

DIGITAL PROJECT MONITORING TOOLS AND PERFORMANCE OF DONOR-FUNDED PROJECTS IN NAIROBI COUNTY, KENYA

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ABSTRACT

Donor-funded projects play a significant role in Kenya's socio-economic development, yet many continue to experience delays, cost overruns, and accountability challenges despite increased investment in digital monitoring systems. This study examined the effect of digital project monitoring tools on the performance of donor-funded projects in Nairobi City County, Kenya. Specifically, the study evaluated the influence of data accuracy and reliability, and feedback and corrective mechanisms on project performance. The study was guided by the Resource-Based View Theory and Accountability Theory. A descriptive correlational research design was adopted. The target population comprised 185 donor-funded projects operating in Nairobi County, from which a sample of 126 respondents was selected using stratified and simple random sampling techniques. Primary data were collected using structured questionnaires, and a pilot study was conducted to establish instrument validity and reliability. Quantitative data were analysed using descriptive statistics, Pearson correlation, and multiple linear regression with the aid of SPSS version 28. Out of the 126 questionnaires administered, 118 were returned, representing a response rate of 93.7%. The findings revealed that both data accuracy and reliability, and feedback and corrective mechanisms had positive and statistically significant effects on project performance. Correlation analysis showed strong positive relationships between data accuracy and reliability and project performance ($r = 0.702$, $p < 0.05$), and between feedback and corrective mechanisms and project performance ($r = 0.688$, $p < 0.05$). Regression results indicated that data accuracy and reliability ($\beta = 0.245$, $p = 0.001$) and feedback and corrective mechanisms ($\beta = 0.218$, $p = 0.001$) significantly predicted project performance. The overall regression model was statistically significant ($F = 106.972$, $p < 0.001$) and explained 75.2% of the variation in project performance ($R^2 = 0.752$). The study concludes that effective digital project monitoring tools enhance project performance by improving data quality, accountability, evidence-based decision-making, organisational learning, and timely corrective action. The study recommends that implementing agencies strengthen data governance practices, institutionalise structured digital feedback systems, invest in staff capacity building, and integrate monitoring platforms to improve the performance and sustainability of donor-funded projects.

Keywords: Digital project monitoring tools, data accuracy and reliability, feedback and corrective mechanisms, project performance, donor-funded projects, Nairobi City County.

Background of the Study

In recent years, donor-funded development projects have come under increasing scrutiny to deliver reliably on cost, time and outcome expectations (World Bank, 2023). One of the mechanisms promoted to enhance oversight and accountability is the use of digital monitoring tools, defined here as mobile data-collection applications, cloud-based dashboards, geospatial systems and integrated project-information platforms. For example, digital dashboards are described as “simple and powerful data-driven software solutions that are used to visually ascertain the status and key performance indicators of a project” (Project Management Institute, as cited in PMI, 2013/2024). In practice, organisations supporting donor-funded programmes list top-use monitoring tools specifically designed for funded projects (e.g., mobile data entry, online dashboards, financial tracking) (Funds for NGOs, 2024).

Despite the promise of digital monitoring, research remains clear that merely deploying tools does not automatically translate into improved project performance. Studies show that successful monitoring and evaluation (M&E) systems that support project performance must combine timely data collection, stakeholder involvement, feedback loops and capacity for utilization of data (Kimote & Muchai, 2024; Ochieng’-Olima & Wairimu Mungai, 2024). For instance, a study of donor-funded projects in Kenya found that although M&E tools were available, their use was constrained by staff capacity and organisational readiness (Ochieng’-Olima & Wairimu Mungai, 2024).

In the broader project management discipline, digital tools are increasingly embedded within governance and coordination frameworks. According to Chen (2025), digital technologies in project management no longer simply automate tasks but become integral to how coordination, accountability and strategic alignment occur in complex projects. This suggests that digital monitoring tools can influence performance not just by enabling data capture, but by reshaping organisational processes and decision-making.

In the context of donor-funded projects, performance is typically measured by dimensions such as timeliness, budget adherence, quality of deliverables and stakeholder satisfaction. Monitoring systems that provide real-time visibility, enable corrective action and support stakeholder communication are posited to improve these dimensions (Jurčić, 2025). However, empirical evidence from developing country contexts remains limited. In Kenya, for example, the national aid information management system (e-ProMIS) has been cited as enhancing data on donor-funded projects (Development Initiatives, 2024), yet there is little published evidence linking such systems to improved project outcomes in specific local contexts.

Given this gap, it is timely to examine the effect of digital project monitoring tools on the performance of donor-funded projects in Nairobi City County, Kenya. This study will assess the extent of tool adoption, identify implementation challenges, and empirically measure how tool use associates with project outcomes such as timeliness, cost adherence and quality.

Statement of the Problem

Donor-funded projects form a critical pillar of Kenya’s socio-economic development agenda, accounting for approximately 30 percent of the country’s annual development expenditure (National Treasury & Planning, 2023). Yet, despite the substantial financial inflows, their implementation performance remains below optimal levels. According to the Office of the Auditor-General (OAG, 2025), only 169 projects (79 %) of the 213 donor-funded projects audited for the year ending 30 June 2024 received clean audit opinions, while 43 (20 %) were qualified and 1 (1 %) adverse, revealing persistent weaknesses in project governance and monitoring. The same report recorded pending bills rising from KSh 35.82 billion in FY 2020/21 to KSh 68.88 billion in FY 2023/24, demonstrating growing liquidity stress, delayed disbursements, and stalled

implementation. Additionally, 22 projects incurred KSh 2.55 billion in unsupported expenditures, and seven projects experienced cumulative disbursement delays amounting to KSh 2.07 billion, directly undermining timeliness and cost control (OAG, 2025).

To enhance oversight, the Government of Kenya and development partners have introduced digital project-monitoring platforms such as the Electronic Project Monitoring Information System (e-ProMIS), Integrated Financial Management Information System (IFMIS), and sector-specific systems like the Kenya Health Information System (DHIS2/KHIS). These platforms are intended to digitize data flows, strengthen accountability, and support evidence-based decision-making. However, adoption and utilisation have been uneven. The National Treasury (2025) acknowledges that system interoperability gaps, weak data quality, and low compliance with mandatory quarterly reporting through e-ProMIS continue to limit visibility across the project portfolio. Likewise, the Public Procurement Regulatory Authority (PPRA, 2024) reports that while e-procurement coverage has expanded nationally, irregular tender management and delayed contract execution remain pervasive, signalling that digital platforms alone have not translated into consistent performance gains.

Within Nairobi City County, which hosts the headquarters of most project-implementing ministries, donor agencies, and international NGOs, these national weaknesses are particularly visible. County progress reports reveal low absorption rates averaging 62 percent for externally financed projects between 2021 and 2024, driven by procurement bottlenecks, weak monitoring, and delayed counterpart funding (Council of Governors, 2024). Empirical studies mirror this pattern. Ochieng'-Olima and Wairimu Mungai (2024) found that although digital tools such as DHIS2 improved reporting efficiency in Nairobi-based health projects, 68 percent of facilities lacked adequately trained staff, and 54 percent reported data-entry delays, constraining system effectiveness. Similarly, Kanyi (2023) observed that fewer than half of donor-funded projects in Nairobi had fully operational digital dashboards or documented corrective-action reviews, implying that monitoring data are rarely transformed into actionable management responses.

The cumulative evidence points to a central paradox: while Nairobi City County is the epicentre of Kenya's donor-funded project activity and possesses advanced digital monitoring infrastructure, implementation inefficiencies, data-quality gaps, and low system utilisation persist, leading to continued delays, cost overruns, and under-achievement of outputs. Thus, the core problem is not the absence of digital monitoring tools but the limited empirical understanding of how their use, or lack thereof, affects project performance outcomes such as timeliness, budget adherence, and deliverable quality. This study therefore sought to bridge this gap by empirically analysing the effect of digital project monitoring tools on the performance of donor-funded projects in Nairobi City County, Kenya.

Objectives of the Study

The general objective is to examine the effect of digital project monitoring tools on the performance of donor-funded projects in Nairobi City County, Kenya.

The study was guided by the following specific objectives:

- i. To evaluate the effect of data accuracy and reliability on the performance of donor-funded projects in Nairobi City County, Kenya.
- ii. To examine the effect of feedback and corrective mechanisms on the performance of donor-funded projects in Nairobi City County, Kenya.

LITERATURE REVIEW

Theoretical Review

Resource-Based View (RBV) Theory

The Resource-Based View (RBV), advanced by Jay Barney (1991), contends that organisational advantage stems from resources that are valuable, rare, inimitable, and non-substitutable (VRIN). Such resources generate sustained performance differentials. In donor-funded project management, digital monitoring systems and the human expertise to operate them represent intangible resources that, when effectively leveraged, yield superior project outcomes (Barney, 1991; Peteraf & Barney, 2022). Projects with advanced digital infrastructure, reliable data, and skilled staff can coordinate tasks, detect risks, and ensure accountability more effectively than those lacking these capabilities.

Contemporary evidence supports this reasoning. Fainshmidt, Peacock, and Smith (2023) established that digital capabilities serve as strategic assets enhancing operational agility and value creation in public institutions. Likewise, Mutua and Wainaina (2022) found that Kenyan donor-funded projects with well-developed data-management competencies achieved higher rates of timely completion and budget compliance. These findings illustrate that digital project monitoring tools, supported by technical expertise and institutional learning, can serve as strategic resources that drive performance sustainability.

However, the RBV has notable limitations. Critics such as Kozlenkova et al. (2022) argue that it is overly inward-looking and insufficiently sensitive to external pressures, such as donor conditionalities, political changes, and regulatory frameworks, that shape project outcomes. Moreover, digital technologies evolve rapidly, eroding the rarity or inimitability of specific tools unless organisations continuously invest in upgrading and learning. Therefore, this study adopted a dynamic interpretation of RBV, viewing digital monitoring capabilities as evolving strategic resources whose value depends on sustained adaptation, institutional support, and integration with broader governance structures.

Accountability Theory

Gray, Owen, and Adams (1996) developed Accountability Theory to explain the moral and operational obligation of organisations to account for their actions, justify resource use, and disclose outcomes to stakeholders. In donor-funded projects, accountability is paramount because implementing agencies must demonstrate that funds are used efficiently and objectives achieved (Gray et al., 1996; Ebrahim, 2021). Digital monitoring tools advance this principle by providing real-time data trails, automated reporting, and accessible dashboards that enable stakeholders, donors, governments, and beneficiaries, to verify progress independently.

Empirical research affirms these benefits. The World Bank (2023) reported that countries integrating digital dashboards into project reporting improved transparency and reduced procurement irregularities. In Kenya, Ochieng'-Olima and Wairimu Mungai (2024) found that digital feedback mechanisms enhanced auditability and donor confidence in health-sector programmes. By embedding accountability features into digital systems, donor-funded projects strengthen both upward accountability (to funders) and lateral accountability (to implementing partners).

Nonetheless, Accountability Theory faces criticism for its normative bias toward formal reporting and upward control. Ebrahim and Weisband (2022) argue that excessive emphasis on donor-centric accountability can create compliance burdens that crowd out learning and innovation. Furthermore, Koppell (2021) warns that digital accountability systems may reinforce power asymmetries if beneficiaries lack equal access to data or influence over feedback mechanisms. Therefore, while Accountability Theory aptly underpins the transparency benefits of digital

monitoring tools, its limitations highlight the importance of balancing control with participatory feedback and adaptive learning in project implementation.

Conceptual Framework

A conceptual framework is a device that organizes empirical observations in a meaningful structure (Shapira, 2019). It forms part of the agenda for negotiation to be scrutinized, tested, reviewed and reformed as a result of investigation and it explains the possible connections between the variables (Durham & Stokes, 2015).

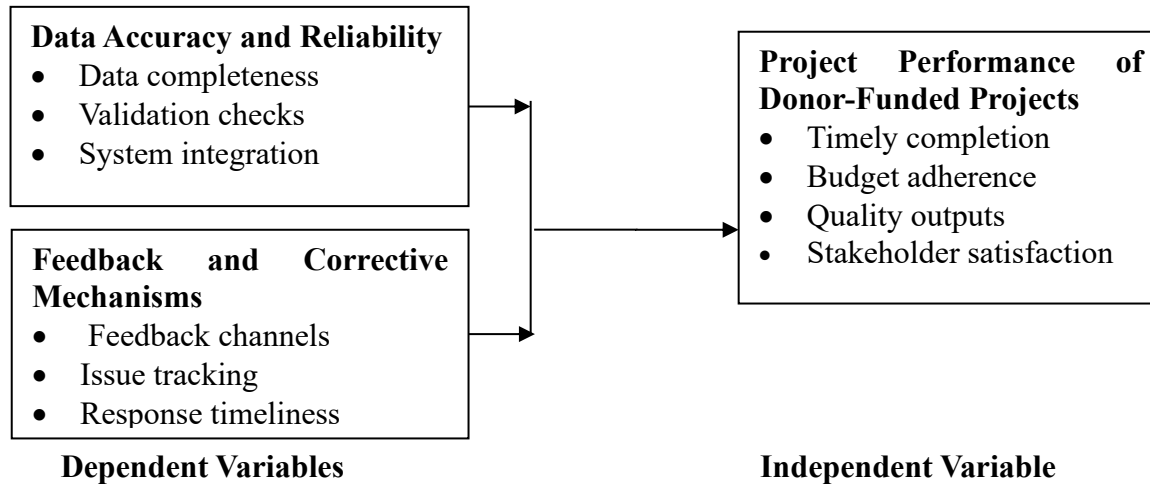


Figure 2. 1: Conceptual Framework

Data Accuracy and Reliability

Data accuracy and reliability are fundamental to effective digital project monitoring because they ensure that project information correctly reflects actual conditions and remains consistent over time. Accurate and reliable data enhance transparency, accountability, and evidence-based decision-making, enabling donors and project managers to assess progress and allocate resources effectively (Munyua & Mutula, 2021; World Bank, 2023; UNDP, 2022). In donor-funded projects, reliable digital monitoring systems strengthen stakeholder confidence by supporting credible performance reporting and facilitating predictive analytics for early identification of implementation risks (Development Initiatives, 2024; Fainshmidt et al., 2023). Evidence from Kenya further shows that routine data verification and cleaning significantly improve reporting accuracy within digital platforms such as DHIS2 (Ochieng'-Olima & Wairimu Mungai, 2024).

Data accuracy and reliability are assessed through indicators such as data completeness, consistency, source verification, and timely correction of identified errors. Complete and consistent records improve decision-making, while validation rules and integration with financial management systems such as IFMIS enhance data authenticity and reduce manipulation (Ministry of Health, 2022; UNDP, 2022; Development Initiatives, 2024). Empirical studies demonstrate that organisations implementing robust data validation procedures achieve better budget utilisation, timely reporting, and improved service delivery, highlighting the direct contribution of high-quality data to project performance (Zerfu et al., 2025; Mutua & Wainaina, 2022).

Despite these benefits, maintaining data quality remains challenging due to staff turnover, limited digital skills, fragmented reporting systems, inadequate standardisation of indicators, and weak interoperability across donor platforms (UNDP, 2022; Kimote & Muchai, 2024; Development Initiatives, 2024). These challenges indicate that improving data accuracy and reliability requires not only technological solutions but also continuous capacity building, effective data governance, and institutional commitment. Consequently, accurate and reliable data remain essential for

strengthening accountability, supporting informed decision-making, and improving the performance of donor-funded projects.

Feedback and Corrective Mechanisms

Feedback and corrective mechanisms are structured processes within digital monitoring systems that enable project stakeholders to analyse performance information, identify implementation gaps, and undertake timely corrective actions. These mechanisms transform monitoring from a reporting function into a continuous learning and management process by integrating dashboards, automated alerts, and issue-tracking systems that support evidence-based decision-making (Ebrahim, 2021; World Bank, 2023; Ebrahim & Weisband, 2022). Studies in Kenya and Ghana show that projects using digital feedback platforms resolve implementation bottlenecks more quickly, improve schedule adherence, and strengthen accountability among implementing agencies (Ochieng'-Olima & Wairimu Mungai, 2024; Alhassan & Asare, 2022; UNDP, 2022).

Effective feedback systems are characterised by digital communication channels, issue logging and tracking, timely responses to system alerts, and the integration of monitoring findings into review meetings and planning processes (World Bank, 2023; Ebrahim & Weisband, 2022; Koppell, 2021). These features enable organisations to convert monitoring data into management decisions, resulting in improved budget utilisation, stronger stakeholder satisfaction, and early detection of project risks (Mutua & Wainaina, 2022; World Bank, 2023). Consequently, feedback mechanisms serve as the operational link between monitoring information and performance improvement.

However, feedback systems may be constrained by overly bureaucratic reporting structures, limited capacity to interpret digital reports, fragmented information systems, and inadequate organisational learning cultures (Koppell, 2021; Ebrahim, 2021; Kimote & Muchai, 2024; UNDP, 2022). These limitations suggest that effective feedback mechanisms require not only digital platforms but also responsive leadership, staff capacity, and integrated information systems. Strengthening these dimensions enhances adaptive management, accountability, and the overall effectiveness of donor-funded projects.

Project Performance of Donor-Funded Projects

Project performance refers to the extent to which donor-funded projects achieve their intended objectives within planned cost, time, quality, and stakeholder expectations. Beyond delivering outputs, project performance encompasses transparency, accountability, adaptive learning, and sustainable development outcomes (Kerzner, 2021; World Bank, 2023; UNDP, 2022). Because donor-funded projects operate under both donor and implementing agency accountability structures, digital monitoring platforms such as e-ProMIS, IFMIS, and DHIS2 have become increasingly important in strengthening financial oversight, implementation monitoring, and evidence-based decision-making (Ebrahim, 2021; National Treasury & Planning, 2023; Ochieng'-Olima & Wairimu Mungai, 2024).

Project performance is commonly evaluated using indicators such as timeliness, budget adherence, quality of deliverables, and stakeholder satisfaction. Research shows that digital dashboards and automated monitoring systems improve schedule compliance, financial accountability, and output quality by enabling early identification of implementation challenges and supporting timely management interventions (Mutua & Wainaina, 2022; Office of the Auditor-General, 2025; World Bank, 2023; Ebrahim & Weisband, 2022). Similar findings from Ghana and Kenya indicate that digital monitoring contributes to greater operational efficiency, accountability, and achievement of project objectives (Alhassan & Asare, 2022; Kimote & Muchai, 2024).

Despite these improvements, project performance remains constrained by weak interoperability between information systems, inconsistent utilisation of digital monitoring platforms, and institutional capacity limitations (Development Initiatives, 2024; National Treasury & Planning,

2023; UNDP, 2022). Furthermore, reliance on quantitative performance indicators alone may overlook broader outcomes such as social inclusion and sustainability. Therefore, sustained improvements in donor-funded project performance depend on integrating high-quality data, effective feedback mechanisms, institutional capacity, and adaptive management practices.

Empirical Review

Data Accuracy and Reliability and Project Performance

Empirical evidence consistently demonstrates that data accuracy and reliability significantly influence project performance by improving decision-making, accountability, and operational efficiency. Fainshmidt et al. (2023), guided by the Resource-Based View theory, found that organisations with strong data verification protocols achieved significantly higher project delivery consistency and stakeholder satisfaction ($r = 0.67$, $p < 0.01$). Similarly, Zerfu et al. (2025), using Systems Theory and a mixed-method approach, established that integrating automated validation rules and financial cross-checks into digital monitoring systems significantly enhanced project outcomes, although excessive reliance on automated controls without field verification sometimes reduced data reliability. In Eastern and Southern Africa, Munyua and Mutula (2021) further reported that projects with established data verification routines experienced improved donor disbursements and better performance despite challenges arising from incomplete reporting and delayed data cleaning.

Comparable findings have been reported within African public sector projects. Ahiabu et al. (2024) found that Ghanaian district health projects implementing automated validation rules and regular data audits achieved 23% higher performance in timeliness and output delivery than projects with weaker quality controls. Likewise, Ochieng'-Olima and Wairimu Mungai (2024) established that data completeness was positively associated with budget adherence and project timeliness ($r = 0.59$, $p < 0.05$) in donor-supported health programmes in Kenya, although weak verification processes and limited integration with financial systems continued to undermine decision-making. Kimote and Muchai (2024) similarly reported that frequent data verification and reliable monitoring systems significantly improved project performance ($\beta = 0.428$, $p < 0.05$), although the study relied largely on self-reported measures of data quality.

Although previous studies consistently confirm the positive contribution of data accuracy and reliability to project performance, most were conducted in private-sector organisations, specific sectors such as health, or across multiple countries with differing institutional environments. In addition, several studies relied on descriptive designs or subjective measures of data quality rather than objectively examining system-based accuracy controls. Consequently, there remains limited empirical evidence on how data accuracy and reliability within digital monitoring systems influence the performance of donor-funded projects across multiple sectors in Nairobi County. The current study addresses this contextual and methodological gap by examining data accuracy and reliability as system-based determinants of project performance.

Feedback and Corrective Mechanisms and Project Performance

Empirical studies indicate that feedback and corrective mechanisms enhance project performance by promoting timely decision-making, organisational learning, and accountability. Ebrahim (2021), guided by Accountability Theory, found that organisations with structured feedback loops that integrated monitoring results into planning achieved significantly better project outcomes and stakeholder satisfaction, although feedback remained largely donor-driven. Similarly, Koppell (2021), applying Systems Theory, established that digital feedback mechanisms embedded within project dashboards improved responsiveness by reducing the time between identifying implementation problems and taking corrective action. However, excessive formalisation of feedback systems sometimes discouraged innovation and genuine organisational learning.

Evidence from Africa further demonstrates the importance of effective feedback systems in donor-funded projects. Ebrahim and Weisband (2022) reported that digital feedback frameworks enhanced project sustainability and adaptive planning across Sub-Saharan Africa, although fragmented donor-specific systems limited integrated organisational learning. In Ghana, Alhassan and Asare (2022) found that projects using digital feedback dashboards and issue-escalation workflows experienced 27% fewer implementation delays and improved communication between stakeholders, despite challenges associated with limited staff capacity and weak integration with procurement systems. Similarly, Mutua and Wainaina (2022) established that structured feedback channels significantly improved project timeliness and budget utilisation ($\beta = 0.386$, $p < 0.05$), although feedback processes remained predominantly top-down.

While existing studies demonstrate that feedback and corrective mechanisms positively influence project performance, most focus on accountability, responsiveness, or sector-specific applications rather than evaluating feedback as an integrated dimension of digital project monitoring. Furthermore, many studies highlight fragmented feedback systems, limited stakeholder participation, and inadequate responsiveness within donor-funded projects. Consequently, there remains insufficient empirical evidence on how digital feedback and corrective mechanisms influence the overall performance of donor-funded projects across different sectors in Nairobi County. The current study addresses this gap by examining feedback and corrective mechanisms as a key component of digital monitoring systems and assessing their contribution to project performance.

RESEARCH METHODOLOGY

The study adopted a descriptive correlational research design to examine the relationship between digital project monitoring practices and the performance of donor-funded projects in Nairobi County, Kenya. The design enabled the researcher to describe existing digital monitoring practices while determining the relationships between the independent variables and project performance through quantitative analysis. The target population comprised 185 active donor-funded projects operating in Nairobi County across the health, infrastructure, education, and governance sectors, as reported by the National Treasury (2025). The study focused on project management personnel, including project coordinators, monitoring and evaluation officers, finance officers, and technical specialists, who were considered knowledgeable about digital monitoring systems and project performance. A stratified random sampling technique was employed to ensure proportional representation of projects across the four sectors. The sample size of 126 respondents was determined using Yamane's (1967) formula with a 5% margin of error. One respondent from each selected project, preferably the project manager or monitoring and evaluation officer, was selected through simple random sampling.

Primary data were collected using a structured questionnaire comprising closed-ended and five-point Likert scale items. Data collection was undertaken after obtaining the necessary approvals from JKUAT, NACOSTI, donor agencies, and implementing partners. The questionnaires were administered both physically and electronically through email and Google Forms, with respondents given one week to complete them. A pilot study involving 13 respondents from donor-funded projects in Kiambu County was conducted to evaluate the suitability of the questionnaire. Instrument validity was established through expert review to ensure adequate coverage of the study variables and alignment with the conceptual framework, while reliability was assessed using Cronbach's Alpha, with a coefficient of 0.70 or higher considered acceptable for all study constructs. Collected data were coded and analysed using SPSS version 28. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarise the data, while inferential statistics comprising Pearson's correlation and multiple linear regression analysis were employed to examine the relationships and determine the effect of the independent

variables on project performance. The findings were presented using tables and figures to facilitate interpretation.

RESEARCH FINDINGS AND DISCUSSION

Out of the 126 questionnaires distributed to respondents across the four sectors of donor-funded projects in Nairobi County, 118 were completed and returned, representing a response rate of 93.7%. A response rate of 93.7% is considered excellent for survey-based research. According to Mugenda and Mugenda (2019), a response rate above 70% is deemed adequate for reliable statistical analysis, while rates exceeding 85% significantly enhance representativeness and reduce non-response bias. Similarly, Saunders, Lewis, and Thornhill (2019) argue that response rates above 80% improve the generalisability of findings in quantitative studies, especially when probability sampling is employed.

Descriptive Analysis of Study Variables

Data Accuracy and Reliability

This section examined the extent to which data accuracy and reliability influenced the performance of donor-funded projects in Nairobi County. Respondents rated statements related to data verification, consistency, and dependability in digital monitoring systems. Table 1 presents the descriptive results.

Table 1: Descriptive Statistics for Data Accuracy and Reliability

Statement	Mean	Std. Dev.(SD)
Our project has standard data validation procedures to ensure accuracy.	4.23	0.61
All data entries in the monitoring system are verified before submission.	4.11	0.74
The digital system automatically detects inconsistencies in data.	4.09	0.72
Data cleaning and verification are performed regularly to maintain quality.	4.17	0.68
The project has mechanisms to back up and recover data in case of system failure.	4.06	0.80
Data collected from different sources are consistent and reliable.	4.14	0.70
Accurate and reliable data have improved the credibility of project reports.	4.25	0.65
Aggregate Mean Score	4.15	0.70

As shown in Table 1, the overall mean score for data accuracy and reliability was 4.15 (SD = 0.70), suggesting strong agreement that data accuracy mechanisms are in place and positively contribute to project performance. The highest-rated statement, 'Accurate and reliable data have improved the credibility of project reports' (M = 4.25, SD = 0.65), indicates that respondents viewed data precision as crucial to building donor confidence and ensuring accountability. Similarly, the statement "Our project has standard data validation procedures" (M = 4.23, SD = 0.61) shows that projects have embedded systematic data verification protocols into their monitoring frameworks. Respondents also agreed that regular data cleaning and verification maintain data quality (M = 4.17, SD = 0.68) and that data from different sources are consistent and reliable (M = 4.14, SD = 0.70), implying a high degree of standardisation and coherence in data management practices. The findings further reveal that digital systems automatically detect inconsistencies in data (M = 4.09, SD = 0.72), reflecting adoption of technologies capable of flagging outliers and duplicates.

The statement 'The project has mechanisms to back up and recover data in case of system failure' (M = 4.06, SD = 0.80), while still indicating agreement, recorded the lowest mean score. This suggests that though backup systems exist, they may not be uniformly implemented or routinely tested across all projects. Nonetheless, the narrow range of means (4.06–4.25) and relatively low standard deviations (<1.00) indicate strong consensus that accurate and reliable data underpin effective monitoring and project performance.

The findings are consistent with recent studies emphasising the role of data integrity in project performance. Kiplagat and Njoroge (2021) found that data accuracy directly influences the credibility of M&E reports, which in turn enhances donor confidence and funding continuity in public-sector projects. Similarly, Zhang and Siau (2023) argued that reliable data enable evidence-based decision-making and strengthen institutional trust between implementing agencies and funding partners. The result that projects maintain regular data cleaning and validation supports Harrison and Easton (2020), who demonstrated that structured data verification improves analytical reliability and reduces decision errors in development programmes. Moreover, the high mean scores on data consistency and validation procedures echo Moriarty and Clark's (2022) assertion that standardised data management practices improve cross-system interoperability, allowing for seamless information exchange between M&E, finance, and procurement systems.

However, the slightly lower rating for data backup and recovery mechanisms suggests a lingering vulnerability in data security and continuity planning. This aligns with Owino and Were (2023), who observed that despite digital adoption, many African development projects underinvest in cybersecurity and disaster recovery systems. The implication is that while data accuracy and reliability are strong within routine reporting processes, sustainability could be improved through enhanced data protection policies and redundancy infrastructure.

Overall, the findings affirm that data accuracy and reliability significantly improve the performance of donor-funded projects by ensuring data integrity, enhancing accountability, and promoting credible reporting. Accurate, verifiable data enable timely decision-making, build donor confidence, and provide a dependable foundation for monitoring outcomes, key elements of successful project performance.

Feedback and Corrective Mechanisms

This section assessed how feedback and corrective mechanisms influence the performance of donor-funded projects in Nairobi County. Respondents rated seven statements related to how digital monitoring systems facilitate feedback, learning, and corrective action. The results are summarised in Table 2.

Table 2: Descriptive Statistics for Feedback and Corrective Mechanisms

Statement	Mean	Std. Dev. (SD)
The project has formal mechanisms for providing feedback on performance reports.	4.16	0.73
Feedback received from supervisors leads to corrective action in project activities.	4.12	0.77
Performance reviews are conducted regularly to assess progress and make adjustments.	4.18	0.69
Lessons learned from monitoring are documented and shared with project teams.	4.07	0.74
The project encourages open communication between management and field teams.	4.15	0.71
Corrective actions are tracked and followed up until completion.	4.09	0.78
Feedback mechanisms have enhanced accountability and performance learning.	4.20	0.65
Aggregate Mean Score	4.14	0.72

As presented in Table 2, the overall mean for feedback and corrective mechanisms was 4.14 (SD = 0.72), indicating strong agreement that digital monitoring systems have facilitated structured feedback processes in donor-funded projects. The highest mean was recorded for the statement

that feedback mechanisms have enhanced accountability and performance learning ($M = 4.20$, $SD = 0.65$), suggesting that feedback loops have contributed to institutional transparency and adaptive management. Respondents also agreed that performance reviews are conducted regularly to assess progress and make adjustments ($M = 4.18$, $SD = 0.69$) and that formal feedback mechanisms exist for performance reports ($M = 4.16$, $SD = 0.73$). These results indicate that donor-funded projects have adopted regular performance review structures supported by digital systems that allow prompt identification of bottlenecks and facilitation of remedial action.

Similarly, the statement that open communication is encouraged between management and field teams ($M = 4.15$, $SD = 0.71$) confirms that feedback is not confined to hierarchical reporting lines but also flows horizontally across teams. Respondents also agreed that feedback from supervisors leads to corrective action ($M = 4.12$, $SD = 0.77$), implying that feedback mechanisms translate into actionable interventions rather than remaining merely procedural. The relatively lower but still high mean for lessons learned being documented and shared ($M = 4.07$, $SD = 0.74$) suggests that while knowledge-sharing exists, it may not always be systematically institutionalised.

Overall, the findings indicate that donor-funded projects in Nairobi County have operationalised feedback and corrective systems that enable continuous learning, enhance accountability, and support adaptive management. The low standard deviations (all below 1.00) suggest a high level of consensus among respondents regarding the effectiveness of these mechanisms in improving project outcomes.

These results align with recent empirical evidence emphasising that structured feedback mechanisms are essential for learning and adaptive performance in development projects. Omari and Karanja (2022) found that digital feedback loops enable rapid identification of performance gaps and promote accountability through continuous communication between project teams and management. Similarly, Munyua and Mugo (2023) demonstrated that real-time feedback systems enhance responsiveness to field challenges, leading to timely corrective actions in community-based projects. The finding that performance reviews and open communication improve project efficiency supports Mekonnen (2021), who highlighted that participatory review mechanisms foster ownership, strengthen coordination, and sustain donor trust. Additionally, Hassan and Rono (2020) reported that documentation of lessons learned enables institutional learning and knowledge transfer, reducing repetition of past mistakes in successive project cycles.

However, the slightly lower score for documentation of lessons learned suggests that while feedback is regularly provided, the translation of insights into institutional knowledge may be inconsistent. This observation resonates with Ibrahim and Okech (2024), who argued that many African donor projects lack systematic feedback archiving and reflection practices, resulting in limited organisational learning.

Overall, the findings confirm that feedback and corrective mechanisms significantly enhance project performance by ensuring continuous improvement, transparency, and accountability. The evidence demonstrates that when donor-funded projects embed structured review, communication, and learning systems into their monitoring frameworks, they are better positioned to adapt to emerging challenges, achieve efficiency, and sustain performance improvements over time.

Project Performance

This section evaluated the performance of donor-funded projects in Nairobi County, which served as the dependent variable in the study. Respondents rated seven statements measuring project efficiency, timeliness, quality, stakeholder satisfaction, and overall achievement of objectives. Table 3 presents the descriptive statistics.

Table 3: Descriptive Statistics for Project Performance

Statement	Mean	Std. Deviation (SD)
The project consistently achieves its objectives within planned timelines.	4.07	0.77
Project activities are implemented within the approved budget.	4.11	0.72
Deliverables meet expected quality standards.	4.19	0.69
Stakeholders express satisfaction with project outcomes.	4.14	0.70
The project demonstrates high levels of efficiency in resource utilisation.	4.10	0.73
Project monitoring data are used to improve subsequent planning.	4.22	0.65
Overall, the project's performance has improved due to digital monitoring tools.	4.26	0.61
Aggregate Mean Score	4.16	0.69

Source: Research Data (2025)

The findings in Table 3 reveal an aggregate mean score of 4.16 (SD = 0.69), indicating general agreement that donor-funded projects in Nairobi County perform effectively, largely influenced by digital monitoring systems. Respondents strongly agreed that overall project performance has improved due to digital monitoring tools (M = 4.26, SD = 0.61), demonstrating the perceived value of technological adoption in enhancing transparency, accuracy, and operational control. Respondents further agreed that project monitoring data are used to improve subsequent planning (M = 4.22, SD = 0.65), suggesting that evidence-based decision-making has become an integral part of project management. The statement that deliverables meet expected quality standards (M = 4.19, SD = 0.69) also recorded a high mean, reflecting that performance monitoring has improved quality assurance and adherence to donor requirements.

In addition, respondents agreed that stakeholders are satisfied with project outcomes (M = 4.14, SD = 0.70) and that projects demonstrate efficiency in resource utilisation (M = 4.10, SD = 0.73), indicating that digital oversight has reduced wastage and enhanced accountability. The lowest mean, 4.07 (SD = 0.77), was recorded for the statement that projects consistently achieve objectives within planned timelines. Although this still reflects agreement, it implies that some implementation delays persist, possibly due to external factors such as procurement bottlenecks or donor approval processes.

Overall, the results indicate that donor-funded projects in Nairobi County exhibit strong performance across efficiency, quality, and accountability dimensions. The low standard deviations (below 1.00) show high consistency among responses, confirming that these perceptions are widely shared across participating organisations.

The findings correspond with recent research emphasising that project performance improves significantly when digital monitoring and evaluation tools are institutionalised. Kariuki and Chege (2022) found that digital monitoring systems enhance efficiency and facilitate real-time tracking of project indicators, resulting in improved adherence to timelines and budgets. Likewise, Aboagye and Boateng (2023) reported that the integration of digital dashboards and feedback loops increases project transparency, stakeholder satisfaction, and accountability, key elements of successful project outcomes. The finding that digital monitoring data inform planning aligns with Ndlovu and Khumalo (2021), who highlighted that data-driven decision-making leads to adaptive project management and greater long-term sustainability. Similarly, Langat and Kimutai (2020)

observed that quality standards and compliance improve when projects adopt automated reporting tools that allow early detection of performance variances.

However, the slightly lower score for achieving objectives within timelines mirrors the observations of Okoth and Waweru (2024), who found that while digital monitoring improves oversight, systemic delays in donor disbursement and procurement approvals can still affect timely project completion. This suggests that while technology enhances control and transparency, structural inefficiencies external to digital systems may continue to constrain full performance optimisation.

Overall, the results confirm that digital project monitoring tools play a pivotal role in enhancing the performance of donor-funded projects, primarily through better data use, improved decision-making, higher transparency, and greater accountability. The evidence supports the broader argument that performance improvements are not just a function of monitoring tools themselves, but of how effectively these tools are integrated into decision-making and resource management processes.

Correlation Analysis

This section presents the results of the Pearson correlation analysis, which examined the strength and direction of linear relationships between the independent variables, data accuracy and reliability, and feedback and corrective mechanisms, and the dependent variable, project performance. According to Cohen (1988), correlation coefficients (r) range from -1 to $+1$, where values closer to $+1$ indicate a strong positive relationship, values around 0 indicate no relationship, and values closer to -1 signify a strong negative relationship. The following scale was used to interpret the magnitude of the relationships: $0.00 - 0.19$ Very Weak Relationship, $0.20 - 0.39$ Weak Relationship, $0.40 - 0.59$ Moderate Relationship, $0.60 - 0.79$ Strong Relationship, and $0.80 - 1.00$ Very Strong Relationship (Cohen, 1988). A p -value (significance level) less than 0.05 indicates that the correlation is statistically significant, meaning the relationship between the two variables is unlikely to have occurred by chance (Field, 2020). The results are presented in Table 4.

Table 4: Correlation Matrix

		Performance	Data Accuracy and Reliability	Feedback and Corrective Mechanisms
Performance of Donor-Funded Projects	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	105		
Data Accuracy and Reliability	Pearson Correlation	.702**	1	
	Sig. (2-tailed)	.000		
	N	207	207	
Feedback and Corrective Mechanisms	Pearson Correlation	.688**	.368	1
	Sig. (2-tailed)	.000	.078	
	N	207	207	207

**Correlation is significant at the 0.05 level (2-tailed).

Source: Research Data (2025)

The correlation between data accuracy and reliability and project performance was also strong and significant ($r = 0.702$, $p < 0.05$). This indicates that projects maintaining high standards of data integrity perform better in terms of timely decision-making, donor reporting, and outcome achievement. Reliable data form the foundation of credible monitoring, ensuring that resource allocation and corrective actions are based on valid evidence. This finding aligns with Tran and Nguyen (2021), who observed that accurate and verifiable data enhance accountability and strategic alignment in donor-funded programmes. Similarly, Bashir and Shah (2023) reported that

projects with strong data governance systems experience improved stakeholder satisfaction and budget adherence. The results underscore the pivotal role of accurate, consistent, and verified data in ensuring that monitoring translates into tangible performance gains.

Lastly, a strong positive correlation ($r = 0.688$, $p < 0.05$) was found between feedback and corrective mechanisms and project performance. This suggests that the existence of structured feedback channels and follow-up systems significantly contributes to performance improvement. Projects that systematically document lessons learned, conduct regular reviews, and take corrective actions demonstrate higher adaptability and resilience. This supports Ahmed and Rajeev (2020), who found that active feedback loops improve decision responsiveness and promote organisational learning in development settings. Likewise, Kato and Mwangi (2023) noted that feedback mechanisms foster continuous improvement and strengthen accountability structures within donor-supported projects. The significant correlation in this study implies that performance outcomes improve where management not only monitors results but also actively responds to feedback through course correction and knowledge sharing.

Regression Analysis

This section presents the results of the multiple linear regression analysis used to determine the combined and individual effects of digital project monitoring tools on the performance of donor-funded projects in Nairobi County.

Table 5: Model Summary

Model	R	R Square (R^2)	Adjusted R^2	Std. Error of the Estimate
1	0.867	0.752	0.744	0.241

Source: Research Data (2025)

The results in Table 5 indicate that the correlation coefficient ($R = 0.867$) suggests a very strong positive relationship between the independent variables and project performance. The coefficient of determination ($R^2 = 0.752$) implies that approximately 75.2% of the variation in project performance among donor-funded projects in Nairobi County is explained by the four predictor variables: data accuracy and reliability, and feedback and corrective mechanisms. The remaining 24.8% of the variation is attributed to other factors not captured in this model, such as external political, environmental, or donor policy influences. The adjusted R^2 (0.744), which accounts for the number of predictors, confirms that the model has strong explanatory power and is suitable for further inferential testing.

Table 6: ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig. (p-value)
Regression	24.938	2	6.234	106.972	0.000
Residual	8.225	115	0.073		
Total	33.163	117			

Source: Research Data (2025)

The ANOVA results indicate an F-statistic of 106.972 with a p-value of 0.000, which is less than 0.05. This confirms that the overall regression model is statistically significant at the 95% confidence level. Therefore, the independent variables jointly have a significant influence on project performance. This finding implies that the integration of digital project monitoring tools explains a substantial portion of the observed improvements in donor-funded project outcomes in Nairobi County.

Table 7: Regression Coefficients

Predictors	Unstandardised Coefficients (B)	Std. Error	Standardised Coefficients (β)	t-value	Sig. (p-value)
(Constant)	0.328	0.095	,	3.453	0.001
Data Accuracy and Reliability	0.245	0.071	0.276	3.451	0.001
Feedback and Corrective Mechanisms	0.218	0.066	0.263	3.303	0.001

Source: Research Data (2025)

The results further reveal that data accuracy and reliability had a positive and significant influence ($\beta = 0.245$, $t = 3.451$, $p = 0.001$) on project performance. This means that for every unit increase in data accuracy, project performance improves by 0.245 units. Accurate and consistent data ensure that managerial and donor decisions are grounded in credible evidence. This finding aligns with Banda and Chen (2023), who concluded that high data integrity leads to improved resource allocation and performance predictability in international aid projects. Similarly, Mugisha and Odhiambo (2021) emphasised that reliable datasets reduce errors in monitoring, enhance donor confidence, and foster accountability. The significant coefficient demonstrates that reliable and validated data are the backbone of effective monitoring systems and high-performing donor-funded projects.

Feedback and corrective mechanisms also exhibited a positive and statistically significant effect ($\beta = 0.218$, $t = 3.303$, $p = 0.001$), suggesting that strengthening feedback channels and action-tracking systems enhances project performance by 0.218 units for every unit improvement. This finding indicates that continuous performance feedback, regular reviews, and documented corrective actions drive adaptive management and learning. Mensah and Abebe (2022) found that institutionalised feedback processes foster responsiveness and promote accountability in development organisations. Likewise, Lee and Wanjiku (2023) reported that integrating feedback analytics into project monitoring systems increases agility and ensures sustained performance improvement. This strong relationship underscores that feedback mechanisms transform monitoring from a compliance exercise into a strategic learning tool that sustains donor-funded project success.

The regression equation derived from the coefficients can be expressed as:

$$\text{Project Performance} = 0.328 + 0.245X_1 + 0.218X_2$$

Conclusions

The third major conclusion is that data accuracy and reliability underpin effective project management and donor accountability. The study revealed that performance decisions are only as credible as the data upon which they are based. Accurate and verifiable data improve the validity of monitoring results and strengthen donor confidence in reported outcomes. When data quality is prioritised through verification protocols and digital validation tools, discrepancies in reporting are reduced, enabling managers to track progress with precision. Furthermore, accurate data allow for timely identification of performance gaps and resource inefficiencies, leading to more effective corrective actions. Therefore, projects that institutionalise strong data governance practices achieve higher performance consistency and credibility in donor reporting.

Lastly, the study concluded that feedback and corrective mechanisms are central to continuous improvement and learning within donor-funded projects. When performance data are reviewed regularly and translated into actionable feedback, projects evolve adaptively to changing contexts. Structured feedback systems facilitate communication between management and field teams,

ensuring that lessons learned inform future planning and implementation. The consistent tracking of corrective actions reinforces accountability and promotes a culture of reflective practice. Projects that cultivate this adaptive management approach are more resilient to risks, more innovative in problem-solving, and more likely to sustain long-term impact. Hence, the integration of systematic feedback and learning mechanisms is critical to achieving ongoing project performance improvements.

Recommendations

Data Accuracy and Reliability

The study concluded that maintaining high levels of data accuracy and reliability is fundamental to the success of donor-funded projects. It is therefore recommended that implementing agencies establish strong data governance frameworks that define standards for data collection, validation, and verification. This should include the use of digital validation tools, built-in system checks, and data audit trails to ensure the integrity and consistency of project information.

Organisations should also invest in capacity building for staff involved in data collection and reporting, ensuring they understand the importance of data credibility and the ethical standards of data management. Regular data quality assessments and audits should be institutionalised to identify and correct inconsistencies early. Furthermore, data systems should be interoperable across departments and donor platforms to minimise duplication and enhance coherence in reporting. Accurate and reliable data will not only improve decision-making but also strengthen donor trust and long-term funding sustainability.

Feedback and Corrective Mechanisms

The study found that structured feedback and corrective mechanisms significantly improved project performance by fostering adaptability and continuous learning. It is recommended that donor-funded projects institutionalise formal feedback frameworks that clearly outline channels, timelines, and responsibilities for review and response. Managers should establish structured review meetings at defined intervals where progress reports are discussed, lessons learned are documented, and corrective actions are assigned.

In addition, project management systems should incorporate digital feedback modules that allow real-time communication between field teams and supervisory staff. Corrective actions should be logged, tracked, and followed up to ensure accountability and learning across implementation cycles. Creating a culture of open communication and performance reflection will enable organisations to adapt to emerging challenges and align project activities with evolving donor expectations. Finally, feedback mechanisms should not only focus on internal project teams but also include external stakeholders and beneficiaries to enhance participatory monitoring and shared ownership of project outcomes.

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