

Technological Diversification Strategies and Judicial Performance of High Courts in Kenya

Rose Mugeni Ndombi^{1*}, Jairo Kirwa Mise¹, Gulali Donald Indiya¹

¹Department of Business Administration, School of Business and Economics, Maseno University, Kenya

*Corresponding Author Email: rose.ndombi89@gmail.com

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Abstract

Judicial systems are increasingly adopting digital technologies to improve efficiency, reduce case delays and backlogs, and enhance access to justice. In Kenya, the Judiciary has introduced virtual courts, Electronic Case Management Systems (ECMS), Electronic Case Tracking Systems (ECTS), and Electronic Case Filing (ECF) as part of its digital transformation agenda. Despite these interventions, performance challenges persist, raising questions about whether technological diversification translates into improved judicial outcomes. This study determined the effect of technological diversification strategies on the judicial performance of High Courts in Kenya. The study was anchored primarily on Dynamic Capabilities Theory, supported by the Technology Acceptance Model. The study adopted a positivist research philosophy and a quantitative research design. The study collected data through structured questionnaires from 254 respondents, including High Court Judges, Deputy Registrars, Court Assistants, and ICT Officers from High Court stations in Kenya. The study used descriptive statistics, correlation analysis, and multiple regression analysis to analyze the data. Technological diversification strategies were generally rated favourably ($M = 3.788$, $SD = 0.178$), with ECTS receiving the highest rating ($M = 3.809$), followed by ECF ($M = 3.798$), virtual courts ($M = 3.781$), and ECMS ($M = 3.763$). However, the regression model was not statistically significant, $F(4,249) = 0.115$, $p = .977$, $R^2 = .002$, indicating that the four technological strategies jointly explained only 0.2% of the variation in judicial performance. None of the individual technological strategies had a statistically significant effect. The study concludes that technological deployment alone cannot improve judicial performance. The Judiciary should therefore complement digital investments with system integration, adequate ICT infrastructure, staff capacity development, and performance-oriented implementation mechanisms.

Keywords: *Technological Diversification, Judicial Performance, Virtual Courts, Electronic Case Management Systems, Electronic Case Tracking Systems, Electronic Filing, High Courts of Kenya*

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1. Introduction

Judicial institutions worldwide face growing pressure to deliver justice more quickly, transparently, and at a cost manageable for both courts and court users. At the same time, courts continue to contend with case backlogs, lengthy resolution processes, administrative inefficiencies and increasing public expectations for accessible services. These pressures have

made digital transformation an important part of contemporary judicial reform. Technologies such as virtual courts, electronic case management systems, electronic case tracking systems and electronic filing systems are increasingly being incorporated into court operations to improve the movement of cases, reduce dependence on paper-based processes and make judicial services more accessible (European Commission for the Efficiency of Justice [CEPEJ], 2023; Ginsburg & Moustafa, 2023). The underlying expectation is that technological diversification enables courts to manage growing workloads while improving the speed, efficiency, and quality of justice delivery.

The growing use of information and communication technology in judicial administration reflects a broader shift from isolated automation of administrative tasks to more integrated digital court systems. Rather than relying on a single technological intervention, contemporary courts increasingly combine several platforms that support different stages of the judicial process. Electronic filing facilitates document submission and storage, case management systems organize case information and workflows, tracking systems provide information on case progress, and virtual courts enable proceedings without requiring all participants to be physically present. When these technologies operate effectively, they can reduce administrative errors, improve access to case information, strengthen monitoring, and facilitate more efficient utilization of judicial resources (Martínez-Caro et al., 2020; Mulwa et al., 2023).

International experience provides strong evidence of digital technologies' potential contribution to judicial performance, although benefits have not been uniform across jurisdictions. Studies cited in the thesis indicate that digital filing, case management, and virtual judicial processes have been associated with shorter processing times and improved backlog clearance in Eastern Indonesia, while Estonia's e-justice reforms have been associated with substantial reductions in average case duration and administrative costs. Countries such as the United Kingdom, Germany, Singapore, India, and Rwanda have also reported improvements in efficiency, accessibility, and case administration. Conversely, experiences in Botswana and Namibia demonstrate that technological reforms can coexist with persistent delays where courts continue to face infrastructural and administrative constraints (Affandi, 2023; Djamaludin et al., 2023; Fabri, 2024; Matongo & Jacobs, 2022; Mosweu, 2021; Rugege, 2020; Townend & Wiener, 2021; Vasista, 2018).

These contrasting experiences are important because they show that introducing technology does not necessarily produce the same outcomes in every judicial environment. Digital technologies can improve how information is created, transmitted, and retrieved, but a court's ultimate performance is still shaped by the institutional setting in which those technologies operate. Infrastructure, technical support, staffing, procedural arrangements and the ability to integrate new technologies into existing workflows can affect the extent to which technological investments produce observable improvements. Evidence from Southern Africa, for example, points to efficiency gains from judicial technologies but also highlights infrastructure and adaptation challenges, while studies from Pakistan have linked digitization to reductions in pending cases and processing times (Kalanauri, 2021; Mosweu & Mosweu, 2018).

Within East Africa, judicial systems have similarly invested in digital transformation, although implementation experiences differ. Kenya has progressively introduced electronic case tracking, e-filing and virtual hearings as part of broader efforts to modernize the administration of justice. Uganda has implemented an Electronic Court Case Management Information System, while Tanzania has undertaken technology-supported judicial reforms with varying results across court stations. Regional experience therefore shows both the opportunities

offered by judicial technologies and the practical difficulties of translating adoption into consistent improvements in court performance (IACA Journal, 2023; Judiciary of Kenya, 2024; Kuhimbisa, 2024).

In Kenya, digital transformation has become a prominent feature of judicial reform. The Judiciary has deployed technologies intended to support filing, case management, tracking, and virtual proceedings, with the broader purpose of improving efficiency and access to justice. The Case Tracking System, e-filing platforms and virtual hearings are particularly important because they address different stages of the judicial process and collectively represent a move towards a more digitally integrated justice system. These reforms are expected to decongest physical registries, improve access to case information, reduce unnecessary movement of litigants and advocates, strengthen case monitoring, and contribute to faster administration of justice (Judiciary of Kenya, 2024; Judiciary of Kenya, *Leveraging on ICT*, 2024).

The High Court provides an important setting in which to examine whether these expectations are being realized. As a superior court of record, the High Court exercises original and supervisory jurisdiction over a broad range of civil, criminal, constitutional and administrative matters. Many of these cases involve extensive documentation, several procedural stages, multiple parties and complex legal questions. Efficiently handling such matters requires timely access to case information, reliable document management, effective scheduling, and continuous monitoring of case progress. Virtual Courts, Electronic Case Management Systems (ECMS), Electronic Case Tracking Systems (ECTS) and Electronic Case Filing (ECF) therefore have considerable potential to improve the management of these demanding judicial processes.

Judicial performance in this context extends beyond the mere availability of technology. It concerns the extent to which courts can manage and dispose of cases efficiently and deliver justice within reasonable timelines. The thesis conceptualized performance in terms of outcomes including case completion, backlog reduction, and effective case resolution, alongside broader dimensions of service delivery and efficiency. Technological diversification is therefore meaningful from a performance perspective only when the technologies deployed contribute to observable improvements in how cases and judicial services are managed.

The Kenyan experience, however, raises an important concern. Considerable investment has been made in judicial technologies, yet case backlog and delays remain important challenges within the justice system. The thesis identifies continuing pressure from rising filings, limited judicial and administrative resources and differences in technological and infrastructural capacity across court stations. This coexistence of digital expansion and persistent performance challenges raises a fundamental strategic management question: whether expanding the range of technologies available to courts necessarily improves judicial performance. The question is particularly relevant because successful digital transformation should ultimately be demonstrated through improved outcomes rather than simply through installing or using technological systems (Judiciary of Kenya, 2024; Wangui, 2017).

Existing empirical research provides useful evidence on individual judicial technologies, but important gaps remain. Previous studies have linked electronic filing to improved document accessibility, case management systems to better workflow coordination, tracking systems to enhanced case monitoring, and virtual courts to continuity and accessibility of proceedings. However, evidence linking these technologies to measurable judicial performance within Kenya remains limited, particularly when the technologies are examined collectively rather than as separate innovations. The thesis specifically identifies limited Kenya-based evidence

linking e-filing to reduced High Court backlogs and improved hearing timeliness. This creates an empirical gap because a court may successfully implement several digital systems without necessarily achieving corresponding improvements in its overall performance.

The literature also has a contextual gap. Evidence generated from other countries cannot automatically be generalized to Kenyan High Courts because judicial institutions operate within different legal, administrative, infrastructural, and resource environments. Even within Kenya, technological implementation may vary among court stations because of differences in connectivity, equipment, workloads and administrative capacity. Moreover, studies examining isolated technologies do not adequately capture the strategic value of technological diversification, where several complementary technologies are deployed simultaneously across different aspects of court operations. Examining Virtual Courts, ECMS, ECTS and ECF within one analytical framework therefore provides a more comprehensive assessment of whether the Judiciary's expanding digital capability is associated with improved performance (Judiciary of Kenya, 2024; Mulwa et al., 2023).

Against this background, the present study addresses the gap by examining technological diversification as a multidimensional strategic construct comprising Virtual Courts, Electronic Case Management Systems, Electronic Case Tracking Systems and Electronic Case Filing Systems, and relating these strategies to the judicial performance of High Courts in Kenya. The study moves beyond determining whether digital technologies are present or positively perceived and examines whether variation in their deployment and use is associated with measurable variation in judicial performance. Accordingly, the study aimed to determine the effect of technological diversification strategies on the judicial performance of High Courts in Kenya. The corresponding null hypothesis stated that technological diversification strategies have no significant effect on the judicial performance of High Courts in Kenya.

2. Literature Review

2.1 Theoretical Framework

This manuscript is primarily anchored on Dynamic Capabilities Theory (DCT), with the Technology Acceptance Model (TAM) providing a complementary explanation of technology use at the individual level. The two perspectives are relevant because technological diversification in the judiciary involves more than acquiring digital systems. It requires an institution to identify technological opportunities, integrate them into existing processes, reorganize routines where necessary, and ensure that intended users accept and use the systems. In the present study, technological diversification comprises Virtual Courts, Electronic Case Management Systems (ECMS), Electronic Case Tracking Systems (ECTS), and Electronic Case Filing (ECF), while judicial performance reflects the efficiency and effectiveness with which High Courts manage and dispose of cases.

2.1.1 Dynamic Capabilities Theory

Dynamic Capabilities Theory developed from the resource-based perspective of the firm and is principally associated with Teece, Pisano, and Shuen (1997). The theory argues that owning valuable resources does not, by itself, guarantee superior organizational performance, particularly in rapidly changing environments. Organizations must possess the ability to integrate, build and reconfigure internal and external competencies in response to changing circumstances. Teece (2007) subsequently conceptualized dynamic capabilities around three broad organizational activities: sensing opportunities and threats, seizing identified opportunities, and transforming or reconfiguring organizational resources and processes. The

central proposition is therefore that performance depends not simply on what resources an organization possesses, but on its ability to deploy and continuously adapt those resources (Teece et al., 1997; Teece, 2007).

The theory is particularly relevant to technological diversification in the judiciary. The introduction of Virtual Courts, ECMS, ECTS and ECF can be understood as the Judiciary's response to changing demands for faster, more accessible and more efficient justice. From a dynamic capabilities perspective, identifying the need for digital court processes represents sensing; investing in and deploying appropriate digital technologies reflects seizing; while integrating these technologies into filing, case management, tracking, hearings and other judicial workflows represents transformation. Consequently, the strategic value of judicial technology should ultimately be reflected in outcomes such as faster case resolution, improved case completion, backlog reduction and greater operational efficiency rather than merely in the availability of technological platforms (Teece, 2007; Teece et al., 1997).

DCT is especially useful for the present study because it helps distinguish technological resources from technological capability. A High Court may have access to electronic filing, case tracking, and virtual hearing platforms but still fail to achieve substantial performance improvements when those systems operate independently, duplicate manual processes, or are poorly integrated into judicial workflows. The thesis recognizes technological diversification as the adoption of digital filing, online case tracking, virtual hearings, and automated case management to improve efficiency, accessibility, and transparency. In DCT terms, therefore, technology represents an organizational resource whose value depends on the Judiciary's capacity to configure and use it productively.

DCT nevertheless has limitations. The theory operates mainly at the organizational level and pays comparatively less attention to why individual employees accept, resist, or use particular technologies inconsistently. Judicial digital transformation ultimately depends on judges and court personnel interacting with the systems in their daily work. For this reason, DCT provides the principal organizational-level explanation for the study, while TAM supplements it by explaining the behavioural dimension of technology adoption.

2.1.2 Technology Acceptance Model

Davis (1989) developed the Technology Acceptance Model to explain individual acceptance and use of information technology. TAM proposes that two central perceptions influence users' willingness to adopt technology: perceived usefulness and perceived ease of use. Perceived usefulness refers to the extent to which a person believes that using a particular technology will improve work performance, while perceived ease of use concerns the extent to which the technology is considered relatively free of effort. These perceptions influence attitudes and behavioural intentions and, ultimately, actual system use (Davis, 1989; Venkatesh & Davis, 2000).

TAM complements DCT in the present study because institutional technological capability cannot produce intended outcomes if the people responsible for judicial processes do not use the systems effectively. For example, an ECMS's potential to improve case administration depends partly on whether court personnel consider the system useful for managing their work and sufficiently straightforward to incorporate into routine processes. The same applies to electronic filing, case tracking and virtual hearings. Technologies that are cumbersome, unreliable, or perceived as adding work rather than simplifying it may be underutilized even after considerable institutional investment. The thesis similarly identifies perceived usefulness and perceived ease of use as central TAM concepts relevant to technological adoption.

Taken together, DCT and TAM provide complementary explanations for the proposed technology–performance relationship. DCT explains how the Judiciary can build, combine and reconfigure technological resources to respond to changing demands, while TAM explains how individual users’ perceptions can influence actual utilization of those resources. The theoretical expectation is therefore that technological diversification should improve judicial performance where digital resources are effectively integrated into organizational processes and meaningfully utilized by judicial personnel. This expectation provides the theoretical basis for examining Virtual Courts, ECMS, ECTS, and ECF as predictors of judicial performance in Kenya's High Court.

2.2 Empirical Review

2.2.1 Virtual Courts and Judicial Performance

Virtual courts enable judicial proceedings to take place through digital communication platforms without requiring every participant to be physically present in a courtroom. Their growing use reflects efforts by judicial systems to improve accessibility, reduce the time and costs associated with physical appearances and provide greater flexibility in scheduling hearings. From a performance perspective, virtual hearings can reduce disruptions to court proceedings, improve judicial time utilization, and enable cases to proceed where physical attendance presents logistical difficulties. Virtual courts therefore represent an important component of technological diversification because they alter the traditional spatial and procedural organization of judicial proceedings (CEPEJ, 2023; Judiciary of Kenya, 2024).

International experience suggests that virtual and digitally supported judicial proceedings can improve efficiency when integrated with other court technologies. Evidence reviewed in the thesis shows that jurisdictions such as the United Kingdom, Germany, Singapore, India and Rwanda have reported improvements in efficiency and access to justice following various forms of judicial digitization. Similarly, integrated digital reforms involving virtual verdict delivery, electronic filing and case management in Eastern Indonesia were associated with a 28% reduction in case processing time and a 33% improvement in backlog clearance (Affandi, 2023; Djamaludin et al., 2023; Ojas et al., 2024; Rugege, 2020; Townend & Wiener, 2021; Vasista, 2018).

However, the potential benefits of virtual courts should be interpreted cautiously. Holding a hearing remotely does not necessarily shorten the entire life of a case because delays may originate from filing, service, preparation of records, interlocutory applications, judgment writing, or other procedural stages. Virtual hearings may also depend on reliable connectivity, adequate equipment, and users' digital competence. This helps explain why technology-supported reforms have generated different results across institutional settings. Experiences in Botswana and Namibia, for instance, demonstrate that infrastructural and administrative constraints can coexist with technological reforms and limit their contribution to judicial performance (Matongo & Jacobs, 2022; Mosweu, 2021).

In Kenya, virtual hearings form part of the Judiciary’s wider digital transformation alongside case tracking and electronic filing. Their introduction is intended to improve access to justice and make court processes more efficient, but evidence establishing their independent contribution to measurable High Court performance remains limited. This creates a need to determine whether favourable adoption and utilization of virtual courts correspond with improved judicial outcomes when examined alongside other technological strategies (Judiciary of Kenya, 2024; Judiciary of Kenya, *Leveraging on ICT*, 2024).

2.2.2 Electronic Case Management Systems and Judicial Performance

Electronic Case Management Systems provide an integrated mechanism for courts to organize case information and coordinate activities across different stages of judicial proceedings. These systems may support case registration, scheduling, document management, workflow monitoring, and information retrieval. Their strategic importance lies in replacing fragmented, paper-heavy processes with structured digital workflows. This can make it easier for judicial personnel to identify pending activities, monitor deadlines and obtain information required to move cases through the court system (Martínez-Caro et al., 2020; Mulwa et al., 2023).

Empirical literature generally associates integrated case management with greater administrative efficiency, although the magnitude of improvement varies considerably. Digital systems can reduce errors associated with manual records, improve access to case information, and provide real-time information on workflow bottlenecks and accumulated cases. These capabilities can support management decisions by allowing courts to monitor indicators such as case resolution time, case closures and procedural compliance. However, their contribution depends on whether information is entered accurately and promptly and whether the system is incorporated into routine court processes rather than operating alongside parallel manual procedures (Martínez-Caro et al., 2020; Mulwa et al., 2023).

Regional experience reinforces the importance of implementation conditions. Uganda's Electronic Court Case Management Information System has produced efficiency gains in some jurisdictions, whereas technology-supported reforms in Tanzania have generated mixed outcomes, with improvements in selected stations but continuing backlogs elsewhere. These findings suggest that case management technologies offer useful capabilities but do not automatically produce uniform performance improvements simply because they have been deployed (IACA Journal, 2023; Kuhimbisa, 2024).

For Kenyan High Courts, ECMS is particularly relevant because complex cases may involve extensive documentation, multiple stages, numerous parties and lengthy procedural histories. A well-functioning case management system can bring these elements together and improve case visibility throughout its lifecycle. Nevertheless, the continued presence of case-management challenges despite technological investment makes it necessary to test empirically whether ECMS is associated with better judicial performance rather than assuming such an effect from its functionality alone (Judiciary of Kenya, 2024; Wangui, 2017).

2.2.3 Electronic Case Tracking Systems and Judicial Performance

Electronic Case Tracking Systems provide mechanisms for following the status and movement of cases through different stages of the judicial process. Unlike broader case management systems, tracking systems are particularly useful for improving visibility of case progress, identifying delays, and enabling judicial administrators and other authorized users to determine where a matter stands at a given time. This visibility can strengthen monitoring, reduce difficulties associated with locating case information and support timely administrative intervention where cases remain inactive for extended periods (Judiciary of Kenya, 2024; Mulwa et al., 2023).

Case tracking may improve judicial performance by increasing accountability and enabling management to identify bottlenecks before they become prolonged delays. Real-time information on workflow, hearing schedules and pending actions allows court administrators to monitor adherence to procedural timelines and allocate attention to cases requiring intervention. More broadly, ICT-supported monitoring provides a basis for evaluating

indicators such as resolution time, monthly case closures and compliance with court schedules (Martínez-Caro et al., 2020; Mulwa et al., 2023).

Kenya's Case Tracking System forms part of the Judiciary's wider effort to decongest registries, reduce backlog and improve access to judicial information. Its importance extends beyond digitizing records because timely case-status information can support managerial oversight and give litigants and advocates greater visibility into proceedings. Yet the thesis identifies limited empirical evidence directly linking case tracking and related digital interventions to measurable backlog reduction in Kenyan High Courts. This leaves an important empirical question: whether greater utilization of ECTS is associated with better judicial performance (Judiciary of Kenya, 2024; Judiciary of Kenya, *Leveraging on ICT*, 2024).

2.2.4 Electronic Case Filing and Judicial Performance

Electronic Case Filing enables court documents to be submitted, received and processed electronically, reducing reliance on physical registries and paper-based filing. It can improve accessibility by allowing advocates and other authorized users to lodge documents without travelling to court registries, while digital records can facilitate faster retrieval and sharing of case documents. E-filing is therefore expected to reduce administrative burden, improve document management and support more efficient movement of cases through the judicial system (Judiciary of Kenya, 2024; Mosweu & Mosweu, 2018).

Empirical evidence from different jurisdictions suggests that electronic filing can improve judicial administration, although its performance effects depend on the wider institutional environment. Cross-country evidence from Southern Africa reports efficiency improvements alongside ongoing infrastructure and adaptation constraints, while evidence from Pakistan indicates reductions in pending cases and processing times following digital reforms (Kalanauri, 2021; Mosweu & Mosweu, 2018). These findings suggest that ECF can improve performance, but its benefits are likely greater where the filing platform is reliably connected to downstream case-management and tracking processes.

This distinction matters because electronic submission of documents does not necessarily mean the entire subsequent workflow is digital. Where documents submitted electronically must later be printed, manually transferred, re-entered into another system, or processed through procedures designed for paper-based operations, some anticipated efficiency gains may be lost. From a dynamic capabilities perspective, meaningful performance improvement therefore requires the Judiciary to reconfigure the underlying workflow rather than merely digitize the point at which documents enter the court system (Teece, 2007; Teece et al., 1997).

In Kenya, e-filing has become one of the most visible elements of judicial digitization. However, the thesis identifies a specific empirical limitation: Kenya-based evidence linking e-filing to High Court backlog reduction and hearing timeliness remains limited. Consequently, evidence is still needed on whether ECF, when considered alongside other technologies deployed by the Judiciary, is associated with measurable differences in High Court performance.

3. Methodology

The study was anchored in a positivist research philosophy, which was appropriate because it sought to objectively measure technological diversification strategies and judicial performance and statistically test the relationship between them. Positivism assumes that phenomena can be observed and measured using systematic procedures and that relationships among variables can be examined through quantitative evidence (Creswell & Creswell, 2017; Cohen et al., 2018).

This philosophical orientation supported the use of standardized measures, numerical data, and inferential statistical techniques to determine whether technological diversification strategies significantly explained variations in judicial performance.

The study adopted a quantitative correlational research design. This design was suitable because it examined naturally occurring relationships between technological diversification strategies and judicial performance without manipulating the study variables. The study operationalized technological diversification through four dimensions: Virtual Courts, Electronic Case Management Systems (ECMS), Electronic Case Tracking Systems (ECTS), and Electronic Case Filing (ECF). The study assessed judicial performance in terms of the efficiency and effectiveness with which High Courts manage and dispose of cases. The correlational design therefore enabled the study to determine both the direction and magnitude of relationships and subsequently estimate the individual and joint effects of the four technological strategies on judicial performance.

The study was conducted in 46 High Court stations in Kenya. High Courts provided an appropriate institutional setting because they exercise original and supervisory jurisdiction over a wide range of civil, criminal, constitutional and administrative matters. Their cases frequently involve extensive documentation, several procedural stages and multiple stakeholders, creating considerable demand for effective case filing, management, tracking and hearing systems. The geographical distribution of High Court stations also created variation in technological infrastructure, operational conditions, and resource availability, enabling an examination of technological diversification across different court environments.

The target population comprised 694 judicial personnel drawn from four categories directly involved in court administration and use of judicial technologies. These were 93 High Court Judges, 66 Deputy Registrars, 328 Court Assistants and 207 ICT Officers. These categories were selected because their responsibilities bring them into direct contact with Virtual Courts, ECMS, ECTS, and ECF, positioning them to provide informed assessments of both technological diversification and judicial performance. The individual judicial officer or staff member constituted the unit of analysis.

A sample of 254 respondents was drawn from the target population of 694. The sample size was determined using Yamane's sample-size formula at a 5% level of precision. Stratified sampling was subsequently used to ensure adequate representation of the different professional categories within the High Courts. This approach was appropriate because the target population was heterogeneous, with Judges, Deputy Registrars, Court Assistants and ICT Officers performing distinct functions and interacting differently with judicial technologies.

Proportionate allocation was applied within the respective strata, resulting in a sample comprising 34 High Court Judges, 24 Deputy Registrars, 120 Court Assistants, and 76 ICT Officers, for a total of 254 respondents. Stratification reduced the likelihood of disproportionately representing any single professional category and allowed the sample to retain the structure of the target population. This procedure was particularly important because technological experiences could reasonably differ based on the respondent's responsibilities within court operations.

Multiple regression analysis tested the study's first null hypothesis at the 5% significance level. The dependent variable was Judicial Performance (Y), while Virtual Courts (VC), Electronic Case Management Systems (ECMS), Electronic Case Tracking Systems (ECTS), and Electronic Case Filing (ECF) constituted the predictor variables. The model was specified as:

$$Y = \beta_0 + \beta_1 VC + \beta_2 ECMS + \beta_3 ECTS + \beta_4 ECF + \varepsilon$$

Where Y represents Judicial Performance, β_0 is the constant, β_1 – β_4 are the regression coefficients of the four technological diversification strategies, and ε represents the error term.

The F-statistic evaluated the overall significance of the regression model, while regression coefficients, t-statistics, and corresponding p-values evaluated individual predictor effects. The null hypothesis - technological diversification strategies have no significant effect on the judicial performance of High Courts in Kenya - was tested at $\alpha=.05$.

4. Results and Discussion

4.1 Correlation between Technological Diversification Strategies and Judicial Performance

Pearson correlation analysis was conducted to establish the direction and strength of the relationship between each technological diversification strategy and judicial performance. The overall technological diversification composite was also correlated with judicial performance. Table 1 presents the relevant results.

Table 1: Correlation between Technological Diversification Strategies and Judicial Performance (n = 254)

Variable	Pearson's r with Judicial Performance	p-value
Virtual Courts	0.013	0.832
ECMS	0.011	0.862
ECTS	-0.018	0.777
ECF	-0.034	0.587
Overall Technological Diversification Strategies	-0.014	0.822

The overall technological diversification construct had a very weak negative correlation with judicial performance ($r = -0.014$, $p = 0.822$). The coefficient was close to zero and statistically insignificant, indicating that variations in respondents' assessments of technological diversification were not systematically accompanied by variations in judicial performance. Thus, although the technologies were generally assessed favourably at the descriptive level, higher technological diversification scores were not associated with significantly higher judicial performance scores.

A similar pattern emerged at the level of the individual technologies. Virtual Courts had a negligible positive correlation with judicial performance ($r = 0.013$, $p = 0.832$), while ECMS also recorded a negligible positive relationship ($r = 0.011$, $p = 0.862$). ECTS showed a negligible negative relationship ($r = -0.018$, $p = 0.777$), as did ECF ($r = -0.034$, $p = 0.587$). None of the four correlations was statistically significant at the 5% level. The signs of the coefficients should therefore not be interpreted as evidence that ECTS or ECF reduced judicial performance; statistically, the results provide no evidence of a meaningful linear association in either direction.

4.2 Regression Analysis and Hypothesis Testing

The study sought to determine whether the four technological diversification strategies jointly and individually predicted judicial performance. The null hypothesis tested was:

H₀₁: Technological diversification strategies have no significant effect on the judicial performance of High Courts in Kenya.

Multiple regression analysis used judicial performance as the dependent variable and Virtual Courts, ECMS, ECTS, and ECF as predictor variables.

Table 2: Model Summary for Technological Diversification Strategies and Judicial Performance

R	R ²	Adjusted R ²	Std. Error of the Estimate
0.043	0.002	-0.014	0.352

The regression model produced an R of 0.043 and R² of 0.002, indicating that Virtual Courts, ECMS, ECTS, and ECF jointly explained approximately 0.2% of the variation in judicial performance. Consequently, the four technological variables explained only 0.2% of the variation in judicial performance. The adjusted R² was -0.014, indicating that after adjustment for the number of predictors, the model did not improve prediction of judicial performance beyond an intercept-only model. Technological diversification therefore demonstrated very limited explanatory power for judicial performance in the observed data.

Table 3: ANOVA for Technological Diversification Strategies and Judicial Performance

Source	Sum of Squares	df	Mean Square	F	p-value
Regression	0.057	4	0.014	0.115	0.977
Residual	30.833	249	0.124		
Total	30.890	253			

The ANOVA results showed that the overall regression model was not statistically significant, $F(4,249) = 0.115$, $p = 0.977$. The p-value was substantially above the 0.05 significance threshold, demonstrating that the four technological diversification strategies, when considered jointly, did not significantly predict judicial performance.

Table 4: Regression Coefficients for Technological Diversification Strategies

Predictor	B	Std. Error	β	t	p-value
Constant	3.883	0.475	—	8.181	<0.001
Virtual Courts	0.017	0.061	0.018	0.275	0.783
ECMS	0.011	0.061	0.011	0.174	0.862
ECTS	-0.016	0.063	-0.016	-0.248	0.805
ECF	-0.033	0.060	-0.035	-0.554	0.580

Dependent variable: Judicial Performance.

At the individual level, none of the four technological strategies significantly predicted judicial performance. Virtual Courts had a small positive coefficient ($B = 0.017$, $\beta = 0.018$, $p = 0.783$), while ECMS similarly recorded a small positive coefficient ($B = 0.011$, $\beta = 0.011$, $p = 0.862$). These results indicate that, holding the other technological strategies constant, increases in Virtual Courts and ECMS scores were associated with only negligible increases in judicial performance, and neither effect was statistically significant.

ECTS recorded a small negative coefficient ($B = -0.016$, $\beta = -0.016$, $p = 0.805$), while ECF recorded $B = -0.033$, $\beta = -0.035$, $p = 0.580$. Both effects were statistically insignificant. The negative coefficients should therefore be interpreted cautiously. They do not provide evidence that case tracking or electronic filing adversely affects judicial performance; rather, the data did not establish a statistically reliable independent effect for either technology.

The estimated regression model was therefore:

$$\hat{Y} = 3.883 + 0.017VC + 0.011ECMS - 0.016ECTS - 0.033ECF$$

Where Y represents predicted judicial performance. More importantly, the joint model was statistically insignificant and explained only 0.2% of the variation in the dependent variable. Accordingly, H_{01} was not rejected. The study therefore found insufficient statistical evidence to conclude that technological diversification strategies significantly affected judicial performance in Kenya's High Courts.

The central empirical result is therefore the contrast between favourable technological adoption and weak performance association. Respondents generally agreed that the four technological strategies were functional within High Courts (overall $M = 3.788$, $SD = 0.178$), yet neither the overall technological diversification construct nor any individual dimension showed a statistically significant relationship with judicial performance. This finding provides the basis for the subsequent discussion of why relatively well-established digital technologies may not, on their own, translate into measurable improvements in judicial performance.

5. Conclusion

The study concludes that technological diversification strategies did not have a statistically significant effect on judicial performance in Kenya's High Courts. Although Virtual Courts, ECMS, ECTS and ECF were all generally perceived favorably, the four strategies jointly explained only 0.2% of the variation in judicial performance, and the overall regression model was not statistically significant, $F(4,249) = 0.115$, $p = 0.977$. The null hypothesis was therefore not rejected.

At the individual level, none of the technologies significantly predicted judicial performance. Virtual Courts and ECMS produced small positive but insignificant coefficients, while ECTS and ECF produced small negative but equally insignificant coefficients. The findings therefore provide no evidence that any of the four technologies independently improved or reduced judicial performance within the sample.

The broader conclusion is that the presence and use of digital technologies are not sufficient indicators of successful judicial transformation. Technologies can improve accessibility, information management, document filing, monitoring and continuity of hearings while broader performance outcomes remain constrained by factors beyond the technology itself. This finding supports the view that technological diversification should be treated as an enabling capability that must be integrated with adequate human resources, infrastructure, technical support and efficient court processes before its full performance benefits can be realized. The thesis reaches the same conclusion that digital adoption alone does not guarantee better case completion, backlog reduction, or timeliness.

From a theoretical standpoint, the findings provide a useful qualification to Dynamic Capabilities Theory. The High Courts appear to possess a range of technological resources, but the insignificant performance relationship suggests that the important issue is how these

resources are combined and embedded within organizational processes. The results also highlight the limitation of equating technology acceptance with institutional performance: technologies may be accepted and positively perceived without necessarily producing measurable system-wide gains.

6. Recommendations

The Judiciary of Kenya should shift the focus of digital transformation from technology deployment to measurable performance outcomes. Virtual Courts, ECMS, ECTS and ECF should be routinely assessed against indicators such as case completion rates, time to disposition, backlog reduction, adjournment rates, system downtime, user costs and satisfaction. Such monitoring would make it possible to distinguish widely used technologies from those that produce demonstrable improvements in court performance. This recommendation is consistent with the thesis's call for outcome-based evaluation of individual digital systems.

Greater attention should also be given to integration and interoperability. Electronic filing, tracking, case management, and virtual hearing platforms should function as connected components of a single digital case lifecycle. Where one system requires users to re-enter information into another, print digitally submitted documents or maintain parallel manual records, the anticipated efficiency gains are likely to be weakened. Integration should therefore enable information entered at filing to move seamlessly through case management, tracking, hearing, and eventual disposition.

The Judiciary should strengthen ICT infrastructure and technical reliability across High Court stations. Reliable connectivity, adequate equipment, responsive technical support and consistent system availability are essential if digital systems are to support judicial work without creating new delays. This is particularly important because the literature reviewed in the thesis shows that infrastructural weaknesses can limit the benefits of technological reforms even where digital systems are available.

Business processes also need redesign. Court workflows should be reviewed alongside technological implementation so inefficient manual procedures are not simply replicated electronically. The introduction of ECMS, ECTS, or e-filing should therefore be accompanied by an examination of case allocation, registry processes, scheduling, document movement, and follow-up procedures. Digital transformation should change how work is organized where existing routines create unnecessary delays.

Continued investment in staff capacity is equally important. Judges, Deputy Registrars, Court Assistants and ICT Officers require ongoing training not only in basic system operation but also in effective use of digital case-management tools, performance dashboards, cybersecurity and troubleshooting. This is especially important as technological systems evolve and become more integrated.

Finally, the Judiciary should address the non-technological determinants of performance alongside digital investment. Given that the four technological strategies explained only 0.2% of variation in judicial performance, future performance improvement efforts should give comparable attention to judicial staffing, support personnel, caseload distribution, procedural efficiency, courtroom and ICT infrastructure, and resource allocation. Technology should therefore form part of a broader judicial-performance strategy rather than being treated as an independent solution to backlog and delay.

References

- Affandi, I. (2023). Application of e-court in different countries: A comparative study in the development of e-court. In *Proceedings of the 3rd International Conference on Law, Governance, and Social Justice* (pp. 1080–1091). Atlantis Press.
- Chawinga, C. J. (2017). *An evaluation of electronic case management system (ECMS) in the Judiciary of Malawi: A case study of the High Court of Malawi registries* [Undergraduate thesis, Mzuzu University].
- Chawinga, W. D., Chawinga, C., Kapondera, S. K., Chipeta, G. T., Majawa, F., & Nyasulu, C. (2020). Towards e-judicial services in Malawi: Implications for justice delivery. *The Electronic Journal of Information Systems in Developing Countries*, 86(2), e12121.
- Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education* (8th ed.). Routledge.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
- Djamaludin, D., Aziz, M. F., Ar-Rasyid, Y., & As-Sayyis, I. A. (2023). Assessing the impact of electronic court systems on the efficiency of judicial processes in the era of digital transformation. *Volksgeist: Jurnal Ilmu Hukum dan Konstitusi*, 1–18.
- European Commission for the Efficiency of Justice. (2023). *Guidelines on electronic court filing (e-filing) and digitalisation of courts*. Council of Europe.
- Fabri, M. (2024). From court automation to e-justice and beyond in Europe. *International Journal for Court Administration*, 15, 1.
- Ginsburg, T., & Moustafa, T. (2023). Strategic judicial empowerment. *American Journal of Comparative Law*, 72(1), 170–200.
- Kalanauri, L. Z. (2021). Electronic filing system, virtual courts & online dispute resolution—Need of the hour for Pakistan legal system. *International Journal for Electronic Crime Investigation*, 5(1), 17–30.
- Kassar, G. R., Kausar, S., & Laghari, A. R. (2024). Evolving case management systems: Technological and administrative reforms to address judicial delays in Pakistan. *Annals of Human and Social Sciences*, 5(3), 763–778.
- Martínez-Caro, E., Cegarra-Navarro, J. G., & Alfonso-Ruiz, F. J. (2020). Digital technologies and firm performance: The role of digital organisational culture. *Technological Forecasting and Social Change*, 154, 119962.
- Matongo, B., & Jacobs, L. (2022). E-justice to bridge records management gap at the High Court in Namibia. In *Archiving Conference* (Vol. 19, pp. 25–29). Society for Imaging Science and Technology.
- Mbugua, K. C. (2012). *Influence of the electronic case management system (ELCM) on the effectiveness of court service delivery: The case of the Eldoret Court Station, Kenya* [Doctoral dissertation, University of Nairobi].
- Mosweu, T. (2021). Access to electronic court records in Botswana: Trends, status and recommendations. *ESARBICA Journal: Journal of the Eastern and Southern Africa Regional Branch of the International Council on Archives*, 40, 87–99.

- Mosweu, T., & Mosweu, O. (2018). Electronic court records management systems: A review of literature in selected African countries. *Mousaion*, 36(3).
- Muigua, K. (2023). Embracing technology for enhanced efficiency and access to justice in the legal profession. *Alternative Dispute Resolution*, 1.
- Mulwa, A., Ngala, M., & Mugaa, L. (2023). Technological strategies and performance of the judicial sector in Kenya: A case of Nairobi City County. *European Journal of Business and Strategic Management*, 8(3), 43–64.
- Ojas, O., Vashishtha, V., Kumar-Jha, S., Kumar-Shah, V., Kumar, R., & Ramasamy, G. (2024). *JAMES: Enhancing judicial efficiency with smart administration*. SSRN.
- Rossner, M., & Tait, D. (2023). Presence and participation in a virtual court. *Criminology & Criminal Justice*, 23(1), 135–157.
- Rossner, M., Tait, D., & McCurdy, M. (2021). Justice reimaged: Challenges and opportunities with implementing virtual courts. *Current Issues in Criminal Justice*, 33(1), 94–110.
- Rugege, S. (2020). Some aspects of judicial reform in Rwanda from 2004 to 2019. *Rwanda Law Journal*, 1(1).
- State of the Judiciary & the Administration of Justice. (2024). *State of the Judiciary & the Administration of Justice annual report 2023/2024*. Judiciary of Kenya.
- Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of sustainable enterprise performance. *Strategic Management Journal*, 28(13), 1319–1350.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533.
[https://doi.org/10.1002/\(SICI\)1097-0266\(199708\)18:7%3C509::AID-SMJ882%3E3.0.CO;2-Z](https://doi.org/10.1002/(SICI)1097-0266(199708)18:7%3C509::AID-SMJ882%3E3.0.CO;2-Z)
- Townend, J., & Wiener, C. (2021). *Justice system data: A comparative study*. The Legal Education Foundation.
- Vasista, T. G. (2018). SaaS based e-court applications in e-governance in India. *International Journal of Managing Public Sector Information and Communication Technologies*, 9.
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. *Management Science*, 46(2), 186–204.
- Wangui, G. (2017). Factors influencing performance of the judicial system in Kenya: The case of delayed court rulings. *International Journal of Law and Policy*, 1(1), 64–72.