency, market remittances, consumer trust, and feeder-level reliability, rather than on ownership transfer

alone. The Nigerian experience illustrates that electricity-sector acquisitions in emerging economies require enforceable performance contracts, credible regulatory incentives, cost-reflective and service-linked tariffs, and enhanced subnational accountability under the Electricity Act 2023.

KEYWORDS: Electricity distribution; post-acquisition performance; DisCos; Nigeria; ATC&C losses; power supply reliability; privatisation; emerging economies.

1. INTRODUCTION

Electricity distribution serves as the final commercial link between the power system and consumers. While generation creates energy and transmission moves it, the distribution company manages whether electricity reaches users, is accurately measured, billed, paid for, and trusted. In developing economies, this segment often struggles because it functions as an engineering network, a billing system, a customer service provider, and a politically sensitive monopoly all at once. Nigeria offers a significant, yet analytically valuable, case for studying utility performance after acquisition. The privatisation of the power sector shifted distribution franchises from public utilities to private investors. According to the Bureau of Public Enterprises, after the privatisation of ten distribution companies was completed, these utilities were transferred to core investors in November 2013, 2013. Performance agreements then mandated reductions in technical, commercial, and collection losses. This history is not merely a footnote; it forms the contractual basis for evaluating post-acquisition performance.

The key issue is no longer whether Nigeria privatised its distribution companies, as that is already settled. Instead, the relevant question is whether the acquisition sufficiently altered the distribution sector's performance logic to enhance power supply reliability. A simplistic analysis might conclude that privatisation has failed, but that approach lacks depth. A more thoughtful inquiry examines why ownership changes after an acquisition haven't led to the anticipated efficiency improvements, and which performance mechanisms link DisCo's finances to customer reliability. This paper advances three arguments. First, post-acquisition performance in electricity distribution must be assessed using sector-specific indicators rather than generic merger-and-acquisition metrics. Second, the Nigerian evidence shows persistent commercial and technical inefficiencies that directly undermine supply reliability. Third, current reforms, including state electricity market transitions under the Electricity Act 2023, create a fresh opportunity to tie tariffs, investment and reliability obligations to measurable performance.

2. Sectoral and Post-Acquisition Context

Nigerian electricity distribution companies acquired assets under conditions that differed markedly from those assumed in standard corporate acquisition models. Unlike a typical firm, where product lines, balance sheets, customer segments, and market share can be reasonably assessed, a distribution utility in a fragile power system inherits outdated feeders, overloaded transformers, inaccurate network maps, unreliable customer records, missing meters, politicised tariffs, and low customer trust. These issues hinder the translation of ownership change into operational efficiency. The BPE review highlights this by noting that performance agreements were entered into despite limited technical information about infrastructure conditions at the time of the transaction, with baseline losses based on provisional estimates [1]. This admission is significant because it indicates that post-acquisition targets were not based on a reliable technical baseline. Consequently, these firms were evaluated against loss-reduction obligations amid substantial information asymmetry.

The post-acquisition business model was also strained by tariff and liquidity problems. Reuters reported in 2025 that Nigeria's power sector continued to face a failing grid, gas shortages, vandalism, high debt and tariff shortfalls, despite an installed capacity far above typical delivered generation [8]. In another report, Reuters noted that six of Nigeria's eleven DisCos were under receivership amid cash shortfalls in the sector, raising serious concerns about the viability of private investment [9]. These developments indicate that post-acquisition distress is not limited to managerial inefficiency; it reflects a fragile market architecture. A distribution utility becomes reliable when it can recover revenue, maintain assets and invest ahead of demand. When a DisCo cannot collect enough revenue, it defers maintenance. When it is deferred, feeders trip more often, transformers fail, and voltage quality deteriorates. Poor reliability, in turn, reduces consumers' willingness to pay, which worsens collections. This is the self-reinforcing cycle at the centre of Nigeria's distribution-sector problem.

3. Literature and Conceptual Framing

Traditional post-acquisition assessments focus on profitability, synergy gains, market share, cost savings, and shareholder value. However, these metrics are inadequate for electricity distribution in developing economies. A DisCo isn't just a company; it's a regulated infrastructure monopoly whose operational success impacts national productivity, household welfare, and upstream market liquidity. In this sector, post-acquisition success should be evaluated based on the new ownership's ability to enhance energy-to-revenue conversion,

turning delivered energy into billed and collected revenue, and to invest in network reliability. This requires a comprehensive performance framework: technical losses indicate engineering inefficiencies; commercial losses reflect billing issues, theft, and metering failures; collection losses show payment discipline; market remittance gauges sector liquidity; and service reliability assesses the consumer experience of the entire system.

NERC's reporting framework supports this broader interpretation. Its quarterly reports evaluate commercial performance through energy offtake, energy accounting, billing efficiency, collection efficiency, ATC&C loss and market remittance [2]-[4]. These indicators are not secondary accounting variables. They are core reliability variables because they determine whether distribution companies can finance the operational expenditure and capital expenditure required to keep electricity flowing to consumers. The conceptual framework adopted in this paper is therefore simple: acquisition affects reliability only through intervening performance mechanisms. New ownership must improve governance discipline, investment allocation, metering, billing, collections, loss reduction and network maintenance. If these mechanisms do not improve, the acquisition becomes a legal transfer of assets rather than an economic transformation of service delivery.

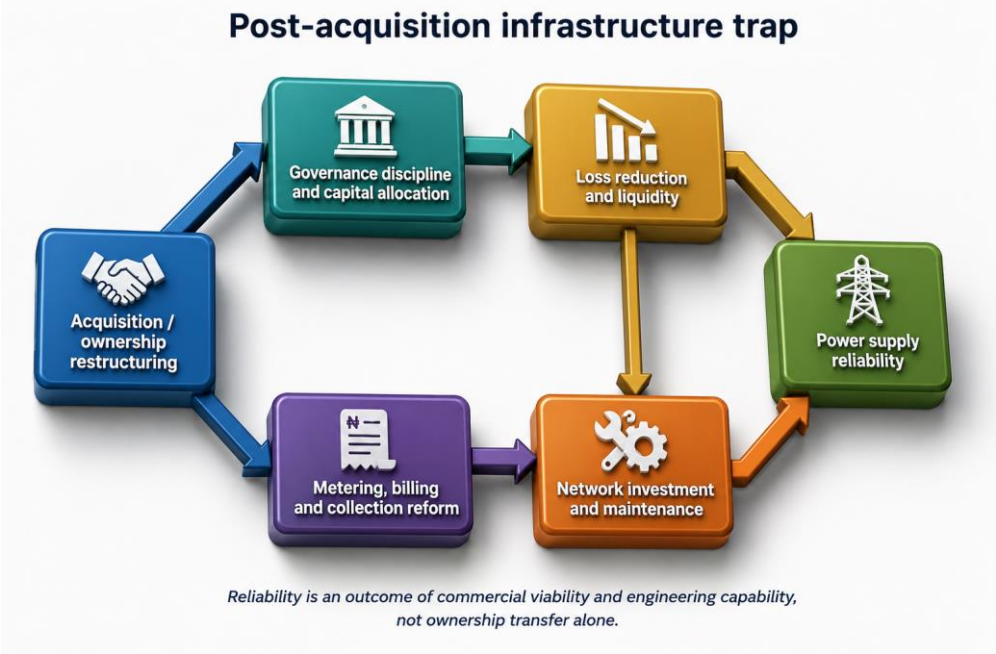

Figure 1: Conceptual framework linking post-acquisition performance to power supply reliability—source: Authors' construction.

4. Analytical Framework and Research Propositions

The analytical proposition of this paper is that power supply reliability is a function of both engineering capacity and commercial solvency. The engineering side includes feeder condition, transformer loading, protection coordination, voltage control and fault-clearing capability. The commercial side includes accurate metering, billing efficiency, collection efficiency and remittance. A distribution company that is technically competent but financially insolvent will eventually fail to maintain its network. Conversely, a financially disciplined utility without network investment will collect revenue from a deteriorating asset base until consumer resistance and outage costs overwhelm the business model.

The relationship can be described as follows:

$PSR_{(i,t)} = f[NI_{(i,t)}, LR_{(i,t)}, CE_{(i,t)}, BE_{(i,t)}, MET_{(i,t)}, REM_{(i,t)}, REG_{(i,t)}]$

where PSR is power supply reliability for DisCo i in period t; NI is network investment; LR is loss reduction; CE is collection efficiency; BE is billing efficiency; MET is metering coverage; REM is market remittance; and REG is regulatory quality. The equation is deliberately conceptual rather than econometric at this stage because the present paper is designed as a journal-style analytical manuscript. A full empirical version should estimate this relationship using quarterly DisCo-level panel data.

The following four propositions are presented: Proposition 1 suggests that increased ATC&C losses reduce supply reliability by lowering revenue for maintenance and capital investments. Proposition 2 states that greater metering coverage enhances consumer trust, collection discipline, and billing transparency. Proposition 3 claims that higher market remittance boosts the liquidity of Nigeria's broader Electricity Supply Industry, thereby supporting upstream generation and transmission. Proposition 4 indicates that regulatory credibility influences the link between post-acquisition performance and reliability, as tariff recovery and investment commitments depend on proper enforcement.

5. Methodological Approach

This paper employs an analytical approach based on desk research, supported by recent regulatory performance data. The primary evidence is sourced from NERC quarterly reports for 2025/Q2, 2025/Q3, and 2025/Q4, along with BPE documentation on privatised DisCos performance reviews, statutory and regulatory materials related to the Electricity Act 2023, World Bank reports on distribution-sector recovery, and Reuters sector coverage [1]-[11]. The analysis focuses on the electricity distribution company. Key performance indicators include energy received, energy billed, energy accounting efficiency, billing efficiency,

collection efficiency, ATC&C losses, revenue losses or gains, and market remittance performance. These metrics are selected because they directly link post-acquisition commercial discipline to the ability to invest in system reliability.

The study is not presented as a causal econometric analysis. That would require a longer panel, pre- and post-acquisition firm-level variables, service-band reliability data, feeder-level outage indicators, and capital expenditure records. Instead, the paper develops a conceptually grounded, data-enriched argument suitable for conversion into an empirical article. The descriptive evidence is used to illustrate the magnitude and structure of the post-acquisition performance problem.

Table 1: Sector-specific indicators for evaluating post-acquisition DisCo performance.

Dimension	Indicator	Reliability interpretation
Technical performance	Feeder availability, technical losses, transformer loading	Determines physical continuity and quality of supply
Commercial performance	Billing efficiency, collection efficiency, ATC&C loss	Determines how much delivered energy becomes usable cash flow
Financial performance	Revenue recovery, debt burden, market remittance	Determines the ability to maintain the network and pay upstream invoices
Customer performance	Metering, complaints, and estimated billing reduction	Determines consumer trust and willingness to pay
Regulatory performance	MYTO target compliance, service-band obligations	Determines whether tariffs and investment are tied to enforceable outputs

6. Descriptive Evidence of Post-Acquisition Performance

The descriptive evidence is uncomfortable. It shows that Nigerian DisCos continue to lose a large share of the commercial value of electricity received at their trading points. In 2025/Q4, all DisCos collectively received 7,991.22 GWh and billed 6,614.57 GWh, yielding an energy accounting efficiency of 82.77% [4]. In monetary terms, the total energy offtake value was NGN 969.19 billion, while the total billed amount was NGN 795.06 billion, resulting in a billing efficiency of 82.03% [4]. More troubling is the collection: DisCos collected NGN 630.93 billion out of NGN 795.06 billion billed, giving a collection efficiency of 79.36% [4].

The ATC&C loss indicator integrates these weaknesses. NERC defines ATC&C loss as the loss resulting from the inability to account for and bill all energy delivered to customers and the inability to collect all bills issued to customers [4]. The formula reported by NERC is: ATC&C loss (%) = [1 - (Billing Efficiency x Collection Efficiency)] x 100. This formula is brutal in its policy implication: modest weaknesses in billing and collection multiply into a much larger aggregate loss.

The aggregate ATC&C loss across all DisCos was 37.92% in 2025/Q2, 33.27% in 2025/Q3 and 34.90% in 2025/Q4, compared with a 2025 MYTO aggregate target of 20.54% [2]-[4]. In other words, the distribution segment remained far from the efficient-loss benchmark assumed in tariff computation. NERC estimated that excess ATC&C losses translated into revenue losses of NGN 158.05 billion in 2025/Q2, NGN 108.75 billion in 2025/Q3 and NGN 139.19 billion in 2025/Q4 [2]-[4].

This is not a marginal inefficiency. In 2025/Q4, the actual aggregate ATC&C loss was 14.36 percentage points above the allowed aggregate efficient loss target [4]. NERC further noted that all DisCos except Eko failed to meet their ATC&C targets in 2025/Q4, while Kaduna DisCo recorded the worst relative underperformance, with actual ATC&C loss of 69.45% against a target of 21.32% [4].

Table 2: Aggregate DisCo commercial performance indicators, 2025/Q2-2025/Q4. Source: NERC quarterly reports [2]-[4].

Indicator	2025/Q2	2025/Q3	2025/Q4
Energy received (GWh)	7,824.43	7,348.95	7,991.22
Energy billed (GWh)	6,449.82	6,158.54	6,614.57
Energy accounting efficiency (%)	82.43	83.80	82.77
Billing efficiency (%)	81.61	82.69	82.03
Collection efficiency (%)	76.07	80.70	79.36
ATC&C loss (%)	37.92	33.27	34.90
Revenue loss (NGN billion)	158.05	108.75	139.19
Market remittance performance (%)	95.65	95.21	92.71

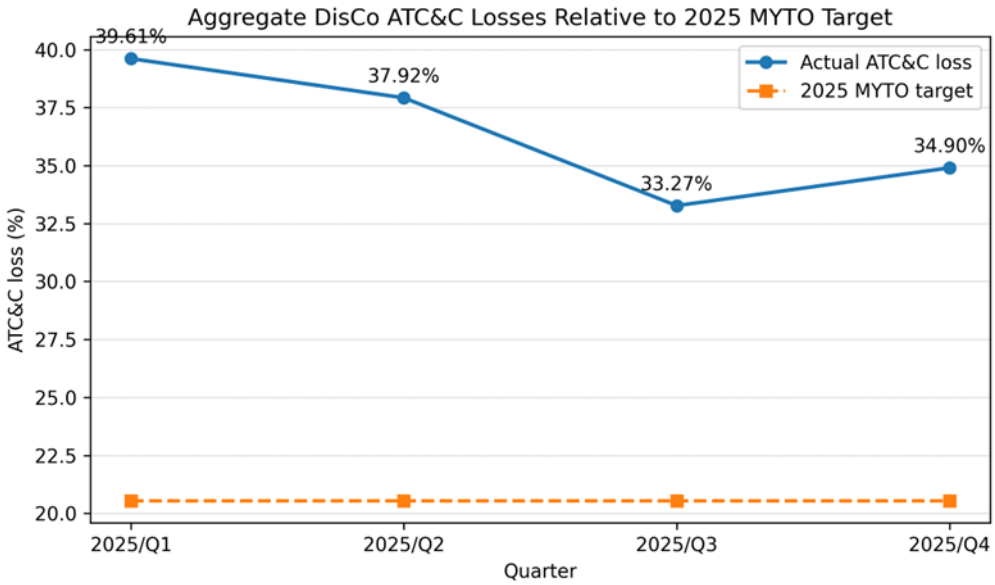

Figure 2: Aggregate DisCo ATC&C losses relative to the 2025 MYTO target. Source: Authors' plot based on NERC data [2]-[4].

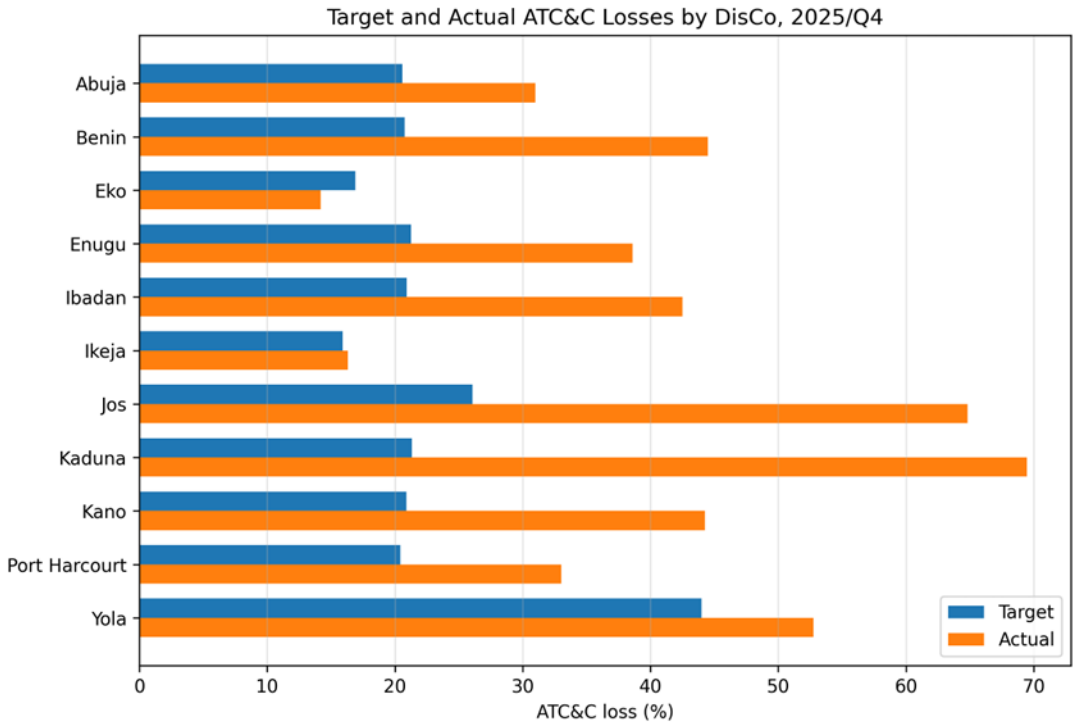

Figure 3: Target and actual ATC&C losses by DisCo in 2025/Q4. Source: Authors' plot based on NERC data [4].

Table 3: DisCo-level ATC&C performance in 2025/Q4. Positive variance means the actual loss is below the target; negative variance means underperformance (source: NERC [4]).

DisCo	MYTO target (%)	Actual ATC&C Q4 (%)	Variance (pp)	Revenue loss/gain (% of gross recoverable revenue)
Abuja	20.60	30.99	-10.39	-13.08
Benin	20.76	44.50	-23.74	-29.96
Eko	16.88	14.20	2.68	3.22
Enugu	21.26	38.62	-17.36	-22.05
Ibadan	20.92	42.51	-21.59	-27.30
Ikeja	15.93	16.33	-0.40	-0.47
Jos	26.09	64.84	-38.75	-52.42
Kaduna	21.32	69.45	-48.13	-61.17
Kano	20.88	44.27	-23.39	-29.56
Port Harcourt	20.42	33.01	-12.59	-15.83
Yola	44.00	52.77	-8.77	-15.66

7. Implications for Power Supply Reliability

The implications of these figures are straightforward. A distribution company with high ATC&C losses lacks the cash flow needed for network repairs. This can hinder its ability to

replace overloaded transformers, strengthen feeders, install meters, automate switching, enhance protection systems, or maintain customer service infrastructure. As a result, technical failures tend to increase, restoration takes longer, and customer dissatisfaction rises. Another implication involves upstream market liquidity. Distribution companies are the primary revenue source in the Nigerian Electricity Supply Industry. Poor collection rates create payment issues for generators, transmission providers, and market operators. In Q4 2025, the total upstream invoice payable by DisCos was NGN 471.66 billion, with NGN 437.27 billion remitted, achieving a 92.71% remittance rate [4]. While this seems decent, it should be viewed in the context of the subsidy structure. NERC reported that the federal government covered about 52% of total generation costs in Q4 2025 due to tariff freezing [4]. Therefore, market liquidity still relies in part on government support, not solely on DisCos' financial health.

A third key issue is consumer trust. Factors like estimated billing, inaccurate enumeration, and poor complaint resolution undermine payment discipline. According to NERC's 2025/Q4 report, precise customer enumeration and end-use metering are among the most effective strategies for enhancing energy accounting and revenue collection [4]. The report also highlights ongoing metering initiatives, such as the Meter Acquisition Fund and DISREP, as well as the Distribution Sector Recovery Program, which aims to boost financial and technical performance and to deploy 3.2 million smart meters [4]. The problem of reliability thus becomes circular: poor service quality diminishes willingness to pay; reduced willingness leads to lower cash flow; diminished cash flow hampers investment; and less investment further degrades service quality. Figure 4 illustrates this cycle of infrastructure trap—an obstacle any credible reform must overcome.

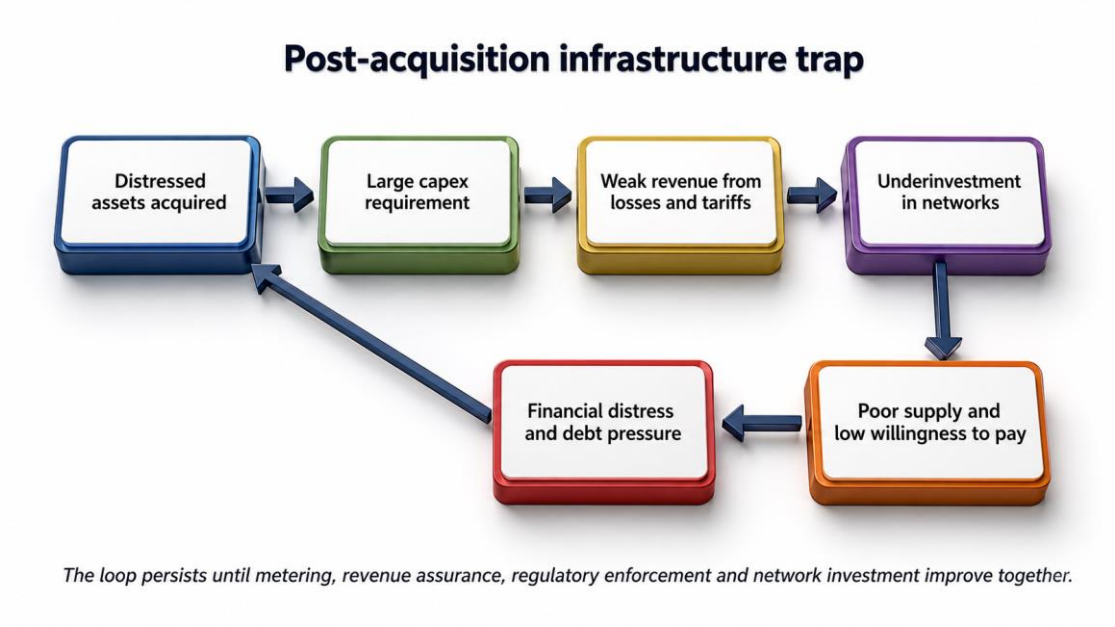

Figure 4: The post-acquisition infrastructure trap in distribution utilities. Source: Authors' construction.

8. Regulatory and Policy Implications

The initial policy takeaway is that a change in ownership should not be mistaken for reform. The 2013 acquisition moved assets, but ongoing loss figures indicate that this alone did not fix the underlying commercial and engineering issues in the distribution segment. Effective reform must focus on enforcing performance commitments rather than merely announcing investment plans. The second key point is that ATC&C loss reduction must be a core regulatory requirement. A DisCo that consistently fails to meet its loss targets is not only underperforming but also putting financial pressure on the entire electricity market. NERC explains that excess ATC&C losses cannot be recovered from customers and could threaten the financial stability of the affected DisCos [4]. This creates a regulatory foundation for penalties, increased oversight, management intervention, or restructuring when underperformance persists.

The third implication is that tariff reform must be linked to service quality. Cost-reflective tariffs without a dependable supply can lead to political pushback and consumer resistance. Conversely, a reliable supply without proper cost recovery risks utility insolvency. The key is straightforward: consumers should only be charged tariffs that match costs when metering, supply hours, voltage quality, and complaint handling are independently verified. The fourth implication relates to state electricity markets. NERC reported in 2026 that regulatory oversight of intrastate electricity operations was transferred to 15 states under the Electricity

Act 2023 [6]. NERC guidance indicates that the Act promotes clearer separation of institutional responsibilities, improved efficiency, accountability, system reliability, market transparency, and broader access [5]. While this decentralisation offers an opportunity to enhance accountability at the feeder level, it also introduces the risk of fragmented regulation if states lack sufficient technical capacity.

Lagos illustrates the emerging direction. Reuters reported in 2026 that Lagos had assumed full regulatory control of its electricity market and signed power-purchase agreements for up to 400 MW to supply public facilities, with payments linked to metered electricity actually delivered rather than take-or-pay provisions [10]. This is the correct logic: pay for delivered, metered and reliable electricity, not merely contracted capacity. However, state-market reform will not eliminate gas constraints, currency exposure, affordability concerns or transmission bottlenecks. It must therefore be designed as a disciplined reliability compact rather than a political slogan.

9. Research Implications and Empirical Extension

A comprehensive empirical study can build on this paper by employing panel-data techniques. The dependent variable should measure supply reliability, such as average daily supply hours, feeder uptime, SAIDI, SAIFI, outage duration, service-band compliance, or transformer failure frequency. Independent variables should include ATC&C loss, billing efficiency, collection efficiency, metering coverage, market remittance, capital expenditure, and regulatory interventions. A suitable fixed-effects model could be: PSR(i,t) = beta0 + beta1 ATCC(i,t) + beta2 BE(i,t) + beta3 CE(i,t) + beta4 MET(i,t) + beta5 REM(i,t) + beta6 CAPEX(i,t) + firm effects + time effects + error. The sign of beta1 is expected to be negative, as higher ATC&C losses likely decrease reliability. Conversely, the signs of beta2 to beta6 are expected to be positive, since improvements in billing, collection, metering, remittance, and investment should enhance reliability.

The researcher should not assert that NERC quarterly reports alone are enough to establish a definitive causal relationship. These reports suffice for descriptive analysis and regulatory benchmarking. However, establishing causality requires more detailed data, such as feeder-level outage indicators, customer-class composition, tariff-band distribution, meter rollout records, network investments by voltage level, and firm-level financial information. Without such data, the work remains an analytical policy study instead of a comprehensive econometric analysis.

10. CONCLUSION

This paper analysed the post-acquisition performance of Nigerian electricity distribution companies and their effects on power supply reliability in an emerging economy. The findings reveal that the distribution sector continues to face high ATC&C losses, poor energy accounting, incomplete revenue collection, and inconsistent performance among DisCos. These issues are not just accounting errors; they are reliability failures that limit funding for network upkeep, meter deployment, transformer upgrades, and service quality enhancements. The core conclusion is clear: Nigeria's electricity distribution challenges are not solely about privatisation but about performance governance. Acquisition can boost reliability only if it alters incentives, cuts losses, enhances metering, improves collections, enforces investment commitments, and ties tariffs to measurable service standards. Without these mechanisms, the government hands over distressed public assets to financially strained private operators. For emerging economies, Nigeria's experience offers a broader lesson. Infrastructure acquisition alone is not development. Development occurs when ownership restructuring leads to tangible improvements in reliability, affordability, accountability, and financial viability. Anything less is just corporate restructuring without public benefit.

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