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# THE MODERATING ROLE OF WORK ENVIRONMENT ON TRAINING AND DEVELOPMENT AND EMPLOYEE ENGAGEMENT IN THE NIGERIAN FEDERAL INLAND REVENUE SERVICE

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## ABSTRACT

This study examined the effect of seven training and development (T&D) dimensions—orientation, compliance, leadership, technical, quality assurance, team, and diversity training—on employee engagement (proxied by job satisfaction) within the Nigerian Federal Inland Revenue Service (FIRS), and investigated the moderating role of the work environment. Grounded in the Job Demands-Resources (JD-R) model, the study adopted a cross-sectional survey design with a sample of 411 employees drawn from a population of 5,250 across 12 states representing Nigeria's six geopolitical zones. Structural Equation Modelling (SEM) using ADANCO software was employed for data analysis. Findings revealed that work environment ($\beta = 0.430$, $p < 0.001$), diversity training ($\beta = 0.479$, $p < 0.001$), and team training ($\beta = 0.159$, $p < 0.001$) were the strongest positive predictors of job satisfaction, with technical training showing a modest but significant effect ($\beta = -0.066$, $p = 0.046$). Orientation, compliance, leadership, and quality assurance training were not statistically significant. The model explained 72.89% of variance in job satisfaction ($R^2 = 0.7289$), but work environment did not significantly moderate any T&D–satisfaction relationships. The findings challenge conventional assumptions that all training types equally enhance engagement, demonstrating that socially embedded and climate-dependent resources—particularly inclusion, teamwork, and supportive work conditions—are the primary drivers of job satisfaction in public-sector tax administration. The study contributes to JD-R theory by clarifying resource classification and offers practical recommendations for evidence-based training governance in bureaucratic institutions

**Keywords:** Training and Development, Employee Engagement, Job Satisfaction, Work Environment, JD-R Model, Public Sector, Nigeria, FIRS

## 1. INTRODUCTION

Employee engagement remains a cornerstone of institutional efficiency, particularly in public sector organisations such as the Nigerian Federal Inland Revenue Service (FIRS), which is responsible for assessing, collecting, and accounting for tax revenues that finance government expenditure (Adebayo & Ojo, 2023; Eze & Nwankwo, 2024). As of 2024, Nigeria's public debt stood at approximately ₦97 trillion (Debt Management Office, 2024), underscoring the urgency of strengthening domestic revenue mobilisation. FIRS, with a workforce exceeding 10,304 employees, has undergone

extensive institutional reforms and digital transformation, including the implementation of the TaxPro Max platform, e-filing systems, and taxpayer education programmes (FIRS, 2025). These rapid changes have intensified the demand for continuous capacity building, effective employee engagement, and supportive work environments (OECD, 2022).

Training and development (T&D) are recognised as strategic levers for building employee capacity and increasing job satisfaction, especially when tailored to specific learning needs (Chukwuemeka & Adeola, 2023; Okafor & Uche, 2024). However, within FIRS, T&D practices are often poorly coordinated, underfunded, or misaligned with employee needs, resulting in limited engagement outcomes (Novatia Consulting, 2024). Despite growing scholarly interest in T&D and employee engagement, significant gaps remain. First, empirical research rarely examines the simultaneous effect of multiple distinct training domains within revenue-generating public institutions. Second, the moderating role of the work environment in the training–satisfaction relationship is underexplored in African public-sector contexts. Third, little empirical evidence addresses how training influences job satisfaction through a JD-R theoretical lens in bureaucratic institutions.

## 1.1. RESEARCH OBJECTIVES AND HYPOTHESES

This study investigated the effect of orientation, compliance, leadership, technical, quality assurance, team, and diversity training on job satisfaction among FIRS employees, and examined the moderating role of the work environment. The following null hypotheses were tested:

$H_{01}$–$H_{07}$: Each training dimension has no significant effect on job satisfaction.

$H_{08}$: Work environment does not significantly moderate the relationship between T&D and employee engagement.

# 2. LITERATURE REVIEW

## 2.1. TRAINING AND DEVELOPMENT AND EMPLOYEE ENGAGEMENT

Training and development are foundational components of human resource management, aimed at equipping employees with skills, knowledge, and attitudes necessary for organisational success (Ujunwa, 2024). Employee engagement—defined as the extent to which employees are emotionally, cognitively, and behaviourally invested in their work—is consistently linked to T&D outcomes (Saks & Gruman, 2023). In this study, job satisfaction serves as the proxy measure of engagement, reflecting employees' positive evaluation of their work experiences (Spector, 1997).

Orientation training reduces uncertainty and role ambiguity (Zhao & Chen, 2023). Compliance training ensures adherence to regulatory standards (Nguyen et al., 2022). Leadership training develops managerial competencies that inspire and support employees (Chan & Mak, 2023). Technical training enhances job-specific proficiency (Obasi & Mba, 2022). Quality assurance training improves error reduction and performance consistency (Raman & Yeo, 2023). Team training strengthens collaboration and interdepartmental cohesion (Liao et al., 2022). Diversity training promotes inclusivity and reduces bias (Roberson & Kulik, 2023).

## 2.2. WORK ENVIRONMENT AS MODERATOR

The work environment—comprising organisational culture, leadership support, communication quality, and psychological safety—significantly influences how employees respond to T&D interventions (Zhou et al., 2022). A supportive environment strengthens training transfer and engagement, while a toxic environment diminishes T&D benefits (Ahmed et al., 2022; Park & Koo, 2022).

## 2.3. THEORETICAL FRAMEWORK: JOB DEMANDS-RESOURCES (JD-R) MODEL

The JD-R model (Demerouti et al., 2001; Bakker & Demerouti, 2023) posits that job resources—physical, psychological, social, or organisational aspects of the job—help employees reduce job demands, achieve work goals, and stimulate personal growth. T&D initiatives constitute critical job resources that enhance competence, autonomy, and efficacy, thereby activating the motivational pathway to engagement. The work environment functions as an overarching organisational resource that shapes the utility of training by facilitating skill application and fostering supportive conditions.

## 3. METHODOLOGY

The study adopted a cross-sectional descriptive survey design. The target population comprised 5,250 FIRS employees across 12 strategically selected states representing Nigeria's six geopolitical zones: Kaduna (350), Kano (450), Borno (200), Gombe (250), Abuja (800), Niger (300), Lagos (1,000), Ogun (400), Anambra (300), Abia (250), Rivers (600), and Akwa Ibom (350) (FIRS, 2025). Using Yamane's finite population formula ($n = N / (1 + N(e)^2)$) with a 95% confidence level and 5% margin of error, the initial sample size was 372. This was inflated by 20% to account for anticipated nonresponse, yielding an adjusted sample of 447. Simple random sampling using the balloting method was employed to select participants. A total of 411 usable questionnaires were retained (91.95% response rate). A structured questionnaire measured seven T&D dimensions (orientation, compliance, leadership, technical, quality assurance, team, and diversity training), job satisfaction (dependent variable, proxy for employee engagement), and work environment (moderator). All constructs were measured using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree), adapted from validated instruments: Job Satisfaction Survey (Spector, 1997), Work Environment Scale (Moos, 1994), and training-specific scales from Zhao & Chen (2023), Nguyen et al. (2022), Chan & Mak (2023), Obasi & Mba (2022), Raman & Yeo (2023), Liao et al. (2022), and Roberson & Kulik (2023). Content validity was established through expert review (CVI = 0.91). Construct validity was confirmed via Exploratory Factor Analysis (KMO = 0.91, Bartlett's test $p < 0.001$) and Confirmatory Factor Analysis (CFI = 0.96, TLI = 0.95, RMSEA = 0.042, SRMR = 0.034). Internal consistency reliability (Cronbach's α) ranged from 0.80 to 0.89 across constructs. Test-retest reliability (two-week interval) yielded correlations from 0.76 to 0.88. Data were analysed using Structural Equation Modelling (SEM) with ADANCO software, enabling simultaneous assessment of measurement and structural models, including direct effects and interaction (moderation) terms. Goel and Kanwa (2026)

## 4. RESULTS

### 4.1. DESCRIPTIVE STATISTICS

**Table 1**

**Table 1 Descriptive Statistics of Constructs**

| Construct | Mean | Std. Deviation |
|---|---|---|
| Job Satisfaction (JS) | 3.23 | 1.234 |
| Orientation Training (OT) | 3.11 | 1.353 |
| Compliance Training (CT) | 3.16 | 1.334 |
| Leadership Training (LT) | 3.11 | 1.323 |
| Technical Training (TT) | 3.91 | 0.603 |
| Quality Assurance Training (QAT) | 3.25 | 1.193 |
| Team Training (TEMT) | 3.22 | 1.223 |
| Diversity Training (DT) | 3.14 | 1.341 |
| Work Environment (WE) | 3.26 | 1.215 |

***Source:** Field Survey, 2025 (N = 411) *

Technical Training exhibited the highest mean (3.91) and lowest dispersion (SD = 0.603), indicating strong and consistent ratings. All other constructs clustered around mid-range means (3.11–3.26) with moderate to high variability.

### 4.3. MEASUREMENT MODEL

Convergent validity was satisfactory for DT (AVE = 0.628, α = 0.901), JS (AVE = 0.561, α = 0.868), LT (AVE = 0.638, α = 0.905), QAT (AVE = 0.526, α = 0.850), TEMT (AVE = 0.548, α = 0.861), TT (AVE = 0.525, α = 0.863), and WE (AVE = 0.543, α = 0.858). OT and CT exhibited weak convergent validity (AVE < 0.50) despite high α, leading to the removal of low-loading items (OT1, OT3, CT3, CT4, CT6). Discriminant validity shortfalls were observed for LT–DT (HTMT = 1.0402) and WE–QAT (HTMT = 1.0164), indicating conceptual overlap.

## 4.4. STRUCTURAL MODEL

**Table 2**

**Table 2 Hypothesis Testing Results (Direct Effects)**

| Hypothesis | Path | Coefficient | t-statistic | p-value | Decision |
|---|---|---|---|---|---|
| $H_{01}$ | OT → JS | 0.005 | 0.089 | 0.929 | Not supported |
| $H_{02}$ | CT → JS | -0.068 | 0.975 | 0.329 | Not supported |
| $H_{03}$ | LT → JS | -0.083 | 1.028 | 0.304 | Not supported |
| $H_{04}$ | TT → JS | -0.066 | 1.995 | 0.046 | Supported |
| $H_{05}$ | QAT → JS | -0.025 | 0.488 | 0.625 | Not supported |
| $H_{06}$ | TEMT → JS | 0.159 | 3.771 | <0.001 | Supported |
| $H_{07}$ | DT → JS | 0.479 | 6.295 | <0.001 | Supported |
| $H_{08}$ | WE → JS | 0.43 | 6.257 | <0.001 | Supported |

**Note:** JS = Job Satisfaction; OT = Orientation Training; CT = Compliance Training; LT = Leadership Training; TT = Technical Training; QAT = Quality Assurance Training; TEMT = Team Training; DT = Diversity Training; WE = Work Environment

## 4.5. FIGURE 1: STRUCTURAL MODEL PATH DIAGRAM

The model explained 72.89% of the variance in job satisfaction ($R^2$ = 0.7289, adjusted $R^2$ = 0.7187). Work environment (β = 0.430, $f^2$ = 0.1356) and diversity training (β = 0.479, $f^2$ = 0.0887) were the most consequential predictors. Team training showed a small but meaningful effect (β = 0.159, $f^2$ = 0.0402). Technical training was significant but modest (β = -0.066, p = 0.046). All interaction terms involving work environment were trivial ($f^2$ < 0.02), indicating no significant moderation.

## 4.6. MODEL FIT

Global fit indices indicated poor fit (SRMR = 0.164; NFI = 0.362), consistent with observed construct overlap and high multicollinearity among predictors (VIFs for LT and DT approached 9–10).

## 5. DISCUSSION

The findings reveal a consistent pattern: socially embedded, relational, and climate-enhancing resources exert the strongest influence on job satisfaction within FIRS. Work environment emerged as the single strongest predictor, functioning as a broad motivational resource that directly enhances engagement regardless of specific T&D interventions. This aligns with research showing that supportive climates amplify motivational pathways to engagement (Williams & Patel, 2024; Khalil & Younis, 2023; Fujimoto & Tanaka, 2023).

Diversity training's strong positive effect (β = 0.479) corroborates evidence that inclusion-focused learning fosters psychological safety and belongingness, which are critical engagement drivers (Ogueyungbo et al., 2022; Sayed & Hamed, 2023). Team training's significant effect (β = 0.159) aligns with studies demonstrating that team-oriented practices and incentives enhance engagement, particularly when supported by collaborative climates (Kusi & Addo, 2022; Njau et al., 2024; Kozlov & Dmitriev, 2022).

Technical training's modest but significant effect supports the JD-R proposition that competence-related resources enhance employees' ability to manage job demands, though less powerfully than social resources (Anas, 2024; Deji & Babarinde, 2023; Kisekka & Kato, 2023). However, orientation, compliance, leadership, and quality assurance training were not significant—contrary to studies reporting positive average effects (Adeyemo et al., 2024) but consistent with evidence that rule- or induction-centric content rarely energises employees unless embedded in feedback-rich systems (Mtui & Mwita, 2022; Van Der Laan & Brekke, 2024).

## 5.1. THEORETICAL IMPLICATIONS

The findings refine the JD-R model for bureaucratic and revenue-administration settings. First, the work environment operates primarily as a strong, direct resource rather than a moderator, demonstrating that climate provides an unconditional motivational boost. This enriches JD-R applications in public institutions by clarifying that climate's energising power may be omnibus rather than interactive.

Second, diversity and team training function as high-yield social resources—shaping belonging, psychological safety, and collective efficacy—while technical training, though significant, is insufficient in driving attitudinal outcomes unless supported by contextual and relational resources. This sharpens the conceptual boundary between relational/contextual resources and procedural/competency resources within JD-R theory.

Third, the very high inter-construct associations (LT–DT; WE–QAT) and convergent validity weaknesses in OT and CT scales reveal where commonly used training labels are empirically indistinct or under-specified, offering a revised conceptual map for training/engagement research.

## 5.2. PRACTICAL IMPLICATIONS

For FIRS and similar public institutions, the findings suggest prioritising work environment improvements (psychological safety, fairness, workload balance, role clarity), institutionalising diversity and inclusion practices, and strengthening team collaboration systems. Technical training should be role-focused and complemented with coaching support. Orientation, compliance, leadership, and quality assurance training require redesign—embedding them into daily work processes rather than standalone programmes—before further investment. Evidence-based training governance, including quarterly dashboards and pilot-testing, is recommended.

## 6. CONCLUSION AND RECOMMENDATIONS

This study provides theory-led and empirically rich evidence that within FIRS, job satisfaction is fundamentally shaped by climate, collaboration, and inclusion—not by procedural or rule-based training in isolation. The work environment, diversity training, and team training are the most reliable drivers, while technical training contributes modestly. The findings challenge conventional assumptions that all training types equally enhance engagement and demonstrate that socially embedded resources are the primary levers for public-sector employee engagement.

## 6.1. LIMITATIONS AND FUTURE RESEARCH

This study has limitations: cross-sectional design precludes causal inference; single-organisation focus limits generalisability; self-reported data may introduce bias; and discriminant validity shortfalls suggest construct refinement is needed. Future research should adopt longitudinal and experimental designs (cross-lagged panels, stepped-wedge rollouts), employ multi-site multilevel sampling, apply regularised estimation techniques (ridge/LASSO) to address multicollinearity, and compare PLS-SEM with covariance-based SEM to understand how model choice affects parameter estimates.

## CONFLICT OF INTERESTS

None.

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