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Influence of ICT Training for County Staff on the Adoption of Management Information Systems in County Governments in Kenya

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ABSTRACT

This study examined the influence of ICT Training for County Staff on the Adoption of Management Information Systems in County Governments in Kenya. With the devolved system of governance, county governments have increasingly embraced technological systems to enhance service delivery and efficiency. However, the effectiveness of such systems largely depended on the ICT competency of the personnel using them. This research aimed to assess the correlation between ICT training and MIS adoption, using qualitative and quantitative methods in selected counties. The findings indicated a significant positive relationship between targeted ICT training and the successful adoption and utilization of MIS. The study adopted a descriptive survey design to capture data on ICT training and MIS adoption from multiple counties. The population included ICT officers, system users, and departmental heads from five counties: Nairobi, Mombasa, Nakuru, Kisumu, and Uasin Gishu.Stratified random sampling was used to select 150 participants proportionally from the counties, ensuring representation from various departments. Questionnaires and interview guides were used to collect primary data. Secondary data were sourced from county reports, government publications, and academic journals. Quantitative data were analyzed using SPSS software to compute frequencies, means, correlations, and regression models. Qualitative data were analyzed thematically. The study concluded that ICT training played a significant role in enhancing the adoption of Management Information Systems (MIS) within county governments in Kenya. Evidence from the analysis demonstrated that staff who had undergone structured ICT training were more likely to effectively utilize MIS platforms in performing their daily tasks. Counties that implemented regular and relevant training programs recorded higher rates of MIS adoption, better user competency, and increased accuracy in system usage.It was recommended that county governments institutionalize structured and continuous ICT training programs. These training initiatives needed to be integrated into human resource development plans and aligned with the specific MIS platforms in use. Counties that had regular training sessions reported better system utilization, thus showing the need for training to be treated as a long-term investment rather than a one-time event.

Key words: ***ICT Training, County Staff, Management Information Systems***

1.0 INTRODUCTION

The evolution of ICT has drastically transformed organizational operations globally. In Kenya, the implementation of devolved governance has necessitated the use of MIS to manage resources, monitor performance, and improve transparency. MIS adoption in county governments has, however, faced several challenges, one of which is the limited ICT capacity among county staff. Training in ICT equips staff with the necessary skills to effectively use MIS, thus improving service delivery. This study investigated the extent to which ICT training influenced the adoption of MIS in county governments in Kenya.

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II: LITERATURE REVIEW

2.0 Introduction

Information and Communication Technology (ICT) has become a central driver of institutional effectiveness, particularly through the implementation of Management Information Systems (MIS). In the context of county governments in Kenya, MIS adoption has been a key reform strategy aimed at improving service delivery, transparency, and operational efficiency. However, the effectiveness of MIS adoption has been significantly influenced by the ICT competency of county staff. This literature review examined existing empirical studies that explored the influence of ICT training on MIS adoption, with a focus on public sector institutions, particularly at the county level in Kenya and comparable settings globally.

2.1 ICT Training and Technological Adoption

ICT training has been widely documented as a critical enabler of technology acceptance and use. A study by Aboagye and Joshua (2017) in Ghana examined the effect of ICT training on the adoption of e-government services among local authorities. The study found that civil servants who underwent structured ICT training programs were 64% more likely to use MIS platforms effectively compared to those without training. The authors attributed this to improved user confidence and reduced resistance to change.

Similarly, Wanjau, Muiruri, and Ayodo (2012) conducted research in Nairobi County and revealed that staff who had received prior ICT training demonstrated a higher level of competence in using digital platforms for record-keeping and communication. This enhanced competence had a direct effect on the functionality of the county's integrated financial management systems. Their findings supported the assertion that ICT training is not just a tool for knowledge transfer but a strategic necessity for digital transformation in governance.

2.2 ICT Literacy Levels in the Kenyan Public Sector

Several studies highlighted that low ICT literacy among government staff had been a major barrier to the effective adoption of MIS. Otieno and Gichoya (2015) assessed the readiness of county governments in Kenya to implement MIS and found that counties with higher percentages of staff trained in basic and intermediate ICT skills reported better system adoption rates. Their research focused on Kisumu, Mombasa, and Uasin Gishu counties and found a strong correlation ($r = 0.76$) between ICT training levels and MIS utilization.

In contrast, counties with limited training initiatives were observed to underutilize their systems, often reverting to manual operations. In Bungoma County, for instance, the lack of routine ICT refresher courses and weak ICT policy implementation were cited as causes of MIS

underperformance (Munyua & Mutula, 2018). These findings indicated that training needed to be continuous and tailored to the specific operational roles of staff.

2.3 Empirical Evidence on Training Outcomes

Empirical findings from international contexts reinforced the Kenyan experience. In a study conducted in South Africa by Ndayizigamiye and Cloete (2020), ICT training significantly influenced the acceptance and use of MIS in municipalities. The study employed a mixed-method approach and concluded that training had both direct and indirect effects—direct through skill acquisition, and indirect through improved attitudes toward digital tools. Staff members who received at least 20 hours of ICT training annually showed an increase in MIS task execution speed by 35%.

Another study by Kimani and Mwangi (2021) analyzed 10 Kenyan counties and observed that consistent ICT training led to fewer system errors and enhanced data accuracy in payroll and procurement systems. They further noted that training programs that included hands-on components and follow-up mentorship were more successful than theoretical workshops alone. The implication was that applied learning frameworks fostered better knowledge retention and system integration.

2.4 Organizational Culture and ICT Training

The role of organizational culture and leadership support in enhancing the effectiveness of ICT training was explored by Barasa and Kiplangat (2019). Their research, which focused on ICT departments in county governments, indicated that supportive leadership and a positive attitude toward learning among staff created an environment where ICT training translated into improved MIS utilization. Counties that institutionalized ICT training as part of their human resource development policies achieved better adoption outcomes.

Similarly, in Uasin Gishu County, an internal audit report reviewed by Njuguna and Karugu (2020) showed that departments with structured ICT induction for new staff recorded higher levels of MIS engagement. These departments were found to be more responsive in areas such as budgeting, document retrieval, and public service tracking. The study highlighted that integration of training with everyday work routines promoted ownership and sustainability of ICT practices.

2.5 Challenges in ICT Training Implementation

Despite the positive impact, several studies pointed to challenges facing ICT training implementation. Maina and Wekesa (2016) identified limited budgets, outdated training content, and a lack of skilled trainers as constraints in counties such as Turkana and Mandera. These limitations reduced the impact of training efforts, resulting in poor MIS adoption and occasional system downtimes.

Furthermore, the lack of alignment between the training curriculum and actual MIS software used was cited in a study by Abok, Ogutu, and Githongo (2022). The research, which reviewed training programs in counties supported by the Kenya Devolution Support Program (KDSP), found that training content often failed to address real-time system challenges faced by staff. Consequently, knowledge gaps remained even after training sessions were completed.

2.6 Synthesis and Research Gap

Overall, the empirical evidence suggested that ICT training was a significant predictor of MIS adoption in public sector institutions. Most studies agreed on the positive relationship between training and system use, especially in enhancing technical skills, reducing resistance to technology, and improving decision-making. However, there existed gaps in the evaluation of long-term training impact and the role of post-training support systems.

In the Kenyan context, there remained limited empirical focus on how counties institutionalized ICT training as part of a broader digital transformation agenda. Moreover, existing studies largely ignored the differential impacts of various forms of training (e.g., workshops vs. on-the-job training) and the role of peer learning. These gaps provided a foundation for the current study, which sought to empirically assess the influence of ICT training on the adoption of MIS across selected counties in Kenya.

111: RESEARCH METHODOLOGY

3.1 Research Design

The study adopted a descriptive survey design to capture data on ICT training and MIS adoption from multiple counties.

3.2 Target Population

The population included ICT officers, system users, and departmental heads from five counties: Nairobi, Mombasa, Nakuru, Kisumu, and Uasin Gishu.

3.3 Sample Size and Sampling Technique

Stratified random sampling was used to select 150 participants proportionally from the counties, ensuring representation from various departments.

3.4 Data Collection Instruments

Questionnaires and interview guides were used to collect primary data. Secondary data were sourced from county reports, government publications, and academic journals.

3.5 Data Analysis

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Quantitative data were analyzed using SPSS software to compute frequencies, means, correlations, and regression models. Qualitative data were analyzed thematically.

IV: FINDINGS

Indicator	Measurement Scale	Frequency (f)	% of Respondents	Mean	Standard Deviation (SD)
Staff Trained in ICT	Yes (1), No (0)	142	64.5%	0.65	0.48
MIS Adoption by Department	Yes (1), No (0)	153	69.5%	0.70	0.46
Frequency of ICT Training	Trainings per year (0–5)	—	—	2.3	1.1
Post-Training Competency Score	Scale (0–100)	—	—	68.9	13.5
Staff Attitude Toward MIS	Likert Scale (1–5)	—	—	3.8	0.77
System Usage Accuracy	Percentage (0–100%)	—	—	76.1	12.7
Refresher Training Participation	Yes (1), No (0)	87	39.5%	0.40	0.49
Leadership Support Score	Scale (1–10)	—	—	6.6	2.2
Availability of ICT Support Staff	Yes (1), No (0)	121	55.0%	0.55	0.50
Budget as a Training Challenge	Yes (1), No (0)	136	61.8%	0.62	0.49

The analysis of the data gathered from a sample of 220 county government staff revealed several critical insights regarding the influence of ICT training on the adoption of Management Information Systems (MIS) in county governments in Kenya. The findings highlighted both the strengths and limitations of current ICT capacity-building initiatives at the county level.

To begin with, a majority of respondents (142 out of 220), representing 64.5%**,** indicated that they had received formal ICT training. This relatively high percentage suggested that most counties had taken steps to equip their employees with basic digital skills. However, a notable proportion (35.5%) had not received any form of ICT training, revealing an existing gap in inclusive capacity development. This training gap was further reflected in the MIS adoption rate, where 69.5% of respondents reported that their departments were actively using MIS platforms in their daily operations. Although this showed progress, it also implied that nearly a third of the departments had not yet fully embraced MIS tools—most likely due to limited staff training or technical support.

The frequency of ICT training was found to be modest, with a mean of 2.3 sessions per year and a standard deviation of 1.1, indicating slight variation across counties. This suggested that while some counties organized regular training sessions, others offered limited or infrequent opportunities for ICT skill development. Respondents who underwent more frequent training demonstrated better post-training performance, as reflected in the mean competency score of 68.9 **(**SD = 13.5) out of 100. These results aligned with earlier studies that confirmed the positive correlation between frequent training and employee confidence in using digital tools.

The findings also demonstrated that the average staff attitude toward MIS was positive, with a mean Likert score of 3.8 (SD = 0.77) on a 5-point scale. This implied that most staff members were open to adopting MIS systems when adequately trained. Similarly, system usage accuracy**,** which measured the percentage of correctly executed MIS operations, stood at a commendable 76.1%**,** with a standard deviation of 12.7. This pointed to relatively high levels of effectiveness in counties that had prioritized ICT training and monitoring.

Despite these successes, the study also uncovered several challenges. Only 39.5% of respondents (87 out of 220) reported having participated in refresher training programs, indicating that most counties had not institutionalized continuous learning. The lack of follow-up training could explain why some departments struggled with advanced features of MIS, even if initial training had been conducted.

Leadership support for ICT implementation scored an average of 6.6 out of 10 (SD = 2.2)**,** suggesting that county management generally supported digital reforms but with varying degrees of commitment. Counties with stronger leadership backing were more likely to have robust ICT infrastructure and better staff performance in MIS adoption.

Moreover, 55% of respondents confirmed the availability of dedicated ICT support staff in their departments, while 45% indicated the absence of such personnel. The lack of technical assistance likely contributed to lower adoption and user satisfaction in some areas. Finally, budget constraints were widely reported as a major challenge to effective ICT training, with 61.8% of respondents affirming that limited funds hindered the frequency, quality, or reach of training programs.

Overall, the findings provided empirical support for the hypothesis that ICT training significantly influenced the adoption and effective use of MIS in county governments. Counties that invested in structured, frequent, and practical training programs exhibited higher rates of MIS usage, greater staff competence, and improved operational efficiency. However, the uneven distribution of resources, insufficient refresher programs, and lack of ongoing technical support posed significant barriers to long-term success. Addressing these issues would require a coordinated policy effort to standardize ICT training, allocate adequate funding, and promote leadership engagement across all counties.

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V: CONCLUSION AND RECOMMENDATION

5.1 Conclusion

The study concluded that ICT training played a significant role in enhancing the adoption of Management Information Systems (MIS) within county governments in Kenya. Evidence from the analysis demonstrated that staff who had undergone structured ICT training were more likely to effectively utilize MIS platforms in performing their daily tasks. Counties that implemented regular and relevant training programs recorded higher rates of MIS adoption, better user competency, and increased accuracy in system usage.

It was also concluded that the frequency and quality of ICT training influenced not only technical skills but also staff attitudes toward the use of digital systems. Counties that offered ongoing refresher training and post-training support fostered more positive perceptions and higher levels of confidence among staff in using MIS applications. Conversely, counties with irregular or one-off training efforts struggled with underutilization of systems and resistance to change.

Furthermore, the study established that while initial training was important, sustainability of MIS usage depended heavily on institutional support structures such as leadership commitment, availability of ICT support personnel, and continued budgetary allocation for capacity-building programs. Counties that lacked these structural enablers faced operational inefficiencies, incomplete MIS integration, and low staff morale.

Budgetary limitations, lack of refresher training, and inadequate ICT support emerged as major barriers that hindered optimal outcomes. Therefore, it was concluded that for MIS adoption to be successful and sustainable, county governments needed to invest not only in one-time ICT training but also in long-term strategies that included periodic assessments, follow-up mentorship, and supportive policies at the management level.

In sum, the study affirmed that ICT training was not just a technical requirement but a strategic tool for digital transformation in county governments. The success of MIS initiatives was closely tied to how well staff were equipped, supported, and encouraged to embrace technology as part of their public service delivery mandate.

5.2 Recommendations

Based on the findings and conclusions of the study, several key recommendations were made to improve the adoption and utilization of Management Information Systems (MIS) through effective ICT training in county governments across Kenya.

Firstly, it was recommended that county governments institutionalize structured and continuous ICT training programs. These training initiatives needed to be integrated into human resource development plans and aligned with the specific MIS platforms in use. Counties that had regular

training sessions reported better system utilization, thus showing the need for training to be treated as a long-term investment rather than a one-time event.

Secondly, it was suggested that counties increase budgetary allocation for ICT development and training. The study revealed that limited funding was a recurring barrier that affected the quality and frequency of training. By setting aside adequate financial resources, counties would have been better positioned to procure skilled trainers, modern training tools, and relevant infrastructure necessary to support staff development.

Thirdly, the research recommended the introduction of refresher courses and follow-up mentorship programs. While initial training was valuable, the findings indicated that skills and confidence diminished over time in the absence of follow-up support. Therefore, refresher training—especially hands-on, practical sessions—should have been offered periodically to reinforce knowledge and address emerging challenges.

Additionally, it was recommended that county governments strengthen ICT support structures, including the hiring and deployment of qualified ICT personnel at departmental levels. Staff members who had access to in-house ICT support were more likely to overcome system-related difficulties promptly and continue using MIS tools effectively.

The study also advised county leadership to play a more active role in promoting ICT adoption. Strong leadership support was associated with improved staff morale and better uptake of technological systems. Leaders needed to champion digital transformation, encourage participation in training programs, and provide recognition for staff who effectively adopted MIS in their work.

Lastly, it was recommended that county governments evaluate training programs regularly to assess their relevance, effectiveness, and impact. Feedback from participants, performance metrics, and system usage reports should have been used to improve future training initiatives and ensure alignment with institutional goals.

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