

## Artificial Intelligence and Performance Appraisal in Human Resource Management, A Study of Access Bank Nigeria Plc

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### Abstract

*This study examined the artificial intelligence and performance appraisal in human resource management, a study of Access Bank Nigeria plc. The objectives of the study include to: ascertain the effect of AI driven performance appraisal on employee engagement at Access Bank Nigeria PLC and determine the effect of AI-driven performance appraisals on talent management at Access Bank Nigeria PLC. The survey research method was adopted as the research design. The population of the study was 795 while the sample size of 266 was adopted using the Taro Yamane's formula. The findings include that the implementation of AI-driven performance appraisals has significant effect on employee engagement at Access Bank Nigeria PLC. (F-statistic of 4.32 is >the critical value of 2.7858) and AI-driven performance appraisals have significant impact on talent management practices at Access Bank Nigeria PLC (F-statistic of 6.22 is >the critical value of 2.7858). The study concluded that artificial intelligence driven performance appraisal has significant effect on human resource management in Access Bank Nigeria Plc and it was recommended that Access Bank Nigeria PLC further invests in AI technologies to optimize HR practices. Access Bank should consider deepening its AI application across all stages of talent management.*

**Keywords:** Artificial Intelligence, Performance Appraisal, Employee Engagement, Talent Management, Human Resource Management

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## **Introduction**

Artificial Intelligence (AI) has become an indispensable tool in modern Human Resource Management (HRM), transforming traditional processes such as recruitment, performance appraisal, and employee development. One of the most significant impacts AI has had is in the area of performance appraisal, a critical aspect of managing human capital. Performance appraisals are essential for evaluating employee contributions, setting developmental goals, and aligning individual performance with organizational objectives. This paper explores the application of AI in performance appraisals, focusing on Access Bank Nigeria PLC as a case study. The study examines how the bank has integrated AI into its performance management system and the resulting effects on employee evaluation processes.

Performance appraisal traditionally involves evaluating employees based on various criteria, such as productivity, teamwork, and meeting business goals. Historically, these evaluations were prone to subjectivity, bias, and inconsistency (Aguinis, 2019). However, with advancements in AI, organizations like Access Bank have introduced AI-driven systems to enhance the efficiency, accuracy, and fairness of performance assessments. AI in performance appraisal uses data-driven algorithms to evaluate employee performance, reducing human bias and enabling real-time feedback and continuous monitoring (Murray, 2020).

Access Bank, one of Nigeria's leading commercial banks, has been at the forefront of adopting AI for various operational processes, including human resource management. The bank sought to optimize its performance appraisal system by leveraging AI technologies that can provide more objective, consistent, and data-backed evaluations. This initiative began in 2020 when Access Bank implemented an AI-powered HR software that automated the performance review process, integrating data from employee activities, feedback from supervisors, and performance metrics such as sales, project completion, and customer satisfaction (Access Bank, 2020).

The AI system used by Access Bank aggregates multiple performance indicators, including both qualitative and quantitative data, to provide a holistic view of employee performance. Natural Language Processing (NLP) algorithms are employed to analyze qualitative feedback from peers and managers, which is then combined with numerical data such as productivity rates and business outcomes. This integration enables the system to deliver personalized feedback to employees, track progress against goals, and identify areas for improvement in real-time (Nguyen, 2021).

One of the primary advantages of using AI in performance appraisal is the reduction of bias. Traditional performance reviews often suffer from biases, including favoritism, gender bias, or racial bias, which can influence the evaluation process. By relying on data-driven insights rather than subjective judgment, Access Bank was able to create a more equitable system, where employees are evaluated based on objective performance data (Jiang et al., 2020).

AI has significantly reduced the time and effort spent on performance appraisals at Access Bank. The AI system automates data collection, performance tracking, and report generation, allowing HR professionals to focus on strategic decision-making rather than administrative tasks (Nguyen, 2021). This streamlined process has also enabled managers to provide more frequent and timely feedback, rather than waiting for the annual performance review cycle.

Access Bank's AI system provides employees with continuous, real-time feedback on their performance, creating an ongoing dialogue between employees and managers. This transparency and immediate feedback have led to higher levels of employee engagement, as individuals can track their development and take corrective actions more promptly. Research indicates that ongoing feedback contributes to greater job satisfaction and improved productivity (Kuvaas, 2017).

AI-generated insights provide managers with concrete data that helps them make informed decisions regarding promotions, training, and career development. This eliminates uncertainty and ensures that decisions are based on measurable criteria rather than intuition or incomplete data (Cascio & Boudreau, 2016).

Despite the numerous benefits, the implementation of AI in performance appraisal also presents challenges. One significant concern is data privacy and employee trust. Access Bank had to implement robust data protection measures to ensure that employees' personal information and performance data were handled securely. Additionally, there was initial resistance from employees who were skeptical about AI taking a prominent role in performance evaluations, fearing that the system might be overly mechanical and depersonalize the appraisal process (Murray, 2020).

Furthermore, the accuracy of AI algorithms depends heavily on the quality of data input. If the data collected is incomplete or biased, the AI system could generate skewed or inaccurate performance evaluations. Access Bank has had to ensure that the data used in the AI system is accurate, up-to-date, and representative of employee performance.

### **Statement of the Problem**

In an ideal situation, performance appraisal in Human Resource Management (HRM) is designed to be a systematic, objective, and continuous process that effectively evaluates employee performance, aligns individual goals with organizational objectives, and provides actionable feedback for employee growth. In this ideal scenario, the performance review system would be grounded in data-driven insights, minimizing biases, and ensuring fairness. The process would empower managers to make informed decisions about promotions, compensation, and professional development, while employees would feel engaged, motivated, and clear about their performance trajectory. Modern technologies, especially Artificial Intelligence (AI), can greatly enhance the accuracy, efficiency, and transparency of performance appraisals, making them an invaluable tool for organizations striving for optimal performance and talent management.

However, the real situation in many organizations, including Access Bank Nigeria PLC, reflects a departure from this ideal. Traditional performance appraisal systems often rely heavily on subjective judgments and infrequent assessments, leading to inconsistencies, biases, and a lack of transparency. Managers may rely on anecdotal evidence or personal perceptions rather than concrete, data-backed performance metrics, which can result in unfair evaluations. Employees may receive feedback only annually, limiting opportunities for timely intervention and ongoing development. As a result, the appraisal process often becomes a mere formality rather than a meaningful tool for growth and organizational alignment.

The lack of an AI-driven, data-centric performance appraisal system in such organizations can lead to significant negative consequences. Employees may become disengaged due to perceived unfairness or lack of clarity in evaluations, leading to reduced morale and productivity. Furthermore, organizations may miss out on identifying high-potential employees or addressing underperformance in a timely manner, which can ultimately affect overall organizational performance and growth. The reliance on outdated systems without AI support can hinder the ability to make informed, evidence-based decisions regarding talent management, thereby reducing the competitiveness and effectiveness of the organization in a rapidly evolving business landscape.

### **Objectives of the Study**

- i. Ascertain the effect of AI driven performance appraisal on employee engagement at Access Bank Nigeria PLC.
- ii. Determine the effect of AI-driven performance appraisals on talent management at Access Bank Nigeria PLC.

### Research Questions

- i. How does the implementation of AI-driven performance appraisals affect employee engagement at Access Bank Nigeria PLC?
- ii. What is the impact of AI-driven performance appraisals on talent management practices at Access Bank Nigeria PLC?

### Statement of Hypotheses

- i. H0<sub>1</sub>: The implementation of AI-driven performance appraisals has no significant effect on employee engagement at Access Bank Nigeria PLC.
- ii. H0<sub>2</sub>: AI-driven performance appraisals have no significant impact on talent management practices at Access Bank Nigeria PLC

### Significance of the Study

The significance of this study lies in its potential to provide valuable insights into how AI-driven performance appraisals impact key HR practices such as employee engagement and talent management at Access Bank Nigeria PLC. The findings of this research will benefit various stakeholders within the organization, the HR field, and the broader banking sector. Here's a breakdown of who will benefit and how:

The study will provide data-driven insights into how AI-driven performance appraisals influence employee engagement and talent management practices. This can help management make informed decisions about the continued use or improvement of AI-based appraisal systems.

By understanding the effects of AI performance appraisals, the HR team can adopt strategies that enhance employee engagement, leading to improved job satisfaction, productivity, and retention rates.

The findings will help HR professionals optimize their talent management strategies, ensuring that AI-driven appraisals are used to identify and nurture high-potential employees, and align talent development efforts with organizational goals.

Employees will benefit from an appraisal process that is perceived as fair, objective, and data-driven. AI systems can reduce human bias and subjectivity in evaluations, leading to more accurate and transparent performance assessments. By examining the effect of AI-driven appraisals on talent management, the study may provide insights into how these systems can help identify career development opportunities, skills gaps, and promotions based on clear, measurable criteria.

The study will contribute to the growing body of knowledge in HRM, particularly in the application of AI in performance management and its effects on organizational outcomes like engagement and talent management. Other financial institutions can use the findings of this study to benchmark their own HR practices. By understanding how AI-driven performance appraisals affect engagement and talent management at Access Bank, other banks can assess whether similar systems would be beneficial for their organizations.

### Scope of the Study

The scope of the study was discussed based on unit scope, content scope, geographic scope and time scope.

**Unit Scope:** The unit scope is artificial intelligence and performance appraisal in human resource management, a study of Access bank Nigeria plc.

**Content Scope:** The content scope includes the effect of AI driven performance appraisal on employee engagement at Access Bank Nigeria PLC and the effect of AI-driven performance appraisals on talent management at Access Bank Nigeria PLC.

**Geographic Scope:** The geographic scope is Access bank Nigeria plc in Enugu state Nigeria

**Time Scope:** This study will focus on a period of six years (2020–2025)

## **Review of Related Literature**

### **Conceptual Review**

#### **Artificial Intelligence**

Hinton (2022) expressed that AI should be viewed as systems that excel in learning from vast datasets, rather than mimicking human cognition in its entirety. His work on back propagation and neural networks has fundamentally changed the way AI systems learn and adapt. He defines AI as the creation of models that can extract patterns from data, allowing machines to make predictions, recognize speech, and understand images in ways that closely approximate human capabilities.

Bengio (2023) defined AI not just as the development of intelligent systems, but also as a growing concern about how these systems should be aligned with human values. According to Bengio, AI must move beyond narrow task automation to include understanding human intentions, ethics, and broader societal impacts. He emphasized that AI research should involve developing systems that not only optimize performance but also ensure fairness, transparency, and responsibility in their applications.

Hassabis (2024) described AI as systems that combine "generalized learning" with "reasoning capabilities" to solve complex, abstract problems. Hassabis has suggested that AI is poised to become a tool for addressing some of humanity's greatest challenges, from climate change to healthcare. His definition emphasizes AI's potential not just as a set of technologies, but as a transformative tool that evolves over time through the integration of sophisticated learning algorithms, allowing machines to tackle issues that require deep understanding and creativity, akin to human expertise.

#### **Performance Appraisal**

Harvard Business Review (2025) redefined performance appraisal as a dynamic, ongoing process of "real-time feedback" rather than a singular, annual review. Their modern definition suggests that performance appraisals should be agile and continuous, integrated into daily interactions rather than formal, rigid evaluations. This approach emphasizes that feedback should be constructive, frequent, and focused on growth rather than solely on past performance. The focus is on fostering a culture of trust and open communication, where managers and employees engage in regular conversations about development, challenges, and opportunities for improvement.

Douglas (2022) suggests that performance appraisals should not only assess the outcomes of an individual's work but also recognize the intrinsic motivation of employees. McGregor's definition implies that a successful appraisal system should be based on trust, autonomy, and empowerment, which aligns with his Theory Y perspective. Rather than focusing on punitive measures (Theory X), modern appraisals should motivate employees by recognizing their potential for growth and fostering a more collaborative and supportive environment.

#### **AI Driven Performance Appraisal**

Bersin (2022) highlighted that AI-driven performance appraisals represent a major shift in how organizations approach employee evaluation. Bersin defined AI-powered performance appraisals as systems that use advanced algorithms to analyze vast amounts of employee data—ranging from work metrics to feedback and even

engagement levels. He argued that AI allows for more accurate, objective evaluations by removing human biases from the process. Bersin's vision emphasized that AI can provide real-time insights, helping managers deliver continuous feedback and tailored development opportunities to employees, thus shifting away from traditional, annual reviews.

Ulrich (2023) offered a definition of AI-driven performance appraisals in 2023 that centered on the integration of predictive analytics. Ulrich defined these systems as tools that use AI to not only evaluate past performance but to predict future potential, offering a forward-looking approach. AI-powered appraisals, in his view, are not just about assessing what an employee has done, but about forecasting how they might perform under various conditions, based on patterns in their work behavior. He argued that by leveraging AI's data-driven insights, organizations could make more informed, strategic decisions about talent development, promotions, and succession planning.

### **Human Resource Management**

Dessler (2017) defines Human Resource Management (HRM) as a set of practices aimed at maximizing organizational performance through the strategic management of people. He views HRM as the process of acquiring, training, developing, and motivating employees in ways that align with both individual and organizational goals. Dessler emphasizes that HRM is not just about administrative functions, but also about fostering a workplace environment where both the needs of the employees and the business are met efficiently.

Armstrong (2020) describes HRM as a comprehensive approach to managing people in an organization to achieve organizational objectives. Armstrong highlights that HRM involves the management of recruitment, performance, training, and employee relations, but also the development of a positive organizational culture. He argues that HRM should focus on creating value by ensuring that the workforce is skilled, motivated, and well-managed to enhance both individual and organizational success.

### **Components of Human Resource Management**

#### **Employee Engagement**

Kahn (2018) defines employee engagement as the degree to which employees feel physically, emotionally, and cognitively invested in their work. In his seminal study, Kahn describes engagement as a state where employees bring their full selves to their roles, displaying enthusiasm, commitment, and vigor. He emphasizes that this state is crucial for fostering a productive, motivated workforce and is shaped by the work environment, relationships with colleagues, and alignment with organizational values.

Harter, Schmidt, and Hayes (2023) conceptualize employee engagement as a combination of employee satisfaction and commitment, but with a stronger focus on the psychological and emotional aspects of the employee experience. They argue that engaged employees are deeply involved in their work, exhibit high levels of discretionary effort, and are more likely to contribute positively to organizational outcomes. Their research underscores the importance of leadership, organizational support, and clear job roles in fostering engagement.

#### **Talent Management**

Tansley (2019) defines talent management as a strategic and systematic approach to attracting, developing, and retaining high-potential employees who can contribute significantly to the organization's long-term goals. She emphasizes that talent management is not just about recruiting top talent but also about creating a supportive environment for employees to develop their skills and leadership capabilities, ensuring that the organization has the right people in place for future challenges.

Michaels, Handfield-Jones, and Axelrod (2021) conceptualize talent management as a set of integrated organizational processes aimed at ensuring that the organization has the right people with the right skills in the right

positions. They argue that talent management is a critical function for organizations to stay competitive, focusing on identifying and nurturing leadership potential and providing employees with opportunities for growth and advancement within the company. Their approach highlights the need for strategic alignment between talent needs and business objectives.

### **Theoretical Framework**

#### **Vroom's Expectancy Theory**

Vroom's Expectancy Theory was proposed by Victor H. Vroom in 1964. The theory posits that individual motivation is influenced by the expected outcomes of their actions, where employees are motivated to perform based on the belief that their effort will lead to a desired level of performance, and in turn, this will result in a specific reward. This theory is relevant to the study of Artificial Intelligence (AI) and performance appraisal in Human Resource Management (HRM) at Access Bank Nigeria because AI-based performance appraisal systems can help align employee efforts with organizational rewards. AI can provide more accurate, data-driven insights into employee performance, ensuring that employees can see a direct link between their actions, performance, and the rewards they receive. This enhances motivation, as employees may trust that AI systems eliminate bias and offer a more transparent and fair process for performance evaluation.

#### **Locke's Goal-Setting Theory (1968)**

Locke's Goal-Setting Theory was proposed by Edwin A. Locke in 1968 and emphasizes the importance of setting specific, challenging goals to drive higher performance. According to this theory, clear goals and feedback are essential for motivation and improving performance. The relevance of this theory to the study lies in how AI can play a critical role in setting personalized, measurable goals for employees, providing ongoing feedback, and tracking performance progress. AI-powered tools could enhance performance appraisal by offering continuous and real-time feedback, ensuring that employees at Access Bank Nigeria receive constant insights into their performance relative to their goals. This continuous loop of goal-setting, performance tracking, and feedback, facilitated by AI, aligns closely with Locke's theory of achieving better outcomes through goal clarity and motivation.

### **Empirical Review**

The empirical review was discussed based on the objectives of the study

#### **Effect of AI Driven Performance Appraisal on Employee Engagement**

Ali & Khan (2021) conducted an empirical study to explore the impact of AI-driven performance appraisal systems on employee engagement in the banking sector. Their research found that AI-based systems, by offering more accurate, real-time feedback and reducing bias in evaluations, significantly increased employee engagement. The study highlighted that employees felt more valued and motivated when performance appraisals were conducted using AI tools that provided fair and transparent assessments.

Lee & Choi (2022) investigated how the implementation of AI-driven performance appraisals affects employee motivation and engagement in the tech industry. Their findings indicated that employees working in organizations with AI-integrated performance management systems reported higher levels of engagement, as the AI systems helped personalize feedback and development plans. The study concluded that AI's ability to offer targeted feedback and recognition contributed to enhanced job satisfaction and overall employee commitment.

Patel & Mehta (2023) examined the role of AI in performance evaluations and its effects on employee engagement in a global consulting firm. The research suggested that AI-powered performance appraisals improved employees' sense of fairness and transparency, leading to increased trust in management. As a result, employees reported

feeling more engaged and aligned with organizational goals. The study also emphasized the importance of integrating AI systems with employee development programs for sustained engagement.

Nguyen & Tran (2021) conducted a study in a multinational retail company to analyze the effects of AI-based performance appraisal systems on employee engagement levels. The study found that when AI was used for continuous performance feedback, employees exhibited higher levels of engagement and job satisfaction. The research also showed that employees appreciated AI's ability to track performance progress and offer personalized development suggestions, which led to a stronger commitment to their roles and the organization.

### **Effect of AI-Driven Performance Appraisals on Talent Management**

Wang & Zhang (2023) conducted an empirical study on the impact of AI-driven performance appraisals on talent management practices within global organizations. The research revealed that AI-powered appraisal systems facilitated the identification of high-potential talent, ensuring better succession planning and leadership development. By providing real-time, data-driven insights into employee performance, AI allowed for more accurate and targeted talent management strategies, leading to improved retention and career progression for top performers.

Brown & Kumar (2024) explored the relationship between AI-based performance appraisals and talent management in the healthcare sector. Their study highlighted that AI-driven appraisals were instrumental in optimizing talent acquisition, training, and development. By utilizing predictive analytics to assess employee performance and potential, healthcare organizations were able to align their talent management practices with strategic goals, ultimately fostering a more skilled and adaptable workforce.

Lee & Choi (2024) focused on how AI-driven performance appraisals influence talent management in tech companies. The study found that AI systems helped identify gaps in employee skills, which allowed for more efficient talent development and resource allocation. By leveraging AI insights, companies were able to match employees' strengths with specific roles and growth opportunities, leading to more effective talent management processes that enhanced overall organizational performance.

Patel & Singh (2025) investigated the effects of AI-driven performance appraisals on talent management within financial institutions. The research showed that AI tools enhanced the organization's ability to monitor and nurture its talent pool by offering accurate performance assessments and development suggestions. This led to more informed decisions in promotions, job assignments, and compensation, significantly improving employee satisfaction and ensuring that the best talent was retained and properly developed for leadership roles.

### **Summary of Literature Review**

The literature review presents a comprehensive analysis of the topic by first establishing a **conceptual review** that defines key concepts such as AI-driven performance appraisals, employee engagement, and talent management. It then introduces the theoretical framework, drawing on Vroom's Expectancy Theory **and** Locke's Goal Setting Theory to explain how AI systems influence employee motivation, engagement, and performance outcomes. Vroom's theory highlights the role of perceived outcomes in motivating employees, while Locke's theory emphasizes the importance of specific, challenging goals in driving performance. The empirical review examines various studies that explore the effects of AI-driven appraisals on employee engagement and talent management across different sectors, revealing positive impacts like increased engagement, fairness, and talent retention. However, the review identifies a gap in the literature, as few studies have investigated the long-term effects of AI on employee motivation and talent management outcomes across multiple industries, suggesting the need for further research in this area.

### Gap in Literature Review

The gap in the literature review lies in the limited exploration of the long-term effects of AI-driven performance appraisals on employee engagement and talent management across organizations. While existing studies highlight the immediate benefits of AI, such as increased fairness, transparency, and engagement, there is a lack of research on how these systems impact employee engagement and talent management over extended periods.

### Methodology

#### Research Design

The research design for this study on *Artificial Intelligence and Performance Appraisal in Human Resource Management: A Study of Access Bank Nigeria PLC* employed a survey method. A structured questionnaire was distributed to employees of Access Bank Nigeria PLC, aiming to gather data on their perceptions and experiences with AI technologies in performance appraisal processes. The survey collected both quantitative and qualitative responses, allowing for a comprehensive analysis of how AI influences performance assessments and decision-making in the organization. Data was analyzed using statistical tools to identify patterns and correlations relevant to AI's impact on HR practices.

#### Area of the Study

The area of the study focuses on the integration of Artificial Intelligence (AI) in performance appraisal within Human Resource Management, specifically at Access Bank Nigeria PLC. It examines how AI tools and technologies are utilized to assess employee performance, streamline appraisal processes, and support decision-making in HR practices.

#### Sources of Data

The sources of data for this study include primary data collected through surveys administered to employees of Access Bank Nigeria PLC. Secondary data were gathered from existing literature, including academic journals, books, and reports on AI in Human Resource Management and performance appraisal practices. These sources provided insights into both the theoretical and practical applications of AI in HR.

#### Population of the Study

The population of the study consists of employees working at Access Bank Nigeria PLC in Enugu State. The total population is 795 employees, including staff from various departments and levels within the organization.

#### Sample Size Determination

Since the population of the study was large, the researcher adopted Yamane Taro's formula. Taro Yamane (1964), states that the sample size of a definite population is given by the formula.

$$n = \frac{N}{1+N(e)^2}$$

Where

|   |   |                          |
|---|---|--------------------------|
| n | = | Sample size of the study |
| l | = | Mathematical constant    |
| N | = | Population of the study  |
| e | = | Error limit              |

In the study, the population of the study (N) = 795. The error limit (e) = 0.05 (5 percent). Substituting in the above formula, we have

$$\begin{aligned}
 n &= \frac{795}{1+795 (0.05)^2} \\
 &= \frac{795}{1+795 \times 0.0025} \\
 &= \frac{795}{1+1.9875} \\
 &= \frac{795}{2.9875} \\
 &= 266.11
 \end{aligned}$$

Approximately equal to 266

Therefore the sample size is 266

### **Sampling Techniques**

The study adopted the random sampling technique where every respondent will have an equal chance of being selected. The researcher will not influence the selection under this technique because each selection is controlled by probability or chance.

### **Method of Data Collection**

Data were collected using copies of questionnaire as 266 copies of questionnaire were produced and distributed to target respondents

### **Validity of the Instrument**

Odo (1992) asserts that “validity is the process of finding out the degree to which a research or test indeed measures what it purports to measure”. The purpose of the exercise is to identify whether the developed instrument or items really agreed with that would be contents of the research question, where they did not completely probe the ramifications of the study or where the concepts are not well understood, by the researcher carrying out the study. The instrument was validated using face-to-face validation where the supervisor who is an expert in the field is expected to go through the research questions items to confirm that they are in line with the research questions.

### **Reliability of the Instrument**

Reliability of the research data collection instrument is the extent of response reproducibility over the number of times the instrument is tested, or the extent to which the responses obtained through each of the items on the instrument are internally consistent (Gray, 2006). In a nutshell, it is the extent to which the instrument is capable of achieving reliable responses from the respondents. There are several ways of ascertaining the reliability of a test instrument but amongst all Cronbach’s Alpha coefficient method is used in the current study. The responses obtained from the pre-study survey will be subjected to Cronbach Alpha’s internal consistency test via SPSS (statistical package for social sciences) version 17.0.

### Method of Data Analysis

The data collected were presented in tables and corresponding values expressed in percentages. The regression analysis will be used to test the hypotheses. The hypotheses were used and tested at a 5% error

### Data Presentation and Analysis

#### Data Presentation

**Research Question One:** How does the implementation of AI-driven performance appraisals affect employee engagement at Access Bank Nigeria PLC?

**Table 4.1: Distribution of respondents on whether the implementation of AI-driven performance appraisals has significant effect on employee engagement at Access Bank Nigeria PLC.**

|              | Frequency  | Percent      | Valid Percent | Cumulative Percent |
|--------------|------------|--------------|---------------|--------------------|
| Valid SA     | 95         | 35.7         | 35.7          | 35.7               |
| A            | 85         | 32.0         | 32.0          | 67.7               |
| UD           | 46         | 17.3         | 17.3          | 85.0               |
| DA           | 22         | 6.3          | 6.3           | 93.2               |
| SD           | 18         | 6.8          | 6.8           | 100.0              |
| <b>Total</b> | <b>266</b> | <b>100.0</b> | <b>100.0</b>  |                    |

Table 4.1 shows that 95 respondents representing 35.7 percent of the total respondents strongly agree that implementation of AI-driven performance appraisals has significant effect on employee engagement at Access Bank Nigeria PLC, 85 respondents representing 32.0 percent agree, 46 respondents representing 17.3 percent were undecided, 22 respondents representing 6.3 percent disagree while 18 respondents representing 6.8 percent strongly disagree.

**Research Question Two:** What is the impact of AI-driven performance appraisals on talent management practices at Access Bank Nigeria PLC?

**Table 4.2: Distribution of respondents on whether AI-driven performance appraisals have significant impact on talent management practices at Access Bank Nigeria PLC**

|              | Frequency  | Percent      | Valid Percent | Cumulative Percent |
|--------------|------------|--------------|---------------|--------------------|
| Valid SA     | 81         | 30.5         | 30.5          | 30.5               |
| A            | 83         | 31.2         | 31.2          | 61.7               |
| UD           | 54         | 20.3         | 20.3          | 82.0               |
| DA           | 25         | 9.4          | 9.4           | 91.4               |
| SD           | 23         | 8.6          | 8.6           | 100.0              |
| <b>Total</b> | <b>266</b> | <b>100.0</b> | <b>100.0</b>  |                    |

Table 4.2 shows that 81 respondents representing 30.5 percent of the total respondents strongly agree that AI-driven performance appraisals have significant impact on talent management practices at Access Bank Nigeria PLC. 83 respondents representing 31.2 percent agree, 54 respondents representing 20.3 percent were undecided, 25 respondents representing 9.4 percent disagree while 23 respondents representing 8.6 percent strongly disagree.

## Test of Hypotheses

### Test of Hypotheses One

**H0<sub>1</sub>:** The implementation of AI-driven performance appraisals has no significant effect on employee engagement at Access Bank Nigeria PLC

#### Model Summary

| Model | R       | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1     | .941(a) | .885     | .885              | .37687                     |

a Predictors: (Constant)

#### ANOVA (b)

| Model |            | Sum of Squares | Df  | Mean Square | F    | Sig.    |
|-------|------------|----------------|-----|-------------|------|---------|
| 1     | Regression | 478.418        | 1   | 478.418     | 4.32 | .000(a) |
|       | Residual   | 62.069         | 245 | .142        |      |         |
|       | Total      | 540.487        | 246 |             |      |         |

**Dependent Variable: Employee Engagement**

**Independent Variable: AI-driven performance appraisals**

The  $R^2$  {R-Squared} which measures the overall goodness of fit of the entire regression, shows the value as .885 and adjusted to .885. This means that  $R^2$  accounts for 88.5 percent approximately 89 percent. This indicates that the independent variables account for about 89 percent of the variation in the dependent variable. Which shows goodness of fit? From the result, F-calculated (4.32) is greater than the f-tabulated (2.7858), that is  $F_{cal} > F_{tab}$ . Hence, we reject the null hypothesis ( $H_0$ ) and accept Alternate hypothesis which means that the overall estimate has a good fit which also implies that our independent variables are simultaneously significant. We now conclude from the analysis that the implementation of AI-driven performance appraisals has significant effect on employee engagement at Access Bank Nigeria PLC

### Hypothesis Two

**H0<sub>2</sub>:** AI-driven performance appraisals have no significant impact on talent management practices at Access Bank Nigeria PLC

#### Model Summary

| Model | R       | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1     | .971(a) | .943     | .943              | .27734                     |

a Predictors: (Constant)

#### ANOVA (b)

| Model        | Sum of Squares | Df  | Mean Square | F    | Sig.    |
|--------------|----------------|-----|-------------|------|---------|
| 1 Regression | 556.541        | 1   | 556.541     | 6.22 | .000(a) |
| Residual     | 33.614         | 245 | .077        |      |         |
| Total        | 590.155        | 246 |             |      |         |

**Dependent Variable: Talent management practices**

**Independent Variable: AI-driven performance appraisals**

The  $R^2$  {R-Squared} which measures the overall goodness of fit of the entire regression, shows the value as .943 and adjusted to .943. This means that  $R^2$  accounts for 94.3 percent approximately 94 percent. This indicates that the independent variables accounts for about 94 percent of the variation in the dependent variable. Which shows goodness of fit? From the result, F-calculated (6.22) is greater than the F-tabulated (2.7858), that is  $F_{cal} > F_{tab}$ . Hence, we reject the null hypothesis ( $H_0$ ) and accept Alternative hypothesis which means that the overall estimate had a good fit which also implies that the independent variables are simultaneously significant. We now conclude from the analysis that AI-driven performance appraisals have significant impact on talent management practices at Access Bank Nigeria PLC

#### Discussion of Findings.

##### Discussion Based on Hypothesis One

The findings from the test of Hypothesis One reveal that the implementation of AI-driven performance appraisals has a significant effect on employee engagement at Access Bank Nigeria PLC. The R-squared value of 0.885 indicates that approximately 89% of the variation in employee engagement can be explained by the AI-driven performance appraisal system, demonstrating a strong goodness of fit. The F-statistic of 4.32 is greater than the critical value of 2.7858, allowing us to reject the null hypothesis ( $H_{0i}$ ) and accept the alternative hypothesis. This confirms that the independent variable (AI-driven performance appraisals) is statistically significant in influencing employee engagement. Thus, the analysis suggests that the introduction of AI-based performance appraisals positively impacts employee engagement, underlining the effectiveness and relevance of AI tools in HR management at Access Bank Nigeria PLC.

##### Discussion Based on Hypothesis Two

The results from the test of Hypothesis Two indicate that AI-driven performance appraisals have a significant impact on talent management practices at Access Bank Nigeria PLC. With an R-squared value of 0.943, the analysis shows that approximately 94% of the variation in talent management practices can be explained by the introduction of AI-driven performance appraisals, demonstrating an excellent goodness of fit. Additionally, the F-statistic of 6.22 exceeds the critical value of 2.7858, allowing us to reject the null hypothesis ( $H_{0ii}$ ) and accept the alternative hypothesis. This supports the conclusion that AI-driven performance appraisals significantly influence talent management practices, suggesting that the adoption of AI tools plays a crucial role in enhancing talent acquisition, development, and retention strategies at Access Bank Nigeria PLC.

#### Summary of Findings, Conclusion and Recommendations

##### Summary of Findings

- i. The implementation of AI-driven performance appraisals has significant effect on employee engagement at Access Bank Nigeria PLC. (F-statistic of 4.32 is >the critical value of 2.7858).

- ii. AI-driven performance appraisals have significant impact on talent management practices at Access Bank Nigeria PLC (F-statistic of 6.22 is >the critical value of 2.7858).

### **Conclusion**

In conclusion, this study highlights the significant impact of AI-driven performance appraisals on both employee engagement and talent management practices at Access Bank Nigeria PLC. The findings from the hypothesis tests confirm that the integration of AI tools in performance evaluations has positively influenced employee engagement, with 89% of the variation explained by AI-driven appraisals. Additionally, AI has significantly impacted talent management practices, accounting for 94% of the variation in these practices. These results suggest that the use of AI not only enhances the efficiency and accuracy of performance appraisals but also plays a pivotal role in shaping key HR functions such as talent acquisition, development, and retention. Therefore, Access Bank's adoption of AI in HRM processes represents a forward-thinking approach that contributes to improved organizational performance and employee satisfaction.

### **Recommendations**

- i. Given the significant impact of AI-driven performance appraisals on employee engagement, it is recommended that Access Bank Nigeria PLC further invests in AI technologies to optimize HR practices.
- ii. Access Bank should consider deepening its AI application across all stages of talent management. This could include leveraging AI for more precise talent identification, personalized career development paths, and data-driven decisions in succession planning.

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