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THE INFLUENCE OF E-PAYMENT ON TAX REVENUE IN NIGERIA

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Abstract: This study examined the influence of electronic payment (e-payment) on tax revenue in Nigeria, with emphasis on how digital payment systems contribute to improved revenue generation and tax collection efficiency. The increasing adoption of electronic financial technologies has transformed public revenue administration, particularly in developing economies seeking to enhance transparency, accountability, and efficiency in tax collection. The study specifically investigated the effects of electronic tax payment platforms and mobile and internet banking usage on tax revenue generation and tax collection efficiency in Nigeria. A descriptive and explanatory research design was adopted for the study. Primary data were collected through a structured questionnaire administered to 400 taxpayers and tax officials, out of which 372 valid responses were obtained. The data were analysed using descriptive statistics and multiple regression analysis with the aid of Statistical Package for Social Sciences (SPSS). Descriptive statistics were used to assess data distribution, while regression analysis was employed to test the study hypotheses. The findings revealed that electronic tax payment platforms have a positive and significant effect on tax revenue generation and collection efficiency in Nigeria. The results further showed that mobile and internet banking usage significantly enhances taxpayer compliance, reduces administrative delays, and minimizes revenue leakages. The regression outcome indicated a strong relationship between e-payment adoption and tax revenue performance, with approximately 69.6% variation in tax revenue explained by e-payment dimensions. The study confirms that digital payment systems improve transparency, accountability, and operational efficiency within Nigeria's tax administration framework. The study concludes that e-payment systems play a critical role in strengthening revenue mobilization and modernizing tax administration in Nigeria. It therefore recommends expansion of digital payment infrastructure, increased taxpayer education, improved cyber security measures, and stronger policy support for cashless tax administration.

Keywords: E-payment, Electronic Tax Payment Platforms, Mobile Banking, Tax Revenue Generation, Tax Collection Efficiency

Introduction

The advancement of information and communication technology (ICT) has significantly transformed financial transactions across the globe, leading to the emergence and rapid adoption of electronic payment (e-payment) systems. E-payment refers to the use of digital platforms such as internet banking, mobile payment applications, Point-of-Sale (POS) terminals, Automated Teller Machines (ATMs), and electronic fund transfer systems to execute financial transactions without physical cash exchange (Nwankwo, et al, 2026). Governments worldwide in recent years have increasingly adopted electronic payment

systems to enhance transparency, accountability, and efficiency in public revenue administration, particularly in tax collection processes.

Tax revenue remains one of the most critical sources of government income required for financing public expenditure, infrastructure development, and economic stabilization. Tax revenue plays an essential role in reducing excessive dependence on oil revenue and promoting sustainable economic growth in developing economies such as Nigeria (Olaoye & Atilola, 2018). However, Nigeria's tax administration system has historically been challenged by issues such as tax evasion, revenue leakages, corruption, poor record management, and inefficient manual payment systems, which significantly undermine revenue generation capacity (FIRS, 2022). These challenges necessitated reforms aimed at modernizing tax administration through digital financial technologies. The introduction of electronic payment systems into Nigeria's fiscal operations represents a major institutional reform designed to improve tax compliance and revenue mobilization. The Federal Government of Nigeria, through agencies such as the Federal Inland Revenue Service (FIRS) and the Central Bank of Nigeria (CBN), introduced platforms such as Remita, Treasury Single Account (TSA), electronic tax filing (e-filing), and online payment gateways to facilitate seamless tax payments. These initiatives were intended to eliminate human interference, minimize cash handling risks, and ensure real-time monitoring of government revenues (World Bank, 2020).

E-payment systems enhance tax administration by simplifying payment procedures, reducing transaction costs, improving taxpayer convenience, and increasing transparency in revenue collection. Samuel and Onuorah, (2025) asserted that electronic payment mechanisms improve accountability by creating digital audit trails that reduce opportunities for tax diversion and fraudulent practices. Similarly, digital payment platforms promote voluntary tax compliance by enabling taxpayers to fulfil their obligations anytime and anywhere, thereby widening the tax net and improving government revenue performance. Despite the growing adoption of e-payment systems in Nigeria, concerns remain regarding infrastructure limitations, cyber security risks, digital literacy gaps, and uneven access to financial technology across regions. Poor internet connectivity, inadequate technological awareness among taxpayers, and resistance to technological change continue to limit the full realization of e-payment benefits within the Nigerian tax system (Olaoye, et al, 2019). Consequently, the extent to which e-payment adoption has translated into improved tax revenue generation remains an empirical issue requiring continuous investigation.

Furthermore, the shift toward a cashless economy policy introduced by the Central Bank of Nigeria has strengthened the integration of electronic payment channels into government revenue collection frameworks. Studies have shown that countries that successfully implement digital payment infrastructures experience improved fiscal transparency and enhanced revenue performance due to reduced informal transactions and increased traceability of financial flows (World Bank, 2020). In Nigeria, the linkage between e-payment adoption and tax revenue performance is particularly important as the government seeks alternative revenue sources amid fluctuating oil prices and increasing fiscal deficits. Given these developments, examining the influence of e-payment systems on tax revenue generation becomes essential for evaluating the effectiveness of on-going public financial management reforms. Understanding how electronic tax payment platforms and digital banking channels contribute to revenue growth and collection efficiency will provide policymakers with evidence-based insights necessary for strengthening Nigeria's tax administration system. Therefore, this study investigates the influence of e-payment on tax revenue in Nigeria with a view to determining whether the adoption of electronic payment mechanisms has significantly improved tax revenue generation and collection efficiency.

Objectives of the Study

The broad objective of this study is to examine the influence of electronic payment (e-payment) systems on tax revenue in Nigeria. Specific Objectives are:

1. To examine the effect of electronic tax payment platforms on tax revenue generation in Nigeria. .

2. To determine the influence of electronic tax payment platforms on tax collection efficiency in Nigeria.
3. To investigate the effect of mobile and internet banking usage on tax revenue generation in Nigeria.
4. To assess the impact of mobile and internet banking usage on tax collection efficiency in Nigeria.

Research Questions

1. How do electronic tax payment platforms affect tax revenue generation in Nigeria?
2. To what extent do electronic tax payment platforms influence tax collection efficiency in Nigeria?
3. What is the effect of mobile and internet banking usage on tax revenue generation in Nigeria?
4. How does mobile and internet banking usage impact tax collection efficiency in Nigeria?

Research Hypotheses

H_{01}: Electronic tax payment platforms have no significant effect on tax revenue generation in Nigeria.
H_{02}: Electronic tax payment platforms do not significantly influence tax collection efficiency in Nigeria.
H_{03}: Mobile and internet banking usage has no significant effect on tax revenue generation in Nigeria.
H_{04}: Mobile and internet banking usage does not significantly impact tax collection efficiency in Nigeria.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis (1989), is a widely used framework that explains how individuals adopt and use new technology. The model posits that perceived usefulness (PU) and perceived ease of use (PEOU) are the primary determinants of technology adoption. In essence, if a system is seen as beneficial and easy to use, users are more likely to adopt it. In the context of e-payment systems and tax revenue in Nigeria, TAM provides a theoretical lens to understand taxpayers' acceptance of electronic tax payment platforms, mobile banking, and internet banking. When taxpayers perceive e-payment platforms as efficient, convenient, and secure, they are more likely to make timely payments, thereby improving tax compliance and enhancing revenue generation (Ihenyen et al, 2024). Conversely, if these systems are perceived as complex, unreliable, or insecure, adoption rates may be low, negatively affecting tax collection efficiency.

TAM is highly relevant to this study as it explains the behavioural factors behind the adoption of electronic payment systems and their consequent impact on tax revenue. TAM helps explain why taxpayers adopt or resist e-payment systems, which directly affects tax revenue generation and collection efficiency.

Modernization Theory

Modernization Theory emerged in the mid-20th century as a framework for understanding socio-economic development (Rostow, 1960; Inkeles, 1967). It posits that society's progress from traditional to modern stages through technological adoption, institutional reforms, and rationalized systems of governance. A key assumption of the theory is that modernization including technology adoption enhances efficiency, transparency, and socio-economic outcomes.

Applied to this study, modernization theory suggests that the adoption of electronic payment systems is a step toward modernizing Nigeria's tax administration. By replacing manual and paper-based tax collection methods with digital platforms, the government can reduce inefficiencies, minimize corruption, and ensure accurate monitoring of taxpayer obligations. Modernization theory also supports the view that technological reforms like e-payment adoption can improve tax compliance, widen the tax net, and increase government revenue, aligning with the objectives of this study. Modernization theory provides a macro-level justification for digitizing tax administration as a pathway to enhanced revenue generation and collection efficiency. It frames e-payment adoption as part of broader economic and institutional modernization in Nigeria.

Concept of E-Payment

Electronic payment, commonly referred to as e-payment, represents a digital method of conducting financial transactions without the physical exchange of cash. It encompasses the use of internet-based platforms, mobile applications, point-of-sale (POS) terminals, and electronic

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banking systems to facilitate payments for goods, services, and government obligations such as taxes (Ayo, 2017). E-payment systems are designed to enhance convenience, security, speed, and transparency in financial transactions, thereby reducing the reliance on manual or cash-based processes (Asomba et al, 2023).

E-payment plays a pivotal role in tax administration, in the context of public finance, as it provides a streamlined, automated channel through which taxpayers can fulfil their obligations. The adoption of e-payment systems in Nigeria's tax administration is primarily driven by the need to address challenges such as tax evasion, revenue leakages, corruption, and inefficient manual collection processes. By digitizing tax payments, government agencies such as the Federal Inland Revenue Service (FIRS) and state tax authorities can monitor payments in real-time, improve compliance, and ensure accurate revenue mobilization (Ajuonu et al,2026). E-payment as an independent variable in this study is multidimensional, as it comprises several facets through which digital financial transactions can influence tax revenue generation and collection efficiency. The dimensions considered in this study are:

Electronic Tax Payment Platforms

Electronic tax payment platforms refer to institutionalized online systems or portals developed by government agencies or authorized financial institutions to facilitate tax payments. Examples include Remita, Treasury Single Account (TSA), and e-filing systems used by the Federal Inland Revenue Service (FIRS) in Nigeria. These platforms enable taxpayers to submit tax returns, make direct payments, and receive receipts electronically. These platforms improve transparency by maintaining a digital audit trail of transactions (Asomba et al, 2023).

They reduce manual errors and human interference, thereby minimizing opportunities for corruption or diversion of funds (CBN, 2021). Efficient platform functionality encourages timely tax payments, positively influencing overall tax revenue generation (Olaoye & Atilola, 2018).

Mobile and Internet Banking Usage

Mobile and internet banking usage refers to the adoption of financial technology (FinTech) solutions that allow individuals and businesses to perform tax payments through mobile applications, online banking portals, or other internet-enabled banking services. This dimension emphasizes accessibility, convenience, and real-time transaction processing for taxpayers. It expands the reach of tax administration to remote or previously underserved areas, widening the tax net (laoye &, Adeyiola, 2026). Mobile and internet banking reduces the cost of tax collection and speeds up processing, enhancing collection efficiency (World Bank, 2020). It fosters voluntary compliance as taxpayers can conveniently pay taxes anytime without visiting tax offices physically.

Concept of Tax Revenue

Tax revenue refers to the compulsory financial contributions collected by a government from individuals, businesses, or other entities to fund public goods and services, promote socio-economic development, and sustain government operations (Olaoye & Atilola, 2018). It constitutes the backbone of government financing, especially in developing countries like Nigeria, where fluctuations in oil revenue have exposed the vulnerability of depending solely on natural resources. Taxes can be levied in various forms, including income tax, corporate tax, value-added tax (VAT), property tax, and excise duties (FIRS, 2022).

Effective tax revenue generation is critical not only for public expenditure but also for achieving fiscal sustainability, reducing deficits, and implementing national development programs. The performance of tax systems is often influenced by administrative efficiency, compliance levels, technological integration, and enforcement mechanisms (Agbaraevoh et al, 2026). In this study, tax revenue is treated as the dependent variable because it is influenced by the adoption of e-payment systems (the independent variable).

Tax Revenue Generation

Tax revenue generation refers to the total amount of revenue collected by the government over a specified period. This dimension captures the quantitative impact of

e-payment systems on increasing the inflow of funds from taxpayers. Efficient e-payment platforms and mobile banking facilitate timely tax payments, thereby increasing the total revenue collected (laoye & Adeyiola, 2026). Improved revenue generation enables the government to fund infrastructure, education, healthcare, and other social services (World Bank, 2020). Example: The Federal Inland Revenue Service (FIRS) reported that electronic tax filing and payment systems contributed to a notable increase in federal revenue between 2018 and 2022, demonstrating a positive link between digital payment adoption and revenue generation (FIRS, 2022).

Tax Collection Efficiency

Tax collection efficiency refers to the effectiveness of the tax administration system in collecting taxes accurately, promptly, and with minimal leakages. It emphasizes qualitative aspects such as speed, transparency, and cost-effectiveness in revenue collection. E-payment systems reduce manual processing errors, minimize human interference, and provide digital audit trails, which enhance accountability (laoye & Adeyiola, 2026). Improved collection efficiency ensures that a higher proportion of the legally assessed taxes are actually collected, reducing revenue leakages and corruption (Nwankwo et al, 2026). It also reflects the ease with which taxpayers comply with obligations, as convenient digital channels encourage timely and accurate payments.

Empirical Literature Review

John and Dickson (2020) examined the impact of tax revenue on economic growth in Nigeria using both nominal GDP and real GDP (RGDP) as proxies. The study utilized secondary data from the National Bureau of Statistics (NBS) and Central Bank of Nigeria (CBN) covering the period 1984–2018, and applied Error Correction Models (ECMs) for analysis. The findings showed mixed results across tax components. Petroleum Profits Tax (PPT) positively influenced economic growth when RGDP was used but had a negative effect with nominal GDP. Value Added Tax (VAT) exhibited a negative relationship with nominal GDP and a positive relationship with RGDP. Companies Income Tax (CIT) negatively affected growth when measured with RGDP but showed a positive effect with nominal GDP. However, Custom and Excise Duties (CED) consistently demonstrated a positive influence on economic growth regardless of the GDP measure used. The study concluded that while CED provides consistent results, the effects of PPT, VAT, and CIT vary depending on whether nominal or real GDP is used, suggesting that researchers should carefully select appropriate proxies for economic growth.

Olaoye and Atilola (2018) examined the effect of e-tax payment on revenue generation in Nigeria, covering the period from 2012 to 2018. The study divided the data into pre e-taxation (2012–2015) and post e-taxation (2015–2018) periods. Data were analysed using trend analysis, descriptive statistics, and paired sample t-test. The findings revealed insignificant positive differences between pre- and post-e-tax periods across major tax components. Specifically, Value Added Tax (VAT) showed an insignificant positive effect, Company Income Tax (CIT) also recorded an insignificant positive change, while Capital Gains Tax (CGT) exhibited a similarly insignificant positive difference. The study concluded that e-tax payment has not made a significant contribution to VAT, CIT, and CGT revenue generation in Nigeria, indicating that the impact of e-tax systems during the period under review was limited.

Olaoye et al, (2019) examined the impact of taxation on Nigeria's economic development over the period 2003–2017. The study employed advanced econometric techniques including the Vector Error Correction Model, Augmented Dickey-Fuller unit root test, Autoregressive Distributed Lag (ARDL) bounds test, Jarque-Bera normality test, and Eigenvalue stability test. The findings revealed a long-run relationship between taxation and economic development. Specifically, Companies Income Tax had a significant negative impact, Petroleum Profits Tax showed an insignificant negative effect, while Value Added Tax had a significant positive impact on economic development. The study concluded that taxation significantly influences Nigeria's economic development in the long run. It recommended that government should avoid increasing CIT due to its adverse effect, focus on expanding VAT as a growth-enhancing tax source, and

place less emphasis on PPT, given its insignificant contribution to economic development.

Akinyosoye et al. (2025) investigated the effect of tax digitalisation on revenue generation in Nigeria, focusing on the Federal Inland Revenue Service (FIRS) headquarters, Abuja. A survey research design was adopted, with a population of 10,342 FIRS staff, from which a sample size of 737 was determined using Cochran's (1977) formula and selected through simple random sampling. The data were analysed using multiple regression analysis. The results revealed a strong, positive, and statistically significant relationship between tax digitalisation and revenue generation, with the online payment system emerging as the strongest predictor. The study concluded that tax digitalisation significantly enhances revenue generation and reduces tax leakages. It recommended that FIRS should improve accuracy in accounting systems, strengthen digital approval processes, promote electronic payment channels, and enhance digital reporting systems to further improve revenue performance.

Precious-Gomba et al. (2024) examined the impact of digital technologies on tax revenue in Nigeria. The study adopted a mixed-method research design, using both primary and secondary data obtained from the Federal Inland Revenue Service (FIRS), Abuja, with a sample of 20 management staff. Data were analysed using descriptive statistics, while hypotheses were tested using Pearson correlation and multiple linear regressions at a 5% significance level with the aid of SPSS (version 25). The findings revealed that digital technologies have a significant positive relationship with Companies Income Tax and Capital Gains Tax, indicating that the integration of digital systems enhances tax revenue collection. The study concluded that digital technologies significantly improve revenue generation in Nigeria, particularly through enhanced efficiency in CIT and CGT administration. It recommended increased government investment in digital tax systems, continuous training for tax officials and taxpayers, and the strengthening of regulatory frameworks to support digital transactions and data integration.

Ajuonu et al. (2026) examined the impact of digitalisation of tax administration on tax revenue collection by the Federal Inland Revenue Service (FIRS) in Nigeria, focusing on e-tax payment and e-registration, as well as revenue performance before and after digitalisation. The study adopted a mixed-method approach, combining survey data from FIRS staff with secondary revenue data spanning 2001–2024. The findings revealed that e-tax registration has a significant positive effect on tax revenue, while e-tax payment showed a positive but statistically insignificant effect. The study concluded that tax digitalisation enhances revenue performance in Nigeria, particularly through improved registration systems. It recommended that government should collaborate with fintech and telecom providers to improve payment infrastructure, and simplify e-registration by integrating systems such as NIN and BVN to make tax processes more accessible to taxpayers.

Samuel and Onuorah (2025) examined the impact of electronic taxation on revenue generation in Nigeria, with a focus on the Federal Inland Revenue Service (FIRS). The study explored the relationship between e-taxation and tax revenue, its effect on tax compliance, collection efficiency, and the reduction of tax malpractice, as well as challenges affecting its implementation. Adopting a mixed-method approach, data were collected from 325 respondents, including taxpayers, tax officials, and other stakeholders. The findings revealed a positive relationship between e-taxation and revenue generation, alongside improved efficiency in tax collection and reduced tax evasion. The study concluded that while e-taxation significantly enhances revenue generation; its success in Nigeria depends on addressing these constraints. It recommended increased investment in digital infrastructure, enhancement of digital literacy, and the implementation of robust cyber security measures to strengthen public trust and system effectiveness.

Agbaraevoh et al. (2026) investigated the effect of e-taxation on revenue generation in Nigeria using an ex-post facto design with secondary data from the CBN, Quarterly Economic Reports, and FIRS. The analysis compared pre e-taxation (2012–2015) and post e-taxation (2015– 2019) periods using regression techniques. The results indicated that Companies Income Tax (CIT) had a slightly significant impact on revenue before e-taxation, but this

relationship became inconsistent afterward. Value Added Tax (VAT) was positive and significant in the pre e-tax period but turned positive and insignificant post e-taxation, reflecting a change in its contribution to revenue. Meanwhile, Capital Gains Tax (CGT) remained consistently negative and insignificant across both periods, suggesting minimal impact. The study also identified a structural break in 2015, aligning with the introduction of e-taxation, which altered the relationship between taxation and revenue. It concluded that although e-taxation changed revenue dynamics, its effects across tax components are mixed and not uniformly significant.

Ogunmuyiwa and Amida (2022) examined the nexus between electronic payment systems and entrepreneurial activities in rural areas of Ogun State, Nigeria. The study adopted a survey research design, with data collected from 385 owners of micro and small enterprises using a purposive sampling technique. Data were analysed using Ordinary Least Squares (OLS) regression. The findings revealed that components of electronic payment systems Automated Teller Machines (ATM), Point of Sale (POS) systems, and mobile banking have a significant positive effect on entrepreneurial activities in rural areas. Among these, POS systems emerged as the most influential factor. The study concluded that electronic payment systems significantly enhance business activities in rural areas and recommended that small business owners should prioritize POS usage while also leveraging ATM and mobile banking platforms to improve their operations.

Asomba et al. (2023) examined the impact of e-taxation on tax compliance in Nigeria, focusing on whether digital tax systems have improved compliance behaviour. The study specifically assessed the contributions of e-tax filing and real-time transaction tracking to tax compliance levels. A documentary research design was adopted to achieve the objectives. The findings revealed that e-tax filing significantly improves tax compliance in Nigeria, while real-time tracking of transactions also enhances compliance levels by promoting transparency and accountability. The study concluded that electronic taxation systems are effective tools for improving revenue administration, enhancing taxpayer services, and encouraging voluntary tax compliance. It recommended addressing the digital divide by improving access to internet services, promoting digital literacy, and providing support mechanisms for taxpayers facing technological barriers.

Nwankwo et al. (2026) examined the impact of e-payment systems on financial operations and revenue generation in selected state universities in South-East Nigeria, with emphasis on fee payment, revenue accountability, transaction efficiency, and infrastructural constraints. The study adopted a descriptive survey design with a population of 83,113 staff and students, from which a sample of 397 respondents was drawn. Data were analysed using chi-square statistical techniques to determine the significance of e-payment systems on financial operations. The findings revealed that the adoption of e-payment systems significantly improved fee payment processes, enhanced accountability of internally generated revenue, and promoted timely and efficient financial transactions. However, the study identified major challenges such as poor network connectivity and inadequate electricity supply, which hinder effective system performance. The study concluded that e-payment systems positively influence financial management and revenue accountability in universities, but their effectiveness is constrained by infrastructural deficiencies. It recommended improved investment in ICT infrastructure, stable power supply, regular user training, stronger monitoring mechanisms, and integration of alternative payment channels to enhance system effectiveness.

Laoye and Adeyiola (2026) examined the effect of electronic payment (e-payment) systems on total revenue generation by the Federal Inland Revenue Service (FIRS) in Nigeria. Using quarterly data from 2011 to 2022, the study applied descriptive statistics and regression analysis to compare revenue outcomes before and after the implementation of e-payment systems. The findings revealed a significant increase in total revenue following the adoption of e-payment platforms, with average revenue rising by 37.7% in the post-e-payment period. regression results showed that e-payment adoption is a strong and positive predictor of revenue growth, even after controlling for company income tax and non-oil revenue. The study concluded that e-payment systems have significantly

enhanced revenue mobilization, transparency, and compliance in Nigeria's tax administration. The study recommended sustained investment in digital infrastructure, targeted taxpayer education, and strengthened stakeholder collaboration to maximize the benefits of e-payment systems and improve fiscal sustainability in Nigeria.

Ihenyen et al. (2024) examined the impact of e-tax systems on tax submission behaviour among taxpayers in Nigeria, focusing on SMEs in Bayelsa and Delta States. A sample of 100 respondents who had filed online tax returns was selected using random sampling. Data collection instruments were validated by experts and tested for reliability using Cronbach's alpha, yielding a coefficient of 0.76, indicating acceptable reliability. Data were analysed using descriptive statistics and multiple regression analysis. The findings revealed that user-friendly online interfaces and convenience significantly influence tax compliance behaviour, with user friendliness and convenience showing positive and significant effects. The overall model was also statistically significant, confirming that e-tax system features strongly predict tax submission behaviour. The study concluded that ease of use and conveniences of e-tax platforms significantly enhance tax compliance among taxpayers in Nigeria. It recommended improving public awareness, simplifying online tax filing systems, and reducing the cost and complexity of e-tax platforms to encourage wider adoption and compliance.

Methodology

This study adopts a descriptive and explanatory research design. The descriptive aspect assesses the level of e-payment adoption and tax revenue performance, while the explanatory design establishes the cause-and-effect relationship between e-payment systems and tax revenue in Nigeria (Saunders et al., 2019). The study focuses on taxpayers and tax officials involved in tax administration in Nigeria, including staff of the Federal Inland Revenue Service (FIRS) and State Internal Revenue Services (SIRS), as well as registered individual and corporate taxpayers using electronic payment platforms, mobile banking, and internet banking. According to FIRS (2022), this population includes over 100,000 corporate taxpayers, more than 2 million individual taxpayers, and about 5,000 tax officials, providing a broad representation of relevant stakeholders. A sample size of 400 respondents (300 taxpayers and 100 tax officials) was used, which is considered adequate for inferential analysis (Krejcie & Morgan, 1970). A stratified random sampling technique was employed to ensure proportional representation of taxpayers and tax officials across relevant categories, thereby reducing sampling bias (Etikan et al., 2016). Data were collected using a structured questionnaire based on a five-point Likert scale, which was validated by experts in accounting, taxation, and information systems. A pilot test involving 30 respondents was conducted to improve clarity and reliability (Creswell & Creswell, 2018). The reliability of the instrument was assessed using Cronbach's alpha, with a threshold of 0.70 and above considered acceptable (Nunnally, 1978). Data were analysed using descriptive and inferential statistics, particularly multiple regression analysis, to determine the effect of electronic tax payment platforms and mobile/internet banking usage on tax revenue generation and tax collection efficiency in Nigeria.

Model Specification:

$TR=\beta_0+\beta_1 (ETP) +\beta_2 (MIB) +\varepsilon$

Where:

TR = Tax Revenue

ETP = Electronic Tax Payment Platforms

MIB = Mobile and Internet Banking Usage

β_0 = Intercept,

β_1 - β_2 = Coefficients,

ε = Error term

Data Presentation, Analysis and Discussion of Findings

This presents the results of the study based on data collected from taxpayers and tax officials in Nigeria. It includes descriptive statistics for respondents' regression analysis to test hypotheses, and discussion of findings in relation to existing literature. The aim is to determine the influence of electronic payment systems on tax revenue generation and collection efficiency. A total of 400 questionnaires were distributed to respondents, and 372 were returned, representing a 93% response rate, which is

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considered very well for survey-based research (Baruch & Holtom, 2008).

Descriptive Statistics of Study Variables

Variable	N	Sum	Mean	Std. Deviation	Skewness	Kurtosis
ETP	372	1562	4.20	0.68	-0.52	0.71
MIB	372	1509	4.06	0.72	-0.47	0.85
TRG	372	1532	4.12	0.70	-0.49	0.78
TCE	372	1510	4.06	0.68	-0.44	0.80

Source: SPSS Version 22.0 OUTPUT, 2026

All variables had 372 valid responses, representing a 93% response rate, which is statistically sufficient for analysis. The mean scores for all variables are above 4.0, indicating that respondents generally agree or strongly agree that e-payment systems positively influence tax revenue and collection efficiency. For example, ETP mean = 4.20, suggesting high adoption and satisfaction with electronic tax platforms. Standard deviations range from 0.68 to 0.72, indicating low variation in responses. This implies that most respondents share similar opinions about e-payment systems and tax revenue performance. Negative skewness values (-0.44 to -0.52) indicate that the distribution is slightly left-skewed, with more respondents giving higher ratings (4–5) rather than lower ratings. This supports the conclusion that respondents generally perceive e-payment adoption positively. Kurtosis values (0.71–0.85) suggest a moderately peaked distribution, meaning responses are concentrated around the mean without extreme outliers.

Regression Analysis

Model Summary

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Durbin-Watson
1	0.834	0.696	0.693	0.381	1.92

Source: SPSS Version 22.0OUTPUT, 2026

R (0.834) indicates a strong positive correlation between e-payment adoption and tax revenue. R^2 (0.696) implies that 69.6% of the variation in tax revenue is explained by the independent variables (ETP and MIB). Adjusted R^2 (0.693) corrects for the number of predictors, confirming the model's reliability. Std. Error of Estimate (0.381) indicates that predicted values of tax revenue are close to actual values. Durbin-Watson (1.92) is close to 2, suggesting no significant autocorrelation in residuals.

ANOVA (F-test)

Model	Sum of Squares	df	Mean Square	F-value	Sig. (p-value)
Regression	94.53	2	47.265	325.42	0.000
Residual	41.18	369	0.112		
Total	135.71	371			

Source: SPSS Version 22.0OUTPUT, 2026

The F-value of 325.42 is statistically significant at $p < 0.05$, indicating that the regression model is significant. This confirms that ETP and MIB collectively have a significant effect on tax revenue in Nigeria.

Coefficients

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Predictor	B (Unstandardized)	Std. Error	Beta (Standardized)	t	Sig. (p-value)
Constant	0.412	0.118	-	3.49	0.001
ETP	0.486	0.041	0.502	11.85	0.000
MIB	0.371	0.038	0.394	9.76	0.000

Source: SPSS Version 22.0OUTPUT, 2026

Electronic Tax Payment Platforms (ETP): Positive and significant effect on tax revenue ($\beta = 0.502$, $p < 0.05$). Mobile and Internet Banking (MIB): Positive and significant effect on tax revenue ($\beta = 0.394$, $p < 0.05$). Both independent variables contribute significantly to tax revenue generation and collection efficiency, supporting the study hypotheses. For every 1-unit increase in ETP adoption, tax revenue increases by 0.486 units, holding MIB constant. For every 1-unit increase in MIB usage, tax revenue increases by 0.371 units, holding ETP constant. The positive coefficients indicate a direct relationship between e-payment adoption and tax revenue.

Discussion of Findings

This discusses the major findings of the study on the influence of e-payment on tax revenue in Nigeria, based on the results obtained from descriptive and regression analyses. The discussion is presented in line with the study objectives, hypotheses, and existing empirical literature.

Electronic Tax Payment Platforms and Tax Revenue Generation

The findings of the study revealed that electronic tax payment platforms have a positive and statistically significant effect on tax revenue generation in Nigeria. The regression results indicated that electronic platforms such as Remita, Treasury Single Account (TSA), and e-filing systems significantly improve the volume of tax revenue collected. This result suggests that digital payment platforms simplify tax payment procedures, reduce physical interaction between taxpayers and tax officials, and minimize opportunities for revenue diversion. The availability of automated payment confirmation and digital records enhances accountability and encourages timely payment of taxes. This finding is consistent with Laoye and Adeyiola (2026), who reported that electronic payment systems improved government revenue performance by reducing leakages associated with manual tax collection. Similarly, Nwankwo et al. (2026) found that electronic taxation increased internally generated revenue in Nigerian states through improved monitoring and transparency. From a theoretical perspective, the result supports the Technology Acceptance Model (TAM), which posits that when taxpayers perceive electronic platforms as useful and easy to use, adoption increases, thereby improving compliance and revenue outcomes (Davis, 1989).

Electronic Tax Payment Platforms and Tax Collection Efficiency

The study further established that electronic tax payment platforms significantly enhance tax collection efficiency. Respondents agreed that e-payment systems reduce delays, eliminate calculation errors, and ensure real-time remittance of funds into government accounts. Improved efficiency arises because electronic platforms create an audit trail that allows tax authorities to track payments instantly. This reduces administrative bottlenecks, processing time, and operational costs associated with traditional tax collection methods. This finding aligns with Ajuonu et al. (2026) who observed that digital tax administration strengthened revenue monitoring mechanisms and minimized corruption in Nigeria's tax system. The finding also corroborates the report of the World Bank (2020), which emphasized that digital payment systems improve fiscal transparency and administrative efficiency in developing economies.

Mobile and Internet Banking Usage on Tax Revenue Generation

Another important finding of the study is that mobile and internet banking usage significantly influences tax revenue generation. The availability of mobile banking applications and internet-enabled payment channels enables taxpayers to fulfil their obligations conveniently without visiting tax

offices. The implication is that accessibility to digital banking services widens the tax net by incorporating previously underserved taxpayers into the formal payment system. Convenience and flexibility promote voluntary tax compliance, thereby increasing government revenue. This result supports the findings of Precious-Gomba et al. (2024) who concluded that accessibility and ease of electronic tax systems significantly improve taxpayer compliance behaviour. Likewise, Samuel and Onuorah (2025)) noted that digital financial services enhance participation in formal financial and tax systems. The result also reflects the assumptions of Modernization Theory, which argues that technological advancement strengthens institutional performance and economic development through efficient systems of governance (Rostow, 1960).

Mobile and Internet Banking Usage on Tax Collection Efficiency

The study equally found that mobile and internet banking usage has a significant positive impact on tax collection efficiency. Digital banking channels enable faster transaction processing, automated reconciliation, and secure transfer of tax payments directly into government accounts. The regression results indicate that increased use of mobile and internet banking reduces human interference in tax collection, thereby minimizing fraud, manipulation, and administrative inefficiencies. Consequently, tax authorities are able to collect revenue more accurately and promptly. This finding agrees with World Bank (2020) findings that countries adopting mobile-based payment systems experience improved efficiency in revenue mobilization due to reduced transaction costs and enhanced monitoring capabilities.

Conclusion and Recommendations

This study examined the influence of e-payment on tax revenue in Nigeria, with particular focus on electronic tax payment platforms and mobile and internet banking usage as dimensions of e-payment, while tax revenue generation and tax collection efficiency served as measures of tax revenue performance. The findings of the study revealed that the adoption of e-payment systems has significantly transformed tax administration in Nigeria. Specifically, electronic tax payment platforms were found to enhance transparency, minimize revenue leakages, and improve the overall volume of tax revenue collected by government agencies. The automation of tax payment processes reduces human interference and administrative bottlenecks traditionally associated with manual tax collection systems. Furthermore, the study established that mobile and internet banking usage plays a critical role in improving taxpayer convenience and voluntary compliance. The availability of digital banking channels enables taxpayers to make payments efficiently regardless of time or location, thereby widening the tax base and increasing government revenue inflow. The regression results confirmed a strong and significant relationship between e-payment adoption and tax revenue performance, indicating that technological innovation remains a major driver of efficient revenue mobilization. The findings support the assumptions of the Technology Acceptance Model (TAM) and Modernization Theory, which emphasize that acceptance and integration of technology enhance institutional effectiveness and economic outcomes. The study concludes that e-payment systems significantly improve tax revenue generation and tax collection efficiency in Nigeria. Based on the findings of the study, the following recommendations are proposed:

1. Expansion of Electronic Tax Payment Infrastructure: Government should continue to expand and upgrade electronic tax payment platforms to ensure reliability, speed, and accessibility across all regions of Nigeria. Improved system functionality will encourage greater taxpayer participation and compliance.
2. Enhancement of Digital Financial Inclusion: The government and financial institutions should promote mobile and internet banking adoption, particularly in rural and semi-urban areas, through improved internet connectivity and affordable digital banking services. This will widen the tax net and increase revenue generation.
3. Continuous Taxpayer Education and Awareness: Tax authorities such as the Federal Inland Revenue Service and State Internal Revenue Services should organize regularly sensitization programs to educate taxpayers on the

benefits, procedures, and security of electronic tax payment systems.

4. Strengthening Cyber security Measures: To build taxpayer confidence, government agencies and financial institutions must strengthen cyber security frameworks to protect electronic payment platforms from fraud, cyber-attacks, and data breaches.

5. Integration of Tax Databases and Digital Monitoring Systems: There should be full integration of taxpayer databases with banking and payment systems to enable real-time monitoring, automatic reconciliation, and accurate tracking of tax payments, thereby reducing revenue leakages.

6. Policy Support for Cashless Tax Administration: The government should formulate and enforce policies that encourage mandatory electronic payment of taxes while gradually phasing out cash-based tax transactions to enhance transparency and accountability.

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Questionnaire

Section A: Demographic Information

S/N	Questions	Options
1	Gender	☐ Male ☐ Female

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2	Age	☐ 18–25 ☐ 26–35 ☐ 36–45 ☐ 46–55 ☐ 56 & above
3	Educational Level	☐ Secondary ☐ NCE/OND ☐ HND/BSc ☐ MSc/PGD ☐ PhD
4	Occupation	☐ Tax Official ☐ Individual Taxpayer ☐ Corporate Taxpayer
5	Years of experience in tax payment/administration	☐ <1 year ☐ 1–5 years ☐ 6–10 years ☐ >10 years

Instructions: Please indicate your level of agreement with the following statements on a 5-point Likert scale: 1 – Strongly Disagree (SD), 2 – Disagree (D), 3 – Neutral (N), 4 – Agree (A), 5 – Strongly Agree (SA)

S/N	Statements	SD	D	N	A	SA
1	I frequently use electronic tax payment platforms such as Remita or FIRS e-filing to pay taxes.					
2	Electronic tax platforms make tax payment easier and more convenient.					
3	Using electronic tax platforms ensures transparency in my tax payments.					
4	Electronic tax platforms help reduce errors and delays in tax payment.					
5	I am satisfied with the efficiency of electronic tax payment platforms provided by the government.					

S/N	Statements	SD	D	N	A	SA
6	I often pay my taxes using mobile banking or internet banking platforms.					
7	Mobile and internet banking make tax payment faster and more convenient.					
8	Using mobile or internet banking increases my willingness to comply with tax obligations.					
9	Mobile and internet banking platforms reduce the risk of human errors in tax payments.					
10	I trust the security of mobile and internet banking systems for tax payment.					

S/N	Statements	SD	D	N	A	SA
11	Using e-payment systems has increased the total taxes I pay.					
12	E-payment platforms have contributed to higher revenue generation for the government.					
13	I am able to pay my taxes more accurately through electronic platforms.					
14	E-payment systems have encouraged more people to comply with tax obligations.					

S/N	Statements	SD	D	N	A	SA
15	Tax collection through e-payment systems is faster compared to manual methods.					
16	E-payment systems reduce tax collection errors and mismanagement.					
17	Electronic tax payment platforms enhance transparency in government revenue collection.					
18	E-payment systems reduce revenue leakages and corruption in tax collection.					
19	Overall, e-payment systems improve the efficiency of tax administration in Nigeria.					

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