CHALLENGES TO EFFECTIVE ICT IMPLEMENTATION IN NIGERIAN CORRECTIONAL CENTRES: IMPLICATIONS FOR RECORD MANAGEMENT AND INMATE TRACKING

Ikwuobe Yusuf, Ph.D.
Department of Educational Foundations and Curriculum
Ahmadu Bello University, Zaria-Nigeria
yusufikwuobe2013@gmail.com, +234-081-83833404; 08065982265
https://orcid.org/0009-0006-4878-7377

&

Ugwu, Jonathan Emeka
Correctional Service Staff College
Barnawa Kaduna, Nigeria
ugwujoe2025@gmail.com, +07030534133
https://orcid.org/0009-0000-7152-4344

Abstract

This study examined the challenges associated with the implementation of Information and Communication Technology (ICT) and their implications for record management and inmate tracking in Kuje Medium Security Custodial Centre, Abuja. The study was guided by two objectives, two research questions, and two null hypotheses. The Technology Acceptance Model (TAM) provided the theoretical basis for the study. A descriptive survey research design was adopted. The population comprised 360 correctional personnel, while a sample of 100 respondents was selected through simple random sampling. Data were collected using a researcher-developed instrument titled Challenges of ICT Implementation, Record Management and Inmate Tracking Questionnaire (CIIRMITQ). The instrument was validated by experts, and a Cronbach's Alpha reliability coefficient of 0.82 was obtained. Data were analyzed using frequencies, percentages, mean scores, and standard deviations to answer the research questions, while simple regression analysis was used to test the hypotheses at the 0.05 level of significance. The findings revealed that inadequate ICT infrastructure, limited staff training, weak institutional support, and poor system maintenance significantly affected record management and inmate tracking in the custodial centre. The regression results showed that ICT implementation challenges accounted for 60.8% of the variation in record management effectiveness ($R^2 = 0.608$) and 56.2% of the variation in inmate tracking and security operations ($R^2 = 0.562$). The study concluded that the effectiveness

of record management and inmate tracking depends largely on the availability and proper utilization of ICT facilities. The study recommended improved ICT infrastructure, regular staff training, strengthened institutional support, and enhanced use of digital technologies for inmate monitoring and records administration in correctional centres.

Keywords: *Information and Communication Technology, record management, inmate tracking, correctional administration, custodial centre.*

Introduction

Record management and inmate tracking remain fundamental to the effective administration, security, and accountability of correctional institutions. Across the world, correctional agencies have increasingly adopted Information and Communication Technology (ICT) tools, including biometric identification systems, electronic databases, CCTV surveillance, and integrated information management platforms, to improve the quality, accessibility, and reliability of inmate records (Adegbile & Okunola, 2019; Makinde & Adeyemi, 2020). In Nigeria, however, the continued reliance on manual record-keeping has created challenges such as missing files, duplication of records, delays in judicial processes, and difficulties in maintaining accurate inmate accountability. These shortcomings have strengthened the demand for digital reforms within the Nigerian Correctional Service (NCoS), particularly following the enactment of the Nigerian Correctional Service Act, 2019, which advocates improved security, rehabilitation, and administrative efficiency through modern management systems (Adebayo & Okon, 2019; Ugwuoke & Nwankwo, 2021).

Despite the potential benefits of ICT, its implementation in many Nigerian custodial centres has been affected by inadequate infrastructure, irregular power supply, poor internet connectivity, limited funding, and insufficient technical expertise among personnel (Makinde & Adeyemi, 2020; Olusola, 2021). Additional challenges, including weak policy implementation and resistance to organizational change, have further slowed the adoption of digital systems, leaving many facilities dependent on manual processes that often compromise record accuracy and inmate monitoring (Ojo, 2021). The situation at the Medium Security Custodial Centre, Kuje, became particularly significant following the July 2022 security breach, which exposed gaps in surveillance, record management, and inmate tracking systems. The incident revealed the operational consequences of incomplete records and inadequate biometric coverage, emphasizing the need for effective ICT-driven information management (Nweke, 2022). Although initiatives such as the Correctional Information Management System (CIMS) were introduced to strengthen inmate data management and inter-agency collaboration, their effectiveness depends largely on adequate infrastructure, funding, staff competence, and institutional commitment. Therefore, this research examines the

challenges affecting ICT implementation in Kuje Custodial Centre and their implications for record management and inmate tracking within the Nigerian correctional system.

The aim of this research is to investigate the challenges associated with the implementation of Information and Communication Technology (ICT) and their implications for record management and inmate tracking in Kuje Custodial Centre.

The specific objectives of the study are to: Identify the factors that hinder the effective use of ICT in inmate record management at Kuje Custodial Centre, and determine how challenges associated with ICT implementation influence inmate tracking and security operations at Kuje Custodial Centre. The study seeks to answer the following questions: What factors hinder the effective use of ICT in inmate record management at Kuje Custodial Centre? And in what ways do challenges associated with ICT implementation influence inmate tracking and security operations at Kuje Custodial Centre? The following null hypotheses will guide the study: Challenges associated with ICT implementation do not have a significant effect on inmate record management in Kuje Custodial Centre; and Challenges associated with ICT implementation do not have a significant effect on inmate tracking and security operations in Kuje Custodial Centre.

This study will be of value to the Nigerian Correctional Service (NCoS), correctional administrators, policymakers, and researchers by providing evidence on the factors affecting the implementation of Information and Communication Technology (ICT) in record management and inmate tracking. The findings will assist correctional managers and officers in understanding how limitations in ICT facilities, technical skills, and institutional support influence administrative processes, security operations, and inmate accountability. The study will also provide useful information to government agencies responsible for correctional administration, particularly in areas relating to infrastructure development, personnel training, and policy implementation. In addition, scholars in criminology, public administration, correctional studies, and information systems may find the study useful as a reference for further research on ICT adoption within correctional institutions.

The study is particularly relevant to Kuje Custodial Centre, where concerns arising from recent security incidents have drawn attention to the need for more reliable information management systems. By examining the challenges associated with ICT implementation, the study will contribute to efforts aimed at improving record accuracy, inmate tracking, and institutional accountability. The findings may also support ongoing reforms within the Nigerian correctional system by providing practical suggestions for strengthening ICT utilization and enhancing the overall management of custodial centres across the country.

This study focuses on the challenges associated with the implementation of Information and Communication Technology (ICT) and their effects on record management and inmate tracking at

Kuje Medium Security Custodial Centre, Abuja. Attention is given to factors such as ICT infrastructure, system performance, staff competence, power supply, and institutional support as they relate to the management of inmate records and security operations. The study is limited to correctional personnel involved in administrative, records, and security duties within the facility, and the findings are applicable only to custodial centres with similar characteristics.

This study was constrained by limited access to some correctional information due to security regulations and the possibility that some respondents may have been reluctant to openly discuss issues relating to ICT practices within the facility. The study was also restricted to Kuje Medium Security Custodial Centre, which may limit the applicability of the findings to other custodial centres with different operational conditions. To address these concerns, respondents were assured of confidentiality, data were collected through validated instruments, and information obtained from different categories of staff was compared to improve the credibility of the findings.

Conceptual Framework

This study is anchored on two related concepts: ICT implementation in record management and ICT application in inmate tracking. The first concept explains that the availability and effective use of technologies such as biometric systems, electronic databases, and digital record platforms can improve the accuracy, security, and retrieval of inmate information (Adegbile & Okunola, 2019; Ojo, 2021; Ugwuoke & Nwankwo, 2021). However, factors such as inadequate facilities, unstable internet services, limited staff competence, and insufficient institutional support may reduce the effectiveness of these systems and affect the quality of inmate records (Makinde & Adeyemi, 2020; Olusola, 2021). In this study, attention was given to the availability and use of ICT facilities and how they influence record management practices in Kuje Custodial Centre.

The second concept focuses on the role of ICT in inmate monitoring and security operations. It assumes that technologies such as CCTV systems, biometric identification, and electronic tracking tools can strengthen inmate supervision, accountability, and institutional security. Nevertheless, challenges including inadequate funding, poor infrastructure, limited technical expertise, and organizational constraints may hinder their effective use, thereby affecting inmate tracking and response to security incidents (Nweke, 2022; Makinde & Adeyemi, 2020; Olusola, 2021). Guided by these concepts, the study examined the challenges affecting ICT implementation and their influence on record management and inmate tracking in Kuje Medium Security Custodial Centre.

Theoretical Framework

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis (1989), explains that an individual's willingness to use a technology is largely influenced by two factors: perceived

usefulness and perceived ease of use. The theory argues that users are more likely to accept and utilize a system when they believe it will improve their job performance and can be operated without difficulty. Within correctional institutions, this perspective suggests that officers are more inclined to use technologies such as biometric identification systems, electronic databases, CCTV surveillance, and digital record platforms when they perceive them as useful for improving record accuracy, inmate accountability, and security operations (Ojo, 2021; Ugwuoke & Nwankwo, 2021; Olusola, 2021). TAM therefore provides a useful basis for understanding staff acceptance of ICT in correctional settings.

The relevance of TAM to this study lies in its ability to explain how staff perceptions influence the use of ICT for record management and inmate tracking in Kuje Custodial Centre. The theory helps in examining whether factors such as system usefulness, ease of operation, and user confidence affect the adoption of ICT tools within the facility (Makinde & Adeyemi, 2020; Ojo, 2021). Although critics argue that TAM pays limited attention to issues such as organizational culture, infrastructure, funding, and training, its focus on user attitudes remains valuable in explaining technology usage and identifying areas that may require improvement to encourage effective ICT utilization.

Diffusion of Innovation Theory (DOI)

The Diffusion of Innovation Theory, developed by Rogers (2003), explains how new ideas and technologies are introduced, accepted, and spread within an organization or social system. According to the theory, the rate of adoption depends on factors such as the perceived advantages of the innovation, its compatibility with existing practices, its level of complexity, the opportunity to test it, and the visibility of its benefits. In correctional institutions, the theory suggests that technologies such as biometric systems, digital record platforms, and surveillance tools are more likely to gain acceptance when staff recognize their benefits and when the systems fit existing operational procedures (Nweke, 2022; Ugwuoke & Nwankwo, 2021). The theory also emphasizes that technology adoption is influenced by communication, organizational structure, and time.

DOI is relevant to this study because it provides insight into the institutional factors that shape ICT adoption within custodial centres. It helps explain issues such as resistance to change, inadequate policy support, and organizational practices that may slow the acceptance of new technologies (Olusola, 2021; Adegbile & Okunola, 2019). While the theory has been criticized for placing greater emphasis on the characteristics of innovations than on individual behaviour, it remains useful for understanding how ICT initiatives spread within organizations and for identifying measures that can support wider adoption of technology in correctional administration.

Empirical Review

Ogundimu and Saluwu (2022) examined the role of Information and Communication Technology (ICT) in security management within Nigerian public institutions. Their findings showed that technologies such as surveillance systems, digital databases, and communication platforms improve monitoring, information management, and response to security-related issues. The study is relevant to the present research because it demonstrates the contribution of ICT to effective record management and security operations. However, its broad focus on public institutions did not address the unique operational requirements of correctional facilities, making it necessary to investigate ICT-related challenges within Kuje Custodial Centre.

Olayinka (2024) developed an automated web-based correctional centre management system aimed at improving inmate information management, inter-agency collaboration, and administrative efficiency in Nigerian correctional facilities. The study emphasized the importance of digital systems in reducing the shortcomings of manual record-keeping and improving access to inmate information. Although the study provides valuable insight into the benefits of ICT, it concentrated mainly on system design and paid limited attention to challenges associated with implementation. This suggests the need to examine issues such as infrastructure, staff competence, and institutional support that may affect the successful use of ICT in correctional centres.

Ugwuoke and Nwankwo (2021) investigated the influence of ICT on record management and inmate monitoring in selected Nigerian custodial centres. The study found that technologies such as biometric databases, electronic filing systems, and surveillance tools improved accountability, record accuracy, and operational efficiency. While the findings provide evidence of the value of ICT in correctional administration, the study focused more on its benefits than on the practical difficulties that may limit its effectiveness. Consequently, issues relating to infrastructure, funding, and staff readiness remain areas requiring further investigation.

Existing studies have established the importance of ICT in improving record management, inmate monitoring, and security within correctional institutions. However, limited attention has been given to the specific factors that hinder the effective implementation of ICT at the custodial centre level, particularly in Kuje Medium Security Custodial Centre. This study therefore seeks to bridge this gap by examining the challenges affecting ICT implementation and their implications for record management and inmate tracking, with the aim of providing practical recommendations for strengthening correctional administration and institutional security.

Methodology

This study adopted a descriptive survey research design to investigate the challenges associated with the implementation of Information and Communication Technology (ICT) and their

implications for record management and inmate tracking in Kuje Medium Security Custodial Centre, Abuja. The design was considered appropriate because it enabled the researcher to obtain information directly from correctional personnel on their experiences, perceptions, and observations regarding ICT use in administrative, records, and security operations without manipulating any variables (Creswell, 2014; Etikan & Bala, 2017). The population of the study comprised 360 correctional personnel, including senior, middle-level, and junior officers. Using simple random sampling, 100 respondents, representing approximately 28% of the population, were selected to participate in the study (Israel, 2015).

Data were collected using a researcher-developed instrument titled Challenges of ICT Implementation, Record Management and Inmate Tracking Questionnaire (CIIRMITQ). The questionnaire was structured on a four-point Likert scale and consisted of two sections: Section A elicited demographic information, while Section B contained items on ICT implementation, record management, inmate tracking, and related operational challenges. To ensure the suitability of the instrument, it was subjected to face and content validation by experts in correctional administration, educational research, and ICT studies. A pilot study involving 10 respondents outside the study sample was conducted, and the data obtained yielded a Cronbach's Alpha reliability coefficient of 0.82, indicating that the instrument possessed adequate internal consistency for the study.

The questionnaires were administered directly to the respondents, and ethical principles such as informed consent, confidentiality, anonymity, and voluntary participation were strictly observed throughout the data collection process. Data obtained were analyzed using descriptive statistics, including frequencies, percentages, mean scores, and standard deviations, to answer the research questions, while simple regression analysis was used to test the hypotheses at the 0.05 level of significance. For the research questions, a decision benchmark of 2.50 was adopted; mean scores of 2.50 and above were accepted, while mean scores below 2.50 were rejected. For the hypotheses, the null hypothesis was rejected where the p-value was less than 0.05 and accepted where the p-value was greater than 0.05.

Hypotheses Testing

This section presents the analysis of the hypotheses formulated for the study to determine the effect of Information and Communication Technology (ICT) implementation challenges on record management and inmate tracking in Kuje Medium Security Custodial Centre. The hypotheses were tested using regression analysis at the 0.05 level of significance to ascertain whether the observed relationships between the variables were statistically significant. The results of the analysis provide the basis for accepting or rejecting the null hypotheses and serve as a guide for drawing conclusions

on the role of ICT challenges in the administration, security, and management of inmate information within the custodial centre.

H_{01}: ICT implementation challenges have no significant effect on the effectiveness of inmate record management in Kuje Custodial Centre.

Table 3: Regression Analysis of ICT Implementation Challenges and Record Management Effectiveness (n = 100)

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	F	Sig.
1	0.78	0.608	0.602	0.45	152.34	0.000

Coefficients

Predictor	B	SE B	Beta	t	Sig.
Constant	1.12	0.18	–	6.22	0.000
ICT Challenges	0.72	0.06	0.78	12.34	0.000

Source: Fieldwork, 2026

The regression results revealed that ICT implementation challenges had a significant influence on inmate record management in Kuje Medium Security Custodial Centre. The model produced a correlation coefficient of $R = 0.78$ and a coefficient of determination of $R^2 = 0.608$, indicating that ICT-related challenges accounted for 60.8% of the variation in the effectiveness of inmate record management. The regression model was statistically significant **(**$F = 152.34$, $p < 0.001$**)**, while the regression coefficient **(**$B = 0.72$, $t = 12.34$, $p < 0.001$**)** showed that challenges such as inadequate ICT infrastructure, limited staff training, poor technical support, and weak policy implementation significantly affected the management of inmate records. Based on the decision rule that a null hypothesis is rejected when $p < 0.05$, the null hypothesis **(H_{01})** stating that ICT implementation challenges have no significant effect on inmate record management in Kuje Medium Security Custodial Centre was rejected**.** The finding indicates that improvements in ICT infrastructure, staff capacity development, and institutional support are necessary to strengthen the accuracy, security, and accessibility of inmate records within the facility.

H_{02}: ICT implementation challenges have no significant effect on inmate tracking and security operations in Kuje Custodial Centre.

Table 4: Regression Analysis of ICT Implementation Challenges and Inmate Tracking/Security Effectiveness (n = 100)

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	F	Sig.
1	0.75	0.562	0.556	0.48	128.57	0.000

Coefficients

Predictor	B	SE B	Beta	t	Sig.
Constant	1.05	0.21	–	5.00	0.000
ICT Challenges	0.68	0.06	0.75	11.34	0.000

Source: Fieldwork, 2026

The regression analysis revealed that ICT implementation challenges had a significant effect on inmate tracking and security operations in Kuje Medium Security Custodial Centre. The results showed a correlation coefficient of R = 0.75 and a coefficient of determination of $R^2 = 0.562$, indicating that ICT-related challenges accounted for 56.2% of the variation in inmate tracking and security performance. The regression model was statistically significant **(**$F = 128.57$, $p < 0.001$**)**, while the regression coefficient **(**$B = 0.68$, $t = 11.34$, $p < 0.001$**)** confirmed that challenges such as inadequate ICT facilities, insufficient staff training, unstable network services, and limited institutional support significantly affected effective inmate monitoring and security operations. Based on the decision rule that a null hypothesis is rejected when $p < 0.05$**,** the null hypothesis **(**H_{02}**)** which stated that ICT implementation challenges have no significant effect on inmate tracking and security operations in Kuje Medium Security Custodial Centre was rejected. This finding suggests that addressing ICT-related constraints through improved infrastructure, continuous staff training, and stronger administrative support would contribute to more effective inmate tracking, enhanced security, and greater accountability within the custodial centre.

Discussion of Findings

The findings of this study revealed that inadequate ICT infrastructure and limited staff competence in the use of digital technologies adversely affect inmate record management in Kuje Medium Security Custodial Centre. This finding is consistent with previous studies which reported that poor technological facilities, weak institutional support, and insufficient staff training often limit the effective use of ICT in public organizations (AbdulKareem et al., 2024). Similar observations have been made in studies on electronic information management, where inadequate technological

resources and low ICT proficiency were found to reduce the quality and accessibility of organizational records. The present finding suggests that improving ICT facilities, strengthening staff capacity, and ensuring sustained institutional support are necessary for maintaining accurate, secure, and accessible inmate records within correctional facilities.

The study also found that challenges associated with ICT implementation significantly affect inmate tracking and security operations. This result agrees with earlier studies which observed that outdated systems, poor integration of digital technologies, and continued reliance on manual processes weaken monitoring and security functions within correctional institutions and other security-sensitive organizations (Prison Breakthrough, 2020; Jail Management Software Market, 2025). Difficulties in accessing reliable inmate information, delays in monitoring activities, and weaknesses in surveillance systems may increase security risks and reduce operational effectiveness. The finding therefore highlights the importance of strengthening ICT infrastructure, expanding staff training opportunities, and improving the use of digital technologies to support effective inmate tracking, accountability, and security management in Kuje Custodial Centre.

Conclusion

Based on the findings, the study concludes that challenges associated with the implementation of Information and Communication Technology (ICT) have a significant effect on record management and inmate tracking in Kuje Medium Security Custodial Centre. Factors such as inadequate ICT facilities, insufficient staff training, weak administrative support, and limited compliance with digital procedures were found to affect the effective use of technology in managing inmate records and security operations. The study therefore concludes that improving ICT infrastructure, strengthening staff competence through regular training, and providing adequate institutional support are necessary for enhancing record accuracy, inmate monitoring, accountability, and overall security within correctional centres.

Recommendations

1. The management of the Nigerian Correctional Service should make adequate provision for modern ICT facilities and ensure their regular maintenance to support efficient record management. In addition, periodic training and retraining programmes should be organized for correctional personnel to improve their competence in the use of digital record systems, while existing ICT policies should be strengthened and effectively implemented to promote accuracy, security, and accessibility of inmate records.
2. Correctional officers and personnel in the Records Department should strengthen the use of digital technologies for inmate monitoring and security operations. Efforts should also be directed toward providing reliable technical support, maintaining existing ICT facilities,

and encouraging staff participation in the use of available technologies to improve inmate tracking, accountability, and overall security within custodial centres.

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