



Influence of Training on Employee Performance in African Public Sector Organizations- A Systematic Review

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Abstract. This systematic review assessed the influence of staff training on employee performance in African public sector organisations. A comprehensive search strategy was employed, yielding 32 studies from various African countries with diverse research designs and sample sizes. This review evaluated the effectiveness of different types of training programmes in public sector staff training programs, providing recommendations for improvement. The findings suggest that various training approaches, including on-the-job, off-the-job, technical, and skills-based training, positively influence employee performance and organisational effectiveness. Performance management and technology integration in training were also identified as important factors. The review highlights a strong positive relationship between training and key employee performance metrics, with performance management, training evaluation, and work environment attributes playing crucial roles. However, challenges such as retention of trained staff, alignment of training with organisational needs, skills shortages, high training costs, and outdated training approaches were noted. Recommendations include conducting comprehensive training needs assessments, investing in diverse training approaches, integrating performance management with training initiatives, adopting innovative delivery methods, fostering supportive work environments, strengthening partnerships, incorporating problem-based learning and indigenous management knowledge, and regularly evaluating training effectiveness. This review provides evidence-based insights for policymakers and training programme designers to enhance the impact of staff training on employee performance in African public sector organisations.

Keywords: African public sector, Employee performance, Performance management, Staff training, Systematic review.

1. INTRODUCTION

Employee training has long been recognised as a vital investment for organisations across various sectors because it enables employees to acquire new knowledge, develop critical skills, and adapt to evolving work environments. The effectiveness of training programmes in enhancing employee performance, fostering innovation, and ultimately contributing to organisational success has been well-documented in the literature (Eljali & Ameen, 2020; Zia-ur-Rehman et al., 2020). However, the public sector, particularly in the African context, presents a unique set of challenges and opportunities regarding employee training and its impact on performance.

Public sector organisations in Africa often operate within the constraints of limited resources, bureaucratic complexities, and rapidly changing societal needs. Simultaneously, the increasing push towards digitalisation and the growing expectations of citizens necessitate a highly skilled and adaptable public sector workforce (Febiri & Hub, 2021). In this context, investing in comprehensive training programmes becomes crucial for African public sector organisations to build capacity, improve service delivery, and achieve broader development goals.

Despite the extensive body of research examining the relationship between training and employee performance in general, there is a pressing need for a focussed systematic review that specifically addresses the context of African public sector organisations. This need arises from several factors that highlight the importance of contextualised insights, the presence of conflicting evidence, gaps in knowledge, and the potential for generating practical recommendations.

The unique challenges and resource limitations faced by the African public sector require a nuanced understanding of how training intervention influence performance within these organisations. Existing research may not fully capture the impact of factors such as cultural dynamics, technological gaps, and the regulatory environment on the effectiveness of training programmes (Adom & Simatele, 2022; Katere et al., 2022). These contextual factors play a significant role in shaping the implementation and outcomes of training initiatives, and a systematic review that takes these into account will provide a more accurate and relevant understanding of the relationship between training and employee performance in African public sector organizations. Still, the current body of literature presents conflicting evidence regarding the impact of training on performance within African public sector contexts. While some studies suggest a strong positive relationship between training and performance (Febiri & Hub, 2021; Sbusisiwe et al., 2021), others highlight challenges in implementation and limited long-term impact (Adom & Simatele, 2022; Mehale et al., 2021). These discrepancies underscore the need for a systematic review that can synthesise these findings and identify the potential reasons for the inconsistencies. By providing a more comprehensive understanding of the topic, a systematic review can help reconcile the conflicting evidence and offer a clearer picture of the effectiveness of training interventions in African public sector organisations.

Another factor driving the need for a focussed systematic review is the presence of gaps in knowledge. Although research has been conducted on specific sectors within the African public sector, there is a lack of a broader overview that assesses various training approaches and performance metrics across different organisational settings. A systematic review that encompasses various public sector functions and training interventions will shed light on the generalizability of the findings and provide insights into the impact of training on diverse aspects of employee performance. This comprehensive approach contributes to a more robust understanding of the topic and identifies areas for further research. Finally, a systematic review can generate evidence-based recommendations tailored specifically to African public sector organisations. By synthesising the available evidence and considering the unique challenges and opportunities present in the African context, a systematic review can inform policymakers on effective training strategies, assist human resource practitioners in designing impactful training programmes, and guide researchers on areas for further inquiry.

Based on these aforementioned research gaps, the following research questions were set to be achieved for the study. These are:

1. What are the different types of training programmes offered to employees in African public sector organisations, and how effective are they in enhancing employee performance?
2. Is there a significant relationship between training and key employee performance metrics such as productivity, efficiency, service delivery, and achievement of organisational goals within the African public sector?
3. What are the challenges and limitations faced by existing public sector staff training programmes in Africa, and what recommendations can be made for more effective training approaches tailored to the public sector environment?

By addressing these research questions, this systematic review provides a comprehensive understanding of the impact of training on employee performance in African public sector organisations.

2. METHODS

This systematic review followed the PRISMA 2020 guidelines to ensure transparency and rigour. The methods section outlines the eligibility criteria, information sources, search strategy, study selection process, data collection and extraction, risk of bias assessment, and synthesis approach employed to comprehensively evaluate the impact of training on employee performance in African public sector organisations.

2.1. Eligibility Criteria

This systematic review included a range of study designs to comprehensively assess the impact of training on employee performance in African public sector organisations. randomised controlled trials (RCTs), quasi-experimental studies, and observational studies (cohort, case-control, and cross-sectional) were considered eligible for inclusion. Qualitative studies that explored the experiences and perceptions of employees and managers regarding training and its influence on performance were also included to provide a more nuanced understanding of the topic.

The review focussed on studies conducted in African public sector organizations, which were defined as government-owned or government-controlled entities that provided public services at the national, regional, or local levels. These organisations included government ministries, departments, agencies, and state-owned enterprises across various sectors such as health, education, infrastructure, and public administration. The participants in the included studies were employees working in these organizations, regardless of their job roles, levels of seniority, or demographic characteristics.

This review examined several training programmes offered to African public sector employees. These included both formal and informal training interventions, as outlined in the Table 1 below:

Table 1: Types of Training Interventions Included in the Review.

Training Type	Description
On-the-job training	Training within the workplace, often hands-on
Off-the-job training	Training outside the workplace (e.g., workshops, seminars, conferences)
E-learning	Training delivered electronically (e.g., online courses, webinars)
Mentoring and coaching	One-on-one guidance and support from an experienced individual
Job rotation	Temporary placement in different roles within the organisation
Leadership development	Training targeting leadership skills and competencies
Technical training	Training in job-specific technical skills

Furthermore, the review primarily focussed on studies that measured the impact of training on various employee performance metrics. Therefore, Studies that reported at least one of the outcome measures indicated in Table 2 were included in the review.

Table 2: Employee Performance Metrics Assessed in the Review

Performance Metric	Description
Productivity	Output quantity and efficiency in resource utilisation
Quality of work	Accuracy, error rates, and adherence to standards
Job knowledge	Understanding job requirements and processes
Employee engagement	Motivation, commitment, and job satisfaction
Innovation	Generation of new ideas and problem-solving approaches
Goal achievement	Success in meeting personal and organisational targets
Customer satisfaction	Positive feedback and ratings from service users

2.2. Information Sources

To identify relevant studies, a comprehensive search was conducted using four electronic databases: Google Scholar, Web of Science, African Journals Online (AJOL), and ProQuest (ABI/INFORM Global and ProQuest Dissertations & Theses). These databases were selected to ensure a broad coverage of literature from various disciplines and sources, including peer-reviewed journals, conference proceedings, and dissertations.

Google Scholar was used as a primary search tool because of its extensive indexing of scholarly literature across multiple disciplines. The Web of Science was included to capture studies from social sciences, management, and related fields. African Journals Online (AJOL) was specifically chosen to identify research conducted in African contexts and published in African journals. ProQuest (ABI/INFORM Global and ProQuest Dissertations & Theses) was searched to access additional studies, particularly those from the fields of business, management, and public administration, as well as dissertations that might not have been published in peer-reviewed journals.

In addition to academic databases, gray literature sources were explored to capture relevant studies that might not have been published in peer-reviewed journals. Government reports, policy documents, and conference proceedings were searched to identify research conducted by public sector organisations or presented at relevant conferences. The websites of international organizations, such as the World Bank, African Development Bank, and United Nations agencies, were scrutinised for reports and working papers related to training and employee performance in African public sector organisations. National government institutions' websites were also searched for pertinent information, such as evaluation reports of training programmes and performance management policies.

2.3. Search Strategy

The search strategy was developed in consultation with a subject librarian and included a combination of keywords and Boolean operators. An example search string used in the databases was as follows:

("employee training" OR "staff development" OR "capacity building" OR "skills training" OR "professional development") AND ("employee performance" OR "job performance" OR productivity OR efficiency OR "service delivery" OR "job knowledge" OR "employee engagement" OR innovation OR "goal achievement") AND ("public sector" OR "government organization" OR "state-owned enterprise") AND (Africa OR "Sub-Saharan Africa" OR "North Africa" OR [list of individual African countries])

The search was limited to studies published in English between January 2014 and December 2024 to capture the most recent and relevant research on the topic.

2.4. Study Selection

The study selection process involved two stages: title and abstract screening, followed by full-text review. In the first stage, the titles and abstracts of all identified studies were screened against the eligibility criteria. Studies that did not meet the inclusion criteria were excluded, whereas those that appeared relevant or had insufficient information were retained for full-text review. In the second stage, the full texts of the remaining studies were retrieved and assessed for eligibility.

2.5. Data Collection Process

A standardised data extraction form was developed to ensure consistent and reliable data collection from the included studies. The data extraction process included both general information about the studies (e.g., authors, year of publication, country, study design) and specific details related to the review objectives (e.g., type of training, employee performance measures, key findings, limitations). The extracted data were entered into a spreadsheet for further analysis. Table 3 shows the variables extracted from each included study

Table 3: Data items extracted from the included studies.

Category	Specific Data items
Study Characteristics	Authors, year of publication, country, study design, and sample size
Participant Characteristics	Age, gender, job roles, and level of education
Intervention Details	The type of training, duration, frequency, and delivery mode
Outcome Measures	Employee performance metrics, measurement tools, and time points
Key Findings	Effect sizes, statistical significance, and qualitative themes
Limitations	Limitations and potential sources of bias

2.6. Risk of Bias in Individual Studies

The quality and risk of bias in the included studies were assessed using appropriate tools depending on the study design. For RCTs, the Cochrane Risk of Bias tool was used, which evaluates studies based on random sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome assessment, incomplete outcome data, selective reporting, and other sources of bias. For non-randomized studies (quasi-experimental and observational), the Risk of Bias in Non-randomized Studies of Interventions (ROBINS-I) tool was employed. This tool assesses bias in seven domains: confounding, selection of participants, classification of interventions, deviations from intended interventions, missing data, measurement of outcomes, and selection of reported results.

Qualitative studies were appraised using the Critical Appraisal Skills Programme (CASP) Qualitative Checklist, which considers the appropriateness of the qualitative methodology, recruitment strategy, data collection, relationship between the researcher and participants, ethical issues, data analysis, and clarity of findings.

2.7. Summary Measures

The primary summary measure was the change in employee performance metrics between the trained and untrained groups or pre- and post-training assessments. For studies that reported continuous data, mean differences or standardised mean differences (Cohen's *d* or Hedge's *g*) with 95% confidence intervals were calculated. For studies with dichotomous data, risk ratios or odd ratios with 95% confidence intervals were computed.

2.8. Synthesis of the Results

A narrative synthesis approach was adopted to integrate and summarise the findings from the included studies. The narrative synthesis was structured around the review's specific objectives, addressing the types of training programmes, their effectiveness, the relationship between training and employee performance, and the challenges and limitations of existing training initiatives in African public sector organisations.

The synthesis also considered the quality and risk of bias in the individual studies, giving more weight to findings from high-quality studies and cautiously interpreting results from studies with higher risk of bias. Subgroup analyses were conducted on the basis of factors such as types of training, employee characteristics, and organisational settings to explore potential sources of heterogeneity and identify any differential effects of training on performance.

3. RESULTS

3.1. Study Selection

The study selection process followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) approach. The flow diagram in figure 1 below illustrates the number of studies identified, screened, assessed for eligibility, and included in the systematic review.

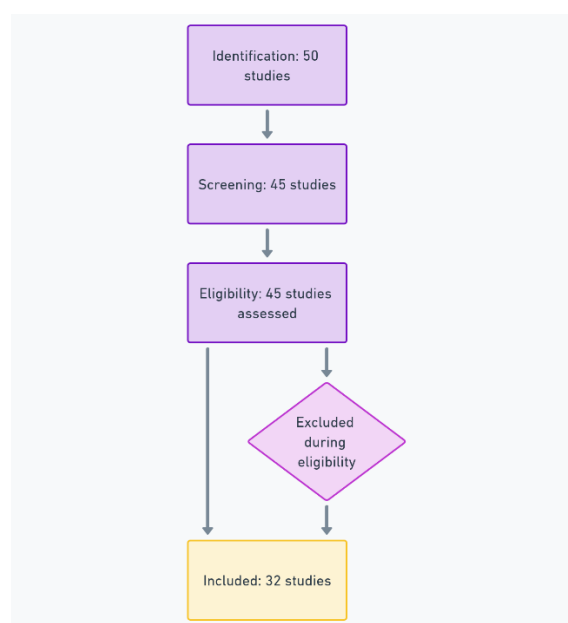


Figure 1: Study Selection Process.

The systematic review process began with the identification of 50 studies from databases and grey literature. After applying the initial screening criteria, 45 studies remained. A further eligibility assessment excluded 13

studies, leaving 32 studies for full-text review. All 32 studies met the inclusion criteria and were included in the final qualitative synthesis.

3.2. Study Characteristics

The systematic review included 32 studies that investigated the impact of training on employee performance in African public sector organisations. These studies were conducted across various African countries and employed a range of research designs, sample sizes, and participant groups. The included studies also examined different types of training interventions and their relationship with key employee performance metrics.

Table 4 presents an overview of the study characteristics for the 17 studies included in the review that addressed Objective 1: Evaluating the different types of training programmes provided to employees in African public sector organisations and their effectiveness in improving employee performance.

Table 4: Study Characteristics for Objective 1: Evaluating Different Types of Training programmes and Their Effectiveness.

Study	Authors	Country	Year	Research Design	Sample Size	Participants	Training Interventions	Outcome Measures
1	Kazi, K. H.	Tanzania	2020	Cross-sectional survey	90	Employees of the Kinondoni Municipality	On-the-job training and Off-the-job training	Quality of work and service delivery
2	Sendawula, K. et al.	Uganda	2018	Cross-sectional survey	150	Employees of four Catholic hospitals	Not specified	Employee engagement and performance
3	Seniwoliba, J. A.	Ghana	2014	Case study	101	Employees of the East Mamprusi District Assembly	Performance appraisal	Performance appraisal effectiveness
4	Tahsildari, A. Shahnaei, S.	Not specified	2015	Quantitative	165	Students in a university	Training and performance appraisal	organisational effectiveness
5	Obi-Anike, H. Ekwe, M.	Nigeria	2014	Cross-sectional survey	66	Employees of selected public sector organisations	Technical and skills-based training	organisational effectiveness and performance
6	Sanni, I. et al.	Nigeria	2018	Case study and quantitative	315	Employees of the Bank of Industry and UBA	On-the-job training and Off-the-job training	Employee performance
7	Mvuyisi, M. Mbukanma, I.	South Africa	2023	Qualitative	12	Employees and students of Walter Sisulu University	On-the-job training	Employee performance and productivity
8	Maake, G. et al.	South Africa	2021	Case study	400	Employees of eight national departments	Performance management and leadership development	Work engagement and employment relationships
9	Falola, H. et al.	Nigeria	2014	Cross-sectional survey	223	Employees of selected banks	Technical and skills-based training	Employee performance and the competitive advantage
10	Mbore, C. Cheruiyot, T.	African countries	2017	Mixed-methods	68	Public sector employees	Not specified	Performance measurement and management
11	Asfaw, A. et al.	Ethiopia	2015	Cross-sectional survey and quantitative	100	Employees of the District Five Administration Office	Technical and skills-based training	Employee performance and effectiveness
12	Munzhedzi, P.	South Africa	2017	Conceptual paper	N/A	N/A	Not specified	Relationship between performance management and training
13	Aro-Gordon, S.	Nigeria	2016	Qualitative	106	Stakeholders from across the country	E-learning and performance appraisal	Performance appraisal effectiveness
14	Okeke-Uzodike, O. Chitakunye, P.	Africa	2014	Conceptual paper	N/A	N/A	Performance management and leadership development	Service delivery and organisational performance
15	Ramulumisi, T. et al.	South Africa	2015	Quantitative	1,200	Employees of a government department	Performance management	Perceived effectiveness of performance management
16	Khan, S. Ukpere, W.	South Africa	2014	Mixed-methods	301	Line managers and employees	Performance management	Impact of performance management on employees
17	Febiri, F. Hub, M.	Africa	2021	Quantitative	70	Employees of public sector IT firms	Technical and skills-based training	Impact of training on IT firm productivity

The studies in Table 4 span from 2014 to 2023 and were conducted in countries such as Tanzania, Uganda, Ghana, Nigeria, South Africa, and Ethiopia. The research designs included cross-sectional surveys, case studies, quantitative approaches, and qualitative methods. Sample sizes ranged from 12 to 1,200 participants, and the studies investigated various training interventions, including on-the-job training, off-the-job training, e-learning, performance appraisal, and technical and skills-based training. The primary outcome measures focussed on employee performance metrics such as productivity, quality of work, job knowledge and skills, employee engagement, and achievement of individual and organisational goals.

Table 5 summarises the study characteristics for the 11 studies that addressed Objective 2: Determining the relationship between training and key employee performance metrics in African public sector contexts.

Table 5: Study Characteristics for Objective 2: Determining the Relationship Between Training and Key Employee Performance Metrics.

Study	Authors	Country	Year	Research Design	Sample Size	Participants	Key Findings
1	Mbore, C. Cheruiyot, T.	African countries	2017	Literature review	N/A	N/A	Specific processes are required to align performance measurement with outcomes-based performance management
2	Maake, G. et al.	South Africa	2021	Quantitative	400	Employees of eight national departments	Performance management mediates work engagement and employment relationships
3	Dabale, W. et al.	Zimbabwe	2014	Correlational	132	Employees of the Mutare City Council	Strong positive relationship between training and employee performance
4	Mehale, K. et al.	South Africa	2021	Quantitative	201	Employees in the SA financial sector	Positive association between training evaluation and employee performance improvement
5	Sendawula, K. et al.	Uganda	2018	Cross-sectional, Correlational	150	Employees of four Catholic hospitals	Training and employee engagement significantly predict employee performance
6	Munzhedzi, P.	South Africa	2017	Conceptual	N/A	N/A	Training and performance management are inseparably linked
7	Obi-Anike, H. Ekwe, M.	Nigeria	2014	Cross-sectional survey	66	Employees of selected public sector organisations	Positive relationship between training/development and organisational effectiveness
8	Mbore, C. Cheruiyot, T.	African countries	2017	Literature review	N/A	N/A	Specific processes are required to align performance measurement with outcomes-based performance management
9	Sanneh, L. & A. Taj, S.	Gambia	2015	Case study	327	Employees of the Gambia Ports Authority	Positive relationship between employee engagement and organisational performance
10	Vigan, F. Giauque, D.	Africa	2018	Systematic review	N/A	Public agents in Africa	Work environment attributes are the most important determinants of job satisfaction
11	Mbiya, D. et al.	Kenya	2014	Quantitative	50	Employees of the Ministry of Interior and Coordination	The majority of respondents believed that training has a positive effect on their performance

The studies in Table 5 were published between 2014 and 2021 and were conducted in various African countries, including South Africa, Zimbabwe, Uganda, Nigeria, Gambia, and Kenya. The research designs included literature reviews, quantitative approaches, correlational studies, conceptual papers, case studies, and systematic reviews. The sample sizes ranged from 66 to 400 participants, and the key findings highlighted the positive relationship between training, employee engagement, and various dimensions of employee performance, such as productivity, organizational effectiveness, and job satisfaction.

Table 6 presents the characteristics of the four studies that addressed Objective 3: Identifying challenges and limitations in existing public sector staff training programmes in Africa and providing recommendations for more effective training approaches.

Table 6: Study Characteristics for Objective 3: Identifying Challenges and Limitations in Public Sector Staff Training programmes and Providing Recommendations.

Study	Authors	Country	Year	Research Design	Sample Size	Participants	Key Challenges and Recommendations
1	Amde, W. et al.	Sub-Saharan Africa	2019	Case study	32	Trainees and key informants from health ministries and public health training institutions	Challenges: Retention of trained staff and alignment of training with organisational needs. Recommendations: Focus on training relevance, student selection, recognition, and career advancement potential.
2	Msomi, A. et al.	South Africa	2016	Conceptual	N/A	N/A	Challenges: Skills shortage, high training costs, and impact on productivity. Recommendations: Introduce e-learning and shift from reductionist to systems thinking.
3	Roka, Z. et al.	Kenya	2017	Case study	167	Frontline health workers	Challenges: Logistical and operational challenges in improving public health practise capacity. Recommendations: Strengthen local, national, and international partnerships for workforce development training.
4	Subban, M. Vyas-Doorgapersad, S.	South Africa	2014	Conceptual	N/A	N/A	Challenges: Lack of management capacity and outdated training approaches. Recommendations: Focus on problem-based learning, performance-oriented training, project management, and indigenous management knowledge.

The studies in Table 6 were conducted between 2014 and 2019 in sub-Saharan Africa, South Africa, and Kenya. The research designs included case studies and conceptual papers. The sample sizes ranged from 32 to 167 participants, and the studies focussed on identifying key challenges such as retention of trained staff, alignment of training with organisational needs, skills shortages, high training costs, and logistical and operational challenges in improving public health practise capacity. The recommendations provided by these studies emphasise the importance of focussing on training relevance, student selection, recognition, career advancement potential, introducing e-learning, shifting from reductionist to systems thinking, strengthening partnerships for workforce development training, and adopting problem-based learning, performance-oriented training, project management approaches, and indigenous management knowledge.

In summary, the study characteristics tables provide a comprehensive overview of the diverse range of studies included in this systematic review, highlighting the breadth of research conducted on the impact of training on employee performance in African public sector organisations. The tables also demonstrate the variety of research designs, sample sizes, participant groups, training interventions, and key findings across the three objectives of the review.

3.3. Risk of Bias Within Studies

To assess the risk of bias within the included studies, appropriate tools were used based on the study design. For randomised controlled trials (RCTs), the Cochrane Risk of Bias tool was employed, whereas the Risk of Bias in Non-randomised Studies of Interventions (ROBINS-I) tool was used for non-randomised studies (quasi-experimental and observational). Qualitative studies were appraised using the Critical Appraisal Skills Programme (CASP) Qualitative Checklist. The risk of bias assessment for each included study is summarised in the Table 7.

Table 7: Risk of Bias within Studies.

Study Number	Study Design	Risk of Bias	Main Sources of Bias
1	Cross-sectional survey	Moderate	Potential selection bias, self-reporting bias, and lack of control for confounding factors
2	Cross-sectional survey	Moderate	Potential selection bias, self-reporting bias, and lack of control for confounding factors
3	Case study	High	Lack of generalizability, potential researcher bias, and absence of control groups
4	Quantitative	Low to Moderate	Depends on the specific study design, sample size, and control for confounding factors
5	Cross-sectional survey	Moderate	Potential selection bias, self-reporting bias, and lack of control for confounding factors
6	Case study and quantitative	High	Lack of generalizability, potential researcher bias, and absence of control groups
7	Qualitative	Low	Clear reporting of research methods, data analysis, and findings
8	Case study	High	Lack of generalizability, potential researcher bias, and absence of control groups
9	Cross-sectional survey	Moderate	Potential selection bias, self-reporting bias, and lack of control for confounding factors
10	Mixed-methods	Moderate	Potential limitations in integrating qualitative and quantitative findings and lack of control for confounding factors
11	Cross-sectional survey and quantitative	Low to Moderate	Depends on the specific study design, sample size, and control for confounding factors
12	Conceptual paper	Not Applicable	These studies did not involve primary data collection or analysis
13	Qualitative	Low	Clear reporting of research methods, data analysis, and findings
14	Conceptual paper	Not Applicable	These studies did not involve primary data collection or analysis
15	Quantitative	Low to Moderate	Depends on the specific study design, sample size, and control for confounding factors
16	Mixed-methods	Moderate	Potential limitations in integrating qualitative and quantitative findings and lack of control for confounding factors
17	Quantitative	Low to Moderate	Depends on the specific study design, sample size, and control for confounding factors
18	Literature review	Not Applicable	These studies did not involve primary data collection or analysis
19	Quantitative	Low to Moderate	Depends on the specific study design, sample size, and control for confounding factors
20	Correlational	Moderate	Potential selection bias, self-reporting bias, and lack of control for confounding factors
21	Quantitative	Low to Moderate	Depends on the specific study design, sample size, and control for confounding factors
22	Cross-sectional, Correlational	Moderate	Potential selection bias, self-reporting bias, and lack of control for confounding factors
23	Conceptual	Not Applicable	These studies did not involve primary data collection or analysis
24	Cross-sectional survey	Moderate	Potential selection bias, self-reporting bias, and lack of control for confounding factors
25	Literature review	Not Applicable	These studies did not involve primary data collection or analysis
26	Case study	High	Lack of generalizability, potential researcher bias, and absence of control groups
27	Systematic review	Not Applicable	These studies did not involve primary data collection or analysis
28	Quantitative	Low to Moderate	Depends on the specific study design, sample size, and control for confounding factors
29	Case study	High	Lack of generalizability, potential researcher bias, and absence of control groups
30	Conceptual	Not Applicable	These studies did not involve primary data collection or analysis
31	Case study	High	Lack of generalizability, potential researcher bias, and absence of control groups
32	Conceptual	Not Applicable	These studies did not involve primary data collection or analysis

Table 7 categorises the 32 included studies on the basis of their research design and assigns a risk of bias level to each study. The main sources of bias for each study design are also identified. The risk of bias assessment table reveals that the included studies have varying levels of bias, ranging from low to high, depending on their research design. Cross-sectional surveys (Studies 1, 2, 5, 9, 24) and correlational studies (Study 20) have a moderate risk of bias due to potential selection bias, self-reporting bias, and lack of control for confounding factors. Case studies (Studies 3, 6, 8, 26, 29, 31) have a high risk of bias because of their lack of generalizability, potential researcher bias, and absence of control groups.

Quantitative approaches (Studies 4, 11, 15, 17, 19, 21, 28) have a low to moderate risk of bias, depending on the specific study design, sample size, and control for confounding factors. Qualitative approaches (Studies 7, 13) have a low risk of bias, with clear reporting of research methods, data analysis, and findings. Mixed-methods studies (Studies 10, 16) have a moderate risk of bias due to potential limitations in integrating qualitative and quantitative findings and lack of control for confounding factors.

Literature reviews (Studies 18, 25), systematic reviews (Study 27), and conceptual papers (Studies 12, 14, 23,

30, 32) were not assessed for risk of bias because they did not involve primary data collection or analysis.

3.4. Results of the Individual Studies

The findings of the included studies are presented in three tables, each corresponding to one of the review objectives.

Table 8: Findings Related to Objective 1: Evaluating Different Types of Training programmes and Their Effectiveness.

Study	Authors	Title	Key Findings
1	Kazi, K. H.	Effectiveness of Employee Training Needs Assessment in the Public organisations in Tanzania: The Case of Kinondoni Municipality	On-the-job and off-the-job training methods are used; challenges include budget deficits, employee turnover, and conflicts between management and subordinates.
2	Sendawula, K. et al.	Training, Employee Engagement, and Employee Performance: Evidence from Uganda's Health Sector	Training and employee engagement significantly predict employee performance; employee engagement is a major predictor.
3	Seniwoliba, J. A.	Assessing the performance appraisal concept of the Local Government Service in Ghana	Performance appraisal is not performed regularly and systematically; it is primarily initiated for promotion.
4	Tahsildari, A. Shahnaei, S.	Enhancing organisational Effectiveness by Performance Appraisal, Training, Employee Participation, and Job Definition	Training, employee participation, performance appraisal, and job description has significant effects on organisational effectiveness.
5	Obi-Anike, H. Ekwe, M.	paraphrase: Impact of Training and Development on organisational Effectiveness: Evidence from Selected Public Sector organisations in Nigeria	There is a positive relationship between training/development and organisational effectiveness; training benefits include increased job satisfaction and reduced employee turnover.
6	Sanni, I. et al.	Comparison of the Effect of Training and Development on Employee Performance in Public and Private Sectors: A Case Study of the Bank of Industry and the United Bank for Africa	Training and development significantly improve employee performance in both the public and private sectors, with the public sector benefiting more.
7	Mvuyisi, M. Mbukanma, I.	Assessing the impact of on-the-job training on employee performance	On-the-job training effectively improves employee performance and productivity by upskilling both recruits and existing employees.
8	Maake, G. et al.	Performance management as a mediator of work engagement and employment relationships in the public sector in South Africa	Performance management positively influences work engagement and employment relationships.
9	Falola, H. et al.	Effectiveness of Training and Development on Employee performances and organisation Competitiveness in the Nigerian Banking Industry	A strong relationship exists between training and development, employee performance, and the competitive advantage.
10	Mbore, C. Cheruiyot, T.	Employee Performance Measurement and Management in the African Public Sector	Specific processes are required to continuously align the performance measurement system with outcomes-based performance management.
11	Asfaw, A. et al.	The Impact of Training and Development on Employee Performance and Effectiveness: A Case Study of the District Five Administration Office, Bole Sub-City, Addis Ababa, Ethiopia	Training and development have a positive and statistically significant relationship with employee performance and effectiveness.
12	Munzhedzi, P.	Reflections on the relationship between performance management and training in the South African public service	Training underpins the process of performance management, and performance management fortifies training; the two are inseparably linked.
13	Aro-Gordon, S.	Leveraging Information Technology for Effective Performance Appraisal in the Nigerian Public Service	An information technology-based performance appraisal approach is proposed; challenges include phobia of the numeric and reluctance to embrace technology change.
14	Okeke-Uzodike, O. Chitakunye, P.	Public Sector Performance Management in Africa: Reforms, Policies, and Strategies	Effective management of service delivery requires well-trained human resources and appropriate workplace values; institutional capacity is a prerequisite for achieving various goals.
15	Ramulumisi, T. et al.	Perceived effectiveness of the performance management system	Employees show negativity towards personal development and manager support, but positivity towards personal performance in the context of performance management.
16	Khan, S. Ukpere, W.	Employee performance management at a South African government organisation	Gaps exist in understanding the electronic performance management system, compliance, feedback, and training initiatives to address organisational effectiveness and employee morale.
17	Febiri, F. Hub, M.	Towards a digitalize economy: The Impact of Training on the Performance of Public Sector IT firms in Africa	There is a positive relationship between staff training and IT firm productivity; training leads to significant differences in productivity scores.

Table 9: Findings Related to Objective 2: Determining the Relationship Between Training and Key Employee Performance Metrics.

Study	Authors	Title	Key Findings
1	Mbore, C. Cheruiyot, T.	Employee Performance Measurement and Management in the African Public Sector	Specific processes are required to align performance measurement with outcomes-based performance management.
2	Maake, G. et al.	Performance management as a mediator of work engagement and employment relationships in the public sector in South Africa	Performance management mediates work engagement and employment relationships.
3	Dabale, W. et al.	Relationship between training and employee performance: the case of Mutare City Council, Zimbabwe	A strong positive relationship between training and employee performance.
4	Mehale, K. et al.	maximising training evaluation for employee performance improvement	A positive association between training evaluation and employee performance improvement.
5	Sendawula, K. et al.	Training, Employee Engagement, and Employee Performance: Evidence from Uganda's Health Sector	Training and employee engagement significantly predict employee performance.
6	Munzhedzi, P.	Reflections on the relationship between performance management and training in the South African public service	Training and performance management are inseparably linked.
7	Obi-Anike, H. Ekwe, M.	paraphrase: Impact of Training and Development on organisational Effectiveness: Evidence from Selected Public Sector organisations in Nigeria	A positive relationship between training/development and organisational effectiveness.
8	Mbore, C. Cheruiyot, T.	Employee Performance Measurement and Management in the African Public Sector	Specific processes are required to align performance measurement with outcomes-based performance management.
9	Sanneh, L. & A. Taj, S. Vigan, F.	Employee engagement in the public sector: a case study of Western Africa	A positive relationship between employee engagement and organisational performance.
10	Giauque, D.	Job satisfaction in African public administrations: a systematic review	Work environment attributes are the most important antecedents of job satisfaction.
11	Mbiya, D. et al.	Effects of Training practises on Employee Productivity in Public Service: A Case Study of the Ministry of Interior and Co-Ordination of National Government, Kakamega Central Sub County	The majority of respondents believed that training has a positive effect on their performance.

Table 10: Findings Related to Objective 3: Identifying Challenges and Limitations in Public Sector Staff Training programmes and Providing Recommendations.

Study	Authors	Title	Key Challenges and Recommendations
1	Amde, W. et al.	Determinants of effective organisational capacity training: lessons from a training programme on health workforce development with participants from three African countries	Challenges: Retention of trained staff and alignment of training with organisational needs. Recommendations: Focus on training relevance, student selection, recognition, and career advancement potential.
2	Msomi, A. et al.	Conceptualisation of e-Learning in the public sector	Challenges: Skills shortage, high training costs, and impact on productivity. Recommendations: Introduce e-learning and shift from reductionist to systems thinking.
3	Roka, Z. et al.	Strengthening health systems in Africa: a case study of a Kenyan field epidemiology training programme for local frontline health workers	Challenges: Logistical and operational challenges in improving public health practise capacity. Recommendations: Strengthen local, national, and international partnerships for workforce development training.
4	Subban, M. Vyas-Doorgapersad, S.	Public Administration Training and Development in Africa: The Case of the Republic of South Africa	Challenges: Lack of management capacity and outdated training approaches. Recommendations: Focus on problem-based learning, performance-oriented training, project management, and indigenous management knowledge.

The tables present the key findings of the individual studies, organized according to the three objectives of the systematic review. Table 8 focuses on the effectiveness of different types of training programs, Table 9 examines the relationship between training and employee performance metrics, and Table 10 highlights the challenges and recommendations for public sector staff training programmes in Africa.

3.5. Synthesis of the Results

The synthesis of the results is presented in accordance with the three objectives of the systematic review. First, the effectiveness of various training programmes in improving employee performance within African public sector organisations is examined. Second, the relationship between training and key employee performance metrics is explored. Finally, the challenges and limitations of existing public sector staff training programmes in Africa are identified, along with recommendations for more effective training approaches. By organising the

synthesis around these objectives, a comprehensive understanding of the impact of training on employee performance in the African public sector is provided, highlighting the most significant findings and themes that emerge from the included studies.

3.5.1. Synthesis of Results: Types of Training Programs and Their Effectiveness

The studies included in this review investigated a variety of training programmes and their effectiveness in improving employee performance within African public sector organisations. On-the-job and off-the-job training methods were commonly used (Kazi, 2020), with on-the-job training being particularly effective in enhancing employee performance and productivity (Mvuyisi & Mbukanma, 2023). Technical and skills-based training programmes were also found to have a positive impact on organisational effectiveness and performance (Obi-Anike & Ekwe, 2014; Asfaw et al., 2015).

Several studies have highlighted the significant effects of training on various aspects of employee and organisational performance. Training, along with employee engagement, participation, and job description, was found to significantly predict employee performance and organisational effectiveness (Sendawula et al., 2018; Tahsildari & Shahnaei, 2015). Moreover, training and development have been shown to have a positive and statistically significant relationship with employee performance, effectiveness, and competitive advantage (Asfaw et al., 2015; Falola et al., 2014).

Performance management, including performance appraisal, has emerged as another critical aspect of training and development in the African public sector. However, some studies noted that performance appraisal was not conducted regularly or systematically and was primarily initiated for promotion (Seniwoliba, 2014). When implemented effectively, performance management positively influences work engagement and employment relationships (Maake et al., 2021).

The integration of technology in training and performance management was also explored. Aro-Gordon (2016) proposed an information technology-based performance appraisal approach, although challenges such as phobia of the numeric and reluctance to embrace technology change were noted. Febiri and Hub (2021) found a positive relationship between staff training and IT firm productivity, with training leading to significant differences in productivity scores.

Despite the overall positive impact of training on employee performance, several challenges were identified. These included budget deficits, employee turnover, conflicts between management and subordinates (Kazi, 2020), and gaps in understanding electronic performance management systems, compliance, feedback, and training initiatives (Khan & Ukpere, 2014).

Therefore, these studies highlighted the effectiveness of various training programs, including on-the-job, off-the-job, technical, and skills-based training, in improving employee performance and organisational effectiveness in African public sector organisations. Performance management and the integration of technology into training were also found to be important factors. However, challenges such as irregular performance appraisals, budget constraints, and employee turnover must be addressed to maximise the benefits of training and development initiatives.

3.5.2. Synthesis of Results: Relationship Between Training and Key Employee Performance Metrics

The studies included in this review investigated the relationship between training and various employee performance metrics within African public sector organisations. A strong positive relationship between training and employee performance has been consistently reported across several studies (Dabale et al., 2014; Sendawula et al., 2018; Mbiya et al., 2014). Training, along with employee engagement, was found to significantly predict employee performance (Sendawula et al., 2018).

Performance management emerged as a key factor in the relationship between training and employee performance. Maake et al. (2021) found that performance management mediates work engagement and employment relationships, whereas Munzhedzi (2017) emphasised that training and performance management are inseparably linked. Mbore and Cheruiyot (2017) highlighted the need for specific processes to align performance measurement with outcomes-based performance management.

The impact of training on organisational effectiveness was also explored. Obi-Anike and Ekwe (2014) reported a positive relationship between training/development and organisational effectiveness in selected Nigerian public sector organisations. Similarly, Sanneh and A.Taj (2015) found a positive relationship between employee engagement and organisational performance in a case study of the public sector in Western Africa.

Training evaluation is another important aspect of the relationship between training and employee performance. Mehale et al. (2021) found a positive association between training evaluation and employee performance improvement, emphasizing the need for organisations to assess the effectiveness of their training programmes. In addition to the direct impact of training on employee performance, work environment attributes have been identified as the most important antecedents of job satisfaction in African public administrations (Vigan & Giauque, 2018). This finding suggests that the context in which training occurs can significantly influence its effectiveness in improving employee performance.

In essence, the studies included in this review provide strong evidence for the positive relationship between

training and key employee performance metrics in African public sector organisations. Performance management, training evaluation, and work environment attributes were identified as important factors influencing this relationship. The findings underscore the need for public sector organisations to invest in effective training programs, align performance measurement with outcomes-based management, and create supportive work environments to maximise the impact of training on employee performance.

3.5.3. Synthesis of Results: Challenges and Limitations in Public Sector Staff Training Programs and Recommendations

The studies included in this review identified several challenges and limitations in public sector staff training programmes in Africa and provided recommendations for more effective training approaches. One of the major challenges highlighted was the retention of trained staff and the alignment of training with organisational needs (Amde et al., 2019). To address this, the authors recommended focussing on training relevance, student selection, recognition, and career advancement potential.

Skills shortage and high training costs have also been identified as significant challenges in the public sector (Msomi et al., 2016). The impact of training on productivity was another concern, as employees often had to be away from their day-to-day duties to attend training. To mitigate these challenges, Msomi et al. (2016) recommended introducing e-learning and shifting from a reductionist to a systems thinking approach in the design and implementation of training programmes.

Logistical and operational challenges in improving public health practise capacity were highlighted by Roka et al. (2017) in their case study of the Kenya Field Epidemiology Training programme. To overcome these challenges, the authors emphasise the importance of strengthening local, national, and international partnerships for workforce development training.

Subban and Vyas-Doorgapersad (2014) identified a lack of management capacity and outdated training approaches as major challenges in public administration training and development in South Africa. They recommended focussing on problem-based learning, performance-oriented training, project management approaches, and incorporating indigenous management knowledge in a developmental context.

Therefore, the studies included in this review identified several key challenges and limitations in public sector staff training programmes in Africa, including retention of trained staff, alignment of training with organisational needs, skills shortages, high training costs, impact on productivity, logistical and operational challenges, lack of management capacity, and outdated training approaches. To address these challenges, the authors provided recommendations such as focussing on training relevance, student selection, recognition, and career advancement potential, introducing e-learning, adopting systems thinking, strengthening partnerships for workforce development, and incorporating problem-based learning, performance-oriented training, project management approaches, and indigenous management knowledge in training programmes. These findings highlight the need for public sector organisations in Africa to critically evaluate their current training practises and implement innovative strategies to overcome the identified challenges and enhance the effectiveness of their staff training programmes.

4. DISCUSSION

This systematic review assessed the influence of staff training on employee performance in public sector organisations in Africa. The review included 32 studies conducted across various African countries, employing a range of research designs and sample sizes. The major findings of the review are synthesised according to three objectives:

Evaluating Different Types of Training programmes and Their Effectiveness:

The review found that a variety of training programs, including on-the-job, off-the-job, technical, and skills-based training, were effective in improving employee performance and organisational effectiveness in African public sector organisations. Performance management and the integration of technology into training were also identified as important factors. However, challenges such as irregular performance appraisals, budget constraints, and employee turnover were noted.

Determining the Relationship Between Training and Key Employee Performance Metrics:

The review provided strong evidence for the positive relationship between training and key employee performance metrics in African public sector organisations. Performance management, training evaluation, and work environment attributes were identified as important factors influencing this relationship. The findings underscore the need for public sector organisations to invest in effective training programs, align performance measurement with outcomes-based management, and create supportive work environments.

Identifying Challenges and Limitations in Public Sector Staff Training programmes and Providing Recommendations:

The review identified several key challenges and limitations in public sector staff training programmes in Africa, including retention of trained staff, alignment of training with organisational needs, skills shortages, high training costs, impact on productivity, logistical and operational challenges, lack of management capacity, and outdated training approaches. Recommendations to address these challenges included focussing on training

relevance, student selection, recognition, and career advancement potential, introducing e-learning, adopting systems thinking, strengthening partnerships for workforce development, and incorporating problem-based learning, performance-oriented training, project management approaches, and indigenous management knowledge in training programmes.

4.1. Strengths and Limitations

The strengths of this systematic review include the comprehensive search strategy, which covered multiple databases, ensuring a broad capture of relevant studies. The inclusion of studies from various African countries and the diverse range of research designs and sample sizes contribute to the generalisation of the findings. The review also employed a rigorous quality assessment using appropriate tools based on the study design, providing a transparent evaluation of the included studies. However, the review also has some limitations. The heterogeneity of the study designs, interventions, and outcome measures precluded the conduct of a meta-analysis, limiting the ability to provide precise quantitative estimates of the impact of training on employee performance. The inclusion of studies published only in English may have introduced language bias, potentially excluding relevant studies published in other languages. In addition, the limited number of randomised controlled trials and the presence of potential confounding factors in some studies may have affected the overall certainty of evidence.

4.2. Overall Conclusions

This systematic review provides evidence that staff training positively influences employee performance in public sector organisations in Africa. The findings suggest that investing in effective training programs, aligning performance management with training, and creating supportive work environments can significantly enhance employee performance and organisational effectiveness. The review also highlights the challenges and limitations of current public sector staff training programmes in Africa and offers recommendations for more effective training approaches. The implications of these findings for practice are significant. Public sector organisations in Africa should prioritise the design and implementation of evidence-based training programmes that are relevant to the needs of their employees and aligned with organisational goals. Performance management systems should be integrated with training initiatives to ensure that the skills and knowledge acquired through training are effectively applied in the workplace. Additionally, organisations should address the identified challenges, such as retention of trained staff, skills shortages, and high training costs, by adopting innovative strategies and leveraging partnerships for workforce development.

4.3. Recommendations

Based on the findings of this systematic review, the following recommendations are provided for policymakers and those designing training programmes in African public sector organizations:

1. Conduct comprehensive training needs assessments to ensure that training programmes are relevant, aligned with organisational needs, and tailored to the specific context of the public sector in Africa.
2. Invest in a mix of training approaches, including on-the-job, off-the-job, technical, and skills-based training, to cater to the diverse learning needs of employees and maximise the impact of training on performance.
3. Integrate performance management systems with training initiatives to ensure that the skills and knowledge acquired through training are effectively applied in the workplace and contribute to the achievement of organisational goals.
4. Adopt innovative training delivery methods such as e-learning to address challenges related to high training costs, impact on productivity, and logistical constraints.
5. Foster supportive work environments that encourage the application of newly acquired skills and knowledge, recognize employee achievements, and provide opportunities for career advancement.
6. Strengthen partnerships with educational institutions, professional bodies, and international organisations to leverage expertise, resources, and best practices in workforce development training.
7. Incorporate problem-based learning, performance-oriented training, project management approaches, and indigenous management knowledge in training programmes to enhance their relevance and effectiveness in the African public sector.
8. Regularly evaluate the effectiveness of training programmes using robust methodologies and use the findings to inform continuous improvement and evidence-based decision-making.

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