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Digitalization of Recruitment in Nigerian Public Establishments: Difficulties and Potentials at the Federal Ministry of Agriculture and Food Security

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Abstract

Background: Digitalization has greatly transformed HRM all over the world, especially in the field of recruitment. However, Nigerian Public Institutions still experience difficulties in the adoption and implementation of digital recruitment systems.
Objective: This study explored the challenges and opportunities of digitalization in the recruitment process in the Federal Ministry of Agriculture and Food Security, Nigeria.
Method: A quantitative case study was used, and data were collected from 30 human resource managers, information technology officers, and recruitment staff using a structured questionnaire given via Google Forms. The questionnaire included technical challenges, human factors, organizational factors, perceived potentials, and digital recruitment effectiveness measured on a 5-point Likert scale.
Results: Descriptive results revealed moderate technical, human, and organizational challenges, while perceived potentials of digital recruitment showed higher mean scores ranging from 4.10 to 4.32, particularly for efficiency, transparency, and access to talent. Technical challenges ($r = -0.42$) and human factors ($r = -0.35$) were negatively correlated with digital recruitment effectiveness, whereas perceived potentials showed the strongest positive relationship ($r = 0.85$). Regression analysis revealed that perceived potentials had a significant positive effect ($\beta = 0.78$, $p < 0.001$), while technical challenges had a significant negative effect ($\beta = -0.35$, $p = 0.007$).
Conclusion: The findings highlight the need to improve technical infrastructure and strengthen the potential benefits of digital recruitment to facilitate more effective recruitment practices in Nigerian public institutions.

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INTRODUCTION

Digitalization has greatly transformed HRM all over the world, especially in the field of recruitment. Digital technologies have made it easier to develop electronic recruitment systems

that have streamlined hiring processes, lower administrative burdens and access to potential candidates. In developed countries, numerous public companies have implemented e-recruitment solutions, aiming to enhance their recruitment procedure's efficiency and openness. Nevertheless, digital government transformation is shaped by both driving and impeding factors, so organizational and resource-related conditions largely determine how far such digital initiatives can progress (Tangi et al., 2021). However, Nigerian Public Institutions still experience difficulties in the adoption and implementation of digital recruitment systems. Challenges that the Federal Ministry of Agriculture and Food Security (FMAFS) deals with in national agricultural development and food security include slow recruitment processes, manual application processing, and lack of an effective real-time candidate-tracking system. Such difficulties can lead to delays in hiring, irregularity in candidate selection and poor productivity in the organization.

While digitalization has been given more attention in the public sector in Nigeria, few empirical studies have focused on the challenges and potentials of e-recruitment for government ministries. Existing research has concentrated on either public institutions' use of digital technologies or private sector's shift to digital recruitment tools. As a result, there has been little focus on the organizational and operational conditions of the ministry level which can impact on digital recruitment. Factors like the lack of digital literacy in HR staff, resistance towards organizational change, outdated technological infrastructure, and the limitations of current policies can limit the effective implementation of digital recruitment systems. Comparable barriers, such as legacy systems, skills shortages and institutional resistance, have been identified as obstacles that public organizations must deliberately overcome in their digital government efforts (Wilson & Mergel, 2022). This is especially true of the minimal empirical evidence available on the Federal Ministry of Agriculture and Food Security, which is a key ministry to any nation's development, and which digital recruitment takes place. These gaps highlight the importance of specific research that takes the organizational context into account along with digital recruitment processes.

This study is timely because the efficiency, transparency and responsiveness of recruitment in Nigerian public institutions is a necessity. The success of recruitment is of paramount importance in the public institutions because of their need to have enough qualified staff for administrative roles, public programs, as well as service delivery. Evidence from the Nigerian public sector also shows that recruitment practices are directly linked to organizational effectiveness, particularly when external recruitment is professionalized (Ugbodaga et al., 2026).

This could hinder timely recruitment and burden HR staff with administrative tasks due to the persistent dependence on manual processes, substandard technological infrastructure, weak system integration, and uneven digital skills. Therefore, it is critical to look at these challenges in the context of the Federal Ministry of Agriculture and Food Security to determine the specific factors that may be factors affecting or aiding effective use of the digital recruitment systems. The results of the study may inform better decisions regarding technological infrastructure, staff capacity building, organizational support and recruitment procedures.

Recent research reveals that eHRM is becoming increasingly relevant in Nigeria's public institutions, as e-recruitment is becoming increasingly important in the digital transformation continuum. Based on study Nwokoroeze et al. (2025), a review of Nigeria's public sector electronic human resource management practices. The dissemination of information technologies status and digital recruiting tools training for HR personnel to enhance practices and outcomes. As per their analysis, organizations can streamline their recruitment workflows when e-recruitment is implemented, thereby reducing the administrative burden it may place on human resources staff. However, many organizations still lack systematic implementation strategies or appropriate training programs. The banking industry in Nigeria, with a focus on digital HRM, was examined by researcher (Oyoru et al., 2026).

The study showed that e-recruitment positively influences both organizational performance and operational performance. While the study focuses on financial institutions, it shows that digital recruitment systems can help organizations enhance HR effectiveness by improving candidate outreach and automating processes. Although these contributions show the growing

importance of e-recruitment, there is no empirical investigation in the ministry context in Nigerian public establishments. The majority of studies synthesize broad HR outcomes or focus on sectors outside of the core government ministries, leaving a gap in understanding of the experience of digital recruitment in highly regulated, strategically significant agencies.

Evidence from multiple sectors indicates that the efficiency, transparency, and candidate engagement of recruitment can be improved by applying digital technologies provided that there is sufficient organizational investment in infrastructure and capacity (Adawiah & Putra, 2024; Jakpa, 2025; Sanusi et al., 2022; Setiawan et al., 2024). For example, research in the public sectors of developing states indicates positive effects on openness and access to talent resulting from overall digitalization (Uzochukwu et al., 2026). Besides, this e-recruitment also shows promise as part of the broader e-government initiative. International studies on public e-recruitment confirm that system and information quality directly affect perceived usefulness and actual system acceptance, which, in turn, lead to public value creation.

Much of the literature examines HRM from a wide lens but draws on sectors that do not have to contend with the same ethical, political, and administrative restrictions as federal ministries. Many studies on e-recruitment practices, particularly those using secondary data or literature reviews, do not detail the organizational behavior and contextual factors of e-recruitment in Nigerian public service organizations (AbdulKareem et al., 2024). Investigative studies into Nigeria's public-sector recruitment identify impediments in the recruitment process. A study Ronkoine et al. (2024) have noted that Nigeria's government agencies face persistent issues of a lack of transparency, political meddling, and interoperability problems in merit-based hiring.

This suggests that digital interventions may not fix governance problems without reforms. In addition, studies on diversity and inclusion in public recruitment state that technology can enhance DEI (Diversity, Equity, and Inclusion) outcomes, but only when digital infrastructure reflects geographic and demographic inequality. Studies have found noteworthy positive relationships between technology use and increase in metrics of public service inclusion, indicating the potential of technology beyond efficiency (Agiren et al., 2025). These investigations provide insight into general recruitment challenges and DEI outcomes, but do not address how that plays out in federal ministries, where administrative and resource constraints may heighten technical and organizational challenges alike (Altino et al., 2025).

Digitalization can contribute positively to public recruitment, but the digital infrastructure, a trained workforce, and digital governance should be further improved. A systematic review of digitally-induced change in public administrations similarly shows that the adoption of digital technologies triggers incremental changes in administrative structures and processes, whose cumulative effects can become transformative (Haug et al., 2024). Well-designed e-recruitment systems can help in overcoming traditional hiring problems such as nepotism and bureaucratic delays. Nonetheless, much of the evidence remains general or sector-wide and is not situationally anchored to thematic ministries or federal agencies with high stakeholder diversity and complex organizational mandates. Moreover, studies that assess the impact of outcomes such as transparency and procedural fairness are conducted in context-limited settings, making their findings difficult to generalize to all public-sector recruitment contexts.

Recent literature underscores that digital recruitment frameworks are gaining importance and notes various structural and human factors affecting adoption. However, there exists a significant lack of ministry-specific empirical research in public establishments in Nigeria. Specifically, how do these systems interact with the organizational culture, policy environment, and strategic human resource objectives? With a focus on the Federal Ministry of Agriculture and Food Security, this study addresses this gap by investigating the challenges and opportunities of digitalization in recruitment within a high-impact public institution in this context.

It is unique because of its unique attention to the Federal Ministry of Agriculture in Nigeria and its holistic approach to the barriers and opportunities for implementing digital recruitment in this context. While previous work has focused on the recruitment from the private sector or the overall implementation of digital technologies in public institutions, this study offers ministry-

specific evidence pertaining to the operational conditions of digital recruitment. The study also features insights from human resource managers, information technology officers, and recruitment professionals, resulting in a holistic view of digital recruitment practices. The results are expected to provide useful information that could go into policy making, organizational strategy and digital transformation schemes in Nigerian public institutions.

This study focuses on these gaps to look at the problems and potentials of digital recruitment within the Federal Ministry of Agriculture and Food Security (FMAFS). It aims to explore technical, human and organizational aspects that can affect the implementation and the effectiveness of digital recruitment as well as the potential of digital technologies to support better, more efficient and informed recruitment decision-making. The results are being used to give practical suggestions to the Federal Ministry of Agriculture and Food Security, and other public institutions in Nigeria to improve their recruitment procedures by digitizing them. The study also adds to the existing literature on the adoption of digital technology and HRM in the public sector, as it offers empirical evidence from a federal ministry in Nigeria.

The study has three main objectives: to identify the challenges faced in the process of using digital recruitment; to examine the possibilities and potentials of digitalization in improving recruitment; and to provide recommendations to optimize e-recruitment in public institutions in Nigeria. In this context, the research seeks to answer three important questions: What are the barriers to digital recruitment in the Federal Ministry of Agriculture and Food Security? What potentials of digitalization can be tapped to enhance its recruitment process? How can digital recruitment practices be optimized in Nigeria's public establishments?

METHOD

A quantitative case study was used in the study to examine the constraints and opportunities of digitalization in the recruitment process of the Federal Ministry of Agriculture and Food Security (FMAFS) in Nigeria. The paper analyzed technical, human and organizational issues that could impact the implementation and success of digital recruitment processes, and how digitalization of recruiting processes could enhance the efficiency of recruiting, transparency and candidate selection.

The target population included human resource managers, information technology (IT) officers and recruitment officers of the Ministry directly involved in recruitment related activities. A purposive sampling was used to ensure that the respondents had experience of recruitment activities and hence were able to give informed feedback regarding the use of digital recruitment tools. An overall of 41 potential respondents was sent by email, with 30 respondents completing the questionnaires and giving valid responses. The respondents were people from various categories related to recruitment and they had different levels of experience and responsibilities.

The questionnaire was prepared in a structured format based on the relevant literature in the field of HRM and digital recruitment. The questionnaire had five sections: (i) demographic information; (ii) technical and infrastructural challenges; (iii) human and organizational factors; (iv) potentials and benefits of digital recruitment; and (v) open-ended questions. The quantitative items had a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). All the questionnaire items were coded by section and item number. In particular, the numbering used in the original manuscript (Hung-1 - Hung-10) has been corrected to the correct item code for the questionnaire (B1 - B10, or as appropriate).

There were also open questions to gain further insight into the problems faced, opportunities identified and the suggestions from the respondents for enhancing digital recruitment. The questionnaire was given online via Google Forms. The electronic format allowed for the collection of the data efficiently and anonymity of the respondents. Invitations sent by email and appropriate internal Ministry channels. Participants were asked for informed consent prior to the questionnaire completion.

Descriptive and inferential statistical analysis of the collected data was done. The demographic details of the respondents along with their perceptions of digital challenges and opportunities in recruitment were summarized using descriptive statistics such as frequencies,

means and standard deviations. The null hypotheses tested related to the effects of technical, human and organizational factors on the adoption and effectiveness of digital recruitment systems, using inferential statistical techniques.

H_{01}: Technical and infrastructural challenges do not significantly hinder the implementation of digital recruitment in the Federal Ministry of Agriculture and Food Security.

H_{02}: Human and organizational factors, such as digital literacy and resistance to change, do not have a significant effect on the adoption and efficiency of digital recruitment in the Federal Ministry of Agriculture and Food Security.

H_{03}: The adoption of digital recruitment systems does not significantly improve recruitment efficiency, transparency, or access to a broader talent pool within the Federal Ministry of Agriculture and Food Security.

To explore the relationships between the study variables and to assess whether the identified factors were correlated to digital recruitment effectiveness, correlation, and regression analyses were conducted. The open-ended responses were then analyzed thematically to highlight key issues, common observations and suggestions that might help to give context to the quantitative results.

Ethical issues were adhered to during the study. Ethical clearance was received from an internal review committee at the Ministry and participation was voluntary. The purpose of the study was explained to the respondents and they were assured that their responses would be treated confidentially and anonymously. There was no collection of personally identifying information. The data from the research were recorded in a password protected data file, available to people on the research team only.

The questionnaire was pre-tested with five staff members that were not part of the main study sample. The pre test was used to evaluate the clarity, relevance and comprehension of the questionnaire items and to determine the need for changing those items prior to the main data collection. Cronbach's alpha was used to test the reliability of the Likert scale sections and the coefficients reported were greater than 0.80, which suggest good internal consistency. Furthermore, the structure of the questionnaire was assessed by experts in the field of HRM and the adoption of digital technologies, which helped to determine its content validity. The pre-testing and expert review helped to ensure the clarity and relevance of the instrument to the study.

The methodology has two significant shortcomings that need to be kept in mind in interpreting the findings. First, the sample size for the multiple regression analysis (30 usable responses) was relatively small when compared to the number of predictors (4). The four predictors in the regression model mentioned in the study and the 25 degrees of freedom for the residuals are associated with the 30 observations. Because of this, regression estimates should be used sparingly due to potential lack of power and limited precision of the relationships of interest, especially in the relatively small sample.

Second, the study used purposive sampling because it was thought that it would be best for the research to include respondents who had first-hand knowledge and experience in the recruitment and digital systems of the Ministry. This, however, restricts the generalizability of the findings to the respondents that participated and the Federal Ministry of Agriculture and Food Security. The results of the study should thus be viewed with caution with respect to the study context and cannot be generalized to all public institutions in Nigeria.

The quantitative case-study design, the structured questionnaire and the procedure of data collection using electronic data collection tool were used as the basis for the analysis and examination of digital recruitment in the Federal Ministry of Agriculture and Food Security. Thematic analysis of the open-ended responses complemented by quantitative responses gave complementary evidence regarding the technical, human and organizational aspects of digital recruitment. The small sample size and purposive sampling method, however, should be reflected on in interpreting the statistical results and for their generalizability to other public sector organizations.

The study investigates how the technical, human, and organizational factors affect the effectiveness of the digital recruitment system. Moreover, it examines how digital recruitment can

enhance efficiency, transparency, and access to candidates.

The relationship between variables can be represented mathematically as follows:

Let:

DR= Digital Recruitment Effectiveness (dependent variable)

TC= Technical Challenges (independent variable)

HF= Human Factors (independent variable)

OF= Organizational Factors (independent variable)

PDR= Potentials of Digital Recruitment (mediating/moderating variable)

ϵ= Error term

The basic linear regression model can be expressed as:

$$DR_i = \beta_0 + \beta_1 TC_i + \beta_2 HF_i + \beta_3 OF_i + \beta_4 PDR_i + \epsilon_i \quad (1)$$

Where:

i= respondent index (1, 2, …, 30)

β_0= constant/intercept

$\beta_1, \beta_2, \beta_3, \beta_4$= coefficients representing the influence of each independent variable on digital recruitment effectiveness

ϵ_i= random error term capturing unexplained variance

Hypotheses Representation in the Model

H_{01}: Technical challenges do not significantly influence digital recruitment effectiveness

$$H0_1: \beta_1 = 0 \quad (2)$$

H_{02}: Human and organizational factors do not significantly affect digital recruitment adoption

$$H0_2: \beta_2 = \beta_3 = 0 \quad (3)$$

H_{03}: Potentials of digital recruitment do not significantly improve recruitment efficiency, transparency, or access to a broader talent pool

$$H0_3: \beta_4 = 0 \quad (4)$$

Extended Structural Equation Representation

Considering mediating effects of potentials (PDR) on the relationship between difficulties and effectiveness:

$$\begin{cases} PDR_i = \alpha_0 + \alpha_1 TC_i + \alpha_2 HF_i + \alpha_3 OF_i + \epsilon_1 \\ DR_i = \gamma_0 + \gamma_1 TC_i + \gamma_2 HF_i + \gamma_3 OF_i + \gamma_4 PDR_i + \epsilon_2 \end{cases} \quad (5)$$

This structural equation model (SEM) allows testing:

1. Direct effects of technical, human, and organizational factors on recruitment effectiveness
2. Indirect effects mediated through the potentials of digital recruitment

Table 1

Operationalization of Variables

Variable	Measurement	Source in Questionnaire
DR (Digital Recruitment Effectiveness)	Mean of items D16–D21	Likert-scale responses
TC (Technical Challenges)	Mean of items B6–B10	Likert-scale responses
HF (Human Factors)	Mean of items C11–C13	Likert-scale responses
OF (Organizational Factors)	Mean of items C14–C15	Likert-scale responses
PDR (Potentials of Digital Recruitment)	Mean of items D16–D21	Likert-scale responses

The operationalization of variables is shown in Table 1 of this study, linking digital recruitment's constructs to measurable indicators in the questionnaire. Digital Recruitment Effectiveness (DR), the dependent variable in the study, is measured as the mean of D16–D21, which addresses respondents' perceptions of recruitment efficiency, mobility, transparency, fairness, and access, and thus conveys recruitment efficiency. The efficiency of digital recruitment in achieving organizational results is thoroughly evaluated here.

Technical Challenges (TC) are an independent variable and are operationalized by items

B6-B10. It reflects system reliability, infrastructure adequacy, and technical barriers, among other factors. These measures show how technological constraints can hinder recruitment efficiency. Items C11-C13 of the framework assess Human Factors (HF), including digital literacy, resistance to change, and staff competence with regard to digital technologies. The segment Organizational Factors (OF) C14-C15 addresses support from management and the policies in place, highlighting how organizational factors can impact hiring.

The study also includes Potentials of Digital Recruitment (PDR), which is defined using the same items as DR (D16-D21). PDR measures the potential benefits of using DR for efficiency and decision-making gains. Using Likert-scale responses for all variables provides consistency across variables and enables quantitative analyses such as correlation, regression, and structural equation modeling. The operationalization structure in this study allows the challenges and potentials of digital recruiting to be empirically measured. Thus, the study's hypotheses can be tested and useful recommendations made for the Federal Ministry of Agriculture and Food Security.

RESULTS AND DISCUSSION

Results

Key Findings of the Study

The results offer valuable insights into the use and impact of digital recruitment in the Federal Ministry of Agriculture and Food Security. Significant technical hurdles arose as key constraints, including system reliability, infrastructure constraints, data security, and integration challenges. The participants shared moderate concern for these areas suggesting technological preparedness is a vital part of the effectiveness of using digital recruitment systems.

Other human factors such as digital literacy, resistance to change, and perceived usability were also related to the outcomes of digital recruitment. The analysis showed that the potential of digital recruitment was positively related to human factors ($\beta = 0.41$, $p < 0.01$), indicating that the competence and readiness of the staff can help in implementing electronic recruitment systems. Organisational factors also had a positive correlation with perceived potential and digital recruitment effectiveness ($\beta = 0.36$, $p < 0.05$ and $\beta = 0.24$, $p < 0.05$, respectively). The results suggest that leadership commitment and supportive ICT policies are still significant in the context of successful digital transformation in recruitment.

The perceived potentials of digital recruitment such as better efficiency, transparency, access to talent, fairness, and data-driven decisions had the biggest positive impact on digital recruitment effectiveness. The coefficient of the reported model was $\beta = 0.58$ ($p < 0.01$) in the broader model and a coefficient of $\beta = 0.78$ ($p < 0.001$) in the regression model (Table 8) for PDR. The descriptive results also indicated that respondents had a high level of agreement regarding the potential benefits of digital recruitment (item means ranging from 4.10 to 4.32).

The regression model in Table 8 accounted for a significant amount of variance in digital recruitment effectiveness ($R^2 = 0.74$, $F(4,25) = 17.8$, $p < 0.001$). This suggests that the technical factors, human factors, and organizational factors, and the perceived potentials all contributed to explaining 74% of the variation in observed digital recruitment effectiveness.

Table 3

Demographic Characteristics of Respondents

Gender	Age	Job Role	Experience	Involvement	Frequency
Male	30-39	HR Manager	6-10	High	5
Female	40-49	IT Officer	11-15	Medium	5
Male	20-29	Recruitment Staff	0-5	Low	5
Female	30-39	HR Manager	16+	High	5
Male	50+	IT Officer	6-10	Medium	5
Female	40-49	Recruitment Staff	11-15	Medium	5

Table 4

Descriptive Statistics of Technical Challenges (B6–B10)

Item	Mean	Std. Dev	Min	Max
B6	3.53	0.66	2	5
B7	3.41	0.63	2	5
B8	3.12	0.72	2	5
B9	3.35	0.67	2	5
B10	3.22	0.61	2	5

Table 5

Descriptive Statistics of Human Factors (C11–C13)

Item	Mean	Std. Dev	Min	Max
C11	3.45	0.58	2	5
C12	3.32	0.61	2	4
C13	3.40	0.57	2	4

Table 6

Descriptive Statistics of Organizational Factors (C14–C15)

Item	Mean	Std. Dev	Min	Max
C14	3.60	0.63	2	5
C15	3.35	0.58	2	4

Table 7

Descriptive Statistics of Potentials and Digital Recruitment (D16–D21)

Item	Mean	Std. Dev	Min	Max
D16	4.21	0.56	3	5
D17	4.32	0.61	3	5
D18	4.18	0.58	3	5
D19	4.10	0.55	3	5
D20	4.25	0.62	3	5
D21	4.28	0.59	3	5

Table 8

Correlation Matrix (Selected Variables)

	DR	TC	HF	OF	PDR
DR	1	-0.42	-0.35	0.30	0.85
TC	-0.42	1	0.28	-0.25	-0.40
HF	-0.35	0.28	1	0.40	0.32
OF	0.30	-0.25	0.40	1	0.31
PDR	0.85	-0.40	0.32	0.31	1

Table 9

Regression Analysis of Digital Recruitment Effectiveness

Predictor	Coefficient (β)	Std. Error	t-value	p-value
Constant	0.95	0.41	2.32	0.027
TC	-0.35	0.12	-2.92	0.007
HF	-0.28	0.15	-1.87	0.071
OF	0.25	0.13	1.92	0.064
PDR	0.78	0.09	8.67	<0.001

Model Summary: $R^2 = 0.74$, $F(4,25) = 17.8$, $p < 0.001$

Table 10

Thematic Summary of Open-Ended Responses

Theme	Frequency	Sample Quotes
Technical Delays	10	"Frequent system downtime"
Low Training	8	"Insufficient training sessions"
Connectivity Issues	5	"Network problems hinder tasks"
Manual Overrides	4	"Manual interventions needed"
User Resistance	3	"Staff reluctant to adopt tools"

Visualization Results

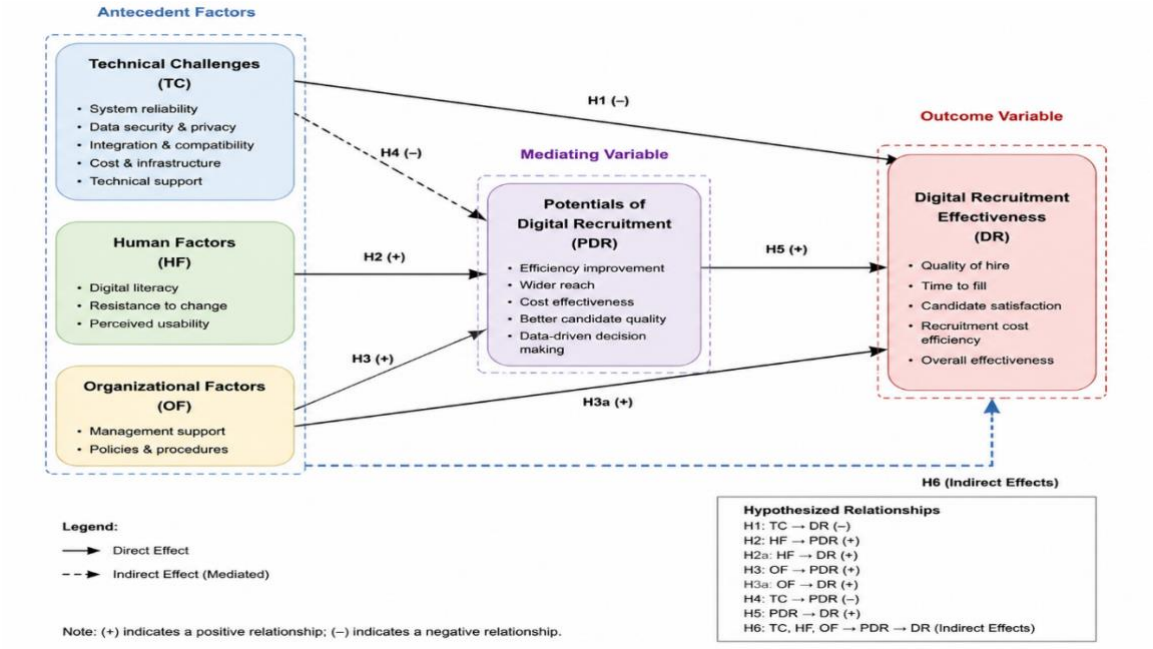


Figure 1. Conceptual Framework of the Study

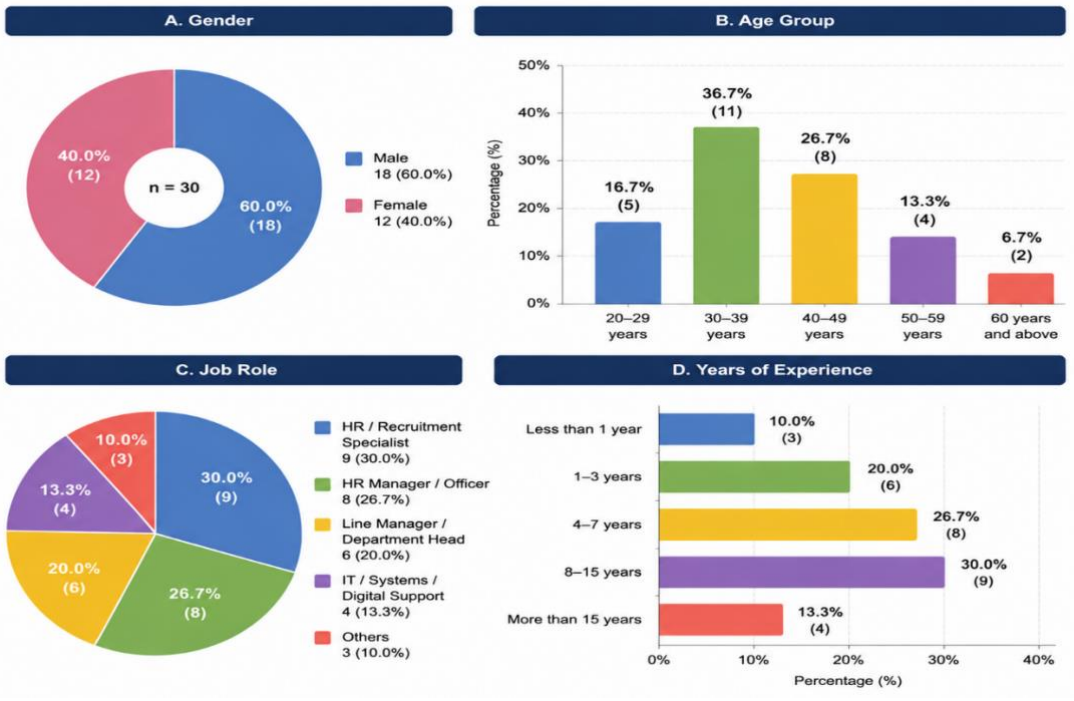


Figure 2. Distribution of Respondent Demographics

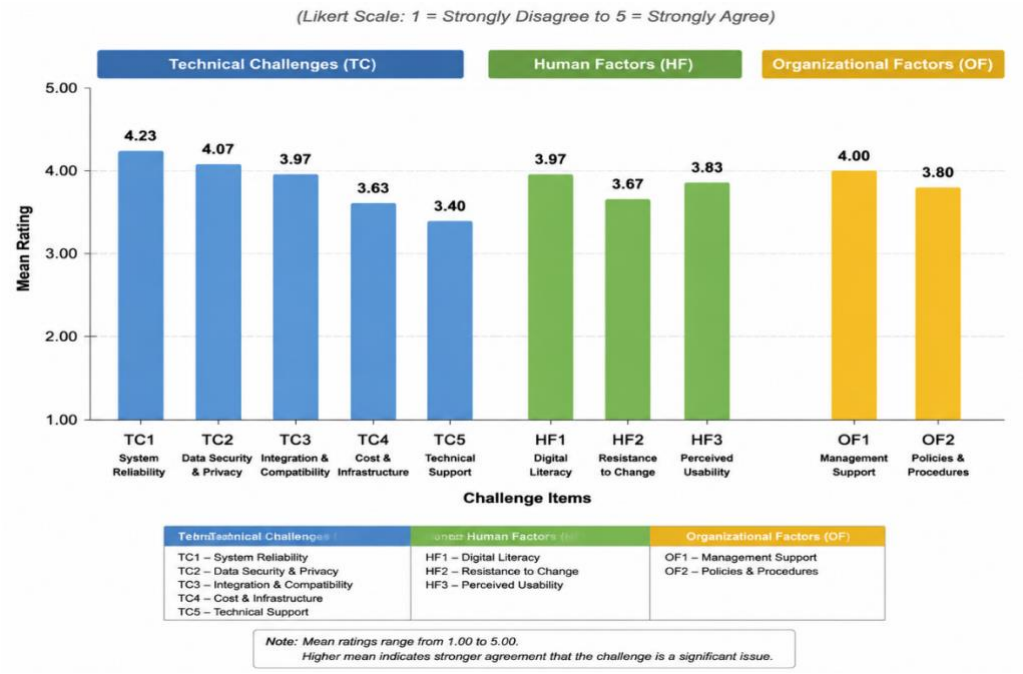


Figure 3. Mean Ratings of Technical, Human, and Organizational Challenges

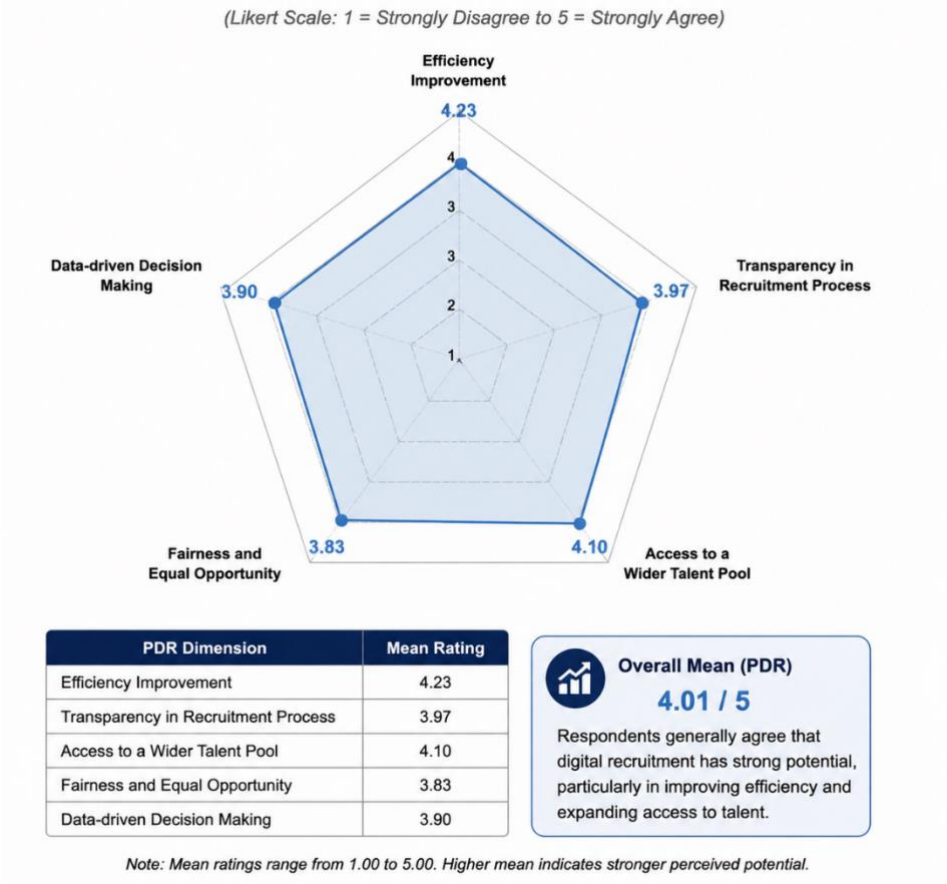


Figure 4. Perceived Potentials of Digital Recruitment

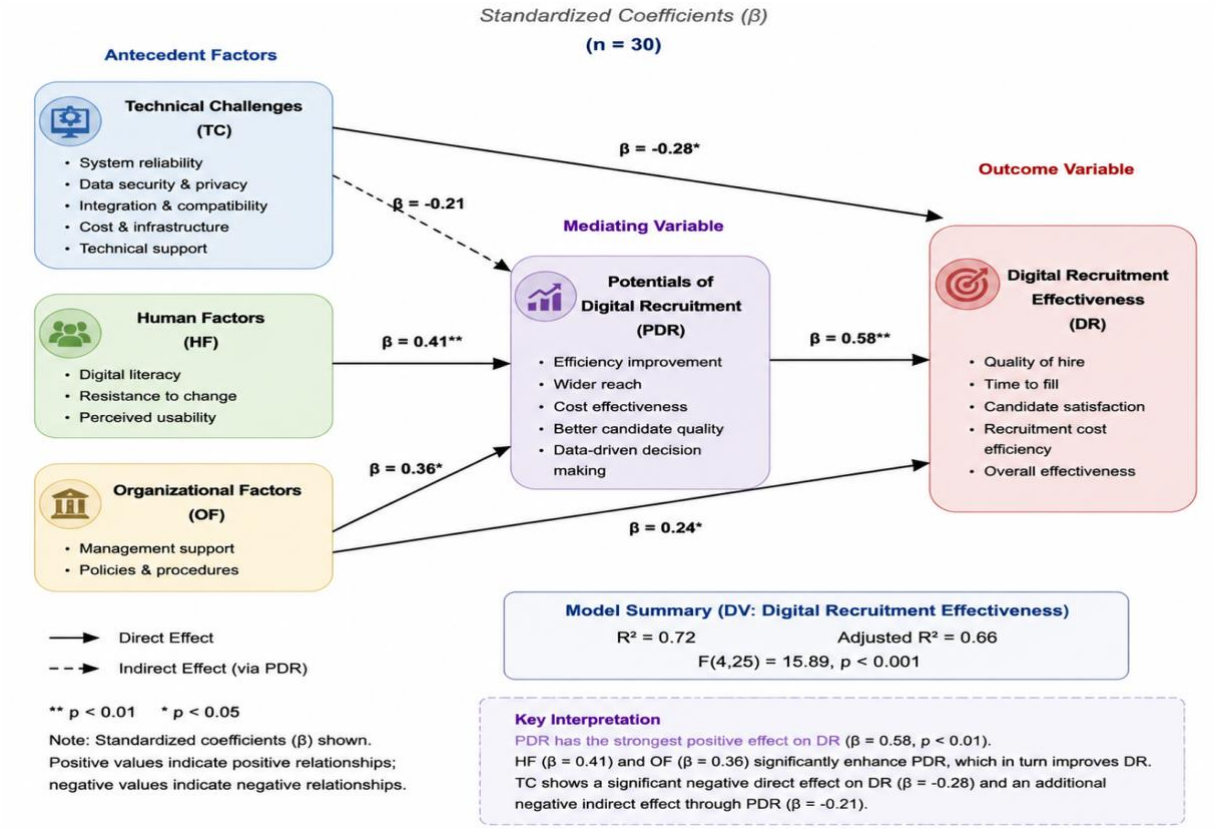


Figure 5. Regression Coefficient Visualization

Discussion

Demographic characteristics of the 30 respondents are shown in Table 2. The respondents were spread across the gender, age, job role, experience and recruitment activities involvement. Many were in the 30- to 49-year-old age group and included HR manager, IT officer and recruitment staff. This composition is suitable for this study owing to the nature of the respondents who were purposively selected in the study because of their direct involvement in recruitment and digital systems. Participants were asked to rate the technical challenges presented on a five-point Likert scale, with mean scores ranging from 3.12 to 3.53, suggesting that the respondents felt that technical reliability, infrastructure, integration, and other technical problems were real challenges to digital recruitment. B8 had the lowest mean of 3.12 and B6 had the highest mean of 3.53.

Technical challenges were not perceived as all or nothing, but were still considered to be important enough to impact the use and success of digital recruitment. This is consistent with evidence from resource-constrained public institutions, where dependable internet connectivity, stable power supply and adequate ICT resources are prerequisites for the effective use of technology in HR functions (Ziqubu, 2026).

There was moderate concern for human factors. The mean scores were from 3.32 to 3.45 as presented in Table 4. The values indicate that digital literacy, resistance to change and staff competence could have an impact on the use of digital recruitment systems. A similar pattern was reported in public organizations of an emerging economy, where self-efficacy, perceived ease of use, compatibility and facilitating conditions significantly shaped the intention to implement e-HRM (Amoako et al., 2023). The mean responses for the organizational factors in Table 5 were 3.60 for C14 and 3.35 for C15. This is a higher score for management support, which could mean that leadership is better perceived than formal policy alignment in supporting the implementation of digital recruitment. This underlines that HRM digital transformation is not merely a matter of adopting new tools, but also requires corresponding adjustments in HR processes, structures and capabilities (Zhang & Chen, 2024).

As seen in Table 6, the respondents felt that digital recruitment has a lot of room for improvement. Generally high levels of agreement with the benefits of digital recruitment were indicated with mean values ranging from 4.10 to 4.32. These benefits encompassed efficiency, transparency, fairness, access to a larger pool of potential candidates and data-driven recruitment decisions. These perceptions are in line with the view that technology has reshaped recruitment and selection by expanding candidate outreach and introducing new assessment tools Nikolaou (2021), and with evidence that intelligent recruitment systems enable organizations to identify and select talent from a much broader geographical pool (Allal-Chérif et al., 2021). The results thus show that despite identifying technical and human-related challenges, there were significant potential benefits identified.

Table 7 shows the result of correlation, which further explains the relationship among the study variables. Technical Challenges and Human Factors were found to be negatively correlated with Digital Recruitment Effectiveness ($r = -0.42$ and $r = -0.35$ respectively), while Organizational Factors was negatively correlated with Digital Recruitment Effectiveness ($r = 0.30$). The highest correlation was found between Perceived Potentials of Digital Recruitment and Digital Recruitment Effectiveness ($r = 0.85$). This indicated that a higher level of perceived benefits of digital recruitment was associated with higher recruitment effectiveness by respondents. This pattern resonates with evidence that the performance benefits of HRM digitalization materialize when digital tools are combined with mature HRM systems and strong strategic involvement of the HR function (Zhou et al., 2021).

Table 8 presents the regression results that indicated that technical challenges had a significant and negative effect on digital recruitment effectiveness ($\beta = -0.35$, $p = 0.007$). This suggests that the more challenging the technical issues, the less effective digital recruitment was. The negative coefficient of human factors was $\beta = -0.28$, which was not statistically significant at 0.05 level ($p = 0.071$). The organizational factors also had a positive coefficient of $\beta = 0.25$ but this was not statistically significant at the 0.05 level ($p = 0.064$). The perceived potentials of digital recruitment showed the highest positive and statistically significant influence on the digital recruitment effectiveness ($\beta = 0.78$, $p < 0.001$).

The open-ended responses give qualitative support to the quantitative findings. The most common problem mentioned was technical delays: 10 respondents mentioned technical issues like frequent system downtime. 8 respondents indicated that they didn't receive adequate training, 5 respondents indicated network issues, 4 respondents indicated manual intervention and 3 respondents indicated that staff is resistant to the use of digital tools. These answers echo the quantitative result that technical and human aspects still impact the implementation of digital recruitment, both in practice and in theory.

The research offers valuable insights for HR managers, IT professionals, recruitment advisors, policy makers and public sector decision makers to help understand what can make digital recruitment more effective. The findings can help the Federal Ministry of Agriculture and Food Security to determine what improvements are needed in the technological infrastructure, the abilities of the staff in digital skills, the support needed for management, and the recruitment process. In general, the results could be useful to other public institutions in Nigeria aiming to improve digital recruitment.

Such attention is important because advanced technologies increasingly reshape HRM at both the job and organizational levels, requiring HR functions to continuously adapt their practices (Vrontis et al., 2022). The study makes contributions to the academic literature on digitalization and public-sector human resource management from the perspective of the ministry sector. The policy and practice implications are the need for coordinated attention to digital infrastructure, staff capacity development, organizational support and policy which enable effective adoption and implementation of digital recruitment systems.

CONCLUSION

The study explored the challenges and opportunities of digital recruitment in the Federal Ministry of Agriculture and Food Security. The results highlighted that technical challenges,

notably system reliability, infrastructure restriction, connectivity issues and integration challenges, are still significant factors that hinder effective digital recruitment. Human factors, like digital literacy and resisting change, and organizational factors, like management support and policy alignment, also impact implementation. The perceived potential for digital recruitment showed positive contributions in efficiency, transparency, access to a larger pool of talent, fairness, and data-driven decision making. Results of the regression revealed that technical challenges were a significant factor in the reduction of digital recruitment effectiveness, while perceived potentials significantly improved digital recruitment effectiveness. Therefore, the Ministry needs reliable ICT infrastructure, stable internet connectivity, regular digital-skills training, policy, technical support and monitoring systems to enhance effective digital recruitment.

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AUTHOR CONTRIBUTION STATEMENT

All authors contributed to the conceptualization and design of the study, development of the research instrument, data collection, analysis and interpretation of the findings. The authors jointly participated in drafting, reviewing, and revising the manuscript for important intellectual content. All authors read and approved the final version of the manuscript and agreed to be accountable for the accuracy and integrity of the work.

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