
HUMAN RESOURCE ANALYTICS AND THE SUCCESS OF TELECOMMUNICATION COMPANIES IN NIGERIA

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ABSTRACT

This research was conducted to investigate the effect of human resource analytics on the success of telecommunication companies in Nigeria. Anchored in the human resource management and organizational performance framework, human resource analytics was operationalized through talent acquisition analytics, learning and development analytics, and engagement and retention analytics, while success was measured using quality of service and employee retention. A survey research design was adopted, and primary data were obtained from employees of four telecommunication companies operating in Akwa Ibom State through a structured questionnaire. Taro Yamane's formula for sample size determination was used to obtain 250 respondents out of 520 employees. The data collected were analyzed using descriptive statistics to summarize respondents' demographic characteristics. Inferential statistics such as simple linear regression was applied to examine the direct effect of human resource analytics on the success of telecommunication companies, while regression analysis was used to evaluate the moderating effect of data literacy of human resource (HR) professionals on this relationship. The results indicated that human resource analytics variables have significant positive effect on success dimensions in the telecommunication companies. The findings further shows that the data literacy of HR professionals strengthens the relationship between human resource analytics and the success of telecommunication companies. It is concluded that effective utilization of human resource analytics, supported by strong HR data literacy, enhances success in telecommunication companies. It was recommended among other things that Telecommunication companies should institutionalize the use of talent acquisition analytics in recruitment processes to ensure that employees hired possess not only technical competence but also customer-service orientation and that the

companies should invest deliberately in building the data literacy and analytical competence of HR professionals through continuous training, certifications, and exposure to analytics tools.

KEY WORDS: Human Resource Analytics, Acquisition Analytics, Success, Training and Development

1.1 INTRODUCTION

The increasing competition in today's business environment and the demand for higher employee productivity have driven organizations to adopt cutting-edge workplace strategies that prioritize both performance and employee well being in order to succeed. Every business oriented organization desires to be successful. Success depends not only on the ability to retain key talent but also on the capacity to satisfy present and potential customers. However, telecommunication customers in Nigeria show meaningful dissatisfaction on service-quality dimensions compared to what is obtained in the developed world and retaining professional employees in this sector is challenging due to stiff competition, high mobility of skilled labor, and limited career development structures. In this circumstance, it is important for companies to adopt innovative and data-driven tools that help them to make informed decisions in a fast-paced business environment in order to achieve organizational success.

Organizational success refers to the organization's ability to harmonize between its internal and external environment, exploit its resources and create additional value for its customers leading to survival and continuity in a changing and highly competitive environment (Majdoleen and Shaker, 2022). It thus entails the attainment of an organization's desired goals and its ability to stay ahead of competing organization (Ali, 2018). Organizational success is a multidimensional concept that cuts across employee productivity, talent retention, customer satisfaction, operational efficiency and financial metrics.

Quality of service shows the ability of an organization to meet or exceed expectations of customers' consistently, resulting in enhanced customer satisfaction, loyalty, and competitive advantage. In the telecommunication companies, this encompasses service reliability, responsiveness, and the overall customer experience. As such, quality of service is measured by responsiveness, reliability, service assurance and service tangibles. Employee retention, on the other hand, refers to the organization's ability to retain skilled and committed employees for a longer period of time. If the retention level is high, it reduces recruitment and training costs, as well as fostering institutional knowledge, stronger customer relationships and

stability. Measures of employee retention used here are job satisfaction, career development opportunities, work environment and benefits. These proxies provide a balanced perspective of organizational success by integrating both service delivery excellence and workforce stability.

According to Singhwal and Vashistha (2023) people analytics is the process that involves the collection, processing, transformation of human resource-related data and analysis of such data using analytical models and tools. This calls for strategic alignment of human resource with the strategic business plan. It equally entails using human resource data to establish human resource practices and policies with the aim of describing, predicting and specifying process levels as organizations seeks to add value and improve on overall performance. In the Telecom sector, employee effectiveness is determined by service delivery, innovation and customer satisfaction, and thus it requires the use of data to manage human resource. Optimum use of data analytics in work-force management can ensure organizational long-term success in terms of operational efficiency, service delivery and competitive advantage. Utilizing data-driven approach to manage people at work requires the use of big data, predictive and AI-powered models to analyze manpower needs and performance trends in organization. In the telecommunication companies people analytics is used in fraud detection enhancing customer experience network optimization and churn prediction. However, people analytics is measured by talent acquisition analytics, learning and development analytics and engagement and retention analytics.

The relationship between people analytics and organizational success can be influenced by the level of data literacy of professionals. Data literacy of human resource (HR) professionals is the ability to read, interpret, analyze, and communicate data meanings for effective and informed decision-making (Mandinach and Gummer, 2016). It endows HR professionals with the skills to interpret raw people-related data into active techniques that can enhance organizational success. Considering people analytics, high levels of data literacy is useful in helping HR teams to interpret trend, identify patterns, and recommend evidence-based interventions accurately. This strengthens the relationship between people analytics and organizational success (Ekanem *et al.* 2023). As a moderating variable, data literacy is expected to influence the strength and direction of the relationship between people analytics variables and organizational success proxies. This is to say that even with solid analytics systems, low data literacy may hinder their effectiveness, while high data literacy can enhance the positive effects of people analytics on organizational success. In the telecommunication sector in Nigeria, data literacy acts as a crucial capability that determines

whether people analytics can lead to measurable organizational outcomes considering the essentiality of rapid decision-making and strategic workforce optimization. Measures of data literacy used here are data interpretation skills, data tools proficiency, data-driven decision making and data communication ability.

The telecommunication sector in Nigeria performs critical role in enhancing economic development and digital inclusion. However, many telecommunication companies in Akwa Ibom State are struggling with turnover of highly skilled employees, low productivity, skills incongruences and poor customer service quality despite the high level of investment in infrastructure and human resources. These employee-related issues undermine organizational success which is defined not just by quantitative measures such as financial outcomes but also by qualitative metrics like quality of service and employee retention.

In the face of today's stiff competition and rising customer expectations, the traditional reactive and institution-based human resource-practices may not address the complex workforce dynamics of the contemporary telecommunication sector. Bob-manuel (2022) accentuates that for improved employee productivity and better organizational outcomes in the telecommunication sector, it is imperative to integrate people analytics which is a data-driven decision making tool that can integrate organizational success into their overall organization's strategy. The dearth of empirical studies on how people analytics influence organizational success in the context of telecommunication companies pose a serious gap in knowledge. Without such empirical evidence, telecommunication companies may make risky human resource decisions that are not in line with their strategic goals. Hence, this study examined how people analytics, given its dimensions of talent acquisition, learning and development and engagement and retention analytics influence organizational success of telecommunication companies in Akwa Ibom State. The broad objective of this study is to evaluate the effect of human resource analytics on the success of telecommunication companies in Akwa Ibom State, Nigeria. The specific objectives of the study are to: i. examine the influence of talent acquisition analytics on quality of service in telecommunication companies in Nigeria; ii. determine the effect of learning and development analytics on quality of service in telecommunication companies in Nigeria. In order to guide the researcher in the inquiry about the link between human resource analytics and the success of telecommunication companies in Akwa Ibom State, the following research questions are raised:(i.)How does talent acquisition analytics influence quality of service in telecommunication companies in Nigeria?(ii) Does learning and development analytics have any effect on quality of service in telecommunication companies in Nigeria?

In line with the research questions, the following hypotheses are formulated: H_{01} : There is no significant influence of talent acquisition analytics on quality of service in telecommunication companies in Nigeria. H_{02} : Learning and development analytics does not have significant effect on quality of service in telecommunication companies in Nigeria.

REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

The main concepts of this study are explained in this section.

2.1.1 People Analytics

People Analytics, also referred to as HR Analytics, Workforce Analytics, or Talent Analytics, is a data-driven approach to managing people at work. It involves collecting, analyzing, and interpreting data related to human resources to inform strategic decisions that improve organizational performance (Marler and Boudreau, 2017). The focus of people analytics is not only descriptive (what has happened) but increasingly predictive (what will happen) and prescriptive (what should be done). People analytics refers to the strategic use of data, statistical models, and machine learning techniques to understand, predict, and optimize human resource functions. It enables organizations to make evidence-based decisions on workforce planning, talent acquisition, retention, and employee development (Singh and Gupta, 2022). The concept of people analytics goes beyond traditional HR metrics by applying advanced data tools to identify trends, diagnose workforce issues, and recommend actions. It supports real-time, forward-looking insights, making HR more agile and aligned with strategic business outcomes (Aguinis *et al* 2022)

2.1.2 Organizational Success

Organizational success refers to the extent to which an organization achieves its goals and fulfills its mission in a sustainable, efficient, and effective manner. It is a multi-dimensional concept that goes beyond just profit or market share, encompassing financial performance, employee well-being, customer satisfaction, innovation, adaptability, and social impact (Ekanem *et al.*, 2023). Key aspects of organizational success include: (1) Financial performance, profitability, revenue growth, return on investment (ROI), and cost efficiency are traditional indicators of success. These are essential for survival and stakeholder satisfaction. (2) Customer satisfaction and loyalty; organizations succeed when they deliver consistent value to customers, resulting in brand loyalty, positive reputation, and market share growth. (3) Employee engagement and retention; a productive, motivated, and loyal workforce often leads to higher performance (Ekanem and Efi, 2025).

(a) Quality of Service

Service quality refers to the extent to which delivered services meet or exceed customer expectations. It is commonly conceptualized using the expectancy-disconfirmation paradigm, where service quality (SQ) equals perceived performance minus expectations. High service quality enhances customer satisfaction, loyalty, and ultimately organizational success (Feng *et al.*, 2021). Several empirical studies affirm that high service quality correlates positively with organizational outcomes such as customer retention, profitability, and operational effectiveness. In retail sectors, researchers have established direct links between improved service quality, higher customer retention, and enhanced firm performance (Chikazhe and Nyakunuwa, 2022; Feng *et al.*, 2021). Similarly, mobile telecommunications companies in Egypt demonstrated that service quality significantly and positively impacts company performance (El-Borsaly and Hassan, 2020).

2.2 Theoretical Framework

The theories relevant to this study are examined in this section.

2.2.1 Resource-Based View (RBV)

Originally developed by Wernerfelt (1984) and further popularized by Barney (1991), The Resource-Based View (RBV) is a foundational theory in strategic management that explains how organizations achieve and sustain a competitive advantage through the effective use of their internal resources. RBV asserts that the unique resources and capabilities an organization possesses are the primary drivers of its performance and long-term success. The theory states that an organization's competitive advantage is derived from resources that are competitively superior, rare, inimitable, and non-substitutable (VRIN). In the context of human resources, people analytics constitutes a strategic resource because it provides organizations with actionable insights that cannot be easily replicated by competitors. For telecom companies operating in Nigeria, tools such as talent acquisition analytics, learning and development analytics, engagement and retention analytics enable managers to optimize workforce performance, enhance decision-making, and sustain a competitive edge in a dynamic market environment.

In this context, RBV is highly relevant because: people analytics represents a strategic capability that transforms workforce-related data into actionable insights, influencing talent acquisition, retention, and productivity; data literacy enhances the value of analytics, making it a rare and hard-to-imitate capability when combined with organizational processes and culture; telecommunication firms that can uniquely integrate data-driven HR strategies with

organizational goals stand to gain sustained competitive advantage over rivals. By applying RBV, this study views people analytics as an intangible but critical resource that can significantly improve organizational success measured in terms of employee retention and quality of service. However, the capacity to fully harness these resources depends on the organization's ability to effectively interpret and utilize analytics outputs.

2.3 Empirical Review

Tessema *et al.* (2025) investigated the impact of human resource analytics on organizational performance, drawing insights from Ethiopia. They adopted a quantitative research design and employed a survey method to collect data from 269 valid responses across 55 organizations based in Addis Ababa. The data were analyzed using structural equation modelling with Smart PLS 3.0 software. The findings revealed that human resource analytics significantly improved organizational performance, with this relationship being mediated by the strategic alignment between human resource practices and organizational goals. Additionally, firm size was found to moderate this relationship, with larger firms experiencing greater benefits from the implementation of human resource analytics. The authors concluded that human resource analytics is a key driver of improved organizational performance, particularly when it is strategically aligned with broader business objectives. They recommended that human resource professionals prioritize the strategic integration of human resource analytics with organizational goals, and that cross-functional collaboration be encouraged to maximize the value of analytics across departments. Tessema *et al.* (2025) conducted their study in Ethiopia using a structural equation model to analyze the data, the present study was conducted in Nigeria, it focused on telecommunication companies, and it adopted a regression model for data analysis. However, both studies share similarities in their use of a quantitative research design.

Yakubu and Tornyeva (2025) analyzed the impact of learning and growth perspective metrics on organizational performance indicators and the moderating role of management support, offering a thorough exploration of Ghana's oil and gas and telecommunications sectors. The researchers adopted a mixed-methods explanatory sequential design. Data were collected through surveys and interviews from 240 respondents within selected key organizations and were analyzed using both Partial Least Squares Structural Equation Modelling (PLS-SEM) and Microsoft Excel. Findings revealed that learning and growth measures such as employee training, innovation, and knowledge management had a positive and significant impact on performance indicators, including return on assets (ROA) and market share. These findings

validate the relevance of enhancing employee skills, fostering innovation, and improving organizational knowledge to achieve long-term competitiveness. However, contrary to expectations, management support did not significantly moderate the relationship between learning and growth initiatives and performance outcomes. It was concluded that learning and growth initiatives have a significant impact on organizational performance, particularly in improving financial returns and market share. Therefore, it was recommended, among other things, that firms should align their learning and growth initiatives with customer-driven innovations and agile business models to strengthen their market presence.

Adeyemo *et al.* (2024) investigated the impact of training and development on employee retention in listed insurance companies in Nigeria, using the Human Capital Theory as a guiding framework. A cross-sectional survey design was adopted, targeting management staff from 23 insurance firms. Data were collected through structured questionnaire, with validity and reliability ensured through rigorous testing. Multivariate Analysis of Variance (MANOVA) was used to test the hypotheses. The findings revealed that while the frequency and quality of training significantly influence job satisfaction, they do not have a significant effect on turnover intention. Development opportunities were found to moderately impact job satisfaction but showed no significant effect on turnover intention. These results highlight the importance of continuous, high-quality training programs in enhancing job satisfaction, aligning with the Human Capital Theory. The study concluded that although training frequency, training quality, and development opportunities improve job satisfaction, they do not significantly reduce employee turnover intention among management staff in Nigeria's listed insurance companies. It was recommended that insurance firms in Nigeria prioritize training initiatives to foster a more satisfied workforce. However, to effectively address high turnover rates, organizations should also integrate other motivational strategies and organizational factors beyond training and development. Adeyemo *et al.* (2024) conducted their study in Nigeria's insurance sector using MANOVA while the present study was carried out in Akwa Ibom State, focusing on the telecommunications sector and employing regression analysis to test the hypotheses. Both studies share similarities in their use of a cross-sectional survey design and structured questionnaires as the primary data collection instrument.

Ameer *et al.* (2023) investigated the impact of Human Resource Analytics on organizational performance, focusing on the mediating role of employee motivation in Bangalore, India. The study employed a descriptive survey design and collected data from Human Resource professionals in Bangalore who utilize analytics for various HR processes. The data were

analyzed using frequency counts, simple percentages, and a regression model to test the proposed hypotheses. The findings revealed that employee motivation partially mediates the relationship between Human Resource Analytics and organizational performance. Moreover, employees' analytical skills particularly their ability to understand, analyze, and interpret data were found to significantly influence organizational performance, especially in terms of improved decision-making and enhanced return on investment. The study further highlighted that motivating employees generate and experiment with new ideas, develop innovative, data-driven methods for delivering products and services, apply creative analytics across various processes, and derive satisfaction from their work can amplify the positive impact of HR analytics. The authors concluded that Human Resource Analytics has a positive effect on organizational performance, and this relationship is strengthened when employee motivation is taken into account. Analytical competency among employees plays a critical role in ensuring the effectiveness of data-driven HR practices, ultimately enhancing organizational success. It was recommended that organizations should invest in building employees' analytical skills through targeted training and development programs while simultaneously fostering a motivational work environment. Encouraging innovation, recognizing contributions and enabling data-driven experimentation can help maximize the benefits of HR analytics and drive sustained performance improvements. Ameer *et al.* (2023) conducted their research in Bangalore, India, while the current study was conducted in Akwa Ibom State, Nigeria. However, both studies shared similarities in terms of research design and method of data analysis, as they adopted a survey research approach and regression analysis for data analysis.

Puspita *et al.* (2022) examined the influence of talent acquisition and the talent pool on leadership readiness and explored the mediating role of perceived organizational support in the relationship between talent acquisition, the talent pool, and leadership readiness in state-owned insurance companies in Istanbul, Turkey. The study adopted a survey research design. The population comprised 1,710 employees across 57 branch offices of state-owned insurance companies, and stratified sampling was used. Descriptive statistics, such as percentages, were employed to analyze the data, while inferential statistics, including path analysis, were used to test the hypotheses. The results showed that talent acquisition had a significant effect on leadership readiness. The influence of the talent pool on leadership readiness was also found to be statistically significant. Furthermore, organizational support had a significant effect on leadership readiness. Perceived organizational support was found to significantly mediate the relationship between talent acquisition, the talent pool, and

leadership readiness. These findings can assist companies in conducting talent mapping to prepare future leaders for key positions. Thus, the study concluded that talent acquisition and the development of a strong talent pool significantly influence leadership readiness in state-owned insurance companies. Furthermore, perceived organizational support plays a critical mediating role in enhancing these relationships. Based on these findings, it was recommended that companies enhance their talent acquisition strategies by adopting more targeted and data-driven recruitment approaches to attract high-potential candidates. Establishing and maintaining a robust talent pool, supported by regular talent mapping and assessment processes, is essential for identifying and nurturing future leaders. The study by Puspita *et al.* (2022) was conducted in Istanbul, Turkey, focused on the insurance industry, and employed path analysis to test the hypotheses. In contrast, the present study was conducted in Akwa Ibom State, Nigeria. It focused on the telecommunication sector, and it employed regression analysis to test the hypotheses. However, both studies shared similarities in the use of a survey research design and a questionnaire as the primary tool for data collection.

Adeleke (2022) examined the influence of e-learning on employee training and development in a study conducted at Kwara State University, Nigeria. The research employed a combination of survey, experimental, and ex-post facto research designs. Questionnaires were administered to a sample of 260 non-academic staff, drawn from a population of 726 employees at the university. The study utilized simple random sampling and adopted the test-retest reliability approach. Data were analyzed and summarized using simple percentages, while regression analysis was employed to test the hypotheses. The findings indicated that e-learning facilitates faster learning and reduces employee downtime, enabling staff to take on greater responsibilities. Furthermore, e-learning was found to enhance employee performance by improving productivity and the quality of work delivered. The study concluded that employees with lighter workloads could be made more effective by engaging them in e-learning-based training programs. Based on its findings, the study recommended the design of interactive online learning platforms aimed at knowledge transfer, with a strong emphasis on skill development. These platforms could be used for onboarding new hires and delivering training in areas such as business operations, auxiliary services, institutional guidelines, and emerging market trends—ultimately enhancing employee performance and service quality. Other e-learning solutions were also deemed important, as they are self-directed and more accessible compared to traditional training methods. Akpoviroro and Adeleke (2022) conducted their study in Kwara State and focused on the university. In contrast, the present

study was set in Akwa Ibom State and concentrated on the telecommunications sector. Both studies share similarities in their research design, data analysis methods, and data collection tools, as they employed survey research design, used questionnaire as the primary instrument for data collection, and adopted simple percentages and regression analysis for data analysis and hypothesis testing.

Lyria *et al.* (2017) analyzed the effect of learning and development on the organizational performance of firms listed on the Nairobi Securities Exchange. Descriptive and correlational survey research designs were employed. A stratified random sampling technique was used to select respondents from the ten strata of NSE-listed companies. The target population comprised 534 senior managers from these firms, from which a sample of 224 respondents was selected. Descriptive statistics, including simple percentages, were used to summarize the data, while hypotheses were tested through regression analysis. The results revealed that learning and development were statistically significant in explaining the organizational performance of the listed companies. It was concluded that learning and development had a positive and significant effect on organizational performance. It is recommended that listed firms maintain effective learning and development activities, as improvements in these areas lead to enhanced organizational performance. Furthermore, firms lacking or with inadequate learning and development practices should adopt such initiatives to improve their organizational outcomes. Lyria *et al.* (2017) conducted their study in Nairobi, focusing on firms listed on the Securities Exchange. In contrast, the present study was conducted in Akwa Ibom State and centered on the telecommunications sector. However, both studies share similarities in research design and data analysis methods, as both adopted survey designs and regression analysis to test their hypotheses.

Agbaeze *et al.* (2017) investigated the impact of talent management strategies on organizational performance in selected deposit money banks in Lagos State, Nigeria. Specifically, the study aimed to determine the extent to which succession planning relates to sustainability, assess the impact of human capital development on employee innovation, and examine the effect of compensation on employee engagement. The study adopted a survey design. The population comprised 3,126 management and junior staff members from selected deposit money banks in Lagos State, including First Bank of Nigeria Plc, United Bank for Africa Plc, Zenith Bank Plc, Access Bank Plc, and Ecobank Plc. A sample size of 359 was derived using Bill Godden's formula, with a five per cent margin of error and a 90 per cent confidence level. Data were collected through a questionnaire and interview guide, both structured using a five-point Likert scale and manually administered to respondents. The

hypotheses were tested using Pearson's product-moment correlation coefficient and simple linear regression analysis. The study concluded that succession planning, compensation management, and human capital development are key strategies for enhancing organizational performance, as affirmed by respondents who are stakeholders in Nigerian deposit money banks. The study recommended that organizations, particularly deposit money banks, should implement effective and consistent succession management by strategically identifying, assessing, and developing staff capable of assuming key roles. This approach supports long-term organizational viability and competitiveness. Additionally, deposit money banks should adopt robust human capital development programs through targeted training and continuous staff development. Agbaeze *et al.* (2017) conducted their study in Lagos State, Nigeria, focusing on deposit money banks while the present study was based in Akwa Ibom State and examined the telecommunications sector. Both studies share similarities in their use of survey research design, regression analysis for hypothesis testing, and the use of questionnaire as the primary data collection instrument.

2.4 Gap in Knowledge

Available literatures have increasingly discussed the role of people analytics in promoting organizational success, and many of the empirical studies has been focused on advanced economies and large multinational corporations. This leaves a little understanding of how these analytical techniques influence organizational outcomes in developing economies like Nigeria. In the Nigerian context, and specifically in Akwa Ibom State's telecommunication industry, empirical evidence is scanty on how different proxies of people analytics like talent acquisition analytics, learning and development analytics and engagement and retention analytics predict two major indicators of organizational success, namely quality of service and employee retention.

3.1 METHODOLOGY

This study is quantitative research that makes use of a cross-sectional survey research design. This design was appropriate for systematically collecting primary data on attitudes, behaviours and characteristics across a broad population. The population of the study comprises of employees including managerial, supervisory, and HR-related staff of four (4) telecommunication companies operating in Akwa Ibom State, Nigeria. This includes professionals in units such as human resources, customer service, network operations, and sales. The choice of this population is informed by their involvement either in decision-

making, employee management, or service delivery. The four major telecommunication companies operating in Akwa Ibom State are Airtel, MTN, Global com and 9mobile. Thus the population of the study is 520 employees. Table 3.1 has the population per company

Table 3.1: Population Distribution per Company.

TelecommunicationCompanies	Numbers	Mgt staff	OtherStaff
MTN	166	24	142
AIRTEL	138	18	120
GLOBALCOM	124	15	109
9mobile	92	11	81
Total	520	68	452

Source: Staff Nominal Roll(2025)

The sample size for the study was 226 and was determined using Yamane’s formula for sample determination. Stratified random sampling technique was adopted for this study to ensure adequate representation of the different segments within the telecommunication companies in the staff. This technique is adopted because the telecommunication industry comprises of diverse groups and representative needs to be obtained from each sub group. First, the population was divided into homogenous strata, that is each telecommunication company forms a stratum to ensure proportional representation across firms. (Appendix iii),employees of each company were stratified into top management staff, middle level management, operational/technical staff and customer service/marketing staff.(Appendix iv) Simple random sampling technique was adopted in each stratum by obtaining the sampling frame in all strata as provided by the respective human resource departments. Each sampling unit was assigned a unique number to aid in the random selection. This eliminated selection bias and ensures fairness

The study relied on primary data for analysis. Primary data were sourced through administration of a structured questionnaire. Scaling of the data was based on ordinal level of measurement. An inferential statistical technique known as parametric statistical test was used in testing data generated for the hypotheses. Demographic data was collected at nominal level of measurement and tested by means of descriptive statistics such as frequency and percentage. A modified Likert scale was used in weighing the options provided. The scale ranges from 1 = Undecided, 2 = Strongly Disagree, 3 = Disagree, 4 = Agree to 5 Strongly Agree.

Questionnaire was the main instrument for data collection in this study (see Appendix II). The questionnaire was divided into four sections labeled A, B,C and D. Section A was for

demographic and organizational profile of respondents; section B was for items measuring the five independent variables (People Analytics dimensions); section C was for the moderating variable (Data Literacy); while section D was for items measuring the dependent variables (Quality of Service and Employee Retention). The questionnaire was highly structured. The theoretical specification assumes a straight-line relationship between the independent variables and the dependent variables. However, these relationships are moderated by data literacy

of HR professionals. Hence,

$$OS = F(EPR) \text{ Model 3.1}$$

$$OS = QOS + EPR \text{ Equation 3.1}$$

$$QOS = F(TAA) \text{ Model 3.2}$$

$$QOS = a_0 + b_1 TAA + e_0 \text{ Equation 3.2}$$

Here OS is organizational success QOS is quality of service and EPR is employee retention. Also, TAA is talent acquisition analytics, and ERA is engagement and retention analytics. Whereas, $a_0, a_1, a_2, a_3, a_4,$ and a_5 are constants, $b_1, b_2,$ are regression coefficients for each independent variable and $e_0,$ error terms.

Descriptive Statistics such as frequency, and percentage distributions were used to summarize respondent demographics, company profile and variable distributions. Correlation analysis was used to check the direction of relationships between variables. Simple linear regression analysis was used to test the direct effects of each independent variable on the dependent variables. Hierarchical regression analysis was used to examine the effect of the moderating variable (data literacy) on the relationship between people analytics and organizational success.

DATA PRESENTATION, ANALYSIS AND FINDINGS

4.1 Presentation and Analysis of Empirical Results

Table 4.1: Questionnaire Administration.

Telecommunication Companies	Copies of Questionnaire	Number Returned
MTN	80	74
AIRTEL	66	62
GLOBACOM	60	57
9MOBILE	44	41
TOTAL	250	234
Percentage (%)	100	93.6

Source: Field data (2025)

The result from Table 4.1 shows that a total of 250 questionnaire were distributed in four telecommunication companies in Akwa Ibom State based on the sample proportion of each company. However, 234 copies were completely filled and returned representing 93.6% of the total copies distributed. Company by company break down shows that out of 80 copies sent out to MTN 74 copies were completely filled and returned. 66 copies were distributed to Airtel and the return rate was 57. In Globacom, 60 copies of the questionnaire were distributed and 57 copies were duly filled and returned. Also, 44 copies were sent to 9Mobile and 41 copies were retrieved completely filled. A total response rate of 93.6 was high enough and fit for use in the analysis.

Table 4.5: Percentage Analysis of Talent Acquisition Analytics.

Options	5		4		3		2		1	
	Freq.	%	Freq	%	Freq	%	Freq.	%	Freq.	%
Our organisation measures the average time taken to fill vacant position accurately.	48	20.5	42	17.9	87	37.2	30	12.8	27	11.5
We track and evaluate the total cost involved in hiring new employees.	68	29	62	26	37	15.8	17	7.2	10	4.3
We assess the performance and productivity of new hires to determine hiring quality.	90	38.5	88	37.6	29	12.4	17	7.2	10	4.3
We regularly review the effectiveness of different recruitment channels used	89	38.0	90	38.5	35	15	16	6.8	4	1.7

From the analysis in Table 4.5, 48 respondents representing 20.5% strongly agreed that their organisations measures the average time taken to fill vacant positions accurately; 42 respondents representing 17.9% agreed; 87 respondents representing 37.2% were undecided; 30 respondents representing 12.8% disagreed; whereas 27 respondents representing 11.5% strongly disagreed. This pulled a mean score of 3.2 which is just a little above the midpoint and sticking more closer to the undecided option indicating neutrality. Also, 88 respondents representing 37.6% strongly agreed that their organisation track and evaluate the total cost involved in hiring new employees; 82 respondents were undecided; 17 respondents representing 7.2% disagreed while 10 respondents representing 4.3% strongly disagreed. A

mean score of 3.9 indicate that an average, respondents agreed to the question. Similarly, 90 respondents representing 38.5% strongly agreed that they assess the performance and productivity of new hires to determine hiring quality; 88 respondents which is 37.6 % agreed; 29 respondents representing 12.4% were undecided; 17 respondents which stood at 7.2% disagreed; while 10 respondents representing 4.3% strongly disagreed with a mean of 3.8 on a scale of 5 suggesting closeness to the agree option. In the same vein, 89 respondents representing 38% strongly agreed that regularly review the effectiveness of different recruitment channels used ,90 respondents which is 38.5% agreed; 35 respondents which stood at 15% were undecided; 16 respondents representing 6.8% disagreed; whereas 4 respondents 1.7% strongly disagreed. This has a mean score of 4 showing that on average respondents agreed to regular review of recruitment channels effectiveness. On the whole, 78 respondents representing 33.7% strongly agreed to talent acquisition questions; 76 respondents representing 32.3% agreed; 47 respondents representing 20.1% were undecided; 20 respondents represent 8.5% disagreed while 13 respondents representing 3% strongly disagreed.

Table 4.6 Percentage Analysis of Learning and Development Analytics Questions.

Statements	5		4		3		2		1	
	Freq.	%	Freq	%	Freq	%	Freq.	%	Freq.	%
Our organisation conducts regular assessment to identify skill gaps among employees	80	34.2	90	38.5	30	12.8	19	8.1	15	6.4
We monitor the participation and completion rates of all training programme	99	42.3	78	33.3	28	12	19	8.1	10	4.3
We evaluate the effectiveness of training in improving employee performance	89	38	82	35.1	30	12.8	20	8.5	13	5.6
Training outcomes are systematically tracked and used to improve future programs	83	35.5	87	37.2	41	17.5	10	4.3	13	5.6

Source: Field data (2025).

The data in Table 4.6 shows that 80 respondent representing 34.2% strongly agreed that their organisation conducts regular assessment to identify skill gaps among employees; 90

respondents representing 38.5% agreed; 30 respondents representing 12.8% were undecided, 19 respondents representing 8.1% disagreed; whereas 15 respondents representing 6.4% strongly disagreed. The mean score for this distribution is 3.8 which lies above the mid-point and is close to agree option denoting high level of agreement to the statement. Equally, 99 respondents representing 42.3% strongly agreed that they monitor the participation and completion rates of all training programmes; 78 respondents which stood at 33.3% agreed; 28 respondents which is 12% of the total were undecided; 19 respondents representing 8.1% strongly disagreed; while 10 respondents representing 4.3% strongly disagreed. This has a mean score of 4 on a scale of 5 implying high level of agreement. Also, 89 respondents representing 38% agreed strongly that they evaluate the effectiveness of training in improving employee performance; 82 respondents representing 35.1% agreed; 30 respondents representing 12.8% were undecided; 20 respondents representing 8.5% disagreed; whereas 13 respondents representing 5.6% strongly disagreed. This has a mean of 3.9 which lies above the mid-point and very close to the 'agree' option. Similarly, 83 respondents representing 35.5% strongly agreed that training outcomes are systematically tracked and used to improve future programmes; 87 respondents representing 37.2% agreed; 41 respondents representing 17.5% were undecided; 10 respondents representing 4.3% disagreed; while 13 respondents representing 5.6% strongly disagreed. The corresponding mean of 3.9 suggests high level of agreement to the question on training outcomes. On average, 88 respondents (37.5%) strongly agreed to engagement and retention questions; 84 respondents (36%) agreed; 32 respondents (13.8%) were undecided; 17 respondents (7.3%) disagreed; 13 respondents (5.5%) strongly disagreed. The resulting mean of 3.9 shows that high number of respondents went for the agreed option.

4.2 Test of Hypotheses

Hypothesis I

Ho: There is no significant influence of talent acquisition analytics on quality of service in Telecommunication companies in Nigeria

$$QOS = a_0 + b_1TAA + e_0 \text{ Equation 4.1}$$

See Appendix V for means score of respondents.

Table 4.11: Regression analysis of the influence of talent acquisition analytics on quality of service.

Model summary ^b			
Model	R	R-Square error	Adj R ² Std
L	.534	.285	,282 0.2596

- a. Predictors (constant), Talent acquisition
- b. Dependent variable: Quality of service

ANOVA ^a						
Model		Sum of squares	Df	Mean square	F	Sig
1	Regression	36.286	1	36.286	92.606	.001 ^b
	Residual	90.904	232	.392		
	Total	127.191	233			

- a. Dependent variable: Quality of Service
- b. Predictors (constant), Talent.

Model		Unstandardised coefficient	Std Error	Standardised coefficient	t	Sig
		B		Beta		
1	(constant)	1.318	.182		7.224	.001
	Talent	.567	.059	.534	9.623	.001

- a. Dependent variable: Quality of Service

Source: Computed from Tables 4.5 and 4.8

The simple linear regression analysis assessed the influence of talent acquisition analytics on quality of service in telecommunication companies in Nigeria. The coefficient of determination (R-square= 0.285) indicates that talent acquisition analytics accounts for approximately 28.5% variation in quality of service while 71.5% is explained by other factors not captured in the model. The correlation coefficient (R= 0.534) reveals a moderate and positive relationship between talent acquisition analytics variables and quality of service in telecommunication companies in Nigeria. The regression coefficient ($\beta = 0.567$) suggests that one unit increase in talent acquisition results in a 0.567 unit increase in the quality of service. The regression model was statistically significant (F=92.606, P < 0.001) hence, the model is a good fit and reliably predicts quality of service. Consequently, the null hypotheses which states that there is no significant influence of talent acquisition analytics on quality of

service is hereby rejected and the alternative hypothesis is accepted, confirming that talent acquisition analytics have a significant and positive effect on the quality of service in telecommunication companies in Nigeria.

Hypotheses ii

H₀₂: Learning and development analytics does not have significant effect on quality of service in telecommunication companies in Nigeria

$$QOS = a_1 + b_2LDA + e_1 \text{ Equation 4.2}$$

Table 4.12: Regression analysis of the effect of learning and development analytics on quality of service.

Model summary ^b				
Model	R	R-Square	Adjusted R Square	Std Error of the Estimate
L	.516	.266	.263	.63439

- a. Predictors (constant), learning
- b. Dependent variable: quality of service

ANOVA ^a						
Model		Sum of squares	Df	Mean square	F	Sig
1	Regression	33.822	1	33.822	84.039	.001 ^b
	Residual	93.369	232	.402		
	Total	127.191	233			

- a. Dependent variable: quality of service
- b. Predictors (constant) learning

Coefficients ^a						
Model		Undtandardised coefficient	Std Error	Standardised coefficient	T	Sig
		B		Beta		
1	(constant)	1.389	.184		7.559	.001
	Learning	.533	.058	.516	9.167	.001

- a. Dependent variable: quality of service

Source: Computed from Tables 4.6 and 4.8

A simple linear regression was carried out to examine the influence of learning and development analytics on quality of service. The R-value of 0.516 suggests a moderate positive relationship between learning and development analytics variables and quality of

service in telecommunication companies in Nigeria. The R-square value of 0.266 implies that 26.6% variation in quality of service was explained by variations in learning and development, analytics. The F-statistics of 84.039 and its corresponding P-value of 0.001 shows that the model is a good fit in predicting quality of service. The coefficient for learning and development analytics is 0.533 denoting that for every unit increase in learning and development analytics, a 0.533 unit increase in quality of service is expected, holding other variables constant. Going by the t-values and their corresponding P-values ($P < 0.005$), the null hypotheses which states that learning and development analytics does not have significant effect on quality of service in telecommunication companies in Nigeria is rejected.

4.3 Discussion of Findings

The study found significant influence of talent acquisition analytics on quality of service in telecommunication sector in Akwa Ibom State. This result is possible because after the COVID-19 pandemic, many telecommunication companies around the globe – Nigeria inclusive – began to rely heavily on data to navigate uncertainties in talent supply and workforce mobility. Data are being instantly collected and analysed by creating resume database and social media profiles like linked. Another possible reason is that telecom companies like MTN and Airtel are beginning to use sourcing analytics to track recruitment trends across local government areas, states and education levels in order to tailor recruitment strategies to fit regional talent pool. With these, companies are able to identify which roles are most difficult to fill and why, predict emerging skill-needs based on digital transformation, reduce hiring bias and track hiring patterns across regions. This eventually boost quality of service rendered by the well selected talents. This result tallies with Puspita *et al.* (2022) and Cheraisi and Busolo (2020) who found significant effect of talent acquisition on organizational performance of Hotels in Kenya. The finding further agrees with Kurunathilakation (2020) who concluded in a study that talent acquisition has a significant positive impact on business performance. It is also in line with the conceptual proposition of Effiong and Ekong (2022) who posits that talent analytics is instrumental in identifying which skill needs boost workforce agility.

It was also found out that learning and development analytics have significant effect on quality of service in telecom sector in Akwa Ibom State. This result is plausible because data-driven training improves staff competence. Since telecom operators rely heavily on technical staff, learning and development analytics help identify which teams resolve task slower, which staff lack critical network troubleshooting skills and which regions need

additional technical training. Also, better adaptation to new telecom technologies help reduce operational errors. This result was possible because data-driven technologies improves performance and in turn lead to better service delivery. The findings agrees with Zeithami *et al* (2018) who maintains customers quality improves when employees receive relevant and timely training that enhances their competences. It further agrees with Hameed and Waheed (2020) who found that training and development significantly improve responsiveness, reliability and assurance dimension of service quality in service -based organizations.

5.1 Summary of the findings.

This study examined human resource analytics and the success of telecommunication companies in Akwa Ibom State. Human resource analytics was evaluated in its ----- dimension of talent acquisition analytics, learning and development analytics and engagement and retention analytics. On the other hand, success was measured by quality of service and employee retention. The relationship between human resource analytics and success was assumed to be moderated by data literacy of HR professional. This moderating variable was operationalized in terms of data interpretation skills, data tools proficiency, data driven decision-making and data communication ability. In order to achieve the objectives of the study, seven hypotheses were formulated in line with the objective. The two dimensions of people analytics were used as predictors against the criterion variable (success) and the moderating effect of detail literacy of the professionals were also measured. The result of the analysis showed that:

- i. There is a significant and positive influence of talent acquisition analytics on quality of service in telecommunication companies in Akwa Ibom State.
- ii. Learning and development analytics have significant and positive effect on quality of service in telecommunication companies in Akwa Ibom State.

5.2 CONCLUSION

The findings of the study demonstrate that human resource analytics is a critical driver of organizational outcomes in the telecommunication companies, where dynamic customer demands and technological complexity required efficient workforce management. The findings further revealed that each element of human resource analytics namely talent acquisition analytics, learning and development analytics and engagement and retention analytics, exerts a significant positive effect on key indicators of success such as quality of service and employee retention. These results highlight the value of data-driven HR practices

in improving decision-making, strengthening service delivery and enhancing workforce capability.

5.4 RECOMMENDATIONS

Following the findings of the study and the conclusion drawn, the following recommendations are made:

- i. Telecommunication companies should institutionalized the use of talent acquisition analytics in recruitment processes to ensure that employees hired possess not only technical competence but also customer-service orientation. By making use of predictive hiring tools, competency mapping and data-based screening, companies can recruit employees who are more capable of delivering high quality service, thereby improving customer experience and organizational reputation.
- ii. Management should use learning and development analytics to continuously assess skill gaps and align training programmes with service delivery challenges. Training decision should be guided by performance data, customer complain and service quality metrics to ensure that employee development initiatives directly translate into improved service responsiveness, reliability and professionalism.

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