



<https://ijecm.co.uk/>

# **APPLICATION OF HUMAN RESOURCE ANALYTICS TO STRATEGIC HUMAN RESOURCE MANAGEMENT IN KENYA TO IMPROVE WORKFORCE PRODUCTIVITY: CONCEPTUAL REFLECTION OF COUNTY GOVERNMENT OF KISUMU**

**Veenah Achieng Adero** 

Jaramogi Oginga Odinga University of Science and Technology, Kenya

veenahadero@ejoooust.ac.ke

**Fronica Monari, PhD**

Jaramogi Oginga Odinga University of Science and Technology, Kenya

fronicak@yahoo.com

**Beatrice Akoth Awino CS (K), MMSK, PhD**

Jaramogi Oginga Odinga University of Science and Technology, Kenya

beatyakawino2018@gmail.com

## **Abstract**

*In recent times human resource analytics has emerged as a key part of strategic human resource management and organizational productivity all over the world. While private sector organizations have quickly adopted data-driven strategies in HRM, public sector organizations, especially in developing economies, have been slow to take up the approach because of infrastructural, institutional and cultural challenges. This paper discusses, conceptually, the importance of HR Analytics in enhancing employee productivity in the public institutions of Kenya specifically in Kisumu County Government. The paper builds on the Resource Based View (RBV), Technology Acceptance Model (TAM), and Human Capital Theory, which are used to explain how HR analytics can enhance institutional efficiency and accountability and evidence-based public service delivery. The study covers the key areas of*



*HR analytics such as workforce planning, employee performance management, employee training and development and employee engagement. It also delves into how HR analytics and contextual elements like organizational culture, leadership commitment, and the effectiveness of decision-making processes work together. The paper builds on literature, policy documents such as Kenya Vision 2030 and the Public Service Bill 2024, and realities faced by devolved governments, to suggest a conceptual framework for future empirical research and the public sector HR practice. The paper concludes that achieving successful integration of HR analytics requires investments of digital systems, analytical capabilities, and leadership support to drive county governments' workforce productivity and service delivery. Translating HR data into actionable insights, and using this information to shape the strategic direction of HR for better outcomes. Turning HR data into meaningful insights and information to guide the strategic direction of HR for improved results.*

*Keywords: HR Analytics, Strategic Human Resource Management, Workforce Productivity, Public Sector, County Government, Kenya*

## **INTRODUCTION**

In the face of financial constraints and growing public expectations, public sector organisations all over the world have come under increasing pressure to deliver quality services, to maintain accountability and to increase the efficiency of their institutions. Such needs have spurred governments to seek new ways in employing their workforce and enhancing their organizational performance. In this context, Human Resource (HR) analytics has become a vital tool to improve the strategic human resource management and to aid in evidence-based decision making. HR analytics is the systematic collection, processing, interpretation and utilization of data related to workforce with the objectives of supporting strategic organizational decision making, enhancing the efficiency of operations and ensuring the alignment of HRM with institutional objectives (Tessema et al., 2025).

Indeed, governments around the world have adopted HR analytics to enhance the effectiveness of their human resource management systems in countries like Singapore, Canada and the United Kingdom (Kamau & Muathe, 2020). These governments can use Human Resource Information Systems (HRIS), predictive analytics, and performance dashboards to make real-time informed workforce decisions. However, in Kenya, many public institutions are still using siloed and manual HR systems that restrict access to information about their employees, and thereby reduce the quality of HR decision-making.

The Constitution of Kenya 2010, introduced devolved governance, which greatly broadened county governments' mandate on public administration, agriculture, infrastructure, and healthcare. As a result, county governments face the challenge of operating more complex workforce systems, while providing high-quality services. But some counties like Kisumu are still facing issues of workforce planning, lack of workforce skills, poor performance monitoring systems, and poor employee engagement (Odula & Chege, 2023). While there has been some effort to launch digital transformation initiatives on the county level, HR functions are still reactive, disconnected and largely reliant on manual processes for data analysis.

However, the expansion of the policy to practice disconnect in governmental entities has led to several questions about how HR analytics can help bolster the strategic HRM framework. The public service bill 2024, as well as Kenya Vision 2030, highlight the need to modernize, improve efficiency, hold public service accountable, and digitalize the public service. However, adoption of analytics-based HR systems in County governments is still low. This conceptual paper thus explores the contribution that HR analytics can make to enhance the productivity of the workforce in Kisumu County Government and the public sector in Kenya.

### **Problem Statement**

While HR analytics are becoming popular in HRM across the globe, the use of HR analytics in the Kenyan public sector is very low. Many county governments still utilize manual, disconnected and paper-based HR systems that restrict both workforce visibility and responsiveness of these institutions, and inhibit evidence-based decision-making. It impacts workforce productivity, employee performance management, succession planning, as well as strategic alignment of human capital and public service goals.

While policy statements on the modernization of public administration systems, like Kenya Vision 2030 and the Public Service Bill 2024, call for this, there is little conceptual grasp of the ways in which HR analytics can strategically enable productivity in devolved government institutions. Much of the literature has been limited to the private sector, and there is a considerable lack of knowledge on how to strategically use HR analytics in county governments. As a result, HR professionals and policy makers are faced with a lack of a comprehensive conceptual framework to support the implementation of a system of workforce management based on analytics in devolved public institutions. To bridge this gap, this paper will propose a conceptual framework that will connect HR analytics and the productivity of the workforce in Kisumu County Government.

## Objectives

The following objectives are followed in the paper:

1. To discuss the conceptual linkage between HR Analytics to employee productivity in the Public sector in Kenya.
2. To research barriers to adoption of HR analytics in County governments at the institutional, cultural and structural level.
3. To conceptualize the HR analytics adoption in Kisumu County Government using the Resource Based View, Technology Acceptance Model and Human Capital Theory.
4. To make policy and practical recommendations for making HR analytics part of devolved governments strategic human resource management.

## LITERATURE REVIEW

Human Resource Analytics (HRA), also known as people analytics or workforce analytics, are processes of systematic analysis and interpretation of information relating to people in the workplace to enhance workforce decisions and institutional performance. HR analytics can be used in the public sector for workforce planning, employee performance evaluation, employee development, succession planning, and employee engagement. Evidence-based workforce management can enhance the efficiency, accountability and quality of service provided by public institutions.

Advanced governance countries have started to use HR analytics to assist them in making strategic decisions regarding human capital. In some nations like Singapore, Canada and the United States, HR analytics tools are employed to predict staffing needs, track employee productivity, understand the workforce trends, and inform policy making (Kamau & Muathe, 2020). These governments have embedded digital systems like Human Resource Information Systems (HRIS), predictive analytics tools and real-time performance monitoring dashboards into the public administration.

Contrastingly, majority of public institutions in Kenya, especially the county governments are still using antiquated and disjointed HR systems. These systems restrict access to reliable information on the workforce and further hampers institutional capacity to make informed HR decisions. This often leads to county inefficiencies, such as poor deployment, monitoring of employees, inadequate training alignment, and an ineffective responsiveness of the organization (Odula & Chege, 2023).

HR analytics has a number of key dimensions that come into play with regards to workforce productivity. Workforce planning analytics provides insights into the types of staffing resources that will be required, as well as gaps in skills, and strategically allocates human

resources. With the use of performance analytics, companies can track their workers' productivity, absenteeism and service delivery metrics, as well as their accountability systems. Training and development analytics evaluate and measures the impact of the training programme and ensures that the institutional capacity building programme is dealing with real gaps in performance. Employee engagement analytics is based on employee survey results, feedback and sentiment analysis, and it helps track employee engagement, satisfaction and attrition risk.

These dimensions together enable an action-oriented, scientific model of the management of the workforce. Implementing HR analytics in County governments can thus play a significant role in enhancing workforce productivity, effectiveness of the Institutions and delivery of quality public service.

### **Theoretical Foundation**

The Resource Based View (RBV), the Technology Acceptance Model (TAM) and the Human Capital Theory are the three complementary theories that have informed this paper.

The Resource-Based View is about the effective use of valuable, rare and difficult-to-match internal resources which leads organizations to sustainable performance advantages (Tjahjadi et al., 2022). In public institutions, HR analytics can be seen as a strategic organizational resource that can support the HR process in all its aspects, such as strengthening workforce planning, managing employees and strengthening decision making in the public institution.

The Theory of the Technology Acceptance Model can be used to understand the factors that influence the acceptance of new technologies, such as perceived usefulness and ease of use (Davis, 2025). The theory is especially relevant in the context of the Kenyan county governments, which are often times hampered by resistance to change, lack of digital readiness, and lack of digital literacy.

According to Human Capital Theory, employees are considered assets of the organizations that can be improved by organization's investments in education and training, and development (Al-Tit et al., 2022). HR analytics enhances human capital development by discovering gaps, measuring training results and informing investments into the workforce.

All of these theories can be combined into a complete picture of how HR analytics plays a strategic role in increasing the productivity of the devolved public institutions workforce.

### **Barriers of HR Analytics in Kenyan Public Institutions**

The study identified a number of factors that were identified as barriers to the adoption of HR Analytics in Kenyan Public institutions. These were:

Although HR analytics has proven to have advantages, its implementation in the Kenyan Public sector is still limited because of a number of institutional and structural problems.

A big challenge is related to not having adequate technological infrastructure. County governments often don't have an integrated Human Resource Information System (HRIS), dependable internet access, safe data storage facilities or analytics tools to help effectively manage their staff data. This restricts their access to timely workforce data, which they can use to collect, process and analyze.

The other obstacle is a lack of HR employees and managers' analytical skills. Traditional administrative techniques to workforce management are still in use by most of the public sector HR practitioners, and they are not very proficient in data analytics techniques (Chatterjee et al., 2021). Many institutions, therefore, do not have the ability to analyze workforce data and to turn it into strategic information for the organization.

There's also a big leadership hurdle to overcome. However, in many County governments, the focus is on lowering administrative requirements in the short run instead of investing in long run organizational innovation by leveraging digital tools and systems for management and analytical information (Muriithi & Waithaka, 2019).

Another factor that plays into adoption of HR Analytics is Organizational Culture. Organizations with hierarchy and bureaucracy tend to be less innovative, open, and practical when they come to making decisions. Bureaucracy and hierarchy tend to stifle innovation, transparency, and data-driven decisions. However, in some settings, analytics systems can be present but not really embedded in the thinking or work of the organization or its workforce (Zolak Poljašević et al., 2025).

All these barriers are interrelated and need a package of solutions which include technological investments, leadership commitment, institutional capacity building and cultural changes.

### **Conceptual Framework**

The conceptual model outlined in this paper depicts how HR analytics can be used to link to the productivity of the workforce in Kisumu County Government. The HR Analytics concept relates to HR Analytics as a strategic capability of the organization that can facilitate effective employees' performance, responsiveness of the organization, and service delivery.

Within the framework the independent variables are workforce planning analytics, performance management analytics, training and development analytics and employee engagement analytics. All these dimensions contribute to strategic workforce management

through making better staffing decisions, tracking employees' performance, building institutional capacity and motivating employees.

Productivity of the employees is the dependent variable, which is defined as efficiency, effectiveness, timely, accountability and quality of service delivery in public institutions.

The framework also highlights effectiveness of HR decision making as a mediating variable in the relationship between the HR analytics and workforce productivity. Organizational culture (as a moderator) affects institutional acceptance and institution adoption for the analytics-driven management practices.

Various factors like technology infrastructure, human resource employee skills, leadership backing, etc., influence the sustainability and impact of the adoption of HR analytics. For the County of Kisumu, the framework is a practical tool to help manage the challenges in the workforce and plan interventions to enhance performance of the County of Kisumu.

## **METHODOLOGY**

The study was conceptual with a systematic literature review and literature synthesis approach, focusing on the concepts, literature, policy documents and theoretical perspective related to HR analytics and public sector institution workforce productivity. Conceptual research design is suitable when the research aims are to build up theoretical knowledge and put forward analytical frameworks instead of tests hypotheses based on primary empirical data (Casula et al., 2021).

Academic journal articles, books, policy documents, government documents and grey literature in relation to HR analytics, strategic human resource management, digital transformation and public sector reform were reviewed in the country of Kenya and other developing countries. A special focus was given to literature that explored the HR analytics implementation in public institutions and devolved government structures.

The Resource Based View, Technology Acceptance Model and the Human Capital Theory were chosen as they help explain the strategic importance of HR Analytics, institutional preparedness to adopt technology and the value of workforce development in driving the performance of an organization.

## **RESULTS AND DISCUSSION**

The conceptual analysis shows that HR analytics has a high potential of enhancing the productivity of the workforce in Kisumu County Government and the entire public sector in Kenya. Predictive workforce planning helps county governments predict staffing needs, and identify skills

gaps, while optimizing human resource allocation. These can help to minimize wastage and enable good public service delivery.

There are also possibilities for employee monitoring and accountability system transformations using performance management analytics. Digital dashboards and key performance indicators can help to track employee performance in real time and can complement the process of shifting the public institutions from a compliance-based management to a results-based workforce management.

Training and development analytics can also reinforce organizational capacity building by helping to target staff development programs to specific performance gaps, rather than using a broad training approach. Employee engagement analytics can also help institutions keep an eye on employee engagement, detect risk of employee attrition, and facilitate proactive employee management.

But the analysis shows that HR analytics implementation is highly dependent on institutional readiness, which is defined as the interest of the organization in implementing HR analytics, as well as the institutional capacity and institutional norms. Some counties may lack digital systems, analytical skills and leadership to implement HR systems that are based on analytics. An organization's culture is also a crucial factor. HR Analytics initiatives are more likely to be successful and the workforce data more likely to be transformed to meaningful productivity outcomes when institutions are promoting transparency, accountability, innovation and data literacy.

The results thus indicate that for HR analytics to increase workforce productivity in Kenyan County governments, investments in the four components of technology, human capacity, leadership and organizational culture transformation are needed.

## **POLICY AND PRACTICAL IMPLICATIONS**

In Kenya, HR analytics has become a growing area of interest with the potential to bring about both opportunities and challenges for public sector institutions. From a policy perspective, embedding HR analytics into the national and county HR management systems will be key for modernizing the public administration systems.

Both Kenya Vision 2030 and the Public Service Bill 2024 give general guidance on modernization of the public sector, yet there is a need for specific policy frameworks to assist in implementing data-driven human resource practices in county governments. Public Service Commission and Council of Governors should come together to create HR analytics standards, reporting framework and guidelines for implementation of County Public Service Boards.

Digital infrastructure is also key to investment. Unfortunately, many counties still use ad hoc spreadsheets and paper data systems that restrict the ability to effectively manage workforce data. County governments should aim to invest in HR information systems, cloud technologies, secure databases and analytics platforms.

Training is also important to capacity building. Public service training institutions should design special HR analytics training programs for HR practitioners, line managers and top decision makers. Leadership support is also essential as it is important that the organization is committed to success, has budget for implementation and is held accountable.

In the operational layer, HR departments must shift from being administrative to strategic workforce management functions with the help of HR analytics tools like dashboards, scorecards and survey systems. To effectively implement integrated workforce analytics systems, there are a number of factors that require cross-functional collaboration, including HR, ICT, finance and strategy departments.

County governments need to also build an evidence-based decision-making culture by sensitizing their staffs, continuous training, and incorporating analytics skills in performance management systems. Moreover, HR analytics must be used in solving the persistent HR issues, like employee attrition, absenteeism, and ineffective training.

## **CONCLUSION**

This paper has conceptualized HR analytics to be a strategic capability of the organization that can gear up human resource management and enhance employee productivity in Kenyan public institutions. The study illustrates how HR analytics can have a significant impact on both workforce planning and employee performance management, through application of the Resource-Based View, the Technology Acceptance Model and the Human Capital Theory.

The paper also emphasizes the importance of institutional readiness factors for successful implementation of HR analytics in county governments, such as technological infrastructure, leadership support, organizational culture, and competencies of HR practitioners in analyzing. While some counties like Kisumu are still facing infrastructural and institutional issues, policy development, like Kenya Vision 2030 and the Public Service Bill 2024, offer good opportunities for public sector modernization.

Implementing HR analytics is thus a strategic route for county governments to move towards evidence-based HRM practices and transform their workforce management practices from reactive to proactive, which can help to enhance public service delivery and institutional performance.

## SCOPE FOR FURTHER STUDIES

This paper has suggested a conceptual framework for HR analytics in Kisumu County Government, but there are several areas that warrant empirical research. First, Quantitative and mixed methods studies are needed to validate the proposed linkages between the HR analytics dimensions and workforce productivity in the respective county governments in Kenya. Empirical evidence of the theoretical framework presented here would be provided by such studies. Second, cross-county comparative analysis of various County governments in Kenya could help identify moderating contextual factors, including size of the County, resource endowment, leadership style and organizational culture, that are influencing the adoption and effectiveness of HR analytics. Third, longitudinal studies following counties that have embarked on digital HR transformation would provide important information on implementation patterns, the durability of change and productivity outcomes. Fourth, research specifically on the human capital aspect – such as the skills and trainings HR professionals need to be able to adopt analytics, and their attitude towards the same – would shape capacity-building initiatives. Lastly, comparative studies of the HR analytics adoption in county governments across Kenya, and sub-national government units from other African countries would help in gaining broader knowledge of how HR analytics are implemented in developing country public sector settings.

## RECOMMENDATIONS

The paper calls on county governments to increase their investments in Integrated Human Resource Information Systems and digital infrastructure to facilitate implementation of workforce data management and analytics. The National public service institutions should come up with a standard framework for and reporting HR analytics which will be used to guide county governments.

The study further suggests that training on data literacy and HR analytics needs to be integrated into the education and continuous professional development programmes of public servants. County governments should also strive to develop data-driven organizational cultures by embedding data practices into performance management systems and accountability practices.

Lastly, institution-wide data governance structure should be created to guarantee data security for the workforce, ethical treatment of employee data, and trust in data analytics systems.

## REFERENCES

Alam, S., Dong, Z., Kularatne, I., & Rashid, M. S. (2026). Exploring approaches to overcome challenges in adopting human resource analytics through stakeholder engagement. *Management Review Quarterly*, 76(1), 729-787. <https://doi.org/10.1007/s11301-025-00491-y>

- Al-Tit, A. A., Al-Ayed, S., Alhammadi, A., Hunitie, M., Alsarayreh, A., & Albassam, W. (2022). The impact of employee development practices on human capital and social capital: the mediating contribution of knowledge management. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(4), 218. <https://doi.org/10.3390/joitmc8040218>
- Casula, M., Rangarajan, N., & Shields, P. (2021). The potential of working hypotheses for deductive exploratory research. *Quality & Quantity*, 55(5), 1703-1725. <https://doi.org/10.1007/s11135-020-01072-9>
- Chatterjee, S., Rana, N. P., Sharma, A., & Dwivedi, Y. K. (2021). Barriers to the adoption of HR analytics: A study using interpretive structural modeling. *Journal of Business Research*, 131, 128–145. <https://doi.org/10.1016/j.jbusres.2021.03.020>
- Cho, W., Choi, S., & Choi, H. (2023). Human resources analytics for public personnel management: Concepts, cases, and caveats. *Administrative Sciences*, 13(2), 41. <https://doi.org/10.3390/admsci13020041>
- Davis, A. C. (2025). Faculty perceptions on the utilization of technology (AI) at HBCUs through the lens of the Technology Acceptance Model (TAM) (Doctoral dissertation, Jackson State University).
- Kamau, P., & Muathe, S. (2020). Strategic human resource management practices and performance of county governments in Kenya. *Journal of Human Resource and Leadership*, 5(2), 67–85.
- Muriithi, G., & Waithaka, S. (2019). Leadership and HRMIS implementation in Kenyan counties: Constraints and prospects. *County Government Studies*, 3(1), 41–59.
- Odula, J., & Chege, S. (2023). Digital human resource practices and organizational performance in the public sector: Evidence from Kenyan counties.
- Republic of Kenya. (2007). Kenya Vision 2030. Ministry of Planning and National Development.
- Republic of Kenya. (2024). The Public Service Bill, 2024. Government Printer.
- Tessema, S. A., Yang, S., & Chen, C. (2025). The effect of human resource analytics on organizational performance: Insights from Ethiopia. *Systems*, 13(2), 134. <https://doi.org/10.3390/systems13020134>
- Tjahjadi, B., Soewarno, N., Nadyaningrum, V., & Aminy, A. (2022). Human capital readiness and global market orientation in Indonesian Micro-, Small-and-Medium-sized Enterprises business performance. *International Journal of Productivity and Performance Management*, 71(1), 79-99. <https://doi.org/10.1108/IJPPM-04-2020-0181>
- Widmann, A., Messmann, G., & Mulder, R. H. (2016). The impact of team learning and knowledge sharing on innovation and employee engagement. *International Journal of Human Resource Management*, 27(10), 1143–1165. <https://doi.org/10.1080/09585192.2015.1066321>
- Zolak Poljašević, B., Gričnik, A. M., & Šarotar Žižek, S. (2025). Human resource management in public administration: The ongoing tension between reform requirements and resistance to change. *Administrative Sciences*, 15(3), 94. <https://doi.org/10.3390/admsci15030094>