# INTERNATIONAL JOURNAL OF INNOVATION, ENTERPRISE, AND SOCIAL SCIENCES

ISSN 2454-6186
Volume 6, Issue 1, Pages 276-292, 2026

Journal Website: https://scholarnestpublishers.com/index.php/IJIESS

## HUMAN RESOURCE ANALYTICS AND PERFORMANCE OF NON-GOVERNMENTFAL ORGANIZATIONS IN NAIROBI COUNTY, KENYA

**Dennis Murimi Njiru[1*] & Dr. Ezekiel Kirinya[2]**

[*1] Masters Sholar, Jomo Kenyatta University of Agriculture and Technology, Kenya

[2] Lecturer, Jomo Kenyatta University of Agriculture and Technology, Kenya

## ABSTRACT

Human Resource Analytics (HRA) has become an important tool for enhancing workforce management through data-driven decision-making. Despite the critical role played by Non-Governmental Organizations (NGOs) in Kenya's socio-economic development, many continue to experience challenges related to employee productivity, engagement, and workforce effectiveness. This study examined the influence of human resource analytics on employee performance among Non-Governmental Organizations in Nairobi City County, Kenya, with specific focus on work efficiency analytics and training analytics. The study was anchored on Goal-Setting Theory and Human Capital Theory and adopted a descriptive research design. The target population comprised 1,143 Human Resource Managers from NGOs operating in Nairobi City County, from which a sample of 296 respondents was selected using simple random sampling. Primary data were collected using structured questionnaires and analyzed using SPSS Version 28. Descriptive statistics were used to summarize the data, while correlation and multiple regression analyses were employed to test the study hypotheses. The findings revealed that human resource analytics had a positive and statistically significant influence on employee performance. Specifically, work efficiency analytics and training analytics were found to significantly enhance employee performance, with work efficiency analytics emerging as the strongest predictor. The study further established that the explanatory variables jointly accounted for 70.9% of the variation in employee performance ($R^2 = 0.709$). The study concludes that the adoption of analytics-driven approaches in performance monitoring, employee development, and workforce management significantly improves employee performance within NGOs. The study recommends increased investment in performance analytics systems, data-driven training evaluation, workforce planning frameworks, and continuous employee feedback mechanisms to enhance organizational effectiveness and sustainable workforce performance.

**Keywords:** Human Resource Analytics, Work Efficiency Analytics, Training Analytics, Employee Performance, Non-Governmental Organizations, Nairobi City County, Kenya.

## Introduction

Human Resource Analytics (HRA) has emerged as a transformative tool for modern organizations, enabling data-driven decision-making in workforce management. HRA encompasses the collection, analysis, and interpretation of HR data to enhance employee performance and organizational productivity (Marler & Boudreau, 2021). As organizations shift toward digital transformation, HR analytics plays a critical role in strategic planning, talent management, and operational efficiency (Angrave et al., 2022). The application of analytics in HR functions such as recruitment, performance appraisal, and employee engagement has been linked to improved decision-making, reduced turnover rates, and enhanced employee satisfaction (McIver et al., 2020).

Recent advancements in HR analytics range from basic workforce reporting tools to advanced predictive analytics. While large organizations may integrate artificial intelligence and machine learning into HR processes, many organizations, particularly NGOs in developing countries, primarily rely on workforce databases, recruitment records, performance appraisal information, training records, and HR information systems to support decision-making (Johnson & Brown, 2021). Given the critical role that employee performance plays in the effectiveness of NGOs, this study seeks to investigate the relationship between HR analytics and employee performance within the NGO sector in Nairobi City County. By examining how HR analytics influences recruitment, performance management, and workforce planning, this research aimed to provide insights into the potential benefits and challenges associated with its adoption.

## Statement of the Problem

Employee performance is a critical determinant of the effectiveness and sustainability of Non-Governmental Organizations (NGOs) in Kenya, which play an essential role in delivering health, education, humanitarian, and community development programs. The sector employs thousands of skilled professionals whose performance directly affects service delivery outcomes. However, studies show that the majority of NGOs struggle to maintain high employee performance due to weak performance management systems and limited data-driven interventions (Mutinda & Kihara, 2022). A 2023 review by the Institute of Human Resource Management (IHRM) reported that only 48% of NGO employees in Nairobi meet or exceed annual performance targets, highlighting a widespread productivity gap (IHRM, 2023).

High employee turnover, low engagement, and inefficient workforce planning remain persistent challenges undermining employee performance in NGOs. According to the Kenya National Bureau of Statistics (2023), NGOs in Kenya experience an average annual turnover rate of 27%, well above the 18% global NGO average. This turnover disrupts project continuity, increases operational costs due to repeated recruitment and onboarding, and leads to a loss of institutional memory (Kamau & Githinji, 2023). Low engagement further compounds the problem: an engagement survey by Wambua and Kariuki (2024) found that only 43% of NGO employees feel motivated to perform at their best, citing unclear expectations and limited career development as key barriers.

Despite global evidence showing the benefits of Human Resource Analytics (HRA) in improving workforce performance, its use in Kenyan NGOs remains limited. The limited adoption is partly attributed to financial constraints, inadequate technological infrastructure, and limited analytical expertise, particularly among small and medium-sized NGOs. A 2024 study found that only 35% of NGOs in Nairobi actively apply HR analytics in performance management, compared to 65% adoption in corporate organizations (Mutuku & Kihara, 2024). The lack of analytics-driven decision-making results in ineffective recruitment, inconsistent talent retention, and inadequate alignment of

human capital with organizational goals (Mwangi & Cheruiyot, 2024). Organizations that have adopted HRA report measurable improvements: Nduati and Mwangi (2024) documented a 22% increase in productivity and a 17% reduction in turnover in NGOs using analytics for workforce planning.

Performance appraisal practices in Kenyan NGOs are often subjective, inconsistent, and poorly aligned with strategic objectives. The IHRM (2023) survey revealed that only 42% of NGO employees believe their appraisals are fair, and just 39% feel that appraisal feedback helps improve their work output. These inconsistencies reduce trust in performance management systems, lowering motivation and retention rates (Nyaga & Kimani, 2023). Without structured analytics tools, appraisal results rarely translate into targeted training, succession planning, or retention interventions.

Given these challenges, there is a pressing need to examine how HR analytics can be strategically applied to improve employee performance in NGOs within Nairobi City County. By exploring the influence of analytics on recruitment, training, appraisal systems, and retention strategies, this research generated actionable insights for improving workforce performance and service delivery (Mutinda & Kihara, 2022; Wambua & Kariuki, 2024).

### Objectives of the Study

To examine the effect of human resource analytics on performance of Non- Governmental Organizations in Nairobi City County, Kenya. The study was guided by the following specific objectives;

i. To assess the effect of work efficiency analytics on performance of Non-Governmental Organizations in Nairobi City County, Kenya.

ii. To evaluate the effect of training analytics on performance of Non-Governmental Organizations in Nairobi City County, Kenya.

## LITERATURE REVIEW

### Theoretical Review

### Goal-Setting Theory

Locke and Latham's (1990) Goal-Setting Theory posits that employees perform better when they have clear, challenging, and attainable goals. This theory suggests that tracking productivity metrics, evaluating competencies, and using performance appraisal data help employees stay aligned with organizational expectations and personal career growth. By applying work efficiency analytics, NGOs can use data-driven insights to set performance benchmarks, provide real-time feedback, and measure employee contributions effectively. This enhances motivation, efficiency, and accountability, ultimately leading to better employee retention and improved job productivity.

The performance benefits of challenging, specific goals lie in the fact that they affect the performance of individuals, organizational units as well as entire organizations. By providing direction and a standard against which progress can be monitored, challenging goals can enable people to guide and refine their performance. Specific goals can boost motivation and performance by leading people to focus their attention on specific objectives, increase their effort to achieve these objectives, persist in the face of setbacks 10 and develop new strategies to better deal with complex challenges to goal attainment (Wood & Locke, 1987). Challenging goals often lead to valuable rewards such as recognition, promotions, and/or increases in income from one's work (Locke & Latham, 2002). Working to attain valued goals relieves boredom by imbuing work with

a greater sense of purpose. Even though setting high goals sets the bar higher to obtain self-satisfaction, attaining goals creates a heightened sense of efficacy (personal effectiveness), self-satisfaction, positive affect, and sense of well-being (Wiese & Freund, 2005). Specific goals increase the desire to perform even better, and difficult goals, when accepted, result in higher performance than easy goals. The main strands of the goalsetting theory are that there must be optimal level of challenge; goal clarity; and feedback (Locke & Latham, 2002).

Goal theory is thus critical in the execution of a performance contract because without it, productivity is not be achieved (Julnes et al. 2007). Goals are more efficient when a time limit is included and used for performance evaluation. Deadlines act as a component for time control and boost the inspirational effect of objectives. Being conscious of the nearing deadline, the typical person made a concerted effort to complete the assignment.

Locke and Latham's goal-setting theory has been widely validated by research, which supports the notion that the most effective performance is seen when goals are specific and challenging, coupled with regular feedback on progress (Locke & Latham, 2018). This has direct relevance to performance appraisals in non-government organizations where individual performance goals should be designed to align with the organization's mission. Clear, measurable goals allow employees to understand what is expected of them and provide them with a roadmap to track their progress. Feedback mechanisms, integral to the goalsetting process, help maintain motivation and foster a commitment to achieving these goals. Integrating goalsetting theory into the performance appraisal system at the organizations can significantly enhance employee performance, ensuring that individual efforts are aligned with organizational objectives and ultimately contributing to the achievement of broader social impacts. Therefore, Goal-Setting Theory anchors the study objective on work efficiency analytics by explaining how performance metrics, KPI tracking, and feedback systems align employee effort with organizational goals, thereby improving employee performance outcomes.

**Human Capital Theory**

Human Capital Theory was developed by Becker's (1964). The theory states that organizations gain a competitive advantage by investing in the knowledge, skills, and abilities of their workforce. This theory emphasizes that hiring high-quality candidates and ensuring job fit lead to better employee productivity, retention, and overall organizational performance. Human capital is generally understood to consist of the individual's capabilities, knowledge, skills and experience of the company's employees and managers (Dess & Picken, 2000). Investment in human capital includes formal education, off-the-job training and on-the-job training (Becker, 1962). According to Becker (1962), skills can be acquired through education and (formal) training but also (and mainly) through the course of people's activities at work (learning-by- doing). The human capital theory directs the decisions of managers about investment in training and developing employees due to the fact that education boosts efficiency and productivity of workers by augmenting the cognitive stock level of economically effective human ability, which results from innate investment in human beings. HCT theory posits that investing in human capital may result to more productivity (Baron & Armstrong, 2006).

Rosen (1986) points to the fact that most specific job skills are learned from performing the work activities themselves. He goes on to argue that there is no perfect substitute for apprenticeship and for work experience itself. Learning potential is viewed as a by-product of the work environment, tied to a specific work activity but varying from activity to activity and from job to job. The knowledge and skills a worker has which come from education and training, including the learning that experience yields, generate a certain stock of productive capital. Job search and migration are activities that increase the value of one's human capital by increasing the price received for a given

stock of skills. A manager's experience is measured in terms of time in years, past involvement and should reflect in the quality of his work (Rodrigues & Lopes, 1997) Human capital theory is of great importance and can be applied to the variable on training analytics. Human resources managers should invest in education and training in order to acquire knowledge and skills for successful task implementation.

Therefore, Human Capital Theory supports the study objective on training analytics by emphasizing that investments in employee learning, skills development, and capability enhancement lead to improved productivity and overall employee performance.

## Conceptual Framework

A conceptual framework provides a mental sketch of the study by linking the independent variables and the dependent variable (Quinlan & Babin, 2021). This relationship between the independent and dependent variables is illustrated in Figure 2.1.

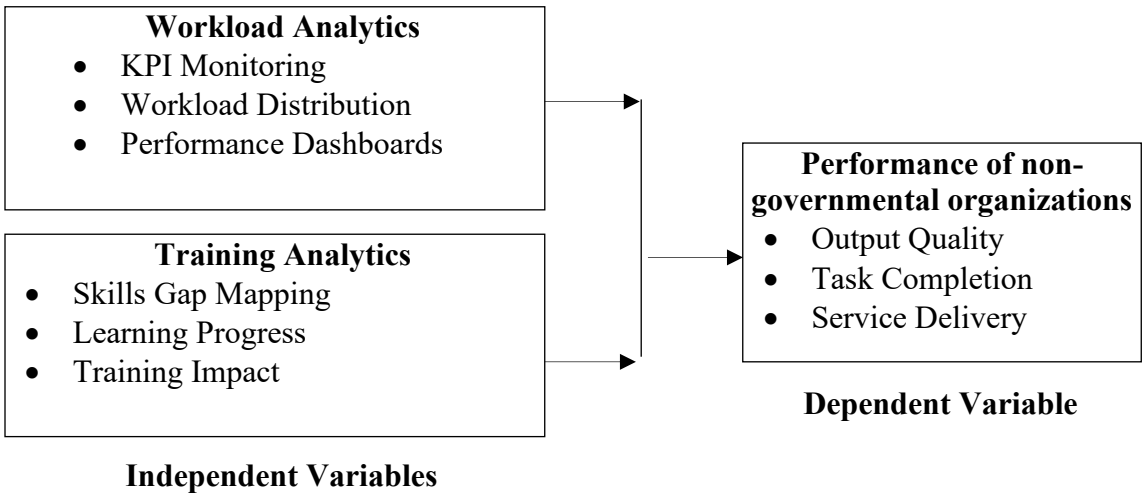


**Figure 2. 1: Conceptual Framework**

## Workload Analytics

Workload analytics involves the systematic collection, processing, and interpretation of employee performance data to enhance organizational outcomes and support strategic decision-making. It provides insights into how effectively employees utilize their time, resources, and skills to deliver results, contributing to improved productivity and organizational growth (Kaaria, 2024; Omondi & Wekesa, 2023). The use of work efficiency analytics enables organizations to track performance trends, identify operational bottlenecks, and develop targeted interventions that enhance workforce performance (Niranjani, 2024).

Performance evaluation systems have evolved significantly in modern organizations to respond to dynamic business environments (Niranjani, 2024). Many organizations are moving from static, annual reviews toward continuous and real-time feedback systems that enable faster identification of performance issues. Continuous performance monitoring supports timely corrective action, enhances alignment between individual objectives and organizational goals, and facilitates ongoing development (Muriithi & Kihara, 2023).

Key Performance Indicators (KPIs) form a central component of work efficiency analytics, providing quantifiable measures to evaluate the success of HR strategies and operational processes. Common KPIs include productivity rates, absenteeism, turnover rates, project completion times,

and service delivery metrics. Tracking these indicators allows HR managers to pinpoint areas for improvement, monitor the impact of interventions, and ensure alignment with organizational performance objectives (Ng, 2023; Mutinda & Kihara, 2022). KPIs are also critical in calculating return on investment for HR initiatives such as training, wellness programs, and talent development (Otieno & Waweru, 2023).

Technological advancements have expanded the scope of work efficiency analytics through the use of HR information systems, digital performance monitoring tools, workforce databases, and reporting dashboards that enable managers to track employee productivity and support decision-making (Mwangi & Cheruiyot, 2024).

Work efficiency analytics also plays a role in organizational risk management. By monitoring efficiency-related metrics, organizations can identify risks such as skill shortages, succession gaps, compliance weaknesses, and diversity challenges. Early identification of these risks enables timely intervention and strengthens organizational resilience (Belizón, Majarín & Aguado, 2023; Kamau & Githinji, 2023). The application of continuous feedback systems further reinforces engagement by providing employees with regular, data-driven guidance to improve their performance. Organizations adopting these systems report higher productivity, improved job satisfaction, and greater alignment between employee performance and strategic goals (Buckingham & Goodall, 2021; Wambua & Kariuki, 2024).

## Training Analytics

Training analytics in human resource management refers to the use of data-driven approaches to evaluate the effectiveness of training programs and identify opportunities for enhancing workforce capabilities. It enables organizations to assess training investments, determine areas where training delivers the highest value, and align training initiatives with strategic objectives (Fernandez & Gallardo, 2021; Otieno & Waweru, 2023). By leveraging training analytics, HR professionals can make informed decisions that optimize both the quality and relevance of training programs.

The training needs assessment is a critical step in implementing effective training analytics. It involves identifying skill gaps across various functions, determining the competencies required for optimal performance, and aligning these with organizational objectives. This process includes reviewing workforce data, employee performance trends, and departmental needs to ensure training interventions are targeted to areas of maximum impact (Kaaria, 2024; Kamau & Githinji, 2023). A well-structured needs assessment allows organizations to allocate resources efficiently and measure the alignment between training content and organizational priorities.

Training analytics also plays a role in improving the return on investment in training initiatives (Abu, Mohd, & Salleh, 2024). By tracking participation rates, skill acquisition, and post-training performance improvements, organizations can evaluate whether training programs meet expected objectives. The use of workforce data analysis supports evidence-based decisions on whether to revise, expand, or discontinue certain training programs. This ensures that training investments remain relevant and cost-effective (Wambua & Kariuki, 2024).

Effective training contributes significantly to enhancing employee confidence, skill application, and job satisfaction. Employees who undergo relevant and well-structured training demonstrate improved performance and higher commitment to organizational goals (Saxena, Bagga, & Gupta, 2021). Training analytics supports this by continuously monitoring learning outcomes, identifying patterns in training effectiveness, and ensuring that interventions remain aligned with emerging organizational needs (Mwangi & Cheruiyot, 2024).

## Employee Performance

Performance of Non-Governmental Organizations (NGOs) refers to the extent to which NGOs effectively achieve their mission, program objectives, and service delivery goals through the efficient utilization of available resources. NGO performance reflects an organization's ability to deliver quality services, complete assigned activities within established timelines, and generate intended outcomes for beneficiaries and stakeholders (Mwangi & Cheruiyot, 2024). In the Kenyan context, performance is a critical measure of organizational effectiveness, accountability, sustainability, and donor confidence, particularly given the important role NGOs play in supporting social and economic development (Otieno & Waweru, 2023).

In this study, performance of NGOs was measured using three key indicators: output quality, task completion, and service delivery. Output quality refers to the extent to which organizational activities and programs meet established standards, stakeholder expectations, and intended objectives. High output quality is reflected in accurate implementation of projects, achievement of program targets, and delivery of services that meet beneficiary needs (Kamau & Githinji, 2023). Task completion refers to the ability of employees and departments to successfully execute assigned duties, projects, and organizational activities within the stipulated timelines and resource constraints. Timely completion of tasks enhances operational efficiency and contributes to the achievement of organizational goals (Wambua & Kariuki, 2024). Service delivery refers to the effectiveness, responsiveness, reliability, and accessibility of services provided to beneficiaries and other stakeholders. Effective service delivery enhances stakeholder satisfaction, strengthens organizational reputation, and improves program impact (Nyaga & Kimani, 2023).

Performance of NGOs plays a strategic role in ensuring organizational sustainability and achievement of development objectives. High-performing NGOs are characterized by efficient resource utilization, effective program implementation, strong accountability mechanisms, and the ability to respond to the needs of beneficiaries and donors. Such organizations are more likely to maintain stakeholder trust, secure continued funding, and achieve long-term organizational success (Mwangi & Cheruiyot, 2024).

Human Resource Analytics contributes to improved NGO performance by providing data-driven insights that support talent acquisition, work efficiency, training, and workforce planning decisions. By integrating analytics into human resource management processes, NGOs can improve workforce productivity, enhance operational effectiveness, optimize resource allocation, and strengthen service delivery outcomes. Consequently, effective application of Human Resource Analytics is expected to improve output quality, task completion, and service delivery, thereby enhancing overall organizational performance (Mutuku & Kihara, 2024; Nduati & Mwangi, 2024).

## Empirical Review

### Work Efficiency Analytics and Employee Performance

Flemming (2020) found that HR analytics enables organizations to identify factors affecting employee satisfaction and engagement, leading to improved productivity, reduced turnover, and enhanced organizational performance. Similarly, Duta (2024) established that performance evaluation improves employee productivity by enhancing skills, accountability, engagement, and initiative. Tong et al. (2023) further reported that performance evaluation increases productivity through clear goal setting, continuous feedback, and recognition of employee achievements. Adesanya et al. (2022) found that employees involved in structured goal-setting achieved higher productivity, service quality, and overall performance, while Mbabazi and Odengo (2025) revealed that goal-setting significantly predicts employee performance by improving task prioritization, planning, and resource management.

Further, Masanja and Kusekwa (2020) established that performance evaluation positively influences task performance, employee motivation, adaptability, and collaboration. Ochieng (2022) found that structured feedback systems improve employee output, skills development, job satisfaction, and productivity. Likewise, Kasina (2024) reported that constructive feedback during appraisal enhances motivation, satisfaction, and workforce productivity. Macharia (2021) concluded that performance appraisal positively influences employee motivation, career advancement, and achievement of performance targets. Collectively, the reviewed studies demonstrate that work efficiency analytics contributes significantly to employee performance through performance monitoring, feedback mechanisms, and goal-setting practices.

### Training Analytics and Employee Performance

Deokar et al. (2021) found that analytics-driven training needs assessment helps organizations identify skill gaps and develop targeted training programs that improve employee competencies and performance. Similarly, Dagnew (2023) established that training needs assessment and adequate training resources significantly improve employee performance and job satisfaction. Alzahmi and Alshamsi (2024) reported that training needs analysis enhances employee engagement, skill proficiency, and task efficiency, while Aklilu (2021) found a positive relationship between effective training practices and employee performance, particularly in improving work quality and satisfaction. Bekele (2021) further established that training and development programs improve employee productivity, teamwork, and motivation.

Additionally, Kamida and Devis (2024) found that employee training enhances adaptability, efficiency, and alignment with organizational objectives. Robert and Mori (2025) reported that structured training needs assessment improves technical skills, operational efficiency, and firm performance. Fadhili (2024) established that both on-the-job and off-the-job training improve employee competence, teamwork, motivation, and performance. Similarly, Odhiambo, Gitari, and Mugaa (2024) found that training needs assessment and appropriate training methods significantly enhance employee performance, while Omusebe, Gabriel, and Douglas (2021) concluded that training needs assessment and relevant training content positively influence employee efficiency and task performance. Overall, the reviewed studies affirm that training analytics is a critical driver of employee performance through improved skills development, training effectiveness, and workforce capability enhancement.

## RESEARCH METHODOLOGY

The study adopted a descriptive research design to examine the effect of Human Resource Analytics on employee performance among Non-Governmental Organizations (NGOs) in Nairobi City County, Kenya. The target population comprised 1,143 active NGOs, with Human Resource Managers serving as the unit of observation. A sample size of 296 respondents was determined using Yamane's formula and selected through simple random sampling.

Primary data was collected using a structured questionnaire administered electronically through Google Forms. The questionnaire measured Work Efficiency Analytics, Training Analytics, and Employee Performance using a five-point Likert scale. A pilot study involving 10% of the sample was conducted in Kiambu County to assess the validity and reliability of the instrument. Content validity was established through expert review, while reliability was assessed using Cronbach's Alpha coefficient, with a threshold of 0.70.

Data were analyzed using SPSS Version 28. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the data. Pearson correlation

analysis was employed to examine relationships among the variables, while multiple linear regression analysis was used to determine the effect of work efficiency analytics and training analytics, on employee performance. Findings were presented using tables and figures.

## RESEARCH FINDINGS AND DISCUSSIONS

The study targeted 296 Human Resource Managers from Non-Governmental Organizations (NGOs) in Nairobi City County, Kenya. After excluding 30 respondents who participated in the pilot study, 266 questionnaires were distributed. Of these, 217 were successfully completed and returned, yielding a response rate of 81.58%. The response rate was considered adequate for analysis, as it exceeded the 70% threshold recommended for survey research, thereby minimizing non-response bias and enhancing the reliability of the findings.

### Descriptive Statistics

### Work Efficiency Analytics

The first objective of the study was to assess the effect of work efficiency analytics on the performance of Non-Governmental Organizations in Nairobi City County, Kenya. Respondents were requested to indicate their level of agreement with statements relating to work efficiency analytics. The findings are presented in Table 1.

**Table 1: Descriptive Statistics for Work Efficiency Analytics**

| Statement | Mean | Std. Dev. |
|---|---|---|
| Task assignments in my department are based on real-time workload analysis. | 4.021 | 0.846 |
| The organization uses data to ensure workloads are distributed fairly among employees. | 3.944 | 0.901 |
| Analytics help prevent overloading or underutilization of staff in the organization. | 4.067 | 0.823 |
| Analytics are used to track how efficiently tasks are completed by staff. | 4.114 | 0.801 |
| The organization uses performance data to improve individual task management. | 4.038 | 0.857 |
| The staff receive feedback on their task efficiency based on data or performance metrics. | 3.926 | 0.918 |
| The organization monitors employee progress toward goals using data tools. | 4.072 | 0.834 |
| Work efficiency analytics help to identify obstacles to achieving performance targets. | 4.126 | 0.792 |
| Performance goals in my role are regularly reviewed using objective data insights. | 3.988 | 0.886 |
| Composite Mean | 4.033 | 0.851 |

The findings indicate that respondents agreed that work efficiency analytics was practiced in their organizations, as shown by a composite mean of 4.033 and standard deviation of 0.851. This implies a high level of agreement with strong consensus among respondents.

Respondents highly agreed that work efficiency analytics help to identify obstacles to achieving performance targets (M = 4.126, SD = 0.792), suggesting that analytics tools are useful in diagnosing barriers to productivity. They also agreed that analytics are used to track how efficiently tasks are completed by staff (M = 4.114, SD = 0.801), indicating that performance measurement systems are actively used. Further, respondents agreed that the organization monitors employee progress toward goals using data tools (M = 4.072, SD = 0.834), implying that employee

progress is increasingly monitored through evidence-based systems.

The respondents further agreed that analytics help prevent overloading or underutilization of staff in the organization (M = 4.067, SD = 0.823), the organization uses performance data to improve individual task management (M = 4.038, SD = 0.857), and task assignments in my department are based on real-time workload analysis (M = 4.021, SD = 0.846). This suggests that organizations are using analytics to allocate duties more effectively and improve staff productivity. They also agreed that performance goals in my role are regularly reviewed using objective data insights (M = 3.988, SD = 0.886), the organization uses data to ensure workloads are distributed fairly among employees (M = 3.944, SD = 0.901), and the staff receive feedback on their task efficiency based on data or performance metrics (M = 3.926, SD = 0.918). These findings imply that performance review and fairness mechanisms supported by analytics are present, though implementation levels vary across organizations.

Overall, the findings show that work efficiency analytics is widely adopted among NGOs in Nairobi City County and contributes to workload balancing, task monitoring, productivity improvement, employee feedback, and performance target achievement. These findings support Goal-Setting Theory advanced by Locke and Latham (1990), which emphasizes that clear goals, regular feedback, and performance monitoring improve employee motivation and output.

The findings are consistent with Flemming (2020), who found that HR analytics helped organizations identify factors affecting satisfaction, engagement, and productivity. Similarly, Tong, Kirsten, and Bharajdagger (2023) reported that performance evaluation systems improved worker productivity through clear goals and continuous feedback. Mbabazi and Odengo (2025) also found that individual goal-setting significantly predicted employee performance at World Vision International Rwanda, while Ochieng (2022) established that structured feedback systems improved employee output at the Kenya Forestry Research Institute. These studies reinforce the present finding that work efficiency analytics positively supports organizational performance.

**Training Analytics**

The second objective of the study was to evaluate the effect of training analytics on the performance of NGOs in Nairobi City County, Kenya. Respondents were requested to indicate their level of agreement with statements on training analytics. The findings are shown in Table 2.

**Table 2: Descriptive Statistics for Training Analytics**

| Statement | Mean | Std. Dev. |
|---|---|---|
| The organization uses employee performance data to assess training needs. | 4.138 | 0.786 |
| Training programs are developed based on data-driven skills gap analysis. | 4.067 | 0.824 |
| Analytics are used to prioritize which staff require immediate training interventions. | 3.988 | 0.886 |
| Participation in training programs is regularly tracked and analyzed. | 4.094 | 0.812 |
| The organization monitors engagement levels during training sessions using feedback and data tools. | 3.955 | 0.901 |
| Staff participation in training is linked to measurable performance outcomes. | 4.021 | 0.846 |
| The organization evaluates which training methods are most effective using performance data. | 4.046 | 0.838 |
| Different training formats (online, in-person, blended) are selected based on analytics. | 3.914 | 0.928 |
| Training delivery is adjusted over time based on data from previous sessions. | 3.972 | 0.887 |
| Composite Mean | 4.022 | 0.857 |

The findings indicate that respondents agreed that training analytics was practiced in their organizations, as shown by a composite mean of 4.022 and standard deviation of 0.857. This implies a high level of agreement with strong consensus among respondents.

Respondents highly agreed that the organization uses employee performance data to assess training needs (M = 4.138, SD = 0.786), suggesting that training needs identification is increasingly evidence-based. They also agreed that participation in training programs is regularly tracked and analyzed (M = 4.094, SD = 0.812), indicating active monitoring of staff learning activities. Further, respondents agreed that training programs are developed based on data-driven skills gap analysis (M = 4.067, SD = 0.824), implying that organizations are aligning training content with identified competency deficiencies.

The respondents also agreed that the organization evaluates which training methods are most effective using performance data (M = 4.046, SD = 0.838), staff participation in training is linked to measurable performance outcomes (M = 4.021, SD = 0.846), and analytics are used to prioritize which staff require immediate training interventions (M = 3.988, SD = 0.886). This suggests that organizations are using analytics not only to plan training, but also to assess value and target urgent development needs. Further, respondents agreed that training delivery is adjusted over time based on data from previous sessions (M = 3.972, SD = 0.887), and that the organization monitors engagement levels during training sessions using feedback and data tools (M = 3.955, SD = 0.901). This indicates that learning processes are increasingly refined through continuous feedback mechanisms.

The lowest rated statement, though still positive, was that different training formats (online, in-person, blended) are selected based on analytics (M = 3.914, SD = 0.928). The relatively higher standard deviation suggests variation in adoption levels across NGOs, possibly due to differences in technology capacity and training budgets.

Overall, the findings reveal that training analytics is widely applied among NGOs in Nairobi City County and supports identification of training needs, skills gap analysis, monitoring of participation, evaluation of training methods, and continuous improvement of learning delivery systems. These findings support Human Capital Theory advanced by Becker (1964), which argues that investment in employee knowledge, skills, and capabilities enhances productivity and organizational performance.

The findings are consistent with Deokar et al. (2021), who found that analytics-based training needs assessment improved skill development and employee performance. Similarly, Dagnew (2023) established that training needs assessment and resource availability significantly influenced employee performance. Alzahmi and Alshamsi (2024) also found that structured training needs analysis significantly improved employee performance in the banking sector, while Odhiambo, Gitari, and Mugaa (2024) reported that training needs assessment had the strongest correlation with employee performance at Airtel Kenya. These studies reinforce the present finding that training analytics positively contributes to organizational performance.

**Employee Performance**

The study further sought to assess the level of employee performance among Non-Governmental Organizations in Nairobi City County, Kenya. Respondents were requested to indicate their level of agreement with statements relating to employee performance. The findings are presented in Table 3.

**Table 3: Descriptive Statistics for Employee Performance**

| Statement | Mean | Std. Dev. |
|---|---|---|
| I consistently meet deadlines and deliver high-quality results in my role. | 4.118 | 0.792 |
| My productivity has improved due to clear planning and performance monitoring. | 4.072 | 0.834 |
| I am able to complete my assigned tasks with minimal supervision. | 4.046 | 0.857 |
| I feel motivated to remain with this organization in the long term. | 3.955 | 0.901 |
| The organization takes effective steps to retain high-performing employees. | 3.914 | 0.928 |
| Staff turnover is low due to supportive performance and development systems. | 3.842 | 0.966 |
| I am confident that my work contributes to better service delivery for our beneficiaries. | 4.126 | 0.786 |
| Our team delivers services efficiently and with high quality. | 4.088 | 0.812 |
| My performance has a positive impact on the organization's ability to meet its service objectives. | 4.104 | 0.804 |
| Composite Mean | 4.029 | 0.853 |

The findings indicate that respondents agreed that employee performance levels were high in their organizations, as shown by a composite mean of 4.029 and standard deviation of 0.853. This implies a high level of agreement with strong consensus among respondents.

Respondents highly agreed that they were confident their work contributes to better service delivery for beneficiaries (M = 4.126, SD = 0.786), suggesting strong employee awareness of mission impact. They also agreed that they consistently meet deadlines and deliver high-quality results in their role (M = 4.118, SD = 0.792), indicating positive perceptions of individual productivity and quality of output. Further, respondents agreed that their performance has a positive impact on the organization's ability to meet service objectives (M = 4.104, SD = 0.804), reflecting alignment between individual effort and organizational goals.

The respondents also agreed that their team delivers services efficiently and with high quality (M = 4.088, SD = 0.812), productivity has improved due to clear planning and performance monitoring (M = 4.072, SD = 0.834), and they are able to complete assigned tasks with minimal supervision (M = 4.046, SD = 0.857). This suggests that effective systems and individual competence are supporting strong operational outcomes.

Moderate to high agreement was recorded on whether respondents feel motivated to remain with the organization in the long term (M = 3.955, SD = 0.901), whether the organization takes effective steps to retain high-performing employees (M = 3.914, SD = 0.928), and whether staff turnover is low due to supportive performance and development systems (M = 3.842, SD = 0.966). This implies that although performance outcomes are positive, retention systems may still require strengthening.

Overall, the findings reveal that employee performance among NGOs in Nairobi City County is generally high, particularly in service delivery, productivity, quality of work, and contribution toward organizational objectives. The relatively lower ratings on retention-related items suggest that workforce stability remains an area for improvement. These findings are consistent with Ahmed, Khan, and Patel (2022), who found that HR analytics enhanced employee performance through data-driven decision-making. Similarly, Tessema, Yang, and Chen (2025) reported that human resource analytics positively influenced organizational performance through improved workforce effectiveness. These studies support the view that analytics-based HR practices can

strengthen both employee and organizational outcomes.

**Correlation Analysis**

The study conducted Pearson product-moment correlation analysis to determine the nature and strength of the relationship between human resource analytics variables and employee performance among Non-Governmental Organizations in Nairobi City County, Kenya. Correlation coefficients range from -1 to +1, where positive values indicate a direct relationship, negative values indicate an inverse relationship, and values closer to zero indicate weak association. Coefficients between 0.30 and 0.49 indicate moderate correlation, while coefficients of 0.50 and above indicate strong correlation.

**Table 4: Pearson Correlation Matrix**

| Variables | | Work Efficiency Analytics | Training Analytics | Employee Performance |
|---|---|---|---|---|
| Work Efficiency Analytics | Pearson Correlation | 1 | | |
| | Sig. | | | |
| | N | 217 | | |
| Training Analytics | Pearson Correlation | .655 | 1 | |
| | Sig. | .097 | | |
| | N | 217 | 217 | |
| Employee Performance | Pearson Correlation | .734** | .706** | 1 |
| | Sig. | .000 | .000 | |
| | N | 217 | 217 | 217 |

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

Work efficiency analytics had the strongest positive and significant relationship with employee performance ($r = .734$, $p < .05$). This suggests that organizations using analytics for workload balancing, task monitoring, goal tracking, and feedback systems are likely to experience improved employee productivity and efficiency. This finding supports Duta (2024), who found that structured performance evaluation systems enhanced productivity, accountability, and employee initiative. It is also in line with Kasina (2024), who reported that constructive appraisal feedback improved employee motivation and satisfaction at the Kenya National Highways Authority.

Training analytics was also positively and significantly related to employee performance ($r = .706$, $p < .05$). This means that data-driven training needs assessment, monitoring of training participation, and evaluation of learning outcomes are associated with better employee output. This finding is consistent with Aklilu (2021), who found a positive relationship between effective training practices and employee performance. It also agrees with Bekele (2021), who established that training and development programs significantly improved motivation, teamwork, and productivity.

**Regression Analysis**

The study conducted multiple linear regression analysis to determine the combined effect of work efficiency analytics and training analytics on employee performance among Non-Governmental Organizations in Nairobi City County, Kenya. Regression analysis was appropriate because it established the extent to which changes in the independent variables explained variation in employee performance.

**Model Summary**

Model summary was used to determine the explanatory power of the model. It showed the amount of variation in the dependent variable that can be explained by the independent variables combined.

**Table 5: Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of Estimate |
|---|---|---|---|---|
| 1 | .842 | .709 | .704 | .412 |

The findings indicate that the correlation coefficient (R = .842) shows a strong positive relationship between the combined human resource analytics variables and employee performance. The coefficient of determination ($R^2$ = .709) implies that 70.9% of the variation in employee performance among NGOs in Nairobi City County was explained by work efficiency analytics and training analytics. The remaining 29.1% of variation is attributable to other factors not included in the model.

This high explanatory power suggests that human resource analytics practices are major determinants of employee performance in NGOs. The finding is consistent with Tessema, Yang, and Chen (2025), who found that HR analytics significantly explained organizational performance outcomes through improved workforce effectiveness. It also agrees with Wright, Nyberg, and Ployhart (2023), who argued that strategic workforce analytics substantially enhances organizational productivity and decision quality.

**Analysis of Variance (ANOVA)**

The study conducted Analysis of Variance (ANOVA) to test whether the overall regression model significantly predicted employee performance among Non-Governmental Organizations in Nairobi City County, Kenya. ANOVA determines whether the independent variables, when considered jointly, provide a statistically significant explanation of variation in the dependent variable.

**Table 5: ANOVA Results**

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 118.642 | 2 | 29.661 | 174.682 | .000 |
| Residual | 48.078 | 265 | 0.183 | | |
| Total | 166.720 | 267 | | | |

The findings indicate that the regression model was statistically significant (F = 174.682, $p < .05$). This means that work efficiency analytics and training analytics jointly had a significant effect on employee performance among NGOs in Nairobi City County, Kenya. The significance of the model implies that the set of human resource analytics variables used in the study provides a reliable explanation of employee performance outcomes. In practical terms, organizations that strengthen analytics capabilities across recruitment, productivity monitoring, employee development, and workforce forecasting are likely to experience improved employee performance.

The findings are consistent with Ahmed, Khan, and Patel (2022), who found that integrated HR analytics systems significantly improved employee performance through better workforce decisions. They also support Abu Al, Mohd Nor, and Salleh (2024), who reported that data-driven HR systems significantly enhanced organizational effectiveness by improving capability development and strategic alignment.

**Regression Coefficients**

The study further examined the individual contribution of each independent variable to employee

performance using regression coefficients. The beta coefficients indicate the direction and magnitude of the effect of each predictor variable while holding the other variables constant.

**Table 6: Regression Coefficients**

| Variable | Unstandardized B | Std. Error | Standardized Beta | t | Sig. |
|---|---|---|---|---|---|
| Constant | 0.512 | 0.184 | | 2.783 | .006 |
| Work Efficiency Analytics | 0.298 | 0.056 | 0.319 | 5.321 | .000 |
| Training Analytics | 0.241 | 0.053 | 0.257 | 4.547 | .000 |

The regression model derived from the findings was:

Employee Performance = 0.512 + 0.298(Work Efficiency Analytics) + 0.241(Training Analytics)

Work efficiency analytics had the strongest positive and significant effect on employee performance ($\beta = 0.298$, $p < .05$). This means that a one-unit increase in work efficiency analytics would result in a 0.298 unit increase in employee performance, ceteris paribus. This finding agrees with Macharia (2021), who found that effective performance appraisal systems significantly enhanced employee motivation and performance outcomes.

Training analytics had a positive and significant effect on employee performance ($\beta = 0.241$, $p < .05$). This indicates that a one-unit increase in training analytics would increase employee performance by 0.241 units, holding other variables constant. This finding supports Fadhili (2024), who found that training and development significantly improved employee output, teamwork, and adaptability.

## Conclusions

The study concluded that work efficiency analytics was the strongest predictor of employee performance. Organizations that apply analytics in workload allocation, productivity monitoring, goal tracking, performance feedback, and identification of workflow obstacles create environments where employees perform more efficiently and remain accountable for results. NGOs that prioritize work efficiency analytics are therefore more likely to achieve higher productivity, better service delivery, and stronger alignment between employee effort and organizational objectives.

The study concluded that training analytics significantly enhances employee performance by ensuring that staff development programs are based on evidence rather than assumptions. Organizations that use performance data to assess training needs, identify skills gaps, monitor participation, and evaluate learning outcomes are more likely to develop competent, motivated, and adaptable employees. As a result, training analytics improves productivity while increasing the effectiveness of human capital investments.

## Recommendations

NGOs should prioritize implementation of work efficiency analytics systems because this variable was found to have the strongest influence on employee performance. Organizations should deploy real-time performance dashboards, workload tracking tools, and productivity monitoring systems that allow managers to assess progress against targets and identify performance bottlenecks early. These systems should be linked to departmental and individual objectives to improve accountability and clarity of expectations. Organizations should also institutionalize continuous feedback mechanisms supported by performance data rather than relying solely on annual appraisals. Managers should receive training on how to interpret analytics reports and use findings to balance workloads, improve task allocation, and support employee coaching. Where possible,

NGOs should automate routine reporting processes so that supervisors can spend more time on performance improvement rather than administrative monitoring.

Non-Governmental Organizations should establish data-driven training management systems that begin with regular training needs assessments based on performance gaps, competency reviews, and changing program requirements. Training budgets should be allocated according to evidence of priority skills shortages rather than generalized staff requests. This would ensure that learning investments address actual organizational capability needs. Organizations should further monitor participation levels, post-training outcomes, and return on training investment using measurable indicators such as productivity improvement, service quality, error reduction, and employee confidence. HR departments should continuously compare different delivery methods such as online, blended, and in-person training to determine the most effective approaches. NGOs should also build learning analytics capacity among managers so that training decisions are guided by measurable impact.

## REFERENCES


Adesanya, A., Oladipo, T., & Akintoye, A. (2022). The effects of individual goal setting on employee performance in a Nigerian financial institution: A longitudinal study. *Journal of African Business, 23*(2), 135-151.

Aklilu, A. (2021). *The Effect of Training Practice on Employees Job Performance in Addis Ababa City Government Plan and Development Commission*. St. Mary's University.

Alzahmi, A., & Alshamsi, S. (2024). The influence of applying human resource training needs analysis on employee performance. *Journal of Human Resource and Leadership, 9*(1), 1-18.

Angrave, D., Charlwood, A., Kirkpatrick, I., Lawrence, M., & Stuart, M. (2022). HR analytics in the era of digital transformation: Strategic insights and organizational implications. *Academy of Management Perspectives, 36*(4), 578-595.

Becker, G. S. (1964). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. University of Chicago Press.

Bekele, H. (2021). *The Effect of Training and Development on Employees Performance: The Case of Jimma University*. Jimma University.

Dagnew, B. (2023). Impact of training needs assessment and resource availability on employee performance.

Deokar, P., Kulkarni, E., & Keskar, R. (2021). Predicting training needs using HR analytics.

Duta, S. (2024). The influence of efficient performance evaluation on worker productivity: A secondary data analysis. *Dandao Xuebao/Journal of Ballistics, 36*(1), 125-134.

Fernandez, V., & Gallardo-Gallardo, E. (2021). Tackling the HR digitalization challenge: Key factors and barriers to HR analytics adoption. *Competitiveness Review: An International Business Journal, 31*(1), 162-187.

Flemming, D. (2020). Predicting employee satisfaction and engagement using HR analytics.

IHRM. (2023). *Institute of Human Resource Management Survey Report*. Institute of Human Resource Management.

Johnson, P., & Brown, T. (2021). Predictive analytics in HR: Enhancing decision-making through AI and machine learning. *Human Resource Development Review, 20*(3), 233-252.

Kaaria, A. (2024). Essential human resource metrics and analytics for sustainable work environments: Literature mapping and conceptual synthesis. *East African Journal of Business and Economics, 7*(1), 241-262.

Kamau, J., & Githinji, P. (2023). Human resource management and workforce performance in Kenyan NGOs.

Kasina, M. (2024). *Effects of Performance Appraisal on Employee Job Satisfaction in Kenyan Parastatals: A Case of Kenya National Highways Authority*. United States International University Africa.

Kenya National Bureau of Statistics (KNBS). (2023). *Annual Labour Market Survey Report*. Government of Kenya.

Locke, E. A., & Latham, G. P. (1990). *A Theory of Goal Setting and Task Performance*. Prentice Hall.

Locke, E. A., & Latham, G. P. (2018). New developments in goal-setting and task performance.

Macharia, W. (2021). *Effects of Job Performance Appraisal on Employee Motivation and Career Advancement: A Case of PKF Audit Firm*. University of Nairobi.

Marler, J. H., & Boudreau, J. W. (2021). An evidence-based approach to HR analytics: The role of big data in human resource management. *Journal of Applied Psychology, 106*(4), 632-648.

Masanja, N., & Kusekwa, E. (2020). The effects of job evaluation on employees' performance: A case of Northern Tanzania Union Conference. *Contemporary Journal of Education and Business, 1*(1), 1-24.

Mbabazi, J., & Odengo, R. (2025). Effect of performance appraisal on employee performance in non-governmental organizations: A case of World Vision International Rwanda (WVIR). *Journal of Research Innovation and Implications in Education, 9*(1), 65-79.

McIver, D., Lengnick-Hall, C., & Lengnick-Hall, M. (2020). Human capital analytics: Transforming HR practices with data-driven insights. *Human Resource Management Review, 30*(2), 178-190.

Mugenda, O. M., & Mugenda, A. G. (2018). *Research Methods: Quantitative and Qualitative Approaches*. Acts Press.

Mutinda, J., & Kihara, P. (2022). Human resource analytics and employee performance in NGOs.

Mutuku, S., & Kihara, P. (2024). Human resource analytics adoption and workforce performance in NGOs.

Mwangi, D., & Cheruiyot, S. (2024). Human resource analytics and organizational effectiveness.

National Council of NGOs. (2024). *Annual NGO Sector Report*. Government of Kenya.

Nduati, P., & Mwangi, J. (2024). Human resource analytics and productivity improvement in NGOs.

Niranjani, D. (2024). The role of HR analytics in enhancing workforce efficiency.

Ochieng, O. (2022). *Effect of Performance Feedback System on Employee Performance in Kenya Forestry Research Institute*. University of Nairobi.

Odhiambo, A. A., Gitari, J., & Mugaa, L. (2024). Relationship between training and employee performance in selected telecommunication industry in Kenya. *International Academic Journal of Human Resource and Business Administration, 4*(4), 423-444.

Otieno, P., & Waweru, J. (2023). Human resource analytics and organizational performance.

Quinlan, C., & Babin, B. (2021). *Business Research Methods*.

Robert, N., & Mori, N. (2025). Effect of training needs assessment in enhancing employees' skills and firm performance. *Journal of Work Applied Management, 17*(1), 82-98.

Saunders, M., Lewis, P., & Thornhill, A. (2021). *Research Methods for Business Students* (8th ed.). Pearson.

Saxena, M., Bagga, T., & Gupta, S. (2021). Fearless path for human resource personnel through analytics. *International Journal of Information Technology, 13*(1), 1649-1657.

Tessema, S. A., Yang, S., & Chen, C. (2025). The effect of human resource analytics on organizational performance: Insights from Ethiopia. *Systems, 13*(2), 13.

Tong, L. U., Kirsten, T. G., & Bharajdagger, S. N. (2023). Effect of performance evaluation on employee productivity. *African Journal of Emerging Issues, 5*(4), 1-12.

Wambua, P., & Kariuki, S. (2024). Employee engagement and performance in Kenyan NGOs.

Wiese, B. S., & Freund, A. M. (2005). Goal progress and well-being.

Wood, R., & Locke, E. A. (1987). The relation of goal setting to performance.

Wright, P. M., Nyberg, A. J., & Ployhart, R. E. (2023). HR analytics and organizational performance: A theoretical perspective on strategic workforce planning. *Strategic HR Journal, 14*(1), 28-45.