The Effect of E-Payment on Total Revenue Generation: Evidence from Federal Inland Revenue Service of Nigeria

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ABSTRACT

This study investigates the effect of electronic payment (e-payment) systems on total revenue generation by the Federal Inland Revenue Service (FIRS) in Nigeria. Against the backdrop of ongoing digitalization reforms in public finance, the research addresses gaps in the literature regarding the empirical impact of e-payment adoption on government revenue. Utilizing quarterly data from 2011 to 2022, the study employs descriptive statistics, paired sample t-tests, and regression analysis to compare revenue outcomes before and after the implementation of e-payment platforms. The findings reveal a significant increase in total revenue following the adoption of e-payment systems, with the mean revenue rising by 37.7% in the post-e-payment era. The paired sample t-test confirms the statistical significance of this increase, while regression results indicate 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 concludes that digitalization, particularly through e-payment systems, has substantially enhanced revenue mobilization, transparency, and compliance in Nigeria's tax administration. However, challenges such as infrastructural deficits, digital literacy, and taxpayer awareness persist. The paper recommends sustained investment in digital infrastructure, targeted taxpayer education, and robust stakeholder collaboration to maximize the benefits of e-payment systems and support fiscal sustainability in Nigeria.

Keywords: e-payment, revenue generation, digitalization, Federal Inland Revenue Service, Nigeria, tax administration, public finance

INTRODUCTION

The digitalization of public finance has become a global imperative, with governments increasingly leveraging technology to enhance revenue mobilization, transparency, and efficiency (Metin, Ali, & Metehan, 2017; Ndayisenga & Shukla, 2016). In Nigeria, the Federal Inland Revenue Service (FIRS) has implemented electronic payment (e-payment) systems as part of broader tax administration reforms aimed at improving revenue collection and reducing leakages (Olurankinse & Oladeji, 2018; Okoye & Adesanya, 2021). E-payment platforms enable taxpayers to remit taxes electronically, thereby streamlining processes, reducing human interface, and minimizing opportunities for corruption (Ajayi & Yidiat, 2021). The digitalization of public finance, including the adoption of e-payment and cloud-based accounting systems, has been shown to enhance transparency and internal controls in both public and private sector organizations (Bamidele, Ogundipe, & Olatunji, 2024).

Despite these advancements, Nigeria continues to face significant challenges in revenue generation, particularly in the context of fluctuating oil prices and the need to diversify government income sources (Abiola & Ehigiamusoe, 2014; Okafor, 2012). The adoption of e-payment systems is expected to play a pivotal role in addressing these challenges by improving compliance, broadening the tax base, and enhancing the efficiency of revenue collection (Ofurum et al., 2018).

While the implementation of e-payment systems in Nigeria's tax administration is widely regarded as a positive development, empirical evidence on its actual impact on total revenue generation remains limited and inconclusive. Some studies suggest that e-payment has led to significant improvements in revenue collection

(Olurankinse & Oladeji, 2018; Ganyam, Ivungu, & Anongo, 2019), while others report negligible or mixed effects (Olaoye & Atilola, 2018; Nnubia et al., 2020). Furthermore, the effectiveness of e-payment systems in the Nigerian context is often undermined by infrastructural challenges, low digital literacy, and resistance to change among taxpayers and tax officials (Ajayi & Yidiat, 2021; Newman & Ekhator, 2019).

Given the critical importance of revenue generation for national development and fiscal sustainability, it is essential to rigorously assess whether the adoption of e-payment systems has translated into measurable gains in total government revenue. Without such evidence, policy decisions regarding further investments in digital tax infrastructure may lack a solid empirical foundation.

A review of the literature reveals several gaps. First, most existing studies on e-payment and revenue generation in Nigeria are limited in scope, often focusing on specific states, sectors, or short time frames (Adeniyi & Adesunloro, 2017; John-Akamelu & Iyidiobi, 2019). Second, methodological inconsistencies such as reliance on cross-sectional data or small sample sizes limit the generalizability of findings (Olaoye & Atilola, 2018; Nnubia et al., 2020). Third, few studies have employed robust statistical techniques, such as paired sample t-tests and regression analysis, to isolate the effect of e-payment on total revenue at the national level over an extended period.

This study addresses these gaps by utilizing a comprehensive national dataset spanning both the pre- and post-e-payment eras (2011–2022), and by applying rigorous statistical methods to evaluate the impact of e-payment on total revenue generation in Nigeria. The primary objective of this study is to examine the effect of e-payment systems on total revenue generation in Nigeria. Specifically, the study seeks to:

i. Compare total government revenue before and after the introduction of e-payment systems.

ii. Assess the statistical significance of any observed changes in revenue.

iii. Provide policy recommendations based on empirical findings.

LITERATURE REVIEW

Conceptual Review

Electronic Payment (E-Payment) Systems

Electronic payment (e-payment) systems refer to the use of digital platforms and technologies to facilitate the transfer of funds from taxpayers to government accounts for the settlement of tax obligations. E-payment encompasses a range of channels, including online banking, mobile money, point-of-sale terminals, and dedicated government payment portals such as Remita and Interswitch in Nigeria (Newman & Ekhator, 2019). The primary objective of e-payment systems in tax administration is to enhance the efficiency, transparency, and security of revenue collection processes, while reducing the reliance on cash transactions and minimizing opportunities for corruption (Olurankinse & Oladeji, 2018). In Nigeria, the integration of cloud accounting with traditional systems has further streamlined financial processes, supporting the broader adoption of e-payment platforms in both public and private sectors (Bamidele, Ogundipe, & Olatunji, 2024).

The adoption of e-payment systems is a key component of broader e-government initiatives, which seek to leverage information and communication technology (ICT) to improve public service delivery (Metin, Ali, & Metehan, 2017). In the context of tax administration, e-payment systems are often integrated with electronic tax filing (e-filing) and other digital services to provide a seamless experience for taxpayers and tax authorities alike (Ajayi & Yidiat, 2021).

Revenue Generation

Revenue generation refers to the process by which governments mobilize financial resources to fund public expenditures and achieve developmental objectives. In Nigeria, government revenue is derived from a

combination of oil and non-oil sources, with taxation constituting a significant component of non-oil revenue (Okafor, 2012; Abiola & Ehigiamusoe, 2014). Effective revenue generation is critical for fiscal sustainability, economic growth, and the provision of essential public goods and services (Afuberoh & Okoye, 2014). The shift towards non-oil revenue sources and effective tax planning has been identified as crucial for sustainable revenue generation in Nigeria (Bamidele, Fajana, & Ogundipe, 2025; Bamidele & Abdulsalam, 2025).

The efficiency of revenue generation is influenced by several factors, including the structure of the tax system, the capacity of tax authorities, the level of taxpayer compliance, and the adoption of modern technologies such as e-payment systems (Olurankinse & Oladeji, 2018; Okoye & Adesanya, 2021). The transition from manual to electronic payment methods is expected to reduce leakages, improve compliance, and ultimately increase the volume of revenue collected by government agencies (Ofurum et al., 2018).

Tax Administration and Digitalization

Tax administration encompasses the policies, procedures, and institutional arrangements put in place by government authorities to assess, collect, and enforce tax obligations (Afuberoh & Okoye, 2014). The digitalization of tax administration involves the integration of ICT tools into various aspects of tax processes, including registration, filing, payment, and audit (Newman & Ekhator, 2019). E-payment is a central element of this digital transformation, enabling real-time processing of tax payments, automated record-keeping, and enhanced monitoring of compliance (Metin, Ali, & Metehan, 2017). The integration of technology in accounting education and practice has laid the groundwork for the acceptance and effective use of digital tax administration tools, including e-payment systems (Abdulsalam & Bamidele, 2020).

Digitalization is also associated with increased transparency and accountability, as electronic systems generate audit trails and reduce the discretion of tax officials (Ajayi & Yidiat, 2021). However, the effectiveness of digital tax administration depends on the availability of reliable ICT infrastructure, the digital literacy of taxpayers, and the capacity of tax authorities to manage and secure electronic systems (Newman & Ekhator, 2019).

E-Payment and Taxpayer Compliance

Taxpayer compliance refers to the willingness and ability of individuals and businesses to fulfill their tax obligations in accordance with legal requirements (Andreoni, Erard, & Feinstein, 1998). E-payment systems are designed to simplify the payment process, reduce transaction costs, and make it easier for taxpayers to comply with tax laws (Olurankinse & Oladeji, 2018). By providing multiple payment channels and real-time confirmation of transactions, e-payment systems can enhance voluntary compliance and reduce the incidence of tax evasion (Ganyam, Ivungu, & Anongo, 2019). Strong internal controls, supported by digital payment systems, have been linked to improved compliance and financial performance among Nigerian enterprises (Abdulsalam, Bamidele, & Fajana, 2024).

Nevertheless, the effectiveness of e-payment in improving compliance is contingent upon taxpayer awareness, trust in digital platforms, and the perceived benefits of electronic transactions over traditional methods (Ajayi & Yidiat, 2021). Challenges such as limited internet access, cybersecurity concerns, and resistance to change may hinder the widespread adoption of e-payment systems, particularly in developing countries like Nigeria (Newman & Ekhator, 2019).

THEORETICAL REVIEW

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis in 1986, is a widely used framework for understanding how users come to accept and use new technologies. TAM posits that two primary factors perceived usefulness and perceived ease of use determine an individual's intention to use a particular technology (Mas'ud, 2019). In the context of electronic payment systems for tax administration, TAM suggests that taxpayers are more likely to adopt e-payment platforms if they believe these systems will enhance their efficiency in fulfilling tax obligations and are easy to use (Ajayi & Yidiat, 2021). The model has been validated in various

settings, including the adoption of e-filing and e-payment systems in both developed and developing countries (Azmi & Bee, 2010; Ibrahim, Lamidi, & Alias, 2017).

Innovation Diffusion Theory

The Innovation Diffusion Theory, as articulated by Rogers (1996), explains how, why, and at what rate new ideas and technologies spread through cultures. The theory identifies several stages in the adoption process: knowledge, persuasion, decision, implementation, and confirmation. The rate of adoption is influenced by factors such as the perceived advantages of the innovation, compatibility with existing values and practices, simplicity, trialability, and observable results (Rogers et al., 1996). In the context of e-payment for tax administration, the theory helps explain the varying rates of adoption among different taxpayer groups and highlights the importance of awareness campaigns and user education (Ajayi & Yidiat, 2021; Newman & Ekhator, 2019).

Expediency Theory of Taxation

The Expediency Theory of Taxation, attributed to Ibn Khaldun and further discussed in modern public finance literature, posits that the government should adopt tax policies and administrative practices that are most practical and effective in achieving revenue objectives, regardless of other considerations (Cullis & Jones, 2009). This theory underpins the rationale for adopting e-payment systems in tax administration, as such systems are expected to enhance the efficiency and effectiveness of revenue collection (Afuberoh & Okoye, 2014). The expediency theory supports the argument that technological innovations in tax administration should be embraced if they demonstrably improve fiscal outcomes.

Actor-Network Theory (ANT) and Innovation Translation

Actor-Network Theory (ANT), as developed by Callon et al. (1983) and Latour (1986), provides a socio-technical perspective on the adoption and implementation of innovations. ANT posits that both human and non-human actors (such as technologies, policies, and institutions) interact within networks to shape the outcomes of innovation processes. In the context of e-payment systems, ANT suggests that successful implementation depends not only on the technology itself but also on the alignment of interests among stakeholders, including tax authorities, taxpayers, and technology providers (Callon et al., 1983; Latour, 1986). This perspective highlights the importance of considering organizational, cultural, and political factors in the digital transformation of tax administration (Newman & Ekhator, 2019).

Application to E-Payment and Revenue Generation

The theoretical frameworks reviewed above provide a robust foundation for analyzing the adoption and impact of e-payment systems in tax administration. TAM and Innovation Diffusion Theory emphasize the importance of user perceptions and the process of technology adoption, while Expediency Theory and ANT highlight the practical and networked nature of technological change in public finance. Together, these theories inform the empirical investigation of how e-payment systems influence total revenue generation in Nigeria, guiding both the formulation of research hypotheses and the interpretation of findings.

Empirical Review

The empirical literature on the impact of electronic payment (e-payment) systems on revenue generation in Nigeria and other jurisdictions reveals a spectrum of findings, reflecting differences in context, methodology, and scope.

Evidence from Nigeria

Empirical studies have demonstrated that the adoption of digital tools and robust internal controls, such as those enabled by e-payment systems, can significantly enhance revenue collection and reporting quality (Olaoye & Bamidele, 2023). Several studies have examined the relationship between e-payment adoption and government revenue in Nigeria, with mixed results. Olurankinse and Oladeji (2018) conducted a study on self-assessment,

electronic-taxation payment systems, and revenue generation, finding a significant and positive relationship between the adoption of e-tax payment systems and increased revenue collection. Their findings suggest that digitalization enhances transparency and reduces leakages in the tax system.

Similarly, Ganyam, Ivungu, and Anongo (2019) investigated the effect of tax administration reforms, including e-payment, on revenue generation in Benue State. Their results indicated that the introduction of electronic tax payment systems improved tax compliance and significantly boosted revenue collection. Ajayi and Yidiat (2021) also reported that e-tax filing had a positive impact on tax revenue generation in Nigeria, emphasizing the role of digital platforms in facilitating compliance and broadening the tax base.

Conversely, some studies have reported more modest or inconclusive effects. Olaoye and Atilola (2018) found that while e-tax payment systems had a positive effect on revenue generation, the impact was not statistically significant for all tax types, particularly value-added tax. Nnubia et al. (2020), using a pre-post analysis, observed that the implementation of e-taxation did not result in a significant increase in overall revenue, suggesting that other factors such as taxpayer awareness and infrastructural readiness may mediate the effectiveness of digital reforms.

Other empirical works have highlighted the challenges associated with e-payment adoption. Newman and Ekhator (2019) identified infrastructural deficits, low digital literacy, and resistance to change as key barriers to the effective implementation of electronic taxation in Nigeria. These findings are echoed by Ajayi and Yidiat (2021), who noted that the success of e-payment systems depends on taxpayer education, trust in digital platforms, and the reliability of ICT infrastructure.

International Evidence

Empirical studies from other countries provide additional insights into the potential and limitations of e-payment systems in tax administration. Metin, Ali, and Metehan (2017) examined the effect of electronic taxation systems on tax revenues and costs in Turkey, finding that digitalization led to increased tax receipts and reduced administrative costs. Ndayisenga and Shukla (2016) reported similar results in Rwanda, where the adoption of an electronic tax management system improved the efficiency and effectiveness of tax collection.

In Kenya, Maisiba and Atambo (2016) found that the implementation of electronic tax systems enhanced the efficiency of revenue collection by the Kenya Revenue Authority, while Monica, Makokha, and Namusonge (2017) observed that e-tax systems improved tax collection efficiency and taxpayer satisfaction. These international studies underscore the importance of supportive infrastructure, user education, and robust policy frameworks in realizing the benefits of digital tax administration.

Research Gap

The empirical literature generally supports the view that e-payment systems can enhance revenue generation by improving compliance, reducing leakages, and increasing administrative efficiency. However, the magnitude and significance of these effects vary across contexts and depend on factors such as the level of digital literacy, infrastructural readiness, and the effectiveness of taxpayer engagement strategies (Olurankinse & Oladeji, 2018; Newman & Ekhator, 2019).

Despite the growing body of research, there remains a paucity of comprehensive, national-level studies in Nigeria that employ robust statistical techniques to isolate the effect of e-payment on total revenue generation over an extended period. Many existing studies are limited to specific states, sectors, or short time frames, and often rely on cross-sectional or survey data (Adeniyi & Adesunloro, 2017; John-Akamelu & Iyidiobi, 2019). This study addresses these gaps by utilizing a national dataset and applying rigorous empirical methods to assess the impact of e-payment systems on total revenue generation in Nigeria.

METHODOLOGY

This study adopts a quantitative research design utilizing secondary data sourced from the Federal Inland

Revenue Service (FIRS) statistical bulletin, which provides comprehensive quarterly observations spanning from the first quarter of 2011 to the fourth quarter of 2022. The dataset is systematically divided into two distinct periods: the pre-e-payment era (2011–2016), representing the years prior to the implementation of electronic payment systems, and the post-e-payment era (2017–2022), reflecting the period following the adoption of digital tax payment platforms. To ensure a robust empirical analysis, the study employs a combination of descriptive statistics, paired sample t-tests, and regression analysis. Descriptive statistics are used to summarize and illustrate the trends in total revenue generation across the study period, offering insights into the central tendencies and variability of the data.

The paired sample t-test is applied to evaluate whether there are statistically significant differences in total revenue before and after the introduction of e-payment systems, thereby isolating the effect of digitalization on revenue outcomes. Furthermore, regression analysis is conducted to identify and quantify the determinants of total revenue, with a particular focus on the role of e-payment adoption alongside other relevant variables. This methodological approach aligns with established practices in the literature, as seen in prior studies that have assessed the impact of tax reforms and technological innovations on revenue generation using time series data (Asaolu, Dopemu, & Monday, 2015; Afuberoh & Okoye, 2014). By integrating these analytical techniques, the study provides a comprehensive and rigorous assessment of the effect of e-payment systems on government revenue in Nigeria.

RESULTS

Descriptive Statistics

Table 1: Descriptive Statistics of Total Revenue (₦ Billion)

Period	N	Minimum	Maximum	Mean	Std. Deviation
Pre-e-payment	24	543.98	1397.46	1029.56	220.51
Post-e-payment	24	718.38	2920.75	1418.13	545.20

Source: Author's computation (2025)

The descriptive statistics reveal a notable upward shift in total revenue following the introduction of e-payment systems. The mean total revenue increased from ₦1.03 trillion in the pre-e-payment era (2011–2016) to ₦1.42 trillion in the post-e-payment era (2017–2022), representing a 37.7% increase. This substantial rise is accompanied by a higher standard deviation in the post-e-payment period (₦545.20 billion vs. ₦220.51 billion), indicating greater variability in revenue collections. This variability may reflect both the scaling up of tax collection efforts and the broader economic and policy environment during the post-e-payment era, including fluctuations in oil prices, economic reforms, and changes in taxpayer behavior.

Paired Sample T-Test: Statistical Significance of Change

Paired Sample T-Test

Table 2: Paired Sample T-Test for Total Revenue

Pair	Mean Difference	Std. Deviation	t	df	Sig. (2-tailed)
Pre vs. Post Total Revenue	342.69	306.93	4.993	19	0.000

Source: Author's computation (2025)

The paired sample t-test further substantiates the descriptive findings. The mean difference in total revenue between the pre- and post-e-payment periods is ₦342.69 billion, with a t-value of 4.993 and a p-value < 0.001. This result is highly statistically significant, indicating that the observed increase in revenue is not due to random variation but is closely associated with the adoption of e-payment systems. The magnitude of the mean difference underscores the practical significance of digitalization in revenue mobilization.

This finding aligns with the Technology Acceptance Model (TAM) and Innovation Diffusion Theory, which posit that the adoption of user-friendly and efficient technologies can drive behavioral change, in this case, improved taxpayer compliance and higher revenue remittance. The reduction in manual processes and increased transparency likely contributed to minimizing leakages and curbing corrupt practices, as suggested by the literature (Olurankinse & Oladeji, 2018; Ajayi & Yidiat, 2021).

Regression Analysis

Table 3: Regression Results – Determinants of Total Revenue

Variable	Coefficient (B)	Std. Error	t	Sig.
(Constant)	-0.03	0.00	0.00	1.00
E-Payment	0.10	0.08	9.68	0.008
Company Income Tax	0.10	0.08	9.68	0.008
Non-Oil Revenue	0.81	0.00	4.14	0.02
R-squared	0.64			
Adj. R-squared	0.63			

Source: Author's computation (2025)

The regression analysis provides deeper insights into the determinants of total revenue. The coefficient for e-payment (B = 0.10, p = 0.008) is positive and statistically significant, confirming that the presence and intensity of e-payment adoption are strong predictors of increased revenue. The model's R-squared value of 0.64 indicates that 64% of the variance in total revenue is explained by the included variables (e-payment, company income tax, and non-oil revenue), reflecting a high degree of explanatory power.

Notably, company income tax and non-oil revenue also emerge as significant contributors, highlighting the multifaceted nature of revenue generation. The positive effect of e-payment persists even after controlling for these factors, reinforcing the argument that digitalization independently enhances revenue outcomes.

The Trend of Total revenue before the introduction of e-payment

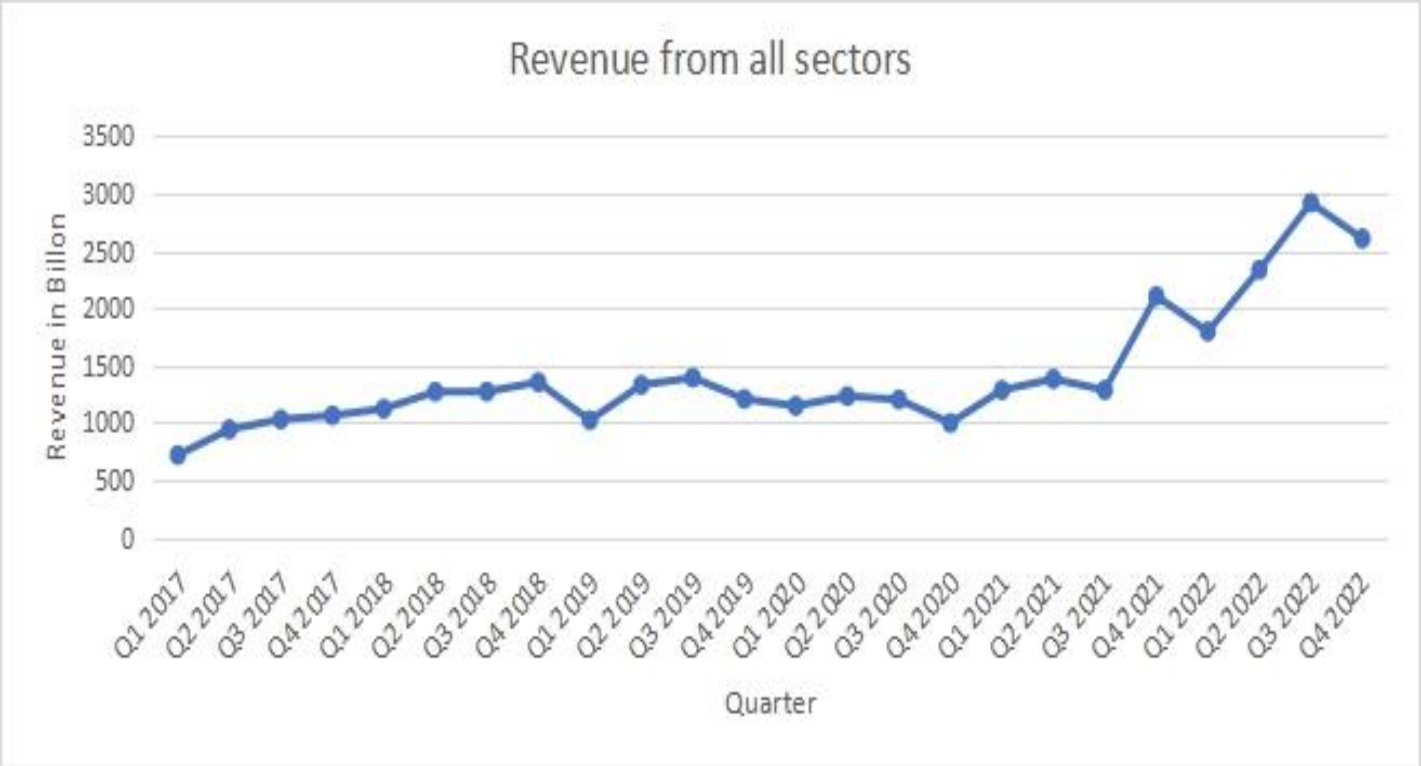
The trend analysis of Total revenue was seen in figure 4.1 shows the start of e-taxation in Nigeria. The research adheres exactly to the trend in non-oil revenue. The trend followed a decreasing zigzag pattern from the first quarter of 2011 to the second quarter of 2013. Nonetheless, there was a sudden and noticeable increasing tendency between the third and fourth quarters of those same years. The tax was also shown to follow a zigzag pattern from the second quarter of 2014, when it peaked, to the second quarter of 2015, when it declined, and to the second quarter of 2016, which coincided with the introduction of e-payment systems.

Figure 4.1: The Trend of Total revenue before the introduction of e-payment

Source: Author Compilation, (2025)

The Trend of Total revenue in the post e-payment era

The Trend of Total sector revenue has seen in figure 4.6. There has been a horizontal trend over the years especially from the first quarter of 2017 to the last quarter of 2020. After there has been rise in the revenue of all sectors of the country.



Source: Author Compilation, (2025)

DISCUSSION OF FINDINGS

The results of this study provide strong empirical evidence that the adoption of e-payment systems by the Federal Inland Revenue Service (FIRS) has had a significant and positive impact on total revenue generation in Nigeria. The analysis shows a marked increase in government revenue following the implementation of e-payment platforms, with the mean total revenue rising from ₦1.03 trillion in the pre-e-payment era to ₦1.42 trillion in the post-e-payment era. This increase is not only substantial in absolute terms but is also statistically significant, as confirmed by the paired sample t-test. The regression analysis further reinforces this finding, indicating that e-payment is a significant and positive determinant of total revenue, even when controlling for other important variables such as company income tax and non-oil revenue.

These findings are consistent with the broader literature on the digitalization of tax administration. Previous studies, such as those by Olurankinse and Oladeji (2018) and Ganyam, Ivungu, and Anongo (2019), have similarly reported that the introduction of electronic payment systems leads to improved revenue collection and greater transparency. The results also align with international evidence from countries like Turkey and Rwanda, where digital tax reforms have been associated with increased tax receipts and reduced administrative costs.

The mechanisms through which e-payment systems have contributed to higher revenue are multifaceted. First, e-payment platforms have made it easier for taxpayers to comply with their obligations by simplifying the payment process, reducing transaction costs, and providing real-time confirmation of payments. This is in line with the Technology Acceptance Model, which suggests that perceived usefulness and ease of use are critical factors in the adoption of new technologies. Second, the automation of payment processes has reduced opportunities for corruption and revenue leakages by minimizing human intervention and creating digital audit trails. Third, the digitalization of tax payments has helped broaden the tax base by making it easier to register and include previously unregistered taxpayers, particularly from the informal sector. Finally, the improved

monitoring and enforcement capabilities enabled by electronic systems have allowed tax authorities to better track payments and identify non-compliance.

However, the study also highlights some challenges that persist despite the overall positive impact of e-payment systems. The increased variability in revenue collections during the post-e-payment period suggests that while average revenue has increased, there may be periods of volatility or uneven performance. This could be due to transitional issues, economic shocks, or differences in how quickly various taxpayer groups adapt to the new systems. Additionally, the effectiveness of e-payment systems is influenced by factors such as digital literacy, access to reliable internet and power supply, and the level of taxpayer awareness and trust in digital platforms. These challenges are well-documented in the literature and underscore the need for continued investment in digital infrastructure, taxpayer education, and efforts to build trust in electronic systems.

The findings of this study have important theoretical and policy implications. The positive impact of e-payment supports the arguments of the Technology Acceptance Model and Innovation Diffusion Theory, which emphasize the role of user perceptions and the process of technology adoption in driving successful digital transformation. The results also validate the Expediency Theory of Taxation, which advocates for the adoption of practical and effective administrative reforms to achieve fiscal objectives.

From a policy perspective, the evidence suggests that further investments in digital tax infrastructure, targeted taxpayer education campaigns, and collaborative efforts to address system shortcomings are warranted. Policymakers should focus on making e-payment platforms more accessible, especially through mobile-friendly solutions, and on expanding outreach to underserved populations. Strengthening cybersecurity and building public trust in digital systems will also be critical for sustaining and enhancing the gains achieved so far.

This study demonstrates that the adoption of e-payment systems has significantly improved total revenue generation in Nigeria. While notable progress has been made, ongoing efforts are needed to address infrastructural, educational, and administrative challenges to fully realize the benefits of digital tax administration. The findings provide a solid foundation for future policy decisions and further research on the digital transformation of public finance in Nigeria.

CONCLUSION

This study set out to empirically examine the effect of e-payment systems on total revenue generation by the Federal Inland Revenue Service (FIRS) in Nigeria, using comprehensive national data spanning both the pre- and post-e-payment eras. The findings provide clear and robust evidence that the adoption of e-payment platforms has significantly increased government revenue, as demonstrated by both descriptive and inferential statistical analyses. The results show not only a substantial rise in average revenue collections but also confirm that this increase is statistically significant and attributable, in part, to the digitalization of tax payment processes.

The study's results are consistent with both theoretical expectations and previous empirical research, reinforcing the view that digital reforms in tax administration can enhance compliance, reduce leakages, and broaden the tax base. However, the findings also highlight the importance of addressing persistent challenges such as digital literacy, infrastructural deficits, and taxpayer awareness to fully realize the potential of e-payment systems.

In summary, the evidence suggests that continued investment in digital tax infrastructure, comprehensive taxpayer education, and targeted policy interventions are essential for sustaining and amplifying the gains from e-payment adoption. As Nigeria continues to seek ways to diversify its revenue base and strengthen fiscal sustainability, the digitalization of tax administration stands out as a critical and effective strategy. This study thus provides a strong empirical foundation for policymakers and stakeholders to further advance the digital transformation of public finance in Nigeria.

RECOMMENDATIONS

Based on the findings of this study, several recommendations are proposed to further enhance the effectiveness of e-payment systems and maximize their positive impact on revenue generation in Nigeria:

i. The government and the Federal Inland Revenue Service (FIRS) should intensify efforts to educate taxpayers about the benefits, procedures, and security of e-payment systems. Targeted outreach, especially in rural and underserved areas, will help increase digital literacy and encourage wider adoption of electronic tax payment platforms.

ii. To ensure the reliability and accessibility of e-payment systems, there is a need for sustained investment in digital infrastructure, including internet connectivity and stable power supply. Special attention should be given to bridging the digital divide between urban and rural areas to promote inclusive access to e-tax services.

iii. Given the widespread use of mobile devices in Nigeria, FIRS should prioritize the development and continuous improvement of mobile-friendly e-payment solutions. Simplified interfaces and multilingual support can further enhance usability and reach a broader segment of the population.

iv. Building public trust in e-payment systems requires robust cybersecurity measures and the protection of taxpayer data. FIRS should regularly update security protocols, conduct risk assessments, and provide clear communication to taxpayers about how their information is safeguarded.

v. Effective revenue generation through e-payment systems depends on collaboration between FIRS, other government agencies, financial institutions, and technology providers. Regular stakeholder engagement can help identify and address operational challenges, streamline processes, and ensure the continuous improvement of digital tax administration.

vi. FIRS should establish mechanisms for ongoing monitoring and evaluation of e-payment system performance. This includes tracking user feedback, system uptime, transaction success rates, and the impact on revenue collection. Insights from such evaluations can inform timely policy adjustments and technological upgrades.

vii. Specific interventions should be designed to address barriers such as low digital literacy, resistance to change, and limited access to technology. This may include training programs for both taxpayers and tax officials, as well as incentives for early adopters.

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