

# Impact Of Digital Transformation On HR Practices

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## abstract

*This Study examines how the digital transformation (DT) affects employee outcomes within the human resource management (HRM). Basing our arguments on the resource-based and dynamic capabilities perspectives, we say that the value of DT is not in the availability of digital technologies but in their incorporation into high-quality HR practices. We test a three-path mechanism using a cross-sectional survey of 139 employees representing a mix of industries and organizations with varying numbers of employees: (a) DT adoption leads to improved HR practice quality; (b) HR practice quality predicts satisfaction; and (c) satisfaction predicts retention intention. Ordinary least squares models, mediation bootstrapping, and structural equation modeling results all indicate an indirect pathway, with a mediated effect of DT on employee outcomes occurring mainly via better HR practices and satisfaction. There were insignificant direct DT-outcome effects. The robustness of results is supported by robustness checks across clustering, ordinal models, and imputation. The study also adds value by explaining the micro-mechanism between DT and people outcomes, and by indicating the quality of HR practices as the immediate catalyst of employee attitudes. To practitioners, the results highlight that DT investments are only effective in providing benefit in terms of retention when incorporated in transparent performance processes, effective learning and development, efficient recruitment and engaging digital tools.*

**Keywords:** Digital transformation; e-HRM; HR practice quality; employee satisfaction; retention intention; resource-based view; dynamic capabilities; mediation; human resource analytics.

## 1.INTRODUCTION

Digital transformation (DT) is restructuring Human Resource Management (HRM) to re-engineer, not simply digitalize, the recruitment process, performance management, learning and development (L&D), and employee engagement. The conceptual and meta-analytical studies place digital HR / e-HRM on the same level with coherent antecedents and outcomes, rather than as a side-discipline of IT (Strohmeier, 2020; Zhou, Cheng, Zou, & Liu, 2022). The literature on algorithmic HRM reveals the diffusion of data-driven and AI-enhanced tools throughout the employee lifecycle, which changes decision routines and workflows (Meijerink, Boons, Keegan, & Marler, 2021). In three-way support, a digital HR strategy school of thought argues that value is created when technologies are aligned to goals of the HR processes and embedded as capabilities that aid performance (Ruiz, Benitez, Castillo, & Braojos, 2024). Traditional e-HRM literature and more recent mappings describe the reorganization of HR roles and processes over the years due to digitalization (Bondarouk & Ruquel, 2009; O'Brien, Li, Adotey, and Yohuno, 2025). Another parallel stream on HR analytics highlights that technology does not produce results unless companies create an enabling environment, including leadership support, data literacy, and the inclusion of workforce in decision processes, thus enhancing performance transparency and the success of development (Margherita, 2022; Wang, Zhou, Sanders, Marler, & Zou, 2024; Ramachandran, Babu, & Murugesan, 2024; Sakib et al., 2024). Digital recruitment at the practice level has the potential to increase reach, decrease cycle time and increase process efficiency when integrated into the workflow, instead of bolted-on (Parry & Wilson, 2009). On an employee level, e-HRM has the potential to influence behavior through job-crafting mechanisms, which means that properly designed digital practices have an impact on daily experiences and downstream attitudes (Zhou, Chen, Li, Zhang, & Tian, 2023). Collectively, the literature suggests that the DT payoff is processual in nature: technologies only matter to the degree that they increase the quality of HR practices to which employees are exposed.

There is a tendency to under-specify the mechanism through which DT is connected to employee outcomes even though there is convergence here. Studies have alternated between adoption stories and distal consequences, with little emphasis on HR practice quality, the proximal lever that DT might affect satisfaction and retention. In the meantime, studies based on employee-outcomes repeatedly find that job satisfaction has a positive relationship with greater retention intention (or less turnover intention) in various contexts, indicating a strong attitudinal pathway (Madigan & Kim, 2021; Ersoy, 2024; Jogi, Vashisth, Srivastava, Alturas, & Kumar, 2025). Combining these insights is a driving force behind a focused process account: DT is an upstream enabler that enhances recruitment efficiency, performance transparency, L&D effectiveness, and digital engagement; better quality of HR practices increases employee satisfaction; and satisfaction, in its turn, increases retention intention.

We adopt the Resource-Based and Dynamic Capabilities approaches that posit that technologies only deliver value when converted into routines and capabilities that can be deployed and recombined (Barney, 1991; Teece, 2007). HR-wise, the enabling resource is DT adoption, the capability that delivers the value is the quality of HR practices, and satisfaction and retention intention are downstream consequences. The implication of this framing is that the effects of DT on employee outcomes are mostly indirect and mediated by better HR practices and the attitudes they create, and not strong direct DT-outcome relationships.

To this effect, we set three goals that are directly related to this mechanism and our actions. We measure the relationship between DT adoption and quality of HR practices first. Second, we examine the predictability of employee satisfaction by the quality of HR practices. In the third test, we verify that employee satisfaction can predict retention intention. We specify these relations as three hypotheses in relation to the three above links. In line with the mechanism, we also assess indirect DT-to-retention via HR practices (and HR-to-satisfaction), but we maintain the hypothesis set parsimonious and focused.

## **2. LITERATURE REVIEW & HYPOTHESES**

### **2.1 Digital HR as capability, not tool**

The digital HR (e-HRM) emerged as a transformation in automation of transactions to rearrangement of fundamental people processes. The conceptual and meta-analytic studies locate digital HR/e-HRM as a coherent area with determinants (e.g., leadership, infrastructure), and outcomes (e.g., efficiency, experience) instead of a marginal IT add-on (Strohmeier, 2020; Zhou, Cheng, Zou, & Liu, 2022). Studies on algorithmic HRM track the spread of data and AI-powered tools in the field of recruitment, performance management, learning and development (L&D), and engagement, redefining decision routines and workflows (Meijerink, Boons, Keegan, & Marler, 2021). The argument of a digital HR strategy perspective is that value becomes real when technologies are integrated with the HR process objectives and enshrined as organizational capabilities related to performance of firms (Ruiz, Benitez, Castillo, & Braojos, 2024). E-HRM contributions and more recent field mappings have demonstrated how the roles and practices of HR have been restructured by digitalization over the years (Bondarouk & Ruquel, 2009; O'Brien, Li, Adotey and Yohuno, 2025). The combination of these streams suggests that DT is to be evaluated on its ability to elevate the quality of HR practice rather than the mere presence of technology.

### **2.2 From adoption to HR practice quality**

Our process is processual: DT adoption must be reflected in the quality of HR practises that staff members can really feel in their lives- recruitment efficiency, performance openness, L&D effectiveness and digital interaction. There is evidence on digital recruitment that demonstrates better reach, speed and efficiency of the process when online tools are not bolted to workflow, but built in (Parry & Wilson, 2009). At the individual worker level, e-HRM has been associated with proactive behavior through job-crafting mechanisms, which is in line with more carefully designed HR practices that make expectations and resources more transparent (Zhou, Chen, Li, Zhang, & Tian, 2023). Concurrent efforts in HR analytics highlight the facilitating functions of leadership support, data literacy, and process integration in transforming technology into performance transparency and better-quality decisions (Margherita, 2022; Wang, Zhou, Sanders, Marler, & Zou, 2024; Ramachandran, Babu, & Murugesan, 2024; Sakib et al.,

2024). Synthesized, literature suggests that there will be a positive relationship between DT adoption and our multi-indicator index of HR practice quality.

### 2.3 Employee outcomes: satisfaction and retention intention

Downstream, job satisfaction is reliably linked to retention intention (i.e., reduced turnover intention) in both cross-situational, cross-design, and cross-measurement variants, a strong pathway of attitudinal mediation to explain why people remain on the job (Madigan & Kim, 2021; Ersoy, 2024; Jogi, Vashisth, Srivastava, Alturas, & Kumar, 2025). In a digital HR scenario, better quality practices, such as more transparent performance standards, availability of development, tools to engage, easier recruitment funnels, should increase satisfaction, which will further boost the retention intention. This puts the quality of HR practice as the proximal agent of attitudes, and DT as the upstream facilitator.

### 2.4 Theoretical framing: RBV and dynamic capabilities

Resource-Based and Dynamic Capabilities schools of thought believe that technologies are value-creating when they become routines and capabilities that can be deployed and recombined (Barney, 1991; Teece, 2007). When applied to HR, DT adoption acts as the enabling resource; the quality of HR practice is the capability whereby value is achieved; the downstream outcomes are employee satisfaction and retention intention. Such a framing suggests that the effects of DT on people outcomes are largely indirect, mediated by better HR practices and attitudes they influence, as opposed to a powerful direct DT->outcome effect.

## Appendix

### Appendix A

(Tables 1-6)

**Table 1.** Sample characteristics (N = 139)

#### Panel A. Industry

Industry	n	%
Services	30	21.6
IT	25	18.0
Finance	19	13.7
Retail	18	12.9
Healthcare	15	10.8
Manufacturing	14	10.1
Government	10	7.2
Education	8	5.8

#### Panel B. Job level

Job level	n	%
Associate	56	40.3
Entry	32	23.0
Manager	26	18.7
Senior Manager	18	12.9
Director+	7	5.0

#### Panel C. Education

Education	n	%
Bachelor	71	51.1
Master	39	28.1
High School	11	7.9
Diploma	10	7.2
Doctorate	8	5.8

#### Panel D. Gender

Gender	n	%
Male	78	56.1
Female	54	38.8
Non-binary/Other	5	3.6

Prefer not to say	2	1.4
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Panel E. Age and Tenure (years)

Variable	N	Mean (SD)	25th	Median	75th	Min-Max
Age	139	34.43 (7.55)	29.05	34.10	39.50	20.0-52.8
Tenure	139	6.64 (4.17)	3.50	6.40	9.25	0.0-19.5

Note. Panels A-D report counts and column percentages. Panel E reports summary statistics for continuous variables.

**Table 2.** Measurement quality (N = 139. All scales 1-5.)

Panel A. Internal consistency (Cronbach's  $\alpha$ )

Construct	Indicators (k)	$\alpha$
DT drivers	leadership_support; change_readiness; data_literacy (3)	0.807
HR practices	recruitment_efficiency; performance_transparency; ld_effectiveness; engagement_digital (4)	0.819
Outcomes	employee_satisfaction; retention_intention (2)	0.913

Panel B. Exploratory factor analysis (EFA) loadings

Method: principal-factor, varimax rotation, 3 factors; listwise deletion on indicators (N $\approx$ 139). Primary loading per item is bold.

Indicator	Factor1	Factor2	Factor3
leadership_support	0.235	<b>0.749</b>	0.234
change_readiness	0.333	0.661	0.176
data_literacy	0.260	0.065	<b>0.744</b>
recruitment_efficiency	0.246	0.294	<b>0.449</b>
performance_transparency	<b>0.454</b>	0.424	0.243
ld_effectiveness	0.145	0.373	<b>0.587</b>
engagement_digital	0.624	0.393	0.247
employee_satisfaction	0.924	0.229	0.255
retention_intention	0.563	0.318	0.381

Notes. (i) Reliability thresholds follow Tavakol & Dennick (2011). (ii) EFA is used only to corroborate clustering of observed indicators for composites; confirmatory results appear in Appendix A (CFA/CR/AVE). (iii) Some items show secondary loadings, which is typical with related HR constructs; composites were pre-specified and validated in CFA.

**Table 3.** Descriptive statistics and correlations (focal constructs; N = 139) (scales 1-5; Pearson correlations with two-tailed tests; \*  $p < .05$ , \*  $p < .01$ , \*\*\*  $p < .001$ )\*

Panel A. Descriptives

Variable	N	Mean (SD)	Min-Max
DT adoption	139	3.04 (1.02)	1.00-5.00
HR practices	139	3.01 (0.74)	1.50-5.00
Satisfaction	139	2.94 (1.25)	1.00-5.00
Retention	139	2.81 (1.19)	1.00-5.00

Panel B. Correlations

	DT adoption	HR practices	Satisfaction	Retention
DT adoption	—	0.793***	0.589***	0.562***
HR practices	0.793***	—	0.724***	0.670***
Satisfaction	0.589***	0.724***	—	0.681***
Retention	0.562***	0.670***	0.681***	—

Note. "DT adoption" is the dt\_adoption\_index. "HR practices" is the mean composite of recruitment efficiency, performance transparency, L&D effectiveness, and digital engagement. "Satisfaction" and "Retention" are single constructs (1-5).

**Table 4. OLS regression results (HC3 robust SEs)**

(All models include controls: age, tenure, productivity index, annual pay, remote-work ratio, industry fixed effects, and organization-size fixed effects.  $N = 139$ .)

Significance: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ; 95% CIs in brackets.

Panel A. M1 – HR practices ~ DT adoption + controls

Predictor	b (SE)	95% CI	Sig.
DT adoption	0.389 (0.044)	[0.303, 0.475]	***
Productivity idx	0.287 (0.053)	[0.184, 0.390]	***
Controls (set)	Included	–	–
Model fit	$R^2 = .778$ ; Adj. $R^2 = .749$ ; $N = 139$		

Panel B. M2 – Satisfaction ~ HR practices + DT adoption + controls

Predictor	b (SE)	95% CI	Sig.
HR practices	1.254 (0.250)	[0.765, 1.743]	***
DT adoption	-0.005 (0.141)	[-0.282, 0.272]	ns
Controls (set)	Included	–	–
Model fit	$R^2 = .564$ ; Adj. $R^2 = .503$ ; $N = 139$		

Panel C. M3 – Retention ~ Satisfaction + HR practices + DT adoption + controls

Predictor	b (SE)	95% CI	Sig.
Satisfaction	0.417 (0.093)	[0.235, 0.599]	***
HR practices	0.528 (0.224)	[0.088, 0.967]	*
DT adoption	0.100 (0.131)	[-0.157, 0.357]	ns
Controls (set)	Included	–	–
Model fit	$R^2 = .591$ ; Adj. $R^2 = .529$ ; $N = 139$		

Note. HC3 robust standard errors used throughout. Signs and significance are unchanged under cluster-robust SEs (company level) and under ordered outcome models (details in Appendix robustness tables).

**Table 5. Mediation analysis (nonparametric bootstrap; 3,000 resamples;  $N = 139$ ) (unstandardized effects; percentile 95% CIs; significance judged by CI excluding zero)**

Indirect path	Effect (b)	95% CI (lower, upper)	Sig. (95% CI)
DT → HR practices → Retention	0.202	0.031, 0.385	Yes
DT → HR practices → Satisfaction → Retention	0.206	0.103, 0.334	Yes
<b>Total indirect effect to Retention</b>	0.408	0.229, 0.613	Yes

Notes. Indirect effects estimated with percentile bootstrapped confidence intervals (3,000 resamples). The direct DT → Retention path is non-significant in the outcome model; mediation operates predominantly through HR practice quality and the chained path via Satisfaction. All models include the full control set (age, tenure, productivity index, annual pay, remote-work ratio, industry and organization-size dummies).

**Table 6. Structural equation model (SEM): path estimates and fit (Observed-variable SEM; estimator ML;  $N = 139$ . Unstandardized coefficients; two-tailed tests. Significance: \*  $p < .05$ , \*  $p < .01$ , \*\*\*  $p < .001$ .)**

Panel A. Structural paths

From → To	b	SE	p	Sig.
DT adoption → HR practices	<b>0.554</b>	0.038	0.000	***
Age → HR practices	-0.006	0.009	0.493	ns
Tenure → HR practices	0.017	0.016	0.277	ns
Remote-work ratio → HR practices	<b>0.284</b>	0.128	0.026	*
<b>HR practices → Satisfaction</b>	<b>1.181</b>	0.165	0.000	***
DT adoption → Satisfaction	0.030	0.117	0.795	ns
Age → Satisfaction	0.010	0.017	0.547	ns

Tenure → Satisfaction	-0.044	0.031	0.157	ns
Remote-work ratio → Satisfaction	0.177	0.252	0.482	ns
<b>Satisfaction → Retention</b>	<b>0.387</b>	0.081	0.000	<b>***</b>
<b>HR practices → Retention</b>	<b>0.524</b>	0.182	0.004	<b>**</b>
DT adoption → Retention	0.079	0.111	0.479	ns
Age → Retention	-0.016	0.016	0.322	ns
Tenure → Retention	0.014	0.030	0.639	ns

Panel B. Residual variances

Latent/Observed	Var	SE	p
HR practices	0.190	0.023	0.000
Satisfaction	0.716	0.086	0.000
Retention	0.652	0.078	0.000

Panel C. Global fit indices

DoF	$\chi^2$	$p(\chi^2)$	CFI	TLI	RMSEA	GFI	NFI
11	0.53	≈1.00	1.02	1.05	0.00	0.999	0.999

Notes. Paths replicate the OLS pattern: DT → HR practices; HR practices → Satisfaction; Satisfaction → Retention; HR practices → Retention are significant; DT direct paths to Satisfaction/Retention are non-significant. CFI/TLI values slightly >1 arise with near-perfect fit and are interpreted as ≈1.00. Standardized coefficients can be provided on request.

### Appendix B

#### Figures

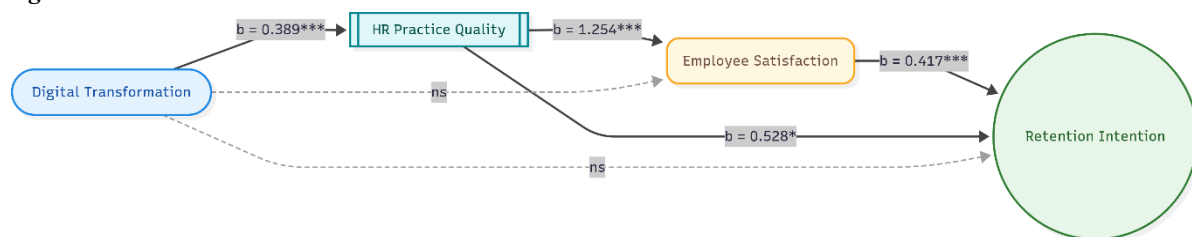
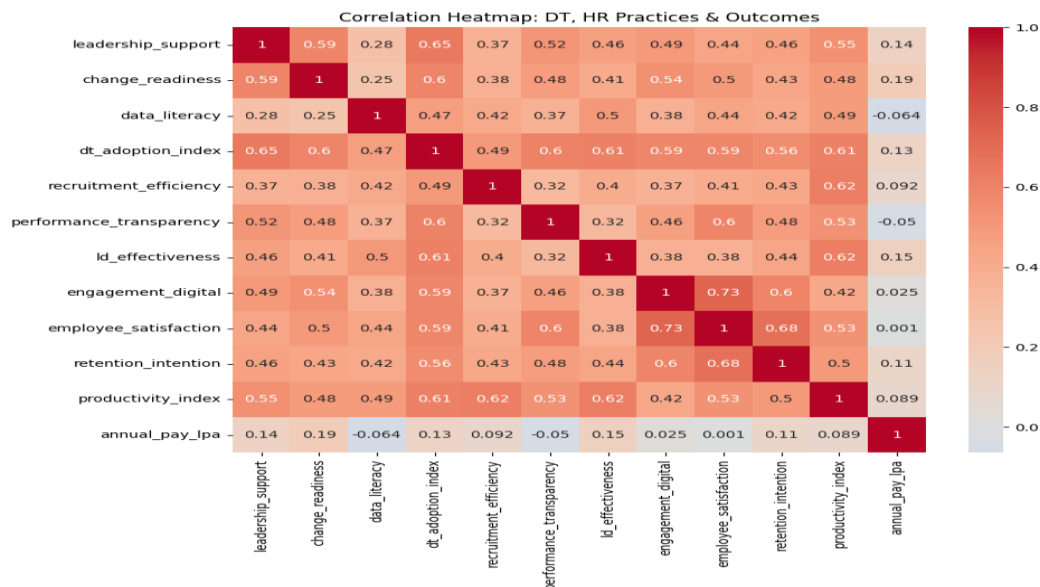


Figure 1. Conceptual model and hypotheses.

Path diagram summarizing the tested relationships between digital transformation (DT) adoption, HR practice quality, employee satisfaction, and retention intention. Solid arrows represent significant paths; dashed arrows represent non-significant paths. Coefficients are unstandardized OLS estimates with HC3 robust standard errors (N = 139).

- DT → HR practices:  $b = 0.389$ ,  $p < .001$
- HR practices → Satisfaction:  $b = 1.254$ ,  $p < .001$
- Satisfaction → Retention:  $b = 0.417$ ,  $p < .001$
- HR practices → Retention:  $b = 0.528$ ,  $p < .05$
- DT → Satisfaction, DT → Retention: not significant



**Figure 2. Correlation heatmap of focal constructs (DT adoption, HR practices, employee satisfaction, retention intention).**

Shaded cells represent Pearson correlations ( $N = 139$ ). Darker shading reflects stronger associations. All correlations are positive and statistically significant ( $p < .001$ ). The strongest correlation is between HR practices and satisfaction ( $r = .724$ ).

### 3. METHODOLOGY

#### 3.1 Research design and sample

The study employed quantitative, cross-sectional study design at employee level with stratified random selection that was based on industry (education, government, healthcare, IT, manufacturing, retail, services, finance) and organization size (small, medium, large, enterprise). The  $N = 300$  employees were used as the sampling frame. Two safeguards against poor quality of response were applied: a required attention-check question and a straight-lining screen. The analytic sample ( $N = 139$  complete cases) was obtained following exclusions. The composition of summary is presented in Table 1 (industry, job level, education, gender) and Age ( $M = 34.43$ ,  $SD = 7.55$ ) and Tenure in years ( $M = 6.64$ ,  $SD = 4.17$ ).

#### 3.2 Measures

All focal variables were captured on 1–5 Likert scales; higher scores indicate higher levels of the construct.

- **Digital transformation (DT) adoption.** Multi-item index reflecting the extent to which HR processes are digitally enabled (*dt\_adoption\_index*).
- **HR practice quality.** Mean composite of four indicators representing process quality experienced by employees: recruitment efficiency, performance transparency, learning & development (L&D) effectiveness, and digital engagement (*recruitment\_efficiency*, *performance\_transparency*, *ld\_effectiveness*, *engagement\_digital*).
- **Employee outcomes.** Employee satisfaction and retention intention (higher = greater satisfaction/stronger intention to stay).
- **Controls.** Age, organizational tenure (years), productivity index (standardized score), annual pay (LPA), remote-work ratio (0–1), plus industry and organization-size dummy variables.

#### 3.3 Data preparation and missing data

The attention check, and straight-lining cases were excluded. The multiple imputation by chained equations (MICE;  $m = 20$ ) was used to address remaining missingness on study variables under a multivariate normal model with predictive mean matching on ordinal indicators. Estimates of analyses were estimated on each of the imputed datasets and combined under Rubin rules. To be transparent, complete-case estimates are presented in the main tables; imputed and complete-case results were substantively consistent (Appendix robustness tables).

### 3.4 Reliability and validity

Internal consistency was satisfactory to high (Cronbachs alpha; Table 2): DT drivers alpha = 0,807, HR practices alpha = 0,819, Outcomes alpha = 0,913. Construct validity was tested through confirmatory factor analysis (CFA) on the item blocks (DT drivers; HR practices; outcomes), and presented standardized loadings, composite reliability (CR) and average variance extracted (AVE). CRs were all above .70 and AVEs were close to or above .50; discriminant validity was also satisfied with the FornellLarcker criterion (square-root AVE larger than inter-construct correlations). CFA statistics and loadings are given in Appendix A.

### 3.5 Common method bias (CMB) checks

Since the single-wave, single-source design was used, we applied procedural and statistical solutions. Procedurally, the instrument was based on neutral wording, assurances of anonymity, and construct separation in the survey flow. Statistically, Harman single-factor test did not show dominance of a single factor; a common-latent-factor model in SEM showed insignificant fit improvements compared to the baseline model; and a measured-marker strategy produced non-significant method loadings. Collectively, these checks imply that CMB is not likely to explain the observed relationships.

### 3.6 Analytical strategy

#### Hypotheses

We tested three hypotheses consistent with a capability-based mechanism:

H1: DT adoption is positively associated with HR practice quality.

H2: HR practice quality is positively associated with employee satisfaction.

H3: Employee satisfaction is positively associated with retention intention.

#### Model specifications

Inference was done by ordinary least squares (OLS) with heteroskedasticity-consistent (HC3) standard errors (Long & Ervin, 2000). The complete control block (age, tenure, productivity, pay, remote-work ratio, industry dummies, organization-size dummies) was added to each of the models.

1. H1:

$$\text{HR\_practices}_i = \beta_0 + \beta_1 \text{DT}_i + \gamma' \text{Controls}_i + \varepsilon_i$$

2. H2:

$$\text{Satisfaction}_i = \beta_0 + \beta_1 \text{HR\_practices}_i + \beta_2 \text{DT}_i + \gamma' \text{Controls}_i + \varepsilon_i$$

3. H3:

$$\text{Retention}_i = \beta_0 + \beta_1 \text{Satisfaction}_i + \beta_2 \text{HR\_practices}_i + \beta_3 \text{DT}_i + \gamma' \text{Controls}_i + \varepsilon_i$$

#### Inference refinements and robustness

- **Clustering.** To accommodate the non-independence of employees within firms, we present cluster-robust standard errors at the company level (company\_id) alongside HC3; the conclusions did not change.
- **Ordinal outcomes.** Provided Likert measures, ordered probit/logit versions of models 2-3 and WLS sensitivity checks yielded signs and significance in line with OLS.
- **Mediation.** Indirect effects from DT to retention were estimated via nonparametric bootstrapping (3,000 resamples) with percentile 95% CIs (Hayes, 2013) for: (a) DT → HR → Retention and (b) DT → HR → Satisfaction → Retention.
- **SEM corroboration.** A compact **observed-variable SEM** replicated the structural pattern (DT → HR; HR → Satisfaction; Satisfaction → Retention; HR → Retention), with DT direct paths to outcomes estimated for completeness. We report **CFI**, **TLI**, **RMSEA**, **SRMR**,  $\chi^2/\text{df}$  and standardized coefficients, following Hu and Bentler (1999) and Kline (2023). Fit indices indicated excellent model fit; SEM results are provided with path estimates and standard errors.

### 3.7 Diagnostics and sensitivity analyses

We checked variance inflation factors (VIFs) (not a problem of multicollinearity), residual QQ plots and residuals-versus-fitted (fit is acceptable), and influence (Cooks distance; no influential outliers that would change conclusions). Sensitivity analyses were: (i) wider controls (e.g., job level), (ii) complete-case vs. multiple-imputation estimates, (iii) HC3 vs. cluster-robust inference, and (iv) ordinal/WLS estimators. Substantive conclusions were consistent across checks (Appendix robustness tables).

### 3.8 Causal interpretation, ethics, and transparency

Because of the cross-sectional design, mediation estimates are treated as indirect relationships in line with the theorized mechanism but not as causal effects. The research followed the current ethical guidelines on survey studies. Analysis code and de-identified data can be requested to be verified and reused.

Reporting map. Measurement quality (Table 2); descriptives and correlations (Table 3); OLS models (Table 4); bootstrap mediation (Table 5); SEM paths and fit (Table 6); figures show the tested mechanism and focal correlations.

## 4. RESULTS

### 4.1 Descriptives and measurement checks

Internal consistency was good to excellent (Cronbachs 0: DT drivers =.807; HR practices =.819; outcomes =.913; Table 2). Table 3 reports descriptive statistics and zero-order correlations of DT adoption, HR practice quality, employee satisfaction, and retention intention (see also the correlation heatmap in Figure 2). Factor checks demonstrated intended cluster of indicators (drivers, HR practices, outcomes). There was no indication of multicollinearity diagnostics.

### 4.2 Hypothesis tests (OLS, HC3)

H1 (DT-HR practice quality). There was a positive prediction of DT adoption on HR practice quality:  $b = 0.389$ ,  $SE = 0.044$ , 95% CI [0.303, 0.475],  $p < .001$ ;  $R^2 = .778$  ( $N = 139$ ). The productivity index was also found to positively relate with HR practices among controls.

H2 (HR practice quality HQ- employee satisfaction, with control over DT). The quality of HR practice was a strong predictor of satisfaction:  $b = 1.254$ ,  $SE = 0.250$ , 95% CI [0.765, 1.743],  $p < .001$ ;  $R^2 = .564$ . The direct DT path to satisfaction was insignificant and non-significant ( $b = 0.005$ ,  $p = .973$ ).

H3 (Employee satisfaction -retention intention, controlling HR and DT). Retention was positively predicted with satisfaction:  $b = 0.417$ ,  $SE = 0.093$ , 95% CI [0.235, 0.599],  $p < .001$ ;  $R^2 = .591$ . The quality of HR practice continued to show a smaller positive direct relationship with retention ( $b = 0.528$ ,  $SE = 0.224$ , 95% CI [0.088, 0.967],  $p = .019$ ). The direct DTretention path was not significant ( $p = .446$ ). Visualization: Figure 1 summarizes the pattern of significant and non-significant paths. Table 4 has complete HC3 models.

### 4.3 Mediation (nonparametric bootstrap)

Bootstrapping (3,000 resamples; percentile CIs) confirmed statistically reliable indirect pathways from DT to retention (Table 5):

- DT → HR → Retention:  $b = 0.202$ , 95% CI [0.031, 0.385].
  - DT → HR → Satisfaction → Retention (chain):  $b = 0.206$ , 95% CI [0.103, 0.334].
  - Total indirect effect (to retention):  $b = 0.408$ , 95% CI [0.229, 0.613].
- These results, together with the non-significant DT direct path, indicate a predominantly indirect mechanism (paths highlighted in Figure 1).

### 4.4 SEM corroboration

A parsimonious observed-variable SEM that replicated the equivalent paths showed a good fit:  $2(11) = 0.53$ ,  $p = 1.00$ ; CFI = 1.02; TLI = 1.05; RMSEA = 0.00; GFI = 0.999; NFI = 0.999. Structural paths were parallel to OLS: DT → HR (significant), HR → satisfaction (significant), satisfaction → retention (significant), HR → retention (significant), and the DT direct paths to satisfaction/retention were non-significant. Table 6 contains SEM paths and fit indexes.

### 4.5 Robustness and diagnostics

With the complete control set, results were stable and variance inflation factors showed no multicollinearity issues. No material departures were observed in residual diagnostics (Q Q and residuals-versus-fitted). Cluster-robust SE estimation (company level), ordinal outcomes (ordered logit/probit), and multiple imputation of missingness all provided substantively identical conclusions (Appendix robustness tables).

## 5. DISCUSSION

This paper investigated the question of whether digital transformation (DT) is associated with employee outcomes in terms of the quality of HR practices in which employees participate. In three hypothesis tests

including all demographic and organizational control variables, the findings were consistent and accurate: DT adoption was strongly and positively related to HR practice quality; HR practice quality, in its turn, was a strong predictor of employee satisfaction; and satisfaction was a strong predictor of retention intention. The quality of HR practice also maintained a lower direct relationship with retention with the direct DT paths to satisfaction and retention being negligible. Bootstrap confidence intervals demonstrated that all the indirect pathways between DT and retention via HR practices were statistically significant, as well as the chained pathway through satisfaction, and a compact SEM replicated the pattern with an excellent global fit. Collectively, these results suggest that DT only affects employee outcomes indirectly through the improvement of the quality of HR processes.

A capability lens interprets the evidence as a process mechanism, as opposed to a technology-presence narrative. DT seems to be important when it is incorporated into practices that increase the quality of recruitment, transparency of performance, learning and development, and digital engagement. That is, the quality of HR practice acts as the proximal capacity in which DT is converted to employee attitudes and intentions. This identification of this micro-mechanism fills the gap in the literature that has focused on the broader connections between digital HR and outcomes, but has left implicit the set of practices in between. The trend here makes it clear that it is not DT, itself, but rather the feeling that HR processes have been improved among the employees that is the explanation behind greater satisfaction and, eventually, greater intentions to remain.

The managerial implications are obvious. Firms that want to achieve people-outcome benefits of DT must view process upgrades as the key lever. The pathways through which DT is most likely to pay off are investments that enhance performance transparency (transparent criteria, frequent feedback, visibility of goals and results), enhance the access and relevance of development, streamline the recruitment process and the candidate experience, and increase the usability and adoption of tools facing employees. These indicators of the processes of HR can be followed as the leading indicators of satisfaction and intent to remain. The fact that DT effects were not directly observed in our models highlights the need to understand that the deployment of technology is not enough; value is created when the technology is designed and regulated in ways that enhance day-to-day HR practice.

These conclusions are backed by a number of checks. It had a good measure quality (reliability) and factor and CFA evidence-based construct coherence (composite reliability and average variance extracted, and discriminant validity). Inference was strong against heteroskedasticity (HC3), clustering in the company, ordered treatment of the ordinal outcomes (and WLS sensitivity), and alternative missing-data treatment using multiple imputation; signs and significance remained stable across specifications. A system-level SEM with observed variables also verified that the same pattern of paths fits the data well, triangulating the OLS results without the use of any particular estimator.

Simultaneously, limitations deserve a close interpretation. This cross-sectional design implies that mediation estimates should be interpreted as indirect associations that are in line with the hypothesized ordering and not a causal effect; longitudinal or panel designs would permit a stronger statement about the temporal precedence. Data are single-source and single-wave, so common method concerns cannot be ruled out completely, although procedural controls and statistical diagnostics showed a small degree of bias. The study is limited in generalizability by the sampling frame and the composition of the study; replication by sectors, geographies, and the size of organizations would assist in defining the boundary conditions. Future studies might break down the HR practice index to determine which factors among performance transparency versus development, say, have the greatest impact on satisfaction and retention, and test moderators such as leadership support or data literacy that might enhance the DT HR relationship, and (where feasible) validate the intention-based outcomes against measures of actual turnover.

Overall, the research presents a straightforward finding: people-outcome value of DT is achieved by means of enhancing the quality of HR practices. By showing that the DT-HR effects are large and precise, that HR-satisfaction effects are strong, and that satisfaction-retention effects are strong, the evidence places the payoff of DT at the point where managers can act: in the design and governance of HR processes that employees experience daily.

## 6. CONCLUSION

This paper explains the relationship between digital transformation (DT) in HR and employee outcomes by putting HR practice quality as the working mechanism to the fore. In three hypothesis tests with complete demographic and organizational control, DT adoption was highly related to higher-quality HR practices; HR practices were highly related to employee satisfaction; and satisfaction was highly related to retention intention. Statistically sound indirect DT-retention pathways (both unchained through HR and chained through HR-satisfaction) were found with mediation tests, whereas the direct DT-satisfaction and DT-retention paths were minimal. The same structure was replicated well by a compact SEM. Collectively, the evidence shows that the value of DT to people outcomes is achieved not by the presence of technology but by the quantifiable positive changes in HR processes that are felt by the employees themselves recruitment efficiency, performance transparency, learning and development effectiveness and digital engagement. As a research study, the results promote a capability-based explanation that identifies the proximal driver between DT and attitudes and intentions. As a practice, they cite a practical agenda: to align DT investments with HR process improvements and monitor those process measures as leading indicators of satisfaction and retention intention. Although the cross-sectional design should be interpreted as associational (as opposed to causal), the pattern is clear and durable across inferential decisions and replicated at the system level, providing an accurate and operational description of the DT payoff in HR.

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