Collaboration and Ideation Driving Technological Innovation for National Identity Management Commission's Performance in Nigeria

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Abstract- Technological innovation has become a pivotal driver of public sector transformation, especially in identity management systems. This study investigates how collaboration and ideation contribute to driving technological innovation and improving the performance of the National Identity Management Commission (NIMC) in Nigeria. Specifically, the study aimed to: (1) examine the effect of collaboration on the technological innovation capabilities of NIMC; and (2) determine the impact of ideation on NIMC's operational performance. The research employed a survey design, with a sample population of 576 NIMC staff across six geopolitical zones in Nigeria, including Kogi, Adamawa, Kano, Enugu, Rivers, and Lagos States. Primary data were collected using structured questionnaires, and the analysis was conducted using descriptive and multiple regression techniques to test two formulated hypotheses. Findings revealed that both collaboration and ideation have a statistically significant positive effect on technological innovation, which in turn enhances NIMC's performance. Collaboration through public-private partnerships, inter-agency coordination, and international cooperation enables resource sharing and accelerated technology adoption. Meanwhile, ideation fosters the generation of creative solutions and the integration of emerging technologies. The study concludes that leveraging these two dimensions of innovation can lead to improved efficiency, enhanced data integrity, and greater stakeholder satisfaction. It is recommended that NIMC institutionalize collaborative frameworks and foster a culture of ideation to sustain digital transformation, while investing in frontier technologies such as artificial intelligence, blockchain, and data analytics to optimize identity management processes.

Indexed Terms- Collaboration, Commission, Ideation, Technology, Innovation, National, Identity, Management, Nigeria.

I. INTRODUCTION

Technological innovation has become a cornerstone of modern governance, particularly in enhancing the efficiency, transparency, and responsiveness of public sector organizations. In Nigeria, the National Identity Management Commission (NIMC) plays a critical role in establishing and maintaining a credible identity system essential for national security, governance, financial inclusion, and service delivery. Established under the NIMC Act of 2007, the Commission is mandated to create and manage a secure, reliable, and centralized national identity database through the issuance of the National Identification Number (NIN). The ability of NIMC to perform effectively is increasingly tied to its capacity to adopt and implement innovative technologies. From biometric enrollment to digital identity verification platforms, technological innovation presents viable solutions to many of the Commission's long-standing challenges. However, the integration of such technologies demands more than investment in infrastructure, it requires strategic collaboration and continuous ideation to drive systemic transformation.

Collaboration among public agencies, private technology providers, and international development partners has proven instrumental in scaling operations, improving interoperability, and enhancing data integrity. For instance, coordinated efforts with agencies like the Nigerian Communications Commission (NCC) and the Central Bank of Nigeria (CBN) have streamlined verification processes and expanded the reach of identity services. In addition, international cooperation has provided technical and financial resources critical for upgrading outdated systems (Akinnuwesi et al., 2020; Smith et al., 2018). Meanwhile, ideation, defined as the systematic generation, evaluation, and refinement of ideas, fuels innovation by encouraging adaptive thinking and solution-driven practices. Leveraging tools such as data analytics, artificial intelligence, and design thinking, ideation enables NIMC to anticipate emerging identity challenges such as digital fraud, data privacy, and cybersecurity threats (Jones & Patel, 2020). By fostering a culture of innovation internally and among partners, ideation strengthens NIMC's ability to remain agile and responsive.

Despite its strategic role, NIMC has struggled with low enrollment rates, infrastructural weaknesses, fragmented identity systems, and limited stakeholder trust. These issues stem from outdated technology, underfunding, bureaucratic inefficiencies, and the absence of a well-integrated national digital strategy (Monye & Koker, 2022; Ohiani, 2020). Addressing these challenges requires a dual focus on collaborative partnerships and a culture of ideation to support scalable and secure innovation. This study therefore investigates the extent to which collaboration and ideation influence technological innovation and, by extension, the operational performance of NIMC. It aims to provide evidence-based insights into how multi-stakeholder innovation ecosystems can help bridge the gap between policy, practice, and technology in Nigeria's identity management landscape.

Research Questions

i. To what extent does collaboration enhance the technological innovation and performance of NIMC in Nigeria?
ii. To what extent does ideation influence the technological innovation and performance of NIMC in Nigeria?

Objectives of the Study

The main objective of this study is to examine how collaboration and ideation drive technological innovation and affect the performance of NIMC in Nigeria. Specifically, the study seeks to:

i. Examine the effect of collaboration on technological innovation and performance of NIMC.
ii. Determine the effect of ideation on technological innovation and performance of NIMC.

Research Hypotheses

i. HO_1: Collaboration has no significant effect on the technological innovation and performance of NIMC in Nigeria.
ii. HO_2: Ideation has no significant effect on the technological innovation and performance of NIMC in Nigeria.

II. REVIEW OF RELATED LITERATURE

Concept of Technology Innovation

Technological innovation refers to the development, adaptation, and application of new or improved products, processes, or services to enhance organizational performance, efficiency, and effectiveness (Adeyemi, 2023). It encompasses a broad range of innovations from product innovation (e.g., the introduction of new identity verification tools) to process innovation (e.g., streamlined biometric enrollment procedures), and business model innovation (e.g., partnerships with private sector vendors to deliver identity solutions) (Okpalaoka et al., 2022). In the context of public sector institutions like the National Identity Management Commission (NIMC), technological innovation serves as a catalyst for improving identity management infrastructure. Key technologies such as biometric authentication, facial recognition, real-time APIs, and blockchain-based data systems have been instrumental in enhancing data integrity, operational efficiency, and user satisfaction (Oyedeji, 2018). Crucially, technological innovation in public identity systems does not occur in isolation, it thrives within a broader innovation ecosystem. This ecosystem involves multi-stakeholder collaboration between government agencies, research institutions, private technology firms, international partners, and civil society (Uchechukwu et al., 2016). These partnerships enable the sharing of resources, knowledge, and expertise that accelerate innovation deployment and sustainability.

Collaboration, in this context, refers to the joint efforts of stakeholders to improve the performance of identity systems. Through public-private partnerships (PPPs), inter-agency coordination, and international cooperation, NIMC has been able to introduce and scale digital innovations that were previously unattainable due to institutional limitations. Ideation, on the other hand, is the systematic generation, refinement, and implementation of innovative ideas, often supported by tools like data analytics, artificial intelligence, and design thinking. It plays a critical role in identifying practical solutions to persistent challenges in identity management, such as duplicate records, digital exclusion, and enrollment bottlenecks.

For NIMC, the fusion of collaboration and ideation has translated into meaningful outcomes. For example, biometric innovations such as fingerprint and facial recognition have streamlined identity verification and reduced fraud, while digital platforms supported through cross-sector collaboration have improved NIN enrollment speed and data security (Theophilus, 2023). Ultimately, technological innovation driven by collaboration and ideation empowers NIMC to fulfill its mandate of providing secure, efficient, and inclusive identity management services across Nigeria. As such, sustained innovation ecosystems are vital not only for institutional performance but also for national development, digital governance, and public trust.

Collaboration and the Performance of NIMC in Nigeria

Collaboration plays a pivotal role in driving technological innovation and enhancing the performance of the National Identity Management Commission (NIMC). Effective collaboration between NIMC and other stakeholders, including government agencies, private sector partners, and international organizations is crucial for achieving a seamless, integrated, and secure identity management system in Nigeria. Partnerships with government bodies such as the Nigeria Immigration Service (NIS), Independent National Electoral Commission (INEC), and Federal Road Safety Corps (FRSC) enable data sharing, joint project implementation, and cross-functional integration. These efforts help reduce redundancies, improve data consistency, and ensure a more reliable identity verification process. Through inter-agency coordination, NIMC is better positioned to align identity services across platforms, thereby enhancing public service delivery and national security.

Similarly, collaboration with technology vendors facilitates the deployment of cutting-edge biometric systems, cloud-based infrastructure, and digital identity platforms. These public-private partnerships have led to the introduction of mobile enrollment units, self-service kiosks, and real-time API verification tools, significantly increasing accessibility and efficiency in the identity registration process (Ogochukwu, 2021). By fostering such collaborative ecosystems, NIMC is able to leverage external expertise, reduce operational bottlenecks, and implement scalable innovations. These partnerships not only enhance the technical capacity of the Commission but also support the broader objective of transforming identity management into a robust, citizen-centric digital service. Ultimately, collaboration serves as both a strategic and operational driver of technological innovation within NIMC helping the agency improve its performance, responsiveness, and trustworthiness in managing Nigeria's national identity system.

Impact of Technological Innovation on NIMC in Nigeria

Technological innovation particularly when driven by collaborative partnerships and ideation has had a transformative impact on the performance of the National Identity Management Commission (NIMC) across multiple dimensions (Faboye, 2022). At the core of this transformation is the integration of advanced biometric technologies, such as fingerprint and facial recognition systems, which have greatly enhanced the accuracy, speed, and security of identity verification. These innovations have reduced the incidence of fraudulent registrations and identity theft, strengthening the credibility of Nigeria's national identity database.

Moreover, collaboration with private sector technology firms and development partners has facilitated the deployment of mobile enrollment units, digital ID platforms, and cloud-based infrastructure. These advancements have improved the accessibility and scalability of NIMC's services, particularly in rural and underserved areas, where fixed enrollment centers are limited. In addition, inter-agency collaborations such as those with the Nigerian Communications Commission (NCC), Central Bank of Nigeria (CBN), and Federal Road Safety Corps (FRSC) have enabled the integration of identity data into telecom, banking, and transport systems. This has enhanced the functionality and reach of the National Identification Number (NIN), contributing to more efficient service delivery and national security outcomes. Crucially, ideation processes within and outside NIMC have led to the conceptualization and piloting of innovative solutions tailored to Nigeria's unique challenges. From the development of API-driven verification tools to the exploration of blockchain for identity data protection, ideation has played a central role in shaping the future of identity management in the country. In summary, technological innovation enabled by collaboration and ideation has significantly improved NIMC's operational performance, increased public trust, and positioned the Commission as a critical pillar in Nigeria's digital transformation agenda.

Collaboration and ideation have significantly enhanced the technological capabilities and overall performance of the National Identity Management Commission (NIMC). Strategic partnerships and innovative thinking have improved enrollment efficiency through the deployment of biometric and digital registration systems, enabling faster issuance of NINs. These efforts have also enhanced data accuracy and security, reduced identity fraud, and ensured compliance with data protection standards. Through mobile registration units and digital platforms, NIMC has expanded coverage to underserved areas, improving accessibility. Service delivery has become more efficient due to automation and inter-agency integration, allowing seamless identity verification across sectors. Despite initial costs, these innovations have led to long-term cost savings by reducing manual processes and optimizing resources. Overall, collaboration and ideation are key drivers of sustainable technological innovation in Nigeria's identity management system.

Performance Measurement of National Identity Management Commission in Nigeria

Collaboration and ideation have significantly improved NIMC's performance across key metrics. Enhanced enrollment rates, faster NIN issuance, better integration with government services, and expanded digital infrastructure demonstrate the impact of shared innovation. Additionally, improvements in service delivery, public awareness, data security, and regulatory compliance affirm that collaborative innovation is vital to modernizing Nigeria's identity management system.

Challenges of Technological Innovation toward the performance of National identity Management Commission

Despite the transformative potential of technological innovation in identity management, the National Identity Management Commission (NIMC) in Nigeria faces several persistent obstacles that threaten the efficiency, scalability, and sustainability of innovation efforts. These challenges must be addressed to ensure the commission fulfills its mandate of delivering secure, inclusive, and reliable identity services to all Nigerians.

Infrastructure Limitations

Nigeria's technological infrastructure, particularly in rural and underserved areas, remains underdeveloped. Many communities experience: Unstable electricity supply, which affects the operation of enrollment centers and data servers. Limited or no internet connectivity, making it difficult to transmit biometric and identity data in real-time. Poor telecommunications coverage, which impedes mobile identity verification and digital communication between NIMC and its stakeholders. These limitations not only slow down the identity registration and verification process but also contribute to the digital divide, where urban centers are better served than rural areas. As a result, a large portion of the population remains excluded from the national identity database.

Data Privacy and Security Concerns

With the growing reliance on digital identity platforms and biometric data, ensuring the security and privacy of personal information has become increasingly important. However, NIMC faces challenges such as: Outdated cybersecurity protocols. Lack of comprehensive data protection infrastructure. Limited transparency in data handling procedures These weaknesses expose the identity management system to cyber threats, unauthorized access, and potential data breaches. If citizens perceive that their personal data is not safe, public trust in the identity system may erode, leading to lower participation in the National Identification Number (NIN) program.

Financial Constraints

Technological innovation is capital-intensive. NIMC requires funding for: Acquisition of biometric equipment. Development of secure digital infrastructure. Deployment of mobile enrollment units. Regular system upgrades and cybersecurity enhancement. Staff training and user support services. However, limited budget allocations, dependence on government subvention, and unpredictable donor support create funding gaps. These constraints hinder the scale and speed of technology deployment and sometimes result in project delays, limited coverage, and incomplete rollouts of new initiatives.

Skills and Capacity Gaps

Deploying and maintaining advanced technology systems require skilled personnel, including: IT infrastructure engineers. Data scientists and analysts. Cybersecurity experts. Biometric system technicians. Unfortunately, NIMC suffers from a shortage of trained professionals to manage these complex systems. In addition, the lack of continuous capacity development programs contributes to outdated technical know-how. Without adequate human capital, the commission risks facing: System downtimes. Poor data management. Slow response to technical failures. Inadequate technical support to citizens. This human resource gap undermines operational efficiency and affects user satisfaction.

System Integration Issues

For NIMC to be truly effective, its identity management platform must seamlessly integrate with the databases of key government institutions, such as: The Independent National Electoral Commission (INEC). Nigeria Immigration Service (NIS). Central Bank of Nigeria (CBN). National Health Insurance Authority (NHIA). However, integration is hampered by: Legacy systems used by other agencies. Incompatible data standards. Siloed operations and lack of coordination. Institutional resistance to data sharing. The failure to ensure system interoperability leads to data duplication, delays in identity verification, and inefficiencies in service delivery across government platforms. For example, duplication in capturing biometric data by different agencies wastes resources and causes frustration for citizens.

In summary, while technological innovation offers substantial benefits for enhancing the efficiency, security, and reach of Nigeria's national identity management system, the challenges of infrastructure inadequacy, data security risks, financial limitations, human capacity constraints, and system integration failures continue to undermine progress. Addressing these challenges requires strategic investments, multi-stakeholder collaboration, policy reforms, and a comprehensive digital transformation agenda that prioritizes innovation in identity management across Nigeria.

III. THEORETICAL FRAMEWORK

Resource-Based Theory

The Resource-Based View (RBV) theory, originally postulated by Edith Penrose in 1959, posits that an organization's competitive advantage is rooted in its ability to possess and effectively utilize valuable, rare, inimitable, and non-substitutable (VRIN) internal resources. Applied to the National Identity Management Commission (NIMC), this theory emphasizes the importance of leveraging internal strengths, such as technological infrastructure, skilled human capital, and institutional experience to drive innovation and enhance performance. For NIMC, RBV underscores the need to strategically harness and develop its core resources: Technological Expertise: NIMC's experience in biometric systems, digital identity platforms, and data security mechanisms represents a valuable and hard-to-replicate capability. According to Ayeni (2020), investing in cutting-edge biometric and data management technologies not only improves operational efficiency but also positions NIMC as a leader in digital identity governance. Human Capital: Innovation thrives on people. RBV highlights the strategic value of talent development. By continuously training its workforce in cybersecurity, data analytics, and emerging digital technologies, NIMC can ensure it has the internal capacity to implement and sustain complex technological innovations (Jacob et al., 2021). Collaborative Partnerships: Although RBV focuses on internal resources, it recognizes the strategic importance of alliances to access complementary assets. Through collaboration with technology firms, international partners, and other government agencies, NIMC can tap into external expertise, funding, and technological know-how, thereby enriching its resource base (Akinnuwesi et al., 2020). Innovation Capabilities: RBV encourages institutions to invest in unique capabilities that are difficult to imitate. By fostering a culture of ideation, NIMC can continuously generate and refine innovative solutions tailored to Nigeria's evolving identity management needs, enhancing service delivery and citizen satisfaction. Performance Measurement: Finally, RBV advocates for metrics and evaluation systems to assess how internal resources contribute to performance. NIMC can develop performance indicators such as adoption rates of digital ID services, biometric data accuracy, service turnaround times, and system uptime to track the returns on its technology investments (Onifade et al., 2015).

In sum, the RBV framework supports the view that collaboration and ideation when aligned with internal strengths can serve as powerful drivers of technological innovation and sustainable performance at NIMC. By investing in its people, technology, and strategic partnerships, NIMC can create a high-performing and resilient identity management system that is difficult for competitors to replicate.

Empirical Review

Empirical studies have consistently highlighted the critical role of collaboration and ideation in fostering technological innovation and enhancing organizational performance across various sectors.

Mario et al. (2023) conducted a study on collaborative innovation within Portugal's IT sector, particularly among small and medium-sized enterprises (SMEs). Using data collected from 308 employees and managers via close-ended questionnaires and online surveys (due to pandemic constraints), the study employed PLS-SEM for data analysis. The findings revealed a significant positive correlation between collaborative innovation and financial performance. Moreover, absorptive capacity served as a key mediator, while intellectual capital—comprising human, organizational, and social components—moderated the relationship between collaborative innovation and absorptive capacity. These results underscore the importance of both collaboration and internal capacity in enhancing innovation outcomes.

Nwani and Odiri (2023) explored the impact of strategy implementation on organizational performance in Nigeria's banking sector, focusing on top and middle managers from major banks including Zenith Bank, Access Bank, and GTBank. Using simple regression analysis on data from 205 respondents, the study established a significant positive relationship between effective strategy execution and performance metrics such as prompt service delivery, customer satisfaction, employee engagement, and corporate social responsibility. Their findings suggest that internal ideation and operational alignment are key drivers of innovation and performance.

Fernandes et al. (2022) examined how professional collaboration mediates the relationship between transformational leadership and job satisfaction. Using Smart-PLS analysis on data from 93 participants, the study found that transformational leadership significantly promotes professional collaboration, which in turn enhances employee satisfaction. These results demonstrate that leadership-driven collaboration fosters a conducive environment for innovation and performance improvement, especially within institutional settings.

Obialo and Akinjo (2021) investigated the influence of ideation sources on business growth among entrepreneurs in Ibadan North Local Government Area, Nigeria. With a purposive sample of 195 entrepreneurs (64% female), the study used descriptive statistics and regression analysis to analyze data. The results showed that idea generation from individual creativity, corporate brainstorming, and customer feedback significantly impacted business expansion. The researchers recommended awareness-building and ideation training as essential tools for stimulating innovation and business success. They also called for policy support to facilitate innovation among entrepreneurs. These studies collectively emphasize that collaboration and ideation are not only relevant in the private sector but are also critical drivers of public sector innovation. The insights from these findings are directly applicable to organizations like the National Identity Management Commission (NIMC), where the integration of collaborative frameworks and ideation platforms can significantly enhance technological innovation, operational efficiency, and service delivery outcomes.

Gap in Literature

Despite the rapid evolution of technologicalIV. innovation and its potential to transform public sector performance, there remains a notable gap in scholarly literature regarding its specific application and impact within Nigeria's National Identity Management Commission (NIMC). While existing studies have examined the adoption of digital technologies in general public administration contexts, few have systematically evaluated how collaboration and ideation specifically contribute to driving technological innovation within NIMC.

Moreover, there is a paucity of empirical evidence assessing the effectiveness, efficiency, and sustainability of the technological tools adopted by NIMC such as biometric enrollment systems, digital identity platforms, and mobile registration kits. The actual impact of these innovations on service delivery outcomes, including fraud prevention, enrollment rates, data accuracy, and user satisfaction, remains underexplored.

Additionally, the role of collaborative partnerships including public-private collaborations, inter-agency integration, and international cooperation in shaping NIMC's innovation ecosystem has not been fully examined. Existing literature often overlooks how ideation processes, such as brainstorming, co-design with stakeholders, and internal innovation drives, facilitate the generation and implementation of new identity management solutions.

Another critical gap lies in the interoperability of NIMC's systems with other governmental and private sector databases, which is essential for enabling cross-sector identity verification and digital governance. There is limited academic discourse on the challenges, readiness, and policy frameworks surrounding this integration. This study addresses these gaps by focusing on the interplay between collaboration, ideation, and technological innovation in enhancing the performance of NIMC. It offers a multi-dimensional investigation into the organizational, technical, and institutional mechanisms that underpin effective identity management in a developing country context.

III. METHODOLOGY

This study adopted a survey research design to examine how collaboration and ideation influence technological innovation and the performance of the National Identity Management Commission (NIMC) in Nigeria. Both primary and secondary sources of data were utilized. Primary data were collected through structured questionnaires administered to selected NIMC staff, while secondary data were obtained from institutional reports, academic journals, and other relevant publications. The target population consisted of 576 staff of NIMC, drawn from six states representing Nigeria's six geopolitical zones: Kogi (North Central), Adamawa (North East), Kano (North West), Enugu (South East), Rivers (South South), and Lagos (South West).

To determine the appropriate sample size, the Krejcie and Morgan (1970) sample size determination formula was applied, suitable for a known population. The formula is given as:

S=X2·N·P(1−P)d2(N−1)+X2·P(1−P)S = \frac{{X^2 \cdot N \cdot P (1 - P)}}{{d^2 (N - 1) + X^2 \cdot P (1 - P)}}S=d2(N−1)+X2·P(1−P)X2·N·P(1−P)

Where:

SSS = required sample size

X2X^2X2 = chi-square value for 1 degree of freedom at the 0.05 significance level (3.841)

NNN = population size (576)

PPP = population proportion (assumed to be 0.5)

ddd = degree of accuracy (0.05)

Substituting the values:

S=(3.841)(576)(0.5)(1−0.5)(0.052)(576−1)+(3.841)(0.5)(1−0.5)S = \frac{(3.841)(576)(0.5)(1 - 0.5)}{(0.05^2)(576 - 1) + (3.841)(0.5)(1 - 0.5)}S=(0.052)(576−1)+(3.841)(0.5)(1−0.5)(3.841)(576)(0.5)(1−0.5) S=553.1040.7175+0.96025S = \frac{553.104}{0.7175 + 0.96025}S=0.7175+0.96025553.104 S=553.1041.67775≈329.67S = \frac{553.104}{1.67775} \approx 329.67S=1.67775553.104≈329.67
Rounding up, the final sample size was 330 respondents.

A random sampling technique was used to ensure that every staff member had an equal chance of being selected, enhancing the representativeness of the sample. For the statistical analysis, a significance level of p = 0.05 was set. To test the study's hypotheses and evaluate the impact of collaboration and ideation on technological innovation and NIMC performance, multiple regression analysis was conducted using SPSS version 20 (Statistical Package for the Social Sciences).

IV. DATA ANALYSIS AND DISCUSSION OF FINDINGS

A total of Three Hundred and Thirty (330) questionnaires were distributed to staff of the National Identity Management Commission (NIMC) across six states, each representing Nigeria's six geopolitical zones: Kogi (North Central), Adamawa (North East), Kano (North West), Enugu (South East), Rivers (South South), and Lagos (South West). All returned questionnaires were duly completed and formed the basis of analysis for this study. To test the research hypotheses, multiple regression analysis was employed, with data processing and statistical testing carried out using SPSS version 23.

Model Specification
The dependent variable in this study is the performance of the National Identity Management Commission (NIMC), while the independent variables are proxies of technological innovation, specifically Collaboration (CO) and Ideation (ID).

To test the stated hypotheses and determine the effect of these innovation proxies on performance, PNIMC = Performance of National Identity Management Commission (dependent variable)
CO = Collaboration (independent variable)
ID = Ideation (independent variable)
β_0 = Constant term (intercept)
β_1–β_2 = Regression coefficients of the independent variables
e_i = Stochastic error term
i = Cross-sectional units (i.e., observations across staff/respondents)
The study employed multiple linear regression analysis. The functional relationship is specified as:
PNIMC=f(CO,ID)\text{PNIMC} = f(\text{CO}, \text{ID})PNIMC=f(CO,ID)
This can be expressed in econometric form as:
PNIMCi=β0+β1COi+β2IDi+ei(1)\text{PNIMC}_i = \beta_0 + \beta_1 \text{CO}_i + \beta_2 \text{ID}_i + e_i \tag{1}PNIMCi=β0+β1COi+β2IDi+ei(1)
Where:
This model allows for the estimation of the impact of collaboration and ideation on NIMC's performance, thereby validating or rejecting the study's hypotheses using statistical significance at p < 0.05.

Testing of Hypotheses
This table was used to test the study hypotheses.

Table 1: Model Summary

Model	R	R square	Adjusted R square	Std. Error of the estimate
1	.826[a]	.682	.680	.50967

The model summary presented in Table 1 reveals that the R-squared (R^2) value is 0.682, indicating that 68.2% of the variation in the performance of the National Identity Management Commission (NIMC) is explained by the independent variables Collaboration and Ideation. This suggests a strong explanatory power of the model. The remaining 31.8% of the variation is attributed to other factors not captured in this model, such as infrastructure, regulatory changes, funding, and other technological or organizational dynamics.

Table 2: Analysis of Variance (ANOVA[a])

Model	Sum of Square	df	Mean Square	F	Sig.
1	Regression Residual Total	182.180 84.942 267.122	2 327 329	91.090 .260	.000[b]

As shown in Table 2, the F-statistic is 350.668 with a significance level (p-value) of 0.000. Since this p-value is less than the conventional threshold of 0.05 ($p < 0.05$), the model is statistically significant. This result implies that the independent variables Collaboration and Ideation jointly explain a significant proportion of the variance in NIMC's performance. In other words, the overall regression model is a good fit for the data, confirming that the predictors used in the model contribute meaningfully to explaining variations in the dependent variable.

Table 3: Coefficients[a]

Model	Unstandardized Coefficient	Standardized Coefficient	t	Sig.
	B Std. Error	Beta		
Constant collaboration and Ideation	.350 .084 .722 .030 .127 .028	.777 .144	4.4142 24.067 4.469	.000 .000 .000

Interpretation of Regression Coefficients (Table 3):
As presented in Table 3, the performance of the National Identity Management Commission (NIMC) was regressed on two predictors: Collaboration and Ideation serving as proxies for technological innovation. The regression results show that Collaboration has a t-value of 24.067 and Ideation has a t-value of 4.469, both of which are statistically significant at the 5% level ($p = 0.000 < 0.05$).

This indicates that Collaboration and Ideation each have a positive and significant effect on the performance of NIMC. In practical terms, enhanced collaboration with stakeholders (e.g., public-private partners, government agencies) and a stronger ideation culture (encouraging innovative thinking and solution design) contribute meaningfully to the Commission's operational efficiency, service delivery, and technological advancement. Given these results, the null hypotheses (H_{01} and H_{02}) which stated that collaboration and ideation have no significant effect on NIMC performance are rejected. The study thus affirms that collaboration and ideation are critical drivers of technological innovation and performance improvements at NIMC.

V. DISCUSSION OF FINDING

The result of the test for Hypothesis One, using multiple regression analysis at a 5% level of significance, led to the rejection of the null hypothesis (H_{01}) and the acceptance of the alternative hypothesis (H_{11}). The high t-statistic value (10.307) indicates a strong and statistically significant positive effect of collaboration on the performance of NIMC in Nigeria. This finding is consistent with the views of Howard et al. (2016) and Igbelokoto (2021), who emphasized that internal collaboration across various departments—such as enrollment, data processing, and customer service—enhances operational alignment and prevents redundant efforts. Coordination between units fosters better resource utilization, streamlined workflows, and faster decision-making. Moreover, collaboration with external stakeholders—such as the Ministry of Interior, Nigerian Communications Commission (NCC), telecom firms, and financial institutions—facilitates data sharing, ensures regulatory compliance, and expands NIMC's capacity to deliver integrated and interoperable identity services nationwide. For Hypothesis Two, the findings reveal that ideation—the process of generating new ideas and improving existing systems—also has a positive and significant effect on NIMC's performance. This supports the rejection of the null hypothesis (H_{02}) and acceptance of the alternative (H_{12}).

The result aligns with the work of Monye and Koker (2022), who emphasized that ideation within public institutions like NIMC is crucial for continuous improvement. Through feedback loops and stakeholder engagement, ideation drives the simplification of enrollment procedures, enhancement of data protection protocols, and integration of cutting-edge digital tools. Innovations such as online appointment systems, mobile enrollment units, and biometric authentication technologies exemplify how ideation contributes to faster, more secure, and user-friendly identity management processes. Additionally, fostering a culture of innovation encourages staff at all levels to contribute creative solutions, supporting NIMC's goal of providing efficient and reliable services. both collaboration and ideation are empirically proven to be critical enablers of technological innovation, which in turn significantly enhances the performance of the National Identity Management Commission in Nigeria.

CONCLUSION AND RECOMMENDATIONS

Technological innovation has profoundly transformed the operations and performance of the National Identity Management Commission (NIMC) in Nigeria, ushering in a new era of secure, efficient, and inclusive identity management. Through the adoption of biometric technologies such as fingerprint and facial recognition, NIMC has improved the accuracy of identity verification, reduced duplication, and enhanced public trust in its systems. Crucially, the roles of collaboration and ideation have been central to these advancements. Strategic partnerships with government agencies, private technology firms, and international development partners have provided the foundation for improved service delivery and capacity expansion. At the same time, ideation processes have fostered a culture of innovation within the Commission, encouraging the development of forward-thinking solutions to operational challenges. These combined efforts have minimized bureaucratic inefficiencies, strengthened data protection, and enabled wider access to identity services, particularly in underserved areas. As Nigeria continues its journey toward digital transformation, sustaining the momentum of technological innovation at NIMC will require ongoing investment in infrastructure, workforce capacity, and cybersecurity.

To further strengthen NIMC's performance through collaboration and ideation-driven innovation, the following recommendations are proposed:

Promote Strategic Partnerships:
NIMC should expand its collaborations with other government agencies (e.g., NCC, FRSC), private sector stakeholders (e.g., fintech and telecom companies), and international organizations (e.g., World Bank, IOM). These partnerships will support shared data infrastructure, enhance verification capabilities, and optimize the use of resources for nationwide coverage.

InstitutionalizeInnovationCulture:
Establish structured platforms for continuous brainstorming and idea generation within NIMC. Innovation hubs, cross-functional teams, and regular stakeholder feedback mechanisms can drive the creation of new technologies, policies, and practices that enhance the identity management ecosystem.

StrengthenTechnologicalCapacity:
Continuous investment in state-of-the-art biometric systems, data encryption technologies, and scalable digital platforms is essential. This includes upgrading hardware and software infrastructure to support secure and efficient identity management across all regions.

AddressInfrastructureGaps:
Focus should be placed on overcoming infrastructural limitations, especially in rural and underserved areas. Mobile registration units, solar-powered systems, and offline-capable technologies can help bridge the digital divide.

Enhance Data Privacy and Security:
NIMC must prioritize robust cybersecurity protocols to safeguard personal data. This includes implementing multi-factor authentication, conducting regular system audits, and complying with international data protection standards to maintain public confidence. By embedding collaboration and ideation into its core operations, NIMC can further enhance its performance, scale access to identity

services, and contribute significantly to Nigeria's digital governance and socio-economic development objectives.

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