

TECHNOLOGY ADOPTION AND CASE MANAGEMENT IN THE MILIMANI LAW COURTS IN NAIROBI CITY COUNTY, KENYA

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ABSTRACT

The administration of justice stands as a fundamental pillar of any democratic society, with its effectiveness essential in upholding the rule of law. In recent times, the judiciary of Kenya, especially the Milimani Law Courts in Nairobi, embraced various digital technologies to enhance case management. This study critically examined the effects of technology adoption, namely e-filing systems, virtual hearings, and case tracking systems, on case management efficiency within the Milimani Law Courts. Grounded in established frameworks such as the Technology Acceptance Model (TAM) and Diffusion of Innovations Theory, this research assessed how these technological innovations promoted transparency, reduced delays, and streamlined court operations. Employing a descriptive research design, the study focused on 300 judicial stakeholders, including judges, clerks, ICT personnel, and legal practitioners. Using Yamane's formula, a sample of 75 respondents was obtained through stratified random sampling. Primary data were gathered via semi-structured questionnaires, and secondary data were sourced from judicial performance reports. The analysis was conducted using SPSS, applying descriptive and inferential statistics like regression and correlation analysis. Findings from existing literature revealed that e-filing significantly boosted accessibility and cost efficiency, virtual hearings alleviated logistical challenges and fostered inclusivity, and tracking systems enhanced case monitoring and accountability. Nonetheless, issues such as infrastructural limitations, user resistance, and data security concerns remained pressing. Furthermore, ethical considerations, including digital equity, data privacy, and user trust, were thoroughly scrutinized. This study has substantial implications for policymakers, advocates of judicial reform, and academics by providing actionable insights to advance digital transformation within Kenya's judiciary. The outcomes guide institutional reforms in Milimani and present a replicable framework for other courts in the East African region aspiring to modernize their judicial processes through technology.

Key Words: Technology Adoption, E-Filing Systems, Virtual Hearings, Case Tracking Systems

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INTRODUCTION

The legal system plays a pivotal role in any given country, taking into consideration the aspect of justice administration. In the recent past, Kenya as a country has witnessed significant technological advancements with the adoption of digital solutions in law courts to improve e-filing, virtual hearings, with a tracking system that enhances efficiency, transparency, and cost-effectiveness in case management.

Evolution of technology is considered a milestone, taking us back to 1877. Thomas Edison was the inventor of the phonograph, which is the first device capable of recording and reproducing sound. (Feaster, 2024). Edison had envisioned the principal use of the phonograph as being in the business world, specifically for the purpose of dictation. (Stephens, 2023). However, the original phonograph used tinfoil as the recording material, which faced kickbacks due to its durability and usability. In the 19th century, Alexander Graham Bell and his team worked at the Volta Laboratory, introducing the Graphophone, which used wax cylinders, thus improving the sound quality. (Brown, 2020). In the early 1950s, dictation machines were introduced to law firms, enabling attorneys to record notes for later transcription by their assistants. These devices, while innovative, were often bulky, costly, and susceptible to mechanical issues. (Brandon Powell, 2021). Today, advancements in technology have revolutionized dictation practices in the legal field. Modern lawyers utilize smartphones equipped with speech-to-text applications, allowing for real-time, accurate transcription of spoken words. This shift not only streamlines documentation but also enhances overall efficiency. Contemporary legal software further supports case management through integrated features such as note-taking, reminders, and email archiving. (Nicole Black, 2019). Globally, countries like the United States have put in place policies and procedures that govern the process of integrating technology in the judicial sector. According to Schwinn (2021) provides that the introduction of the e-filing system, as well as the implementation of the PACER (Public Access to Court Electronic Records) system, has significantly enhanced the management and accessibility of court documents and court records. The outbreak of the Covid19 pandemic has given the judicial sector the impetus to integrate video conferencing technology like Zoom and Microsoft Teams in the judicial sector, adopting the use of virtual courts as a precautionary measure. Baum (2022). The use of AI in the management of court cases has given the judicial sector an edge in the pursuit of transparency in the administration of justice, as noted in the article by Smith and Jones (2021). The introduction of smart court technology in China has significantly enhanced the management of court documents and the timely and effective resolution of court cases and disputes (Zhao, 2022). However, the e-court project in India has impacted the digitization of records, reduction in case backlog, and ease of access to court cases. (Verma, 2023). In the contemporary world, blockchain technology in court systems helps maintain integrity in court proceedings. (Rajan, 2022). This study seeks to demonstrate that case management is very key aspect of the legal system. For instance, across federal and state courts in Australia, the e-filing system has played a key role in ensuring the efficiency of case management. (Brown & Wilson, 2022). According to Greenwood (2023), he stated that technological advancements in the court system came as a blessing; for instance, e-filing and virtual hearings, like video conferencing, have facilitated access to justice remotely. Additionally, Legal research is gaining traction due adoption of AI for predictive case analysis. (Taylor, 2012).

Regionally, countries like South Africa and Nigeria have been at the forefront in the gradual adoption of technology in the judicial system. Mayo (2022) provided that in South Africa, the implementation of the digital court initiative has yielded a greater understanding in streamlining case processes and case management. However, the adoption of e-filing and virtual hearings has improved efficiency and reduced corruption in courts in Nigeria. In East Africa, Rwanda has integrated an Electronic Case Management System (IECMS) that has enhanced legal Proceedings. (Mugisha, 2022).

In Kenya, like other countries, the judicial process has experienced challenges of delayed hearing of cases and inefficiency in the process. The introduction of technology to the judicial process has been perceived as a

solution to the inefficiencies experienced. Milimani Law Courts, which handle major cases in Kenya, have taken a major step towards embracing technology to improve the process of case management. The introduction of electronic filing of cases, virtual court sessions, and case management is a major milestone. Technology in the judicial system is also seen to enhance case management in terms of efficiency, accessibility, and transparency. E-filing, where legal documents are filed electronically, and virtual hearings, which reduce physical court appearances, are seen to ease the burden of traditional case management methods. Furthermore, tracking systems are also in place to ensure that updates regarding the status of cases are made available to all parties at any given time. However, it is also not clear how these technology-based tools are affecting case management in the Milimani Law Courts. (Judiciary of Kenya, 2024, December). This study seeks to evaluate the effects of technology adoption in the management of cases at the Milimani Law Courts in Nairobi, Kenya. Specifically, it seeks to assess the effects of e-filing systems, virtual hearings, and case tracking systems. By evaluating the effectiveness of these systems, this study seeks to understand how technology adoption contributes to the improvement of transparency and efficiency in the management of cases at the law courts.

CIPIT (2022) explains that the digitalization of the judicial system in Kenya began in 2005 and 2008. During this time, the judicial system developed strategic plans that recognized the need to integrate technology into the management of legal systems. The foundation laid during this time was later recognized by the Judicial Transformation Framework (JTF) as one of the tools that can help to enhance the delivery of justice. The JTF led to the development of the Electronic Case Records Management System (ECRMS) as a pilot project at the Juvenile Division of the Milimani Law Courts. The main aim of ECRMS was to ensure the security of records and to reduce fraudulent activities and increase efficiency in the delivery of services to the public (Wanjiku, 2015).

In July 2020, Chief Justice David Maraga launched the e-filing system, which was an important technological innovation in Kenya's judiciary system. The e-filing system was developed by the Judiciary's Information Communication Technology Directorate with the objective of enhancing efficiency in filing cases through digitalization. The introduction of this system was to reduce dependence on paperwork, simplify legal processes, and increase access for both legal practitioners and members of the public (KIPPRA, 2020).

Problem Statement

Generally, technology is perceived as an advantage and a challenge in the legal system. The integration of technology into the system has been instrumental in enhancing efficiency and facilitating the smooth operation of different aspects of the law. In the recent past, the adoption of cutting-edge technology, including AI and digital communication tools, has been vital in the management of cases in the legal system. The use of AI, for instance, has been adopted in the management of cases in the world's leading jurisdictions. AI technology is used to automate case management, predict case outcomes, and process large volumes of data. In Kenya, the Milimani Law Courts in Nairobi have adopted technology-driven tools to enhance case management. These include the adoption of e-filing, virtual court hearings, and case tracking. Despite all these advantages, the use of modern technology in the legal field is not without its bottlenecks. The use of e-filing, virtual hearings, and tracking technologies has faced infrastructural, technical, and operational bottlenecks in their implementation, which have affected their efficiency in serving their purposes (Mutua, 2023). According to Gilbert Juma & Associates (2020), one of the major bottlenecks to the use of technology in legal systems is due to infrastructural and technical difficulties. These difficulties include a lack of adequate computer hardware for use in accessing technology in the courts, inadequate training for users, and a lack of reliable internet connectivity. In addition, a large number of users may cause congestion on the portal, thus slowing down operations. Moreover, a lack of reliable electricity, especially in areas not connected to the national grid, adds to the difficulties faced in transforming to technology in the judiciary. The researcher provides that there is a

lack of comprehensive research on the effects of these technological tools on case management outcomes. There are still many challenges in the legal system, such as delays in case resolution, which may not be fully addressed by the use of technology. Therefore, there is a need to assess the effectiveness of technology adoption in improving the efficiency and transparency of case management in the Milimani Law Courts. (Judiciary of Kenya, 2024, December).

This study aims to address the existing gap by investigating the influence of e-filing, virtual hearings, and case tracking systems on case management at the Milimani Law Courts. The results are expected to offer valuable insights into the achievements and obstacles associated with implementing technology within Kenya's judicial system. (Judiciary of Kenya, 2024, December).

LITERATURE REVIEW

Theoretical Review

This section discussed the theories that influenced the adoption of new technology systems. The research was based on some essential theories, and they include The Technology Acceptance Model and Diffusion of Innovations Theory. This theory was founded by Fred Davis in 1989 to examine the determinants that affected users' acceptance and utilization of modern technology, emphasizing perceived usefulness and perceived ease of use as pivotal factors. In the context of the Milimani Law Courts in Nairobi, Kenya, TAM provided a framework to understand the adoption of Information and Communication Technology (ICT) systems, such as e-filing and virtual hearings. Recent studies, however, showed that the perceived usefulness and usability of the system by judicial staff and stakeholders were significant factors in influencing system acceptance. In one study conducted by Baryse (2022) to investigate factors influencing e-filing system adoption in the judiciary, perceived usefulness was established as one of the factors in influencing the acceptance and support for legal technologies in courts. This implies that the perceived usefulness of legal technologies by judicial staff and stakeholders was significant in influencing system adoption in courts. Another study conducted to investigate factors influencing legal technology adoption in courts was based on perceived usefulness and usability as factors in influencing legal technology adoption in courts, which was significant in predicting system adoption in courts. This established the applicability of TAM in assessing system acceptance for ICT innovations in courts, such as e-filing and virtual hearings.

The Diffusion of Innovations Theory, which was created by Everett Rogers in 2003, was a comprehensive theory for understanding the adoption and implementation of new technology, idea, or practice in a social context over time (Rogers, 2003). According to this theory, there were four main factors that impacted this process: the innovation itself, the communication channels used to pass information regarding this new idea, the time frame for this new idea to be adopted, and the social system that helped facilitate this new idea. Furthermore, Rogers divided individuals who adopted this new idea into five groups: innovators, early adopters, early majority, late majority, and laggards. This theory was instrumental in assessing not only whether this new idea would be accepted but also how quickly it would be adopted and who would adopt it (Rogers, 2003). The Milimani Law Courts in Nairobi provided a pertinent case study for the examination of the adoption of digital technology, which included the use of e-filing systems, virtual court hearings, and electronic case tracking systems. These technological advancements were intended to revolutionize the conventional methods of case management. According to Rogers (2003), the extent to which the perceived value of the technological advancements was beneficial, user-friendly, and compatible with the conventional legal processes was instrumental in the adoption of the technology. The communication channels through which information on technological innovation was communicated played a critical role in influencing the adoption of technological innovation. At the Milimani Law Courts, initiatives on awareness and training were primarily communicated through judiciary circulars, peer engagement, ICT training workshops, and digital communication platforms. These communication channels significantly enhanced the technological capabilities of users and motivated judiciary staff to buy into technological innovation. As Mutua (2023)

observed, effective communication mechanisms were instrumental in ensuring that resistance to change was minimized and institutional adaptability to technological change was maximized. Understanding the temporal dimension was instrumental in comprehending the extent to which these technological systems had been adopted. The phased introduction of e-filing and CTS, for instance, demonstrated the extent to which early adopters motivated their colleagues to adopt these technologies by setting an example. As observed by Njuguna (2022), understanding the rate of adoption over time was critical in understanding operational challenges and improving implementation strategies. Lastly, the social system in the judiciary was another factor that influenced the diffusion process. The hierarchical nature and traditions in the judiciary could be instrumental in speeding up or slowing down the adoption of innovations in the system. The support from individuals in positions of power and from peers was instrumental in influencing individuals to start using technology sooner than others or to remain opposed to it. Wanyama and Gichuki (2021) noted that for technology to be integrated into the judicial system, individuals in this system had to be ready to receive this technology, in addition to being technically ready to receive this technology.

Empirical Review

Case management is globally recognized as an important pillar of modern judicial systems, functioning to ensure efficiency and equity in the delivery of justice. Perez Ragone (2019) defined case management as a structured judicial framework understood as a system of rules and procedures that guide the resolution of legal disputes in an efficient and equitable manner through organized control. De Mulder and Vanhoonacker (2021) noted that global legal institutions are adopting digital innovations to ensure the delivery of justice aligns with principles of fairness, efficiency, and accountability.

In Africa, judiciaries utilize electronic records and data systems to overcome challenges in records management as highlighted by Akotia and Abubakre (2022). Technological developments greatly impacted the handling of judicial cases, with systems customized to suit specific legal needs as seen in Botswana (Mosweu & Kenosi, 2018). Proper management of data, safe storage of records, and authentication have become vital to the speedy delivery of justice. Locally in Kenya, reforms include amended Civil Procedure Rules to incorporate Case Management Conferences, ensuring evidence disclosure and reducing oral testimony (Mutua, 2020). Nyaoga and Ombaka (2021) pointed out the importance of case management structures in reducing the burden in the Kenyan justice system. Furthermore, Chief Justice Koome (2023) and Kariuki and Wanjala (2022) acknowledged that automated case management systems are employed to increase efficiency through advanced algorithmic and data processing techniques, enhancing inclusivity and access to justice for marginalized communities via remote access systems.

The shift from paper-based to electronic systems enables courts to optimize space, minimize costs, and enhance the speed of document access (Ivins, 2024). E-filing minimizes errors, enhances service provision, and promotes accountability while maintaining record integrity (Bates, Dietrich, & Mansfield, 2019; Ahmed & Akhtar, 2022). Electronic Case Management Systems enable the management of complex cases with ease, incorporating e-filing, online scheduling, and notifications to make operations smarter and faster (Popova, Maroz, & Gámez, 2021).

African judiciaries invest in these systems to transition away from manual record management, overcoming long-existing clerical backlogs. E-filing improves access to justice and affordability for litigants in civil matters as demonstrated in Kenya (Mkirima & Richard, 2023), Nigeria (Nwokocha & Ezenwa, 2020), and South Africa (Dlamini & Moyo, 2022). In Kenya, namely in urban areas like the Milimani Law Courts in Nairobi, e-filing has revolutionized case management. It greatly relieves court congestion, allows for remote interactions, and reduces management costs (Wekesa & Musau, 2021; Gikonyo & Cheruiyot, 2022). Encryption is vital in e-courts to ensure case documents are not compromised, ultimately increasing user satisfaction and ensuring justice remains accessible (Ivins, 2024).

Virtual court hearings greatly improve case management globally by providing access to justice and maintaining functionality in emergency situations. They streamline proceedings through digital signatures, reduce travel expenses, provide convenience for witnesses and lawyers, and build public trust (Alexander, 2023; McMillan & Todd, 2021; Chen & Li, 2022). They also offer protective advantages for witnesses in sensitive proceedings by preventing physical threats (Halpert & Garcia, 2020).

African courts have modernized operations to decongest facilities and enhance judicial continuity through video conferencing and electronic document sharing. Virtual hearings effectively resolve critical cases, reduce delays, and ensure inclusive access to justice services, particularly for rural or risky cases (Popova, Maroz, & Gámez, 2021; Dlamini & Moyo, 2022). In Kenya, virtual hearings serve as a strategic management tool. Video conferencing platforms are instrumental in reducing travel and filing costs while allowing a continuous flow of cash for litigants (Mkirima & Richard, 2023). With adequate funding and policy support as noted by Chief Justice Koome (2021), technology resolves issues burdened by logistical challenges and hastens overall court operations by reducing adjournments (Gikonyo & Cheruiyot, 2022).

The incorporation of Case Tracking Systems lays the groundwork for unprecedented efficiency and transparency in case management. CTS minimizes human error through automated case registration, facilitates data exchange between registries and judicial officers, and reduces case backlogs (Alexander, 2023; Marquez & Blake, 2020). Advanced CTS tools are proactive, forecasting the future of case administration. They develop exhaustive digital evidence logs and computer-generated scheduling updates, enhancing procedural consistency and reliability (Schaefer & Kruger, 2022).

African courts utilize CTS to address inefficiencies with resolve and ingenuity, promoting responsive and citizen-centric judicial systems (Waweru, 2021; Okon & Ekene, 2020). In Kenya, the judiciary successfully digitized case management, with the vast majority of court stations using CTS (Koome, 2021). This system transforms case registry operations, enhances tracking, and improves court reporting transparency while eliminating redundancy (Mundia, 2023). CTS manages the entire case lifecycle from inception to closure, significantly reducing reliance on outdated manual records (Mesa, 2020). It facilitates the swift allocation of cases for hearing and improves court user satisfaction. Alongside e-filing and Court Recording and Transcription Systems, CTS forms a cohesive technology framework that enhances efficiency, accountability, and data-informed decision-making in the Kenyan judiciary (Wekesa & Musau, 2021; Mkirima & Richard, 2023).

The figure presents a conceptual framework that served as the foundation for this study.

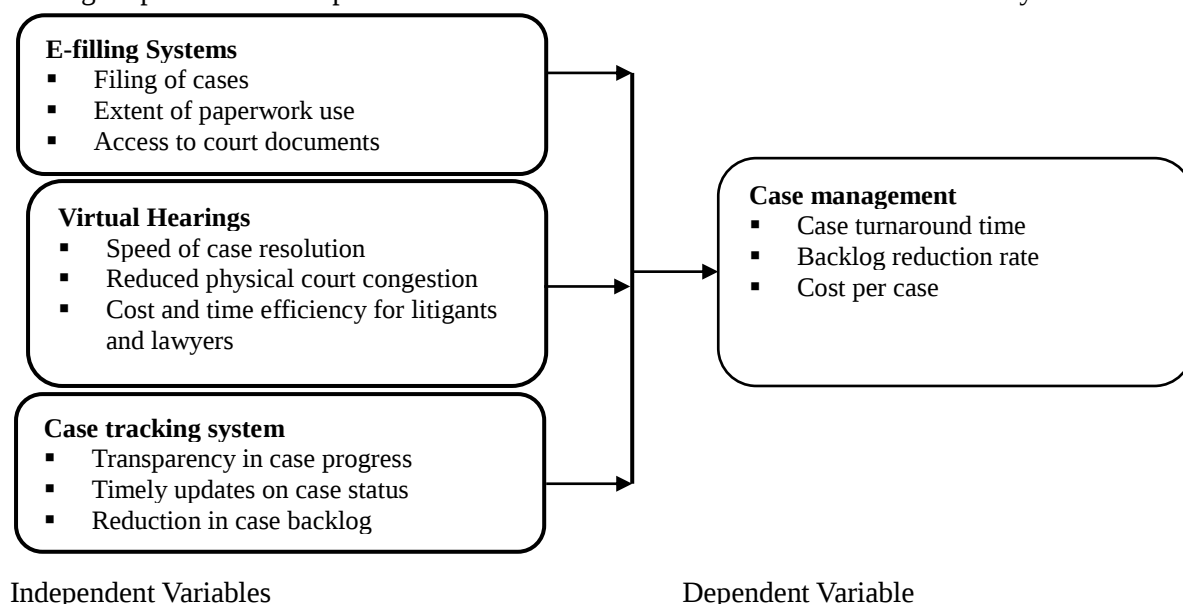


Figure 1: Conceptual Framework

METHODOLOGY

This study employed a descriptive research design using a mixed-methods approach to examine the relationship between technological variables and case management efficiency (Creswell & Creswell, 2018). The target population comprised 300 stakeholders at the Milimani Law Courts, namely judicial officers, court clerks, ICT personnel, and practicing advocates (Judiciary of Kenya, 2023). Using Yamane's (1967) formula, a sample of 75 respondents was selected via stratified random sampling. Primary data was gathered using semi-structured questionnaires and interviews, while institutional reports provided secondary data to support the findings (Soneka, 2019; Adamtey, 2022). Following proper authorization procedures (Ochieng, 2021), data was collected and subsequently analyzed utilizing descriptive and inferential statistics, specifically correlation and regression analysis via SPSS (Ngonga, 2019). multiple regression analysis was employed to determine both the direction and strength of the relationships using the following equation:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Y – Case Management Efficiency (dependent variable)

X1– E-Filing

X2 – Virtual Hearing

X3 – Case Tracking Systems

β_0 - Intercept (value of Y When all X variables are 0)

$\beta_1, \beta_2, \beta_3$ -Coefficients representing the effect of each independent variable

ε -Error term (unexplained variation)

FINDINGS

This chapter presented a detailed analysis and interpretation of data collected from 72 judicial officers, court clerks, ICT staff, and advocates at the Milimani Law Courts, Nairobi. The analysis is based on the study's objectives: assessing the effects of e-filing, virtual hearings, and case tracking systems on case management.

Descriptive Statistics

Descriptive statistics for the variables were presented first to give a picture of adoption of technology in case management. The first objective sought to determine how the adoption of the e-filing system has influenced case management at the Milimani Law Courts. Table 1 below illustrates perceptions on e-filing system.

Table 1: Perceptions on the E-Filing System

Statement	1	2	3	4	5	Mean	SD
	(%)						
The e-filing system has improved the speed of filing and retrieving case documents.	4.2	6.9	9.7	44.4	34.8	3.99	0.96
E-filing has reduced paperwork and operational costs.	5.6	8.3	11.1	41.7	33.3	3.89	1.02
The system is user-friendly and easy to navigate hence saves on time.	6.9	11.1	13.9	38.9	29.2	3.72	1.10
E-filing has enhanced transparency and accountability in case handling.	4.2	8.3	12.5	43.1	31.9	3.90	0.98
I have received adequate training to use the e-filing system effectively.	11.1	16.7	15.3	33.3	23.6	3.42	1.23
Technical issues frequently disrupt the e-filing system.	8.3	13.9	12.5	37.5	27.8	3.63	1.18
Overall Mean						3.76	1.08

The data indicates that 79.2% of respondents showed agreement or strong agreement (44.4% A; 34.8% SA) with the statement that the system enhanced speed because its performance recorded a mean of 3.99 with a standard deviation of 0.96. The evidence demonstrates that digitization completely removed all manual processing delays. Muigua (2020) supports this point by showing that Kenyan courts experience reduced case backlog because they switched from manual registries to digital archives.

The study found that 75.0% of participants believe e-filing decreases their operational costs which resulted in a 3.89 average score (SD = 1.02). The Milimani Law Courts gain major financial and operational advantages from this development. Susskind (2019) shows that online courts change the fundamental economics of justice because they diminish the physical expenses associated with traditional paper-based litigation.

The system's ease of use was supported by 68.1% of respondents (38.9% A; 29.2% SA) with an average score of 3.72 and standard deviation of 1.10. The user experiences showed positive results but there existed different experiences among users because of the high standard deviation. The Technology Acceptance Model (TAM) from Davis (1989) shows that users perceive technology as easy to use which determines whether they will use court internal filing portals in their daily work.

The study found that 75.0% of respondents (43.1% A; 31.9% SA) believe e-filing enhances transparency, with a mean of 3.90 (SD = 0.98). E-filing systems use digital footprints to stop files from "disappearing" which used to be a common problem in Nairobi. This research supports Pathak's (2021) findings which show that e-governance in judicial systems reduces corruption through its ability to create traceable records of all submitted documents. The statement received the least backing because only 56.9% (33.3% A; 23.6% SA) of people thought they received appropriate training. The mean was 3.42 with the highest SD of 1.23, indicating significant disparity in skill levels. Achieng and Kyalo (2021) found that the Kenyan public sector experienced digital resistance because its infrastructure development exceeded the pace of human capital growth.

Technical problems frequently disrupt system operation according to 65.3% of respondents who showed agreement with this statement which resulted in a mean score of 3.63 with a standard deviation of 1.18. The system demonstrates usability but it suffers from operational instability. The World Bank (2022) report on Digital Transformation in Africa demonstrates that government cloud systems face severe adoption challenges because of their "last-mile" connectivity deficits and extended server outages.

The E-Filing System demonstrates high user adoption which benefits case management at Milimani Law Courts because it achieves an overall mean score of 3.76 with a standard deviation of 1.08. The system has achieved improvements in all three areas of speed and cost reduction and transparency enhancement. The training standard deviation of 1.23 together with the technical disruptions standard deviation of 1.18 indicates that "human" elements and "infrastructure" components represent the system's most vulnerable areas.

The second study objective examined how virtual hearings have influenced case management at the Milimani Law Courts. Table 2 shows perceptions on virtual hearing in percentages response.

Table 2: Perceptions on Virtual Hearings

Statement	1	2	3 (%)	4	5	Mean	S. D
Virtual hearings have improved access to justice for court users.	4.2	6.9	8.3	44.4	36.2	4.01	0.94
The integration of technology in case management processes has positively impacted transparency of court operations.	5.6	8.3	9.7	41.7	34.7	3.92	1.02
The system is user-friendly and easy to navigate.	6.9	11.1	12.5	38.9	30.6	3.75	1.10
Continuous evaluation and optimization of technology solutions are crucial for sustainable improvement of case management practices.	2.8	4.2	6.9	43.1	43.0	4.19	0.85
The Milimani Law Courts should prioritize investment in advanced technological infrastructure.	2.8	5.6	8.3	40.3	43.0	4.15	0.92
Effective training programs should be implemented to equip court staff with necessary technological skills.	4.2	6.9	9.7	38.9	40.3	4.04	0.98
Overall						4.01	0.92

The study results show that 80.6% of respondents either agreed or strongly agreed (44.4% A; 36.2% SA) with the statement that virtual hearings improved access to their disability accommodations which resulted in a mean score of 4.01 (SD = 0.94). The research shows that direct access to Nairobi City County without requiring physical travel has increased access for litigants. Donoghue (2017) maintains that digital courts enable users to access court services from any location and time which benefits users who live in remote areas.

The study shows that 76.4% of participants (41.7% A; 34.7% SA) believed that technology integration would make court operations more transparent (Mean = 3.92; SD = 1.02). The system offers recorded sessions together with digital tracking which enables the system to decrease "closed-door" opacity. According to Sourdin (2018) technology functions as a "disruptive transparency agent" which makes court procedures accessible to public view throughout judicial systems. The system received a mean score of 3.75 (SD = 1.10) for easy usage and 69.5% of users agreed with the statement (38.9% A; 30.6% SA). Users found the virtual platforms easy to use because they achieved positive results despite having a higher standard deviation which indicated that users still faced technical difficulties. The Unified Theory of Acceptance and Use of Technology (UTAUT) shows that legal professionals will adopt new digital tools at a faster rate when they experience "effort expectancy" (the ease of use) of these tools.

The statement received the highest level of agreement from respondents who showed 86.1% total support (Mean = 4.19; SD = 0.85). The statement shows that organizations need to understand technology as an ongoing system that requires continuous updates. The Judiciary must view technology as active infrastructure to maintain sustainable e-justice in Kenya according to Kariuki (2021) who observed that technology needs to be treated as active infrastructure.

The study discovered that 83.3% of respondents (40.3% A; 43.0% SA) believe the Milimani Law Courts should prioritize advanced technological investment (Mean = 4.15; SD = 0.92). The existing consensus shows that virtual hearings require improved bandwidth and hardware capacity for their operations. Gichoya (2020) shows that government e-service implementation success in Kenya depends on "infrastructure readiness" which serves as the top determining factor. The need for training was highly emphasized, with 79.2% agreement (38.9% A; 40.3% SA) and a mean of 4.04 (SD = 0.98). The evidence shows that technology exists but human users have not yet learned how to use it at maximum efficiency. The statement mirrors Berman (2020) who claims that legal systems experience a "digital divide" because people lack necessary skills to operate available technology.

The findings for Section 4.5 show that virtual hearings have developed into a standard element which enables Milimani Law Courts to manage their cases efficiently. The overall high mean value of 4.01 indicates that the workforce possesses readiness for digital transformation which depends on infrastructure upkeep. Virtual Hearings receive slightly better user feedback than E-Filing results (Section 4.4) because both systems face identical critical challenges which involve technical stability and specialized training. The Milimani Law Courts need staff members to complete specific technical training that will maintain accurate digital justice operations just like your internal redirect system needs specific training for its routing process.

The study examined how the case tracking system influenced case management at the Milimani Law Courts. Table 3 shows the perceptions on the case tracking system of respondents.

Table 3: Perceptions on Case Tracking System

Statement	1	2	3 (%)	4	5	Mean	S. D
1. The case tracking system provides timely updates on case progress.	4.2	5.6	6.9	41.7	41.6	4.11	0.93
2. The system has improved accountability and reduced case backlogs.	4.2	6.9	8.3	38.9	41.7	4.07	0.98
3. Users can easily access the system to monitor case statuses.	5.6	8.3	11.1	40.3	34.7	3.90	1.04
4. The tracking system has made it easier to plan and manage case schedules.	4.2	6.9	9.7	43.1	36.1	4.00	0.97
5. I have encountered challenges using the case tracking system.	6.9	12.5	11.1	38.9	30.6	3.74	1.13
Overall						3.96	1.01

The study evaluated the influence of the Case Tracking System (CTS) on case management at the Milimani Law Courts. The results presented in Table 3 show a system effectiveness rating of 3.96 together with a standard deviation of 1.01 which indicates users consider the system to be a valuable tool for managing administrative functions. The data reveals that 83.3% of respondents agreed or strongly agreed (41.7% A; 41.6% SA) that the system provide timely updates, with a mean of 4.11 (SD = 0.93). The strongest feature of the CTS system operates in its capacity to deliver real-time information to users. The findings support Reiling's (2020) assertion that judicial transparency depends on the real-time data which enables litigants to monitor their cases without needing to visit the court. A total of 80.6% of participants (38.9% A; 41.7% SA) indicated that the system improved accountability and reduced backlogs (Mean = 4.07; SD = 0.98). The CTS system prevents manual file shelving because it creates a digital record that tracks all case proceedings. The digital tracking system used in the Kenyan Judiciary functions as an internal audit system which detects delays according to Mbote (2021). The study found that 75.0% of respondents (40.3% A; 34.7% SA) can easily access the system to monitor case statuses (Mean = 3.90; SD = 1.04). The users experienced positive system performance although the standard deviation exceeded 1.0 which created differences in user experience. Digital portals increase access to public institutions according to Wasilwa (2019) however internet stability and user interface design serve as essential elements that affect system usability.

Most respondents (79.2%) (43.1% A; 36.1% SA) confirmed that the tracking system simplified schedule management tasks. The system produces digital records which function as a court diary. The Resource-Based View (RBV) Theory connects to this concept because it demonstrates how organizations gain operational advantages through their internal technological capacities. The study found that 69.5% of respondents (38.9% A; 30.6% SA) reported difficulties with the system (Mean = 3.74; SD = 1.13). The high standard deviation here reflects a fragmented user experience where a subset of the population struggles significantly with the interface or system uptime. Nyamu (2022) explains that "systemic glitches" in the Kenyan Integrated Case Management System (ICMS) create continuous problems which undermine digital adoption progress. The

Case Tracking System at Milimani Law Courts serves as a critical bridge between filing and final adjudication. The CTS system has established a new accountability system which was not possible to achieve through manual processes because users achieved an overall average score of 3.96. The analysis shows that technology users find the system useful because they rated its benefits highly. The system's reliability and ease of use present the main challenges because they received lower scores and greater user variability. The digital system at Milimani Law Courts operates successfully but technical problems prevent the systems from reaching complete operational status.

The third objective sought to assess the status of case management at the Milimani Law Courts which was the dependent variable. Table 4 below shows perceptions on case management from respondents in percentages form.

Table 4: Perceptions on Case Management

Statement	1	2	3	4	5	Mean	S. D
			(%)				
1. Cases are handled and concluded within reasonable time frames.	5.6	9.7	11.1	41.7	31.9	3.85	1.07
2. There is effective scheduling and coordination of hearings.	4.2	8.3	9.7	43.1	34.7	3.96	0.98
3. Case backlog has reduced over the past few years.	6.9	11.1	12.5	38.9	30.6	3.75	1.12
4. Communication between court staff and stakeholders is efficient.	5.6	8.3	13.9	40.3	31.9	3.85	1.05
5. Case records are well organized and easily accessible.	4.2	6.9	9.7	41.7	37.5	4.01	0.94
6. Overall, case management processes are efficient and effective.	4.2	8.3	8.3	43.1	36.1	3.99	0.97
Overall mean						3.90	1.02

The study evaluated the influence of the Case Tracking System (CTS) on case management at the Milimani Law Courts. The findings, summarized in Table 4, show an overall mean of 3.96 and a standard deviation of 1.01 which indicates that people consider the system to be an efficient tool for managing administrative work.

The data shows that 83.3% of participants expressed agreement or strong agreement about the system delivering prompt updates which achieved a mean score of 4.11 and standard deviation of 0.93. The system's real-time capability serves as its primary strength. According to Reiling (2020), judicial transparency depends on real-time data accessibility which enables litigants to monitor their cases without needing to visit the court.

The system achieved better accountability and decreased case backlogs according to 80.6% of participants (38.9% A; 41.7% SA) who provided their assessment (Mean = 4.07; SD = 0.98). The system prevents users from manually "shelving" cases because it creates a digital record that shows how cases progress through the system. Digital tracking operates within the Kenyan Judiciary as an internal auditing system that identifies judicial delays according to Mbote (2021) which creates pressure on judges to meet established deadlines. The study found that 75.0% of respondents (40.3% A; 34.7% SA) can easily access the system to monitor case statuses (Mean = 3.90; SD = 1.04). The user experience shows positive results because the standard deviation exceeds 1.0 which demonstrates that users experience different outcomes. Wasilwa (2019) demonstrated that digital portals enhance access to services yet users still find system usability challenging because they need stable internet and well-designed interfaces to navigate public institution systems.

The tracking system facilitated schedule management because 79.2% of respondents showed agreement with this statement which received a score of 4.00 with standard deviation 0.97. The CTS functions as a digital diary which records all court proceedings. The Resource-Based View (RBV) Theory shows that internal technological capabilities which include automated scheduling enable organizations to achieve better operational efficiency through their human resources optimization. The 69.5% of respondents who

participated in the study (38.9% A 30.6% SA) reported that they faced difficulties when they tried to use the system (Mean 3.74 SD 1.13). The high standard deviation here reflects a fragmented user experience where a subset of the population struggles significantly with the interface or system uptime. The observation by Nyamu in 2022 that "systemic glitches" in the Kenyan Integrated Case Management System (ICMS) hinder "digital adoption" advances supports this argument.

The Case Tracking System at Milimani Law Courts functions as a vital connection which links the process of filing with the final court ruling. The CTS has established an accountability system from which organizations can develop 3.96 which shows that organizations use the system to maintain better accountability than they could through manual methods. The analysis shows that people consistently rate technology usage as valuable (Means > 4.0) yet people find it hard to rely on the system and use it efficiently because those two factors show higher standard deviations. The Milimani Law Courts successfully implemented digital processes yet technical issues prevent the "maturity" of these systems from reaching their full potential.

Inferential Analysis

The study utilized Pearson's Correlation Coefficient (r) to examine the strength and direction of the relationship between technology adoption variables and case management at the Milimani Law Courts. The results, as presented in the correlation matrix (Table 5), reveal that all technological dimensions have a statistically significant and positive relationship with the dependent variable.

Pearson correlation analysis was conducted to determine the strength and direction of the relationship between the independent variables and case management.

Table 5: Correlation Matrix

Variables	1	2	3	4
1. E-Filing System	1			
2. Virtual Hearings	0.62**	1		
3. Case Tracking System	0.68**	0.65**	1	
4. Case Management	0.71**	0.74**	0.79**	1

The case tracking system and case management system exhibit their strongest relationship in this research study through a correlation coefficient of $r = 0.79$ which reaches statistical significance at $p < 0.01$. The tracking system reaches its optimal efficiency point which leads to significant improvements in case management success according to this analysis. The finding supports Reiling's (2020) argument that real-time data visibility serves as the essential element driving judicial reform because it directly reduces information gaps that result in case delays. The Virtual Hearings platform established a strong positive relationship with case management through its testing results which showed an r value of 0.74 and a p value less than 0.01. The evidence indicates that digital courtrooms have substantially improved the efficiency of judicial processes. The legal systems need to adopt virtual platforms because they enable the transition from physical locations to procedural workflows according to Susskind (2019). Susskind (2019) argues this method enables legal systems to handle large numbers of litigation cases.

The E-Filing System produced a correlation result of $r = 0.71$ ($p < 0.01$), which shows a strong positive connection between two variables. The digitization of the filing process functions as the basic requirement that establishes better court performance despite being the digitization of the filing process functions as the basic requirement that establishes better court performance despite being the digitization of the filing process functions as the basic requirement that establishes better court performance despite being the e-filing system serves as the main entry point for all digital judicial systems in Kenya according to Muigua (2020) because it establishes the operational framework for judicial systems in the country. The correlation analysis shows that technology adoption establishes a strong positive relationship with case management performance at Milimani Law Courts. The R-values demonstrate that all technological interventions achieve more than minor

enhancements because they function as essential elements that support court operations. The high significance level ($p < 0.01$) indicates that these results are highly unlikely to have occurred by chance which establishes strong empirical support for continuing digital system integration into Nairobi's judicial system.

Multiple regression analysis was conducted to evaluate the collective influence of the E-Filing System, Virtual Hearings, and Case Tracking Systems on Case Management. This inferential method allows for a more complex understanding of how these variables interact to predict organizational performance at the Milimani Law Courts.

The model summary, as shown in Table 6, provides a measure of how well the regression model predicts the outcomes of the dependent variable.

Table 6: Model Summary

Model	R	R ²	Adjusted R ²	Std. Error
1	0.86	0.74	0.73	0.41

The model yielded a coefficient of correlation (R) of 0.86. The value demonstrates that there exists a very strong linear connection between the technological predictors and the case management efficiency results. An R-value of this magnitude suggests that when the three systems (E-Filing, Virtual Hearings, and Case Tracking) are implemented in unison, their joint effect on court operations is highly substantial.

The Analysis of Variance (ANOVA) was conducted to determine whether the multiple regression model is a statistically significant fit for the data.

Table 7: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	18.72	3	6.24	37.10	0.000
Residual	6.78	68	0.10		
Total	25.50	71			

The results in Table 7 show an F-value of 37.10 with 3 degrees of freedom for regression and 68 for the residual. The high F-statistic demonstrates that the explained variance ratio which represents explained variance shows significant value against all unaccounted variance. The associated p-value of 0.000 is well below the standard significance threshold of 0.05.

The results indicate a rejection of the null hypothesis (H_0) which states that no significant connection exists between the independent variables and the dependent variable because the p-value falls below 0.05 threshold. The research study demonstrates strong evidence which shows that E-Filing Virtual Hearings and Case Tracking Systems together predict better case management outcomes. The findings obtained from this research study match the results found by Achieng and Kyalo (2021) who proved that digital transformation initiatives in Kenyan public sector agencies create performance enhancements through their ANOVA based research studies.

The study shows that Berman (2020) found judicial systems reach technological adoption levels which produce predictable and stable efficiency outcomes because the system needs to reach a specific point of technological usage. The ANOVA results confirm that the regression model is statistically significant ($F(3, 68) = 37.10, p < 0.001$). The model demonstrates strong explanatory power because it provides statistical evidence which enables us to analyze all individual coefficients. The current technological system at Milimani Law Courts operates as an integrated platform which establishes validated statistical capacity to enhance case management operations. The model maintains excellent stability because its predictions show extremely small values of "noise" or unexplained error which track to the low residual mean square of 0.10.

The final step in the regression analysis involves examining the individual coefficients to determine the specific contribution of each technological variable to Case Management. The coefficients indicate the direction and magnitude of the effect when all other variables in the model are held constant.

Table 8: Coefficients

Variable	Unstandardized B	Std. Error	Beta	t	Sig.
(Constant)	0.82	0.31		2.65	0.010
E-Filing System	0.28	0.09	0.29	3.11	0.003
Virtual Hearings	0.31	0.08	0.33	3.88	0.000
Case Tracking System	0.39	0.07	0.41	5.57	0.000

The Case Tracking System stands as the most effective predictor for the model. The Standardized Beta value of 0.41 serves as the most important factor in case management. The t-value of 5.57 with a 0.000 significance level shows that this effect demonstrates strong reliability. The research shows that case management effectiveness improves by 0.41 standard deviations when case tracking efficiency increases by one standard deviation.

Reiling (2020) demonstrates through his research that "monitoring and tracking" functions as the central administrative component that supports judicial reform efforts. The Milimani Law Courts require visible case progress because it provides better management information than both the initial case filing and the subsequent hearing process.

The second most important factor after Virtual Hearings shows a Beta value of 0.33. The 0.000 significance level proves that digital courtroom implementation functions as an essential component that drives operational efficiency. Susskind (2019) presents "Technology-Led Transformation" which shows how virtual systems minimize physical and time-related restrictions that affect traditional urban court operations in Nairobi City County.

The E-Filing System produces positive results, which reach statistical significance, but it holds the lowest importance among three tested variables ($\beta = 0.29$). The p-value of 0.003 demonstrates that it maintains statistical significance because it remains above the threshold of ($p < 0.05$). The research shows that e-filing functions as a vital component for management because its effectiveness depends on real-time tracking and virtual court processes. Muigua (2020) describes e-filing as the "entry point" of digital justice...to achieve maximum efficiency at subsequent digital workflows.

Qualitative Results: Thematic Analysis

The researchers used open-ended questionnaire responses and semi-structured interviews to collect qualitative data which revealed deeper insights about how people experience technology adoption at the Milimani Law Courts. Thematic analysis of the data identified six major themes which provided a narrative framework to understand the statistical patterns that appeared in earlier sections.

The most prominent theme among respondents was the substantial reduction in manual bottlenecks and the acceleration of court workflows. Participants reported that digital systems have created permanent changes to how fast legal cases move through the system. One respondent remarked, "E-filing has eliminated long queues and reduced the time spent locating physical files," while another highlighted the geographical flexibility of the new model, stating, "Virtual hearings allow cases to proceed even when parties are outside Nairobi." The thematic agreement among participants directly supports quantitative evidence which showed high mean scores for filing and retrieval speed, proving that technological spatial freedom is a key factor that drives operational productivity.

Participants linked the introduction of case tracking systems to improved discipline and transparency within the court system. The digital audit trail appears to have diminished the historical opacity of manual registries.

The tracking system makes it easy to follow case movement and responsibility, according to one participant. The qualitative data supports the association between case tracking and management because digital responsibility assignment leads to higher accountability according to the study results which show a high correlation between both elements. Pathak (2021) argues that e-governance creates an anti-corruption framework by establishing an unchangeable system that records each judicial activity.

The digital infrastructure shows operational problems which cause users to experience ongoing dissatisfaction with its reliability. The case management process faced major obstacles because of frequent system outages and slow internet connection speeds. A respondent pointed out that "Sometimes the system freezes during peak hours which delays filings," highlighting a critical dependency on backend stability. The e-filing and tracking systems show standard deviations because these "systemic glitches" affect how users experience the system. The World Bank (2022) reports that high adoption rates face challenges from "last-mile" connectivity problems according to their warning.

Technology adoption success depends on human involvement as a key factor that determines results. Many participants felt that the rollout of software often outpaced the training provided to those using it. Staff members face difficulties with system updates because they receive insufficient training according to one employee who stated, "Some staff struggle with updates because training is not consistent." The research results show that "Adequate Training" received lower mean scores which supports Achieng and Kyalo's (2021) finding that digital resistance occurs because infrastructure lacks human capital development.

The physical hardware and environmental conditions of Nairobi City County functioned as obstacles to software development. The respondents identified two major threats to their daily work operations which were insufficient bandwidth and power outages. A participant said that "Insufficient computers slow down operations especially during busy court sessions." The current hardware limitations at Milimani judicial modernization project tie into Gichoya's 2020 research which identifies "infrastructure readiness" as the key factor determining e-government success.

The final theme captured the proactive suggestions of the court users and staff. The respondents demanded four specific solutions which should include immediate system upgrades and automation work plus better network reliability to stop outages and more complete user education sessions plus dedicated ICT support desks. The recommendations create a pathway to progress from "basic adoption" toward "optimized case management" solution.

CONCLUSION

The research findings indicate that courts at Milimani Law Courts achieve better case management results through technology implementation. The research results show that when the court system adopts digital workflows instead of manual operations, it achieves better operational transparency and backlog reduction. The conclusion states that current software capabilities have surpassed both human resources and infrastructure systems. The differences in perception between professional groups show that judicial officers and technical staff have accepted these tools but external users and advocates still encounter problems with system navigation and technical interruptions. The technological system has strong foundations but its achievement depends on local power grid stability and server availability and the ongoing technical expertise of all parties involved.

RECOMMENDATIONS

- (a) To optimize case management, it is recommended that the Judiciary prioritize the stabilization of technical infrastructure. This involves investing in high-capacity servers to prevent downtime during peak filing hours and providing dedicated power backup solutions to mitigate interruptions during virtual hearings.

- (b) Secondly, there is an urgent need for standardized and continuous capacity-building programs. The court should implement mandatory refresher training for both internal staff and external advocates to bridge the skill gaps identified in the thematic analysis.
- (c) Thirdly, the Judiciary should establish dedicated ICT support desks at the Milimani Law Courts to provide real-time troubleshooting for users encountering login or system errors.
- (d) Finally, the study recommends the formalization of a continuous optimization policy where system performance is regularly evaluated against user feedback to ensure the technology remains aligned with the evolving needs of the legal environment

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