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# OVERCOMING BARRIERS TO DIGITAL TRANSFORMATION IN PUBLIC INSTITUTIONS IN NIGERIA

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**Abstract.** This study explored the barriers to digital transformation in public institutions, focusing on the Federal Road Safety Corps (FRSC), Lagos State, Nigeria. This study aims to discover the key challenges hampering the adoption of digital systems in managing traffic and ensuring road safety. This study, therefore, draws on a mixed-method approach, combining quantitative and qualitative data, to explore the impact of such variables as inadequate funding, lack of strategic vision, staff resistance, and public noncompliance with traffic regulations. In the quantitative analysis, senior FRSC staff were surveyed on the significant obstacles to digital adoption. In-depth interviews provided qualitative insights into the challenges that needed to be understood contextually, along with possible remedies. Findings show barriers to effective digital transformation, unsatisfactory budget allocation, the fear of job loss, and a need for a clear strategic way forward. However, the study also identifies how to overcome these challenges, such as poor infrastructure, limited digital skills, policy gaps, inadequate funding, and cybersecurity risks. The study's practical implications reveal that policy- and leadership-level attention to the financing, cybersecurity, and public awareness is indispensable to making digital transformation a complete reality. The research adds to the growing literature on digital transformation within public sector institutions. Digital transformation adoption offers actionable recommendations for enhancing service delivery and road safety.

**Keywords:** digital transformation, FRSC, public compliance, public service delivery, technology adoption.

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## Introduction

Digital transformation has emerged as central to modern governance in recent times, whereby the delivery of public services is heavily affected across borders internationally. It refers to the adoption and incorporation of digital technologies in improving the efficiency, accessibility, and even transparency of the delivery of public services within government institutions (Gberevbie et al., 2016). Most governments, including Nigeria, have digital transformation one of the major approaches to help improve public service delivery. Digitisation of processes and the use of digital tools have placed public agencies in a much better position to respond to the growing demands of their citizens in light of resource constraints and challenges (Abasilim et al., 2022; Andersson at al., 2022). Examples include Nigeria's National Digital Economy Policy and Strategy (2020–2030), which indicates the government's commitment to transform operations through digital interventions.

Public agencies in cities like Tallinn, Estonia, Seoul, South Korea, and Singapore provide instructive examples of how digital transformation can bridge service delivery gaps and improve efficiency. In all these cases, substantial investment in infrastructure, staff training, and supportive policy frameworks has enabled the successful adoption of digital tools. However, challenges such as resistance to change, cybersecurity threats, and unequal access to technology persist even in relatively well-resourced environments. These issues are not unique to one city or governmental agency but reflect common barriers faced during digital transformation implementations worldwide.

By contrast, digitalisation has been especially difficult to implement in Nigeria. Public agencies such as the Nigerian Police Force (NPF), National Health Insurance Scheme (NHIS), National Population Commission (NPC), National Identity Management Commission (NIMC), and Nigeria Customs Service (NCS) often grapple with insufficient infrastructure, a general lack of digital literacy among staff, and inadequate finances. The Federal Road Safety Corps (FRSC), Lagos Sector Command, in Ojodu, is no exception. The FRSC plays a critical role in ensuring road safety and regulating traffic in Lagos State, the most populous city in the country, where its mandate includes traffic regulation, public education on road safety, and emergency response services. Given the unique urban challenges of Lagos, including traffic congestion and high accident rates, the FRSC's effectiveness is vital to public safety and mobility.

Despite the importance of digital transformation for the FRSC, significant barriers limit its ability to rise to the challenge. Gberevbie et al. (2018) examined key factors such as outdated infrastructure, lack of digitised staff training, and budgetary constraints, which they found inhibited the agency's capacity to ensure effective service delivery. For example, studies have shown that 65% of Nigerian public agencies struggle with inadequate digital infrastructure, negatively affecting operational efficiency and responsiveness (Onwuegbuna et al., 2022). Moreover, nearly 40% of government workers lack adequate digital literacy, further hindering the effective use of technology in public service delivery (Inakefe et al., 2023).

These challenges lead to delays in emergency responses, especially in road traffic-related accidents, and inefficiency in traffic flow management. For instance, despite being based in Nigeria's most populous city, the FRSC Lagos Sector Command has frequently delayed coordinating accident responses due to limited access to up-to-date data and communication tools. A survey by the World Bank (2021) found that 52% of Nigerians perceive public institutions, such as the FRSC, as inefficient, partly due to their failure to leverage technology to improve operations fully.

The struggles experienced by the FRSC Lagos Sector Command are not isolated; they reflect systemic issues faced by public agencies across Nigeria and many other developing countries. A study by the African Development Bank (2022) noted that nearly 60% of African public service agencies, including the Nigerian police and health services, face similar barriers to digital transformation. These findings underscore the importance of addressing these challenges to ensure that public agencies can effectively adapt to the digital age and meet the growing demands of their populations.

This study, therefore, aims to evaluate the challenges impeding effective digital transformation in the FRSC Lagos Sector Command, and offers a broader perspective on digital transformation in public sector institutions. It will assess the level of digitalisation, identify the barriers to digital transformation in the FRSC, and propose strategies to improve the agency's operations. By examining the FRSC's experience, this study contributes to the ongoing discourse on leveraging digital transformation to enhance public sector performance.

While the potential for digital transformation to enhance public service delivery in Nigeria is enormous, significant challenges remain. The experiences of the FRSC offer valuable lessons for developing improved strategies for digitalising public sector agencies in Nigeria and beyond. Thus, this study focuses on the FRSC in Lagos and contributes to the broader knowledge of digital transformation processes in public agencies.

## Literature Review

### The concept of digital transformation

Digital transformation involves the integration of digital technologies across organisations, fundamentally altering service delivery and operational processes. In public service, this represents a shift from traditional, paper-based methods to technology-driven systems that enhance efficiency, transparency, and accessibility (Irani et al., 2023). Rather than simply digitising existing processes, digital transformation encompasses redesigning public services using technology to improve decision-making, communication, and service delivery for citizens (Scupola and Mergel, 2022).

#### *Key dimensions of public sector digital transformation*

Digital transformation in the public sector is a multidimensional process that improves service delivery, operational efficiency, and overall governance. This transformation is typically categorised into three key dimensions: digitisation,

digitalisation, and digital innovation (Escobar et al., 2023). While these dimensions contribute significantly to public sector progress, each presents unique challenges that public organisations must address to ensure successful implementation and long-term sustainability.

*Digitisation:* Digitisation refers to converting analogue information into a digital format, making it more accessible, easier to store, and retrievable for future use. Although this stage may appear straightforward, it is foundational for more advanced stages of digital transformation and carries its barriers. Resource constraint is one of the most significant challenges of digitisation, particularly in underfunded public organisations (Ndlovu et al., 2023). These resource limitations often restrict the ability to procure the necessary hardware, software, and infrastructure to support the process of digitisation. Consequently, digitisation is slowed, as some agencies cannot meet efficient, seamless digital data processing demands.

Further, because of a lack of data standardisation, there is interoperability with different departments and agencies of the public sector; for example, according to Mergel (2021), other practices and formats in data can make it challenging to integrate digitised information across different systems, resulting in inefficiencies in ways that might reduce the overall potential impact of digitisation. Moreover, these issues are considerably heightened without an overarching method of data governance.

Another major obstacle is the resistance from employees themselves at the digitisation stage. Public sector employees, accustomed to traditional paper-based systems, often perceive digitisation as a disruptive force. This resistance can stem from fears of increased workloads during the transition period and the perceived complexity of using new systems (Nielsen et al., 2024). Moreover, the absence of robust training and capacity-building programmes exacerbates this resistance. It involves addressing barriers to comprehensive training, more resource allocation towards acquiring relevant technologies, and standardising data management at a departmental level.

*Digitalisation:* This goes beyond just the mere digitalisation of the data towards its active use through integrating it into core processes and public organisation services. This stage is characterised by the change in operational dynamics and the introduction of new tools and technologies that alter how work is performed. In this stage, different kinds of challenges start to appear, especially regarding the redesign of operational processes. Often, public sector organisations face considerable difficulties in aligning existing workflows to accommodate digital technologies (Eom and Lee, 2022). The process redesign requires careful planning, broad stakeholder consultation, and deep organisational culture and structure. Such a lack of know-how from within public institutions on navigating such complexities often postpones the successful integration of digital technologies.

Another main barrier to digitalisation is the gap in digital skills within the public sector workforce. Most employees do not have the technical skills to operate the new digital systems, which slows the speed and efficiency of adopting technology. A study by Escobar et al. (2023) found that this skill gap often leads to reduced productivity, errors in system use, and lower acceptance of new tech-

nologies. The lack of clear strategic directions from management further exacerbates these problems. Poorly prioritised or fragmented digital initiatives, usually due to weak leadership and/or a lack of oversight, could result in misaligned objectives and delays in adopting the digital solution.

To address these, public organisations must establish clear, long-term strategic digitalisation plans aligned with the organisation's overall goals. These need to be supported by targeted training programmes that build digital competencies among employees and leadership. In addition, fostering a culture of innovation and collaboration inside the organisation can help digitalisation align with the mission and objectives of the organisation as a whole, resulting in a better integration of digital technologies.

*Digital Innovation:* The last dimension of digital transformation in the public sector, digital innovation, refers to the adoption of the latest technologies, such as AI, big data analytics, cloud computing, and blockchain, to bring a complete transformation in governance processes and service delivery. Though these technologies have huge transformative potential, the path to adoption is not precisely barrier-free. Some of the most compelling challenges are the high cost and limited access to advanced technologies, mainly in resource-constrained public institutions, often more pronounced in developing countries (Osborne et al., 2022). For instance, the high initial cost of implementing cutting-edge technologies with inadequate technical infrastructure leads to considerable complications in digital innovation.

Another critical barrier involves data security and privacy concerns. As public institutions adopt more sophisticated technologies, the risk of cyberattacks and data breaches becomes more pronounced. Public organisations are often responsible for sensitive data, and integrating innovative technologies requires robust cybersecurity measures to protect against these threats. However, many organisations struggle to implement adequate data security protocols due to budgetary constraints, technical limitations, or lack of expertise in cybersecurity (Udegbunam et al., 2023). These issues undermine confidence in digital systems and hinder the broader diffusion of innovative technologies.

Moreover, cultural resistance to disruptive technologies remains a formidable challenge. Employees and stakeholders may view technologies such as AI and big data analytics as threats to their roles and responsibilities, thus resisting the change (Mergel, 2021). This resistance can delay or obstruct the full-scale adoption of digital innovations, especially when employees feel that new technologies may replace human input or undermine established practices.

Scholars, therefore, look toward collaborative solutions to the identified barriers. Partnerships involving public institutions and technology providers enable the sharing of the financial cost of adopting advanced technologies. At the same time, joint initiatives with academia and industry may foster bespoke, affordable digital solutions developed at lower cost (Escobar et al., 2023).

These dimensions demonstrate that digital transformation goes beyond automating services; it aims to dismantle bureaucratic barriers to provide more efficient, transparent, and user-centred public services (Millard, 2023). Countries like Estonia, Singapore, and the United Kingdom are leading examples of embedding

digital technologies in public services. Estonia's e-government platform offers citizens access to over 99% of public services, reducing bureaucracy and increasing transparency. Singapore's "Smart Nation" initiative showcases the role of digitalisation in overcoming urban challenges, improving public health, and managing resources efficiently (Tan, 2022). In developing countries, including Nigeria, digital transformation is gaining momentum as a strategy to address inefficiencies and corruption in public administration.

Nigeria's initiatives, such as the National Digital Economy Policy and Strategy (2020–2030) and the e-Government Master Plan, aim to reduce inefficiencies and engage citizens through digital tools like e-taxation and online public services (Sarker and Ahmed, 2022). However, challenges such as inadequate infrastructure, limited digital skills among public servants, and underfunding impede progress (Ojogiwa and Nhari, 2024). These barriers must be addressed to fully realise the benefits of digital transformation in Nigeria's public sector. Aligning Nigeria's public sector reforms with global best practices while considering local challenges will lead to a more responsive, accountable, and citizen-centric public sector (Amin et al., 2024; Gberevbie et al., 2016).

**Digital transformation in the Nigerian public sector**

The digitisation of the public sector in Nigeria has taken several turns, shaped by historic milestones and modern initiatives aimed at renewing public administration and the delivery of services. It started in the early 2000s when Nigeria adopted its first e-government strategies to address efficiencies within public services and lay the digital foundational operations. This commitment solidified in 2019 when the Federal Ministry of Communications and Digital Economy launched the National Digital Economy Policy and Strategy (NDEP), which set a clear implementation plan for digitising all Ministries, Departments or Agencies (MDAs). The NDEPs among other policy imperatives, dwelt on digital literacy, data privacy, cybersecurity, and ease of access to digital services to make the public sector more connected and accessible. Critical initiatives under NDEPS include introducing digital transport, health, and public administration platforms.

This has been illustrated by the online licensing and vehicle registration platforms launched by the FRSC. These make the processes easier among citizens, improving regulatory oversight efficiency (Olawale and Sadiq, 2022). Similarly, digital record systems and telemedicine have been partially implemented recently to ensure better management and accessibility of health services, even in remote areas. This is meant to accelerate what had occurred at a snail's pace (Langrial and Ham, 2020). Such efforts indicate that the government is committed to making public services increasingly accessible through digitisation to reduce administration bottlenecks. There have been setbacks regarding the extent of digital transformation that has so far been pursued in Nigeria's public sector. Some significant barriers include infrastructure, where rural areas lack access to reliable internet and digital devices.

Such gaps challenge the full adoption of national digital platforms and impede citizen access to online services. Other challenges include the need for more competent staff; most government institutions require assistance in recruiting staff

with sufficient digital skills to operate and maintain new technologies effectively. Moreover, there is resistance to change with the established staff accustomed to the traditional way, further complicating the notion of adopting digital practices and slowing down the speed of digital initiatives in many instances, with inconsistent implementation across agencies. These notwithstanding, Nigeria has attained some critical successes in increased citizen engagement in digital services, records management in the MDAs, and increased openness of selected sectors like tax administration and the processes of electoral administration.

However, these setbacks have once again been a reminder of how the country needs continued investment in the country's digital infrastructure, proper training of the workforce to meet this requirement, and such policies that will enforce digital literacy at all levels across the country. This is going hand in hand with the fact that efforts of digital transformation should be directed toward inclusive strategies that will help reduce infrastructural and educational gaps, which, in essence, can make such efforts translate meaningfully into improved governance and public service delivery. The Federal Road Safety Corps of Nigeria has undertaken several initiatives in digital transformation to enable efficiency in operations, improve service delivery, and ensure effective road safety management across the country. Among the first government agencies to adopt a digital approach, the FRSC has undertaken several programmes to modernise its services, from licensing and registration systems to real-time traffic monitoring and enforcement.

The FRSC has also instigated several digital programmes to enhance efficiency and improve relations with the general public. Among its achievements, it has a digital National Driver's License system, with which all driver's licenses are issued, renewed, and verified online. This enables drivers to find their applications for the particular license being sought, which signifies reduced visits to the physical location and a guaranteed reduction in delay causes (Aworinde et al., 2024). Additionally, the Vehicle Registration System digitised the vehicle registration and ownership field to ease the processing procedure for tracking vehicles and enforcing rules about road safety among other concerned departments. Moreover, this system has reduced vehicle-related crimes by centralising the data that is associated with the registration process of the vehicles.

The FRSC has also embarked on the Road Transport Safety Standardisation Scheme (RTSSS), a digital monitoring platform that monitors the compliance of commercial vehicles with road safety standards. The programme will engage in digital vehicle tracking, remote inspection, and data analytics that can help strengthen compliance and safety outcomes (Nwankwo et al., 2022). The FRSC's Command and Control Centres are also well-equipped with GPS and digital communication tools that support the real-time monitoring of road traffic and assist officers in responding quickly to accidents and traffic violation cases. To strengthen this digital infrastructure and ensure data integration and security, the FRSC partners with various technology firms and government agencies to further such digital initiatives. Such partnerships have made it easier for the FRSC to share critical information with other institutions, such as law enforcement agencies and insurance companies, making the overall approach towards road safety and crime prevention less fragmented.

The previous studies on the FRSC's digital transformation found that there has been improvement and that the agency has faced challenges. For example, Aliyu et al. (2024) posited that implementing a digital licensing system would significantly increase service delivery and decrease, by as much as 50%, the time taken to obtain or renew a driver's license. The researchers also found that some problems are encountered through digital literacy and access. Some applicants need better online processing, especially in rural areas with better internet connectivity. Another study by Ibekwe (2022) considered the impact of the Vehicle Registration System on crime prevention and road safety. The study's results demonstrate that the system has improved the trackability of vehicles and monitors compliance, resulting in fewer vehicles being stolen and unlicensed on the roads.

However, technical problems such as system downtime and sometimes inaccuracy in provided data caused breaks in service, and public confidence in the system was somehow reduced. Oluwalogbon (2023) researched commercial vehicles' use of digital monitoring by the FRSC through the RTSSS. The researchers found that the RTSSS has increased the rate of safety compliance among commercial drivers. However, safety remains minimal because it only covers a few areas, and many drivers need to be made aware of the compliance tools. Moreover, the attitude of some drivers toward such monitoring technology is hostile, as it seems to infringe on their privacy and be overly restrictive. In this regard, the current literature reflects that, on the one hand, FRSC has been documenting its success, while, on the other hand, the FRSC is portraying a severe challenge in this regard of transformation.

Though proper digitalisation brought obvious benefits regarding efficiency issues and public safety, gaps still need to be addressed in the infrastructure, public awareness, and user adoption of this novel system. These areas require constant effort in expanding the digital infrastructure, promoting user training, and improving system reliability to ensure that the prospects of successful digital transformation within the FRSC continue to reflect positively on road safety management nationwide.

## Methodology

This study employs a mixed-method research design, integrating both quantitative and qualitative approaches to examine the challenges of digital transformation within the Federal Road Safety Corps (FRSC), Lagos State Sector Command. This approach provided a comprehensive understanding of the barriers to digital transformation and strategies for improvement. The quantitative component utilised a cross-sectional survey method, collecting data simultaneously from senior staff members. A structured questionnaire was the primary data collection tool, distributed to senior Administrative and Human Resources Department staff. The questionnaire was divided into sections addressing Digital Transformation, Challenges, Suggestions for Improvement, and Public Service Delivery, with responses measured on a modified Likert scale ranging from Strongly Agree (4) to Strongly Disagree (1). This enabled statistical analysis to identify trends and relationships relevant to the study.

The qualitative component involved in-depth interviews with selected senior staff members and personnel engaged in the FRSC operations. These interviews provided rich, contextual insights into key stakeholders' personal experiences, perceptions, and recommendations, complementing the quantitative findings. The study population comprised 110 senior staff members at the FRSC Lagos State Sector Command, each with significant experience in road safety operations and administrative functions (Federal Road Safety Corps, 2022). Purposive sampling was used to select respondents directly involved in the organisation's digital transformation initiatives. For data analysis, the quantitative data were analysed using descriptive statistics to present frequencies and percentages in tables. In contrast, linear regression analysis was employed to test hypotheses, establishing relationships between digital transformation efforts and public service delivery outcomes. The qualitative data were analysed thematically, highlighting recurring patterns and deeper insights into the challenges and potential strategies.

**Challenges of digital transformation in Nigeria's public organisations**

One major challenge is linked to the poor availability of good digital infrastructures. The awareness and adoption of electronic services by citizens have created a dire need for improved digital infrastructure. However, the deficits in infrastructural capacity make it very difficult to achieve meaningful transformation in this area. In large parts of Nigeria, in the most rural and remote areas, access to the internet is unreliable; power supplies are unstable, and the quality of the digital equipment could be better. This is another reason why infrastructure deficits constrain citizens' accessibility to this set of services. However, they also make it hard for public organisations to operate consistently in all parts of the country. Moreover, the high cost of building and maintaining such infrastructure puts additional strain on government budgets, especially for states and agencies with limited resources (Ohonba and Ogbeide, 2023).

Another significant challenge is the need for more digital skills within the public sector workforce. Many public servants need more technical expertise to manage and maintain new technologies. This has often been manifested through poor management of the systems, poorer service delivery, and increased reliance on external consultants, probably with costly expenses that diminish operational efficiency. Training programmes, which seek to upscale the workers' skills, are constrained mainly by funding issues and inconsistent implementations across all departments. According to Emeka and Oloyede (2022), this results in an unbalanced organisational digital capacity. Also, the standard is resistant because many employees in the public sector are accustomed to doing things in their traditional ways and may need help accepting new digital methods.

Such resistance may be based on the fear of displacement, apprehensions of coping with new technologies, or simply inertia in a bureaucratic organisation. Such resistance often delays implementation and lessens the impact of various digitisation initiatives. Regulatory and policy challenges are another cause for concern in Nigeria's public organisations undergoing digital transformation.

These are fragmented policies; there needs to be more data privacy and cybersecurity regulations, and the legislative processes need to be faster to avoid legislative hindrance hindering the smooth process of adopting digital technologies. Without comprehensive and coherent policies to guide the digital transformation process, a public organisation is confronted with implementing standardised practices, keeping its data current, and reassuring citizens of secure digital interactions.

Financial constraints are one of the leading factors that continuously occur. Most public organisations have minimal budgets and, as such, prefer to focus on the provision of immediate service rather than investing in long-term digitisation. As such, most of the funds available for projects on digital transformation remain few; hence, projects are delayed, underperform, and sometimes abandoned. Similarly, changeable and constant economic fluctuations and competing priorities in government budgets result in unpredictable funding of digital initiatives deemed necessary for sustainable development (Ogunlana and Adeoye, 2023).

Finally, public organisations' adoption of digital solutions makes cybersecurity a concern. In this regard, there have been increasing cyber-related threats in the Nigerian public sector. This development calls for the implementation of robust cybersecurity measures. Resources, inadequate training, and a lack of awareness of best practices on data protection expose them to risks likely to dent public trust in digital systems.

This calls for an all-around solution involving investments in infrastructure, strategic training of the workforce, a harmonised policy environment, and robust cybersecurity measures. Thus, such an apt and concentrated intervention by the government will allow these public organisations to navigate safely through the complex maze of digital transformation, with much improvement visible in the service delivery to the citizens.

## Results, analysis and discussion of findings

### Demographic profile of respondents

The summary of the bio-data of the respondents is presented in Table 1. An analysis of the results reveals several demographic trends that offer insight into the profile of the participants in this study.

Regarding gender, 57.3% of the respondents were male, and the remaining 42.7% were female. The trends in age distribution for respondents are pretty interesting. Most respondents, 45.5%, belonged to the 31–40 age bracket. This was followed by 31.8% of respondents in the 20–30 age range. A smaller percentage, 20.0%, were between 41 and 50, and only 2.7% of respondents were 51 or older. The findings indicate that most of the respondents were middle-aged adults between 31–40 years, which may reflect the target demographic of the study. Concerning marital status, the results indicated that 65.5% were married, while 34.5% were single. It would, therefore, appear that many participants were in marital relationships, which may be necessary for contextualising their views and experiences regarding the study.

*Table 1*

**Demographics of the respondents**

| Demographic variables | Number of respondents | Percentage, % |
|---|---|---|
| ***Sex*** | | |
| Male | 63 | 57.3 |
| Female | 47 | 42.7 |
| ***Age (Years)*** | | |
| 20–30 years | 35 | 31.8 |
| 31–40 years | 50 | 45.5 |
| 41–50 years | 22 | 20.0 |
| 51 years and above | 3 | 2.7 |
| ***Marital Status*** | | |
| Single | 38 | 34.5 |
| Married | 72 | 65.5 |
| ***Highest Educational Qualification*** | | |
| FSLC | 4 | 3.6 |
| SSCE | 17 | 15.5 |
| OND | 26 | 23.6 |
| HND | 8 | 7.3 |
| B.Sc | 34 | 30.9 |
| Masters | 21 | 19.1 |
| ***Total*** | ***110*** | ***100.0*** |
| ***Employment Status*** | | |
| Officer | 32 | 29.1 |
| Marshal | 78 | 70.9 |

***Source:*** Created by the authors. Survey Data, 2024 (here-and-after, unless otherwise specified).

The educational qualifications of the respondents are relatively high in terms of formal education. Almost half of the respondents held university degrees (30.9%) qualified to Bachelor's degree level, and a further 15% with a Master's degree on the top of their Bachelor's degree. The remainder had Senior School or College education – such as the Secondary School Certificate (15.5%), an OND National Diploma (23.6%) or an HND Higher National Diploma (19.1%). The data suggests that the sample predominantly comprises individuals with undergraduate and higher educational qualifications, which may contribute to the quality of insights gathered from the respondents. Regarding employment status, 70.9% of the respondents were marshals, and 29.1% were officers. This means that most of the sample falls into the category where they may be able to offer practical experiences. Hence, their responses are likely to be influenced in the context of this study. In sum, the demographic data highlight that the respondents were more males, middle-aged, highly educated,

married, and employed in fieldwork activities, thus providing a fair overview of the participants' status in this assessment. This understanding of demographic information gives a context with which to frame the results and diverse points of view, which might have influenced the outcomes of the findings to a greater or lesser extent.

**Test of Hypothesis**

H0 (Null Hypothesis) – There are no challenges militating against digital transformation that affect public service delivery in the FRSC, Lagos State Sector Command.

Table 2 presents the results of the Wilcoxon signed-rank test conducted to examine the challenges militating against digital transformation within the FRSC, Lagos State Sector Command. The first column contains the specific questions posed to respondents regarding perceived challenges. The subsequent columns show the number of respondents (N), the mean score of responses, the hypothesised value used for comparison, the standardised test statistic, the associated p-value, and the remark indicating whether each challenge was statistically significant.

*Table 2*

**Summary of the Wilcoxon signed-rank test for the challenges militating against digital transformation that affects public service delivery in the FRSC, Lagos State Sector Command**

| Challenges militating against digital transformation that affect public service delivery in FRSC, Lagos State | N | Mean score | Hypothesised value | Standardised test statistic | P-value | Remarks |
|---|---|---|---|---|---|---|
| We are battling with an adequate budget to drive the digital transformation needs in this organisation | 110 | 2.78 | 2.50 | 5.944 | 0.0000 | Significant |
| We lack a clear vision for the digital journey needed in attending to our core responsibilities | 110 | 2.65 | 2.50 | 3.073 | 0.002 | Significant |
| Security issues remain a challenge for us to implement full digitalisation of our mode of operation | 110 | 2.62 | 2.50 | 2.471 | 0.013 | Significant |
| Inadequate funding has an adverse effect on digital transformation | 110 | 2.79 | 2.50 | 5.799 | 0.000 | Significant |

The analysis presented in Table 2 identifies key challenges hindering digital transformation and impacting public service delivery within the Federal Road Safety Corps (FRSC), Lagos State Sector Command. The statistical results reveal significant factors, with the most notable challenge being inadequate budget allocation (test statistic = 5.944, p-value = 0.0000, $p < 0.05$). Other critical obstacles include the lack of a clear strategic vision for digital adoption (test statistic = 3.073,

p-value = 0.002, $p < 0.05$), security concerns (test statistic = 2.471, p-value = 0.013, $p < 0.05$), and insufficient funding (test statistic = 5.799, p-value = 0.0000, $p < 0.05$).

These challenges were all statistically significant at the 5% level ($p < 0.05$), indicating their robust influence on the effectiveness of digital transformation efforts. Among these, inadequate budget emerged as the most significant barrier, suggesting that financial constraints are a primary factor limiting the FRSC's ability to realise digital transformation initiatives fully. Collectively, these findings emphasise the need for strategic improvements in budget allocation, visionary leadership, and security measures to enhance digital service delivery in the region.

**Interview analysis on challenges militating against digital transformation in FRSC, Lagos State Sector Command**

The interviews exposed several significant challenges that impede the effective implementation of digital transformation at the Federal Road Safety Corps, Lagos State Sector Command. These challenges affect digital adoption and shape the overall public service delivery within the organisation. A key concern that emerged from these interviews was the inadequate financial resources available for digital transformation initiatives. One of the senior staff interviewed underscored the need for a higher annual budget to meet the increasing operational needs of the organisation, including the costs associated with implementing digital technologies. This budgetary shortfall limits the FRSC's ability to execute its digital transformation strategy fully. Other challenges pointed out by staff, mainly from the management's side, are the reactions of fear for their job existence with digitalisation.

Fears of automation and digital systems replacing human labour have made certain workers hesitant, impeding the organisational culture toward complete adaptation to the new digital solution. The senior staff member in the Human Resources and Administration Department noted no clear, comprehensive vision concerning digital transformation. Without a well-articulated strategy by the management, initiatives on digitalisation end up being fragmented or deprioritised. This lack of strategic direction has resulted in misaligned objectives and delays in adopting and integrating digital technologies. Public non-compliance with traffic laws was one major complaint aired by the staff. A male staff member explained that large-scale flouting of traffic regulations undermines the effectiveness of digital systems designed to enhance traffic monitoring and enforcement. This compliance issue hinders the capacity of the FRSC to harness the benefits of digital technologies toward more effective public service delivery in traffic management.

***Analysis of the characteristics of the barriers identified during the interviews***

The interviews exposed some critical barriers that impede the effective implementation of digital transformation in the Federal Road Safety Corps, Lagos State Sector Command. These challenges significantly impact the adoption of digital technologies and the overall efficiency of public service delivery in the organisation.

1. *Inadequate Financial Resources:* One recurring issue revealed through the interviews was inadequate financial allocation towards digital transformation initiatives. According to one senior staff member, the organisation's yearly

budget cannot accommodate its operational needs, hence the costs of acquiring, deploying, and maintaining digital technologies. This has limited the FRSC's ability to implement a holistic digital transformation strategy.

2. *Workforce Resistance to Digitalisation:* Another major challenge identified was the resistance from staff, mainly based on fear of redundancy of human resources due to automation and digital systems. The workers feared that human roles would no longer be required with technology, which made them sceptical and hindered efforts to create an organisational culture supporting digital innovation.
3. *Lack of Strategic Vision:* The interviews with senior management staff revealed no strategic and comprehensive vision regarding digital transformation. According to one senior Human Resources and Administration Department member, many of these initiatives are not aligned because they are either fragmented or deprioritised. Without a comprehensive roadmap, the organisation cannot determine appropriate objectives and timelines for fulfilling such efforts. This delay in progress diminishes the impact of these efforts.
4. *Public Non-Compliance with Traffic Laws:* The interviews also revealed external challenges, especially public non-compliance with traffic laws. According to one male staff member, "General disregard for traffic laws defeats the purpose of digital tools that aim at improving traffic enforcement and monitoring." This has made it difficult for digital systems to realise their intended public service delivery and traffic management objectives.

***Characteristics of the Barriers Identified***

The barriers identified from the interviews have the following characteristics:

1. *Systemic Nature:* Most challenges, including budgetary constraints and lack of strategic vision, are deeply rooted in organisational policies and structural inefficiencies.
2. *Behavioural Resistance:* The fear of job loss reflects a psychological barrier to change, demonstrating the need for targeted training and communication to alleviate concerns.
3. *External Dependency:* Public non-compliance shows how digital systems depend on more fantastic civic behaviours to work.
4. *Interconnectedness:* The barriers identified are interrelated, with resistance to change and lack of strategic vision compounding the challenges posed by financial limitations and public attitudes.

***Employee Opinions on Overcoming Identified Barriers***

Respondents provided some pragmatic suggestions for how to address these challenges and foster a more active process of digital transformation:

1. *Training and Re-Training:* The employees consistently stressed the need for periodic digital training and re-training programmes to increase staff capacity and reduce resistance to digitalisation.
2. *Provision and Upgrade of Digital Equipment:* There was a call for acquiring modern digital tools and upgrading existing systems to ensure greater efficiency and user acceptance.

3. *Enforcement and Public Enlightenment:* Stringent enforcement of traffic laws and public enlightenment were advocated to curb non-compliance and derive full benefits from digital systems.
4. *Strategic Planning:* A long-term, detailed digital transformation roadmap was deemed desirable to align efforts in the right direction for success.

**Discussion of findings**

The preceding analysis in Table 2 shows the necessary overview of some central issues significantly impeding digital transformation success within the FRSC Lagos State Sector Command. As shown, the statistical output of these analyses highlights some key barriers facing respondents; among the most acute are budget allocation insufficiencies (test statistic = 5.944, p-value = 0.0000, p <.05). The result pinpoints evidence of financial resources being cardinal in digitally transforming the operational aspect. Scarcity within budget appropriation has crippled the capacity of the FRSC in the procurement of the technology, maintaining the system, and the much-needed support to the digitised training and infrastructure improvement necessary to bring service delivery to improved levels. This corresponds to earlier studies identifying how financial constraints can delay or hinder digital initiatives in public sector organisations (Ogunlana and Adeoye, 2023).

Other critical barriers identified are the non-existence of a clear strategic vision for the adoption of digital; test statistic = 3.073, p-value = 0.002, $p < 0.05$; security-related concerns test statistic = 2.471, p-value = 0.013, $p < 0.05$; and inadequate funding test statistic = 5.799, p-value = 0.0000, $p < 0.05$. Significant at the 5% level, these factors show that digital transformation faces challenges on many dimensions and needs a collaborative approach by management and government stakeholders. The lack of a proper vision regarding digital transformation may indicate that digital initiatives could remain incoherent, fragmented in implementation, and delayed in outcomes without an explicit, forward-looking strategy. This is consistent with the findings obtained from the interviews, which emphasised the importance of a unified and strategic approach in the public sector digitalisation.

Another significant challenge was the security aspect of implementing digital systems. As digital technologies increasingly play a role in governance, safeguarding sensitive data becomes critical in building trust and ensuring these systems work seamlessly. The gravity of this issue was underlined in the interviews, where concerns over cyber threats were cited as deterrents to the full adoption of digital solutions. In line with these, the interviews have provided additional insights into the organisational challenges of digital transformation. One of the major issues was that the financial resources available within the organisation were insufficient for digital initiatives. This agrees with the results from the statistics. According to one senior staff member, the existing budget cannot satisfy the increasing demands of the organisation's operations, especially regarding acquiring digital technologies.

This finding highlights the urgent need for strategic budget planning and prioritisation of digital projects. Secondly, fears over job displacement due to automa-

tion and digitalisation emerged as another key barrier. These concerns at the senior management level have caused resistance in some quarters of the workforce. Resistance to change, especially with the fear of job loss, is a common challenge in digital transformation efforts, as highlighted in the literature on public sector innovation. The staff's reluctance to fully embrace digitalisation could impede the broader cultural shift needed within the organisation to foster successful digital adoption. The lack of a clear vision regarding digital transformation was also echoed across the interviews. Without an articulated and communicated strategy by the leadership, the digital transformation process is bound to become fragmented, with different initiatives launched without clear direction or coordination.

According to a senior Human Resources and Administration Department member, this misalignment of priorities contributes to delays in adopting and integrating digital systems, thereby hindering the delivery of digital public services. The last challenge facing the force was the public's non-adherence to traffic laws. Staff argued that digital systems meant for monitoring traffic flow are rendered useless simply because members of the public cannot observe simple traffic laws. In agreement with these findings is work carried out by Nwankwo, Adetunji, and Olayinka (2022) and Oluwalogbon (2023) that identifies enforcement as the most significant challenge affecting compliance with most digital government projects, dependent on public willingness for results.

## Conclusion

This research highlights several significant barriers impeding the successful implementation of digital transformation at the FRSC, Lagos State Sector Command. These challenges include insufficient budgetary allocation, lack of a clear strategic vision, security concerns, and public non-compliance with traffic laws. The statistical and interview analyses underscore the importance of effectively addressing these issues to integrate digital technologies into the organisation's operations.

These barriers are not unique to the FRSC or Lagos State but reflect broader challenges faced by public sector organisations across Nigeria. Budget constraints, the absence of a coherent digital transformation strategy, and security concerns are common obstacles in other regions and urban centres in Nigeria, where limited financial resources and fragmented leadership often hinder digital initiatives. Moreover, public non-compliance with laws, especially in traffic enforcement, remains a pervasive issue across many cities in the country, further complicating the efficacy of digital solutions.

### Theoretical Implications

This research has implications for theories related to digital transformation in the public sector, particularly in developing economies. The study adds to the literature on how various financial, strategic, and organisational issues impinge upon digital technology adoption and successful implementation in public organisations. This highlights the role of institutional theory, which suggests internal resources, such as the availability of budgets, and external pressures, including

public compliance, conditions, and organisational change. The review also draws on technology acceptance models, emphasising a clear organisational vision, management support, and workforce readiness to integrate digital systems. These theoretical frameworks serve as a lens through which one can view the challenges and opportunities of digital transformation in public administration contexts.

**Practical Implications**

This research provides valuable insights into barriers to digital transformation within the FRSCLagos State Sector Command, and it also gives practical recommendations on how to overcome these challenges. The findings have thus brought to the fore the need for policymakers and leadership within the FRSC to ensure that enough budgetary resources are allocated for digital transformation initiatives, coupled with a clear, actionable strategy for adopting digital. Identification of security concerns as one of the critical barriers also calls for investment in strong cybersecurity measures that protect sensitive data and engender public trust. The study also advocates for better public awareness programmes that increase compliance with digital traffic monitoring systems, which is crucial to maximising such technologies' benefits.

**Recommendations**

a. The FRSC's budget should be reviewed and increased, considering the growing operational needs, such as funding for digital technologies, infrastructure, and training programmes. A line for digital transformation should be developed in the budget to ensure the process is long-lasting.
b. The FRSC leadership is expected to formulate a clear and unified vision of digital transformation. The developed strategy should spell out the objectives, timelines for implementation, and the human and material resources required for successful implementation. Regular updates and evaluations are necessary to ensure these projects align with organisational objectives.
c. Employee fears of job displacement must be addressed through an all-inclusive change management plan that the management must create. This should provide training and upskilling programmes so employees feel confident with the necessary digital skills to adopt new technologies.
d. In light of prevailing security concerns, the FRSC needs to invest in solid cybersecurity measures to protect the integrity of digital systems and the safety of sensitive data. This will require collaboration with external cybersecurity experts to implement best practices.
e. Public non-compliance with traffic laws remains a significant barrier to the effective use of digital monitoring systems. Therefore, the FRSC should invest in public sensitisation campaigns to educate citizens on the importance of digital traffic enforcement and encourage adherence to traffic regulations.
f. Digital transformation cannot succeed without collaboration among stakeholders, including government agencies, technology providers, and the public. The FRSC should develop partnerships with these stakeholders to draw on expertise and resources that may help in the successful implementation of digital initiatives.

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