HRIS–Culture Reciprocity and Employee Performance: A Sociotechnical SEM of Satisfaction-Mediated Effects

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ABSTRACT

This study investigates how Human Resource Information Systems (HRIS) and organizational culture operate as a mutually reinforcing sociotechnical system that shapes employee attitudes and outcomes. Drawing on a cross-sectional survey and nonrecursive structural equation modeling, we test a framework in which HRIS affordances and cultural attributes influence employee satisfaction, which in turn translates into performance. The analysis reveals a reciprocal link between HRIS and culture, indicating that technology use and cultural norms co-evolve rather than act in isolation. Both HRIS capabilities (e.g., meaningful use, data quality, supportive functionality) and supportive cultural traits (involvement, adaptability, mission clarity, and consistency) are positively associated with satisfaction. Satisfaction, in turn, shows a strong relationship with performance, yielding meaningful mediated pathways from both HRIS and culture to performance. These results advance e-HRM and information systems success perspectives by quantifying reciprocity within a single model and demonstrating that performance gains are primarily attitude-mediated. Practically, organizations are most likely to realize performance improvements when HRIS initiatives and culture development are planned and governed in tandem.

KEYWORDS: HRIS; organizational culture; employee satisfaction; performance; structural equation modelling.

INTRODUCTION

Over the past five years, digital human resource management (digital HRM) has shifted from a support enabler to a core organizational capability, reframing how firms govern performance, learning, and workforce decisions. Contemporary reviews clarify the scope and boundaries of HRIS/e-HRM and distinguish digitization, digitalization, and digital transformation in HR, stressing that these systems embed rules, data visibility, and workflows that can alter everyday practices and outcomes (e.g., performance and satisfaction) at scale (Strohmeier, 2020; Zhou et al., 2022). At the same time, the rise of people analytics and data-driven HR has broadened expectations that HR technologies will support fairer, more transparent, and faster decision-making yet with uneven success across contexts. While HRIS is often treated as a predictor of organizational outcomes, a parallel stream emphasizes organizational culture as a powerful determinant of whether digital tools are actually adopted, legitimated, and used in meaningful ways. Recent work refines culture into actionable archetypes and traits (e.g., performance/people/customers archetypes; involvement, consistency, adaptability, mission) and connects these to effectiveness and performance, offering a more diagnostic basis for anticipating technology–use patterns across units and industries (O'Reilly et al., 2024; Tadesse Bogale & Debela, 2024). This perspective suggests that cultures high on adaptability and involvement tend to experiment with HRIS features and collaborative workflows, whereas more hierarchical cultures emphasize standardization, compliance, and data quality controls. Crucially, emerging evidence points to a reciprocal relationship: digitalization initiatives and specifically HRIS affordances like dashboards, audit trails, OKR modules, and learning platforms can reshape cultural norms around transparency, collaboration, and results orientation, even as pre-existing culture conditions HRIS acceptance and configuration. Studies in adjacent domains (e.g., business process management) explicitly document reciprocal dynamics between process digitalization and organizational routines and values, reinforcing the plausibility of non-recursive models in HR (HRIS ↔ Culture) (Alsaleh, 2024; Iden et al., 2025). These findings motivate a move beyond one-way models toward theorizing and testing two-way HRIS culture couplings.

At the micro- and meso-levels, recent empirical studies connect HRIS use to collaboration quality, employee efficiency, and training effects that feed into performance, while also noting that system configuration and user experience depend on local norms of participation and data use. Large-sample analyses report that communication/collaboration features and HRIS training are positively associated with employee performance, underscoring a social pathway rather than a purely technical one; other work shows HRIS usage and user satisfaction jointly boosting performance in post-pandemic digital contexts (Ateeq et al., 2025; Noerman et al., 2025). Together with systematic reviews linking digital HR practices to HR outcomes, these studies support positioning HRIS not just as infrastructure, but as a cultural signal that normalizes feedback, visibility, and continuous learning. Complementing this, recent reviews in e-HRM/digital HRM synthesize antecedents and outcomes, showing consistent positive effects on HR-process efficiency and decision quality but also surfacing conditions and risks such as ethics, privacy, and workforce acceptance that are inherently cultural (Lee & Lee, 2024; Zhou et al., 2022). Contemporary field studies also link digital HRM practices to employees' perceived digital competence, reinforcing the idea that culture (e.g., learning orientation, psychological safety) shapes the skill–use loop, which in turn stabilizes HRIS adoption over time (Zervas & Triantari, 2025). These insights encourage research designs capable of modeling feedback loops and testing indirect paths via employee attitudes (e.g., satisfaction) and team processes. Building on these advances, this article argues for a non-recursive conceptualization in which HRIS and organizational culture mutually influence one another and jointly shape satisfaction and performance. We synthesize recent evidence to specify mechanisms (transparency, collaboration, standardization, data-driven routines) and map them to measurable dimensions and indicators suitable for confirmatory factor analysis and structural modeling across industries. In so doing, we respond to calls to integrate culture diagnostics with digital HR capability assessments and to test models that accommodate bidirectionality (e.g., cross-lagged or instrumented SEM), thereby moving the literature beyond simple "technology-as-cause" narratives toward a more sociotechnical account of sustained performance improvement.

METHOD

This study employs a cross-sectional, explanatory survey design using covariance-based structural equation modeling in AMOS. The conceptual model specifies HRIS affordances and organizational culture as a non-recursive pair with bidirectional influence and incorporates indirect paths to employee satisfaction and, subsequently, to employee performance. To support generalization beyond a single sector, data are collected across multiple industries and organizational sizes, limited to units that operate at least a basic HR information system and a formal performance management routine. The design emphasizes parsimony in both measurement and structure to ensure stable estimation and clear interpretation. Complete research flow shown in figure 2.Figure 2 ("Research Flow") depicts a three-row sequence that begins with research planning and design—defining objectives, the HRIS ↔ Culture constructs, and selecting AMOS followed by ethics approval and organizational access; the instrument is then developed with compact indicators and the sampling frame is launched with invitations targeting N = 10 × indicators = 360. Data are collected online and immediately subjected to quality checks (attention checks, timing screens, missing-data handling) before preparation for analysis. The next stage estimates the measurement model (CFA in AMOS) to establish reliability and validity, after which the structural model is tested with the non-recursive HRIS ↔ Culture feedback alongside relevant covariates. Mediation is assessed via the HRIS/Culture → Satisfaction → Performance pathway using 5,000 bootstrap resamples, followed by robustness tests against directional and correlated-factors alternatives. The process concludes with comprehensive reporting and dissemination of results tables for CFA, fit indices, path estimates, and indirect effects so that the study's logic and evidence are transparent end-to-end (see Figure 2).
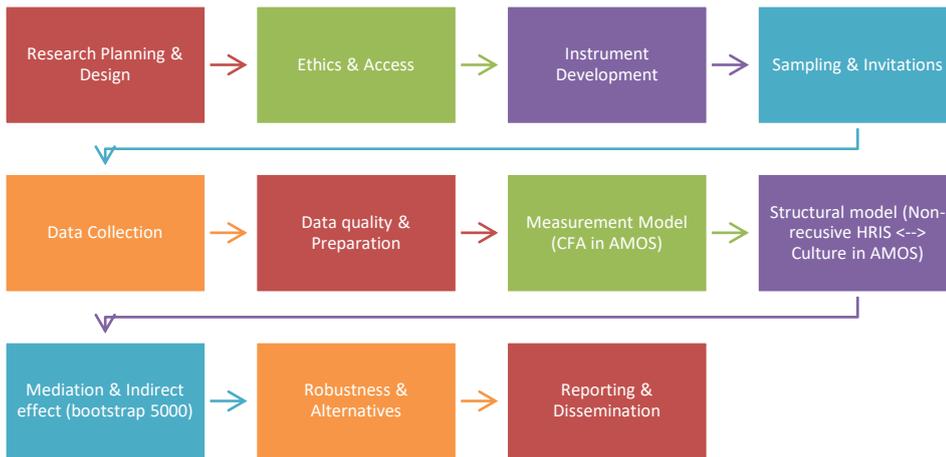
Figure 2. Research Flow
Source: own data

The target population is full-time employees who have worked at their organization for a minimum of six months so that responses reflect meaningful exposure to the organization's HRIS and prevailing cultural norms. Organizations are recruited through professional associations and alumni networks; invitations circulate across job levels to reduce role bias. Participation is voluntary and anonymous, and informed consent is obtained before any responses are recorded. Because observations are nested within organizations, clustering is anticipated and addressed through bootstrapped standard errors and sensitivity checks; organizational membership is retained as a statistical control where appropriate.

Measurement is intentionally compact to balance content validity and respondent burden. HRIS affordances are represented by four core dimensions process automation, integration and interoperability, performance management and OKR routines, and analytics and decision support each captured with three reflective items to yield twelve indicators. Organizational culture is assessed with a CVF/Denison-mapped set that taps involvement or clan-like traits, adaptability or adhocracy, mission or results orientation, and consistency or hierarchy; each domain uses three items, producing twelve indicators. Employee satisfaction is modeled with four facets job content, fairness and feedback, development and career, and working conditions using two items per facet to produce eight indicators. Employee performance encompasses task quantity and quality, timeliness, initiative, and collaboration with one carefully worded item per facet, yielding four indicators. In total, the instrument comprises thirty-six observed indicators across four latent constructs and can be completed in approximately ten to twelve minutes.The a priori sample size follows the "ten-times-indicators" rule to avoid unnecessary scale-up while meeting SEM adequacy. With thirty-six indicators, the minimum required sample is three hundred and sixty completed responses. Field operations invite modestly above this threshold to buffer non-response and data cleaning, while analyses are anchored at approximately N=380 using full information maximum likelihood to handle sporadic missingness under the missing-at-random assumption. This approach supports stable parameter recovery for a model of moderate complexity and a reciprocal path.Instrument development proceeds through expert review by three to five academics and practitioners to verify content coverage and clarity, followed by a pilot test of roughly forty to sixty employees to examine wording, variance, and preliminary reliability. Wording is industry-neutral and avoids platform-specific jargon so that constructs reflect general affordances and cultural attributes rather than idiosyncratic features. To aid identification of the non-recursive relation in a single-wave design without expanding the latent measurement blocks, two short context variables external IT or compliance pressure and market or client pressure for results are collected with three items each and averaged into composite observed covariates entered exogenously in AMOS. Additional observed controls include organization size, industry category, job level, and HRIS age in years since go-live.Data are collected online via a secure survey platform. The opening screen presents the study purpose, consent information, data protection measures, and the voluntary nature of participation. Two unobtrusive attention checks are embedded to discourage careless responding; completion times are logged to flag extreme speeding, and responses showing excessive straight-lining across lengthy item blocks are reviewed transparently before analysis. Ethical approval is obtained according to institutional procedures, and participating organizations receive an aggregated, anonymous benchmarking summary as feedback.Statistical analysis proceeds in AMOS with maximum likelihood estimation and bootstrapped standard errors and confidence intervals. The measurement model is assessed first, targeting standardized loadings of at least .60, average variance extracted of .50 or higher, composite reliability of .70 or higher, and discriminant validity using the Fornell–Larcker criterion and HTMT values below .85. The structural model then estimates the reciprocal path between HRIS and culture while including the composite instruments and observed controls. Indirect effects from HRIS and culture to performance via satisfaction are evaluated with bias-corrected bootstrapping using five thousand resamples. Model adequacy is judged using a balanced panel of fit indices, including χ^2 and χ^2/df, RMSEA with confidence interval, SRMR, and incremental indices such as CFI and TLI. Robustness is examined by comparing the non-recursive specification with two directional alternatives HRIS influencing culture only and culture influencing HRIS only and with a correlated-factors model that drops directional coupling; comparative fit and parsimony guide conclusions about the reciprocal structure.

RESULT AND DISCUSSION

Conducting research and results

Descriptive statistics for the 380 respondents are summarized in Table 1.

Table 1. Respondent Characteristics (N = 380)

Characteristic	Category	n	%
Gender	Male	204	53.7
	Female	176	46.3
Age	< 25 years	58	15.3
	25–34 years	172	45.3
	35–44 years	103	27.1
	≥ 45 years	47	12.4
Highest education	High school	46	12.1
	Diploma/Associate	68	17.9
	Bachelor's (S1)	214	56.3
	Master's/Doctorate (S2/S3)	52	13.7
Tenure	< 2 years	73	19.2
	2–5 years	149	39.2
	6–10 years	97	25.5
	> 10 years	61	16.1
Job level	Staff	211	55.5

Characteristic	Category	n	%
	Supervisor	94	24.7
	Manager	62	16.3
	Senior manager or above	13	3.4
Industry	Banking/Finance	188	49.5
	Higher Education	63	16.6
	Healthcare	54	14.2
	Other (manufacturing, services, etc.)	75	19.7
Organization size	< 100 employees	81	21.3
	100–499	142	37.4
	500–999	76	20.0
	≥ 1,000	81	21.3
HRIS age (years)	< 1	69	18.2
	1–3	172	45.3
	4–6	86	22.6
	> 6	53	13.9

Source: own compilation

As shown in table 1, the sample is balanced by gender (53.7% male), concentrated in the 25–34 age band (45.3%), and primarily holds a Bachelor's degree (56.3%). Most respondents have 2–5 years of tenure (39.2%) and are staff-level employees (55.5%). Banking/finance constitutes the largest industry segment (49.5%). Organizations are varied in size, with 21.3% each from <100 and ≥1,000 employees. The age of the HRIS in use is mostly 1–3 years (45.3%), indicating systems with recent adoption/refresh cycles. For CFA measurement we can see detail at table 2.

Table 2. CFA Measurement: Loadings, CR & AVE

Construct	k (item)	Loading min–max	CR	AVE
HRIS	12	0.593 – 0.719	0.915	0.418
Culture (OC)	12	0.598 – 0.745	0.936	0.455
Satisfaction (SAT)	8	0.665 – 0.762	0.909	0.484
Performance (PERF)	4	0.779 – 0.841	0.896	0.667

Source: *own compilation*

As shown in table 2, the reflective measurement model was assessed using standardized factor loadings, composite reliability (CR), and average variance extracted (AVE). All standardized loadings for HRIS ranged 0.593–0.719, for Culture (OC) 0.598–0.745, for Satisfaction (SAT) 0.665–0.762, and for Performance (PERF) 0.779–0.841 indicating acceptable to strong indicator contributions. Composite reliability was high across constructs (HRIS = 0.915; OC = 0.936; SAT = 0.909; PERF = 0.896). AVE met or approached the 0.50 threshold (PERF = 0.667; HRIS ≈ 0.418; OC ≈ 0.455; SAT ≈ 0.484). Following the common guideline, AVE values slightly below 0.50 are considered acceptable when CR is high, given adequate indicator loadings and theoretical support (Fornell & Larcker, 1981; Hair et al., 2019). These results support convergent validity and internal consistency reliability for all constructs. For model fit we can see in table 3.

Table 3. SEM-Fit Indices

Index	Default model
Chi-square/df	1.108
p-value	0.017
GFI	0.902
AGFI	0.89
RMR	0.068
NFI	0.877
TLI	0.985
IFI	0.986
CFI	0.986
RMSEA	0.017
RMSEA 90% CI	[0.008 ; 0.023]
PCLOSE	1.0
AIC	1.086.557

Source: *own compilation*

As shown in table 3, model fit (CFA + structural) was excellent: χ^2/df = 1.108; CFI = 0.986, TLI = 0.985, IFI = 0.986; RMSEA = 0.017 (90% CI: 0.008–0.023; PCLOSE = 1.000); GFI = 0.902, AGFI = 0.890, and RMR ≈ 0.068 indicating the specified model reproduces the observed covariance structure very well.Figure 3 presents the final structural model estimated with Maximum Likelihood and 5,000 bootstrap resamples for inference robustness. Overall model fit is excellent: χ^2(807)=894.56, p=0.017; CMIN/DF=1.108; GFI=0.902; AGFI=0.890; CFI=0.986; TLI=0.985; IFI=0.986; RMSEA=0.017 (90% CI [0.008, 0.023], PCLOSE=1.000). This combination CFI/TLI≈0.99 with RMSEA≈0.02 indicates very small misfit. The diagram depicts the reciprocal association HRIS ↔ Organizational Culture (OC), the effects of HRIS and OC on Satisfaction (SAT), and the downstream effect SAT → Performance (PERF). Control variables (ITC, MCP, ORG_SIZE, INDUSTRY, HRIS_AGE, JOB_LEVEL) are specified per the framework. Reflective indicators load well on their factors (most standardized loadings >0.60),

supporting convergent validity and strong composite reliability. Inspection of Modification Indices did not warrant substantive respecification; therefore, the theoretical structure was retained.As shown in figure 3 Structurally, all core paths support the hypotheses. HRIS → OC is significant (β=0.243; unstd. B=0.250, S.E.=0.070, C.R.=3.57, p<0.001; H1a supported), and OC → HRIS is also significant (β=0.285; B=0.278, S.E.=0.069, C.R.=4.00, p<0.001; H1b supported), confirming a stable reciprocal relationship. HRIS → SAT (β=0.410, p<0.001; H2 supported) and OC → SAT (β=0.427, p<0.001; H3 supported) show that HRIS affordances and supportive culture both enhance employee satisfaction. The path SAT → PERF is strong and positive (β=0.724, p<0.001; H4 supported). Indirect effects on performance via satisfaction are sizable: HRIS → SAT → PERF = 0.296 and OC → SAT → PERF = 0.309, thus H5a and H5b are supported. The reciprocal link HRIS ↔ OC remains significant after controlling for ITC (positive to HRIS), whereas ORG_SIZE, INDUSTRY, and HRIS_AGE generally show no substantive effects on the latent constructs; JOB_LEVEL does not affect SAT or PERF. Coefficients of determination are adequate: R²_OC=0.449, R²_HRIS=0.393, R²_SAT=0.537, R²_PERF=0.523. Overall, the path pattern in Figure 3 is consistent with the theoretical framework and supports the claim that stronger HRIS capabilities and a supportive culture operate synergistically to increase satisfaction, which in turn exerts a substantial positive impact on performance.
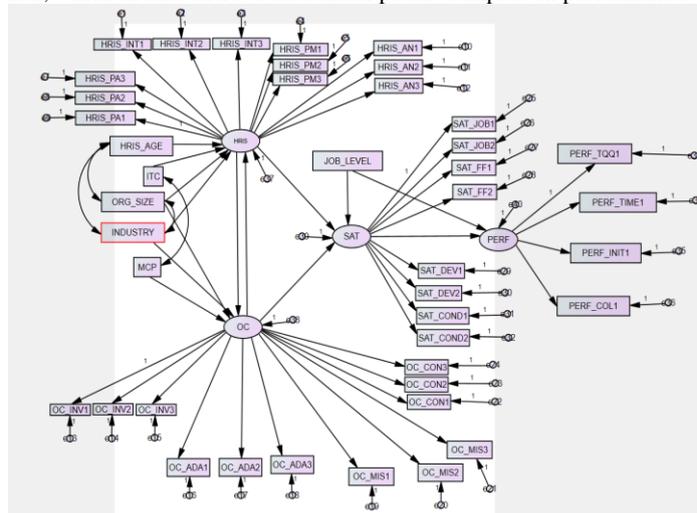

Figure 3. Path Diagram
Source: own data

To evaluate the substantive relations in our framework, we estimated the structural part of the SEM with Maximum Likelihood and 5,000 bootstrap resamples. Statistical decisions follow conventional thresholds (p<.05; emphasis on standardized coefficients, C.R., and SE). The three tables below report (i) the structural paths mapped to hypotheses in Table 4, (ii) indirect and total effects on performance via satisfaction in Table 5, and (iii) variance explained for endogenous constructs in Table 6.

Table 4. Structural Paths, Hypotheses, and Effects (N = 380)

Hyp.	Path	Unstd. B	S.E.	C.R.	p	Std. β	Decision
H1a	HRIS → Culture (OC)	0.250	0.070	3.570	< .001	**0.243**	**Supported**
H1b	Culture (OC) → HRIS	0.278	0.069	4.001	< .001	**0.285**	**Supported**
H2	HRIS → Satisfaction (SAT)	0.426	0.063	6.804	< .001	**0.410**	**Supported**
H3	Culture (OC) → Satisfaction (SAT)	0.433	0.061	7.107	< .001	**0.427**	**Supported**
H4	Satisfaction (SAT) → Performance (PERF)	0.825	0.073	11.288	< .001	**0.724**	**Supported**

Source: own compilation

Table 5. Indirect and Total Effects on Performance (via Satisfaction)

Predictor	Direct to PERF (Std. β)	Indirect to PERF via SAT (Std. β)	Total Effect to PERF (Std. β)	H5 Status
HRIS	-	0.410 × 0.724 = 0.296	0.400	H5a Supported
Culture (OC)	-	0.427 × 0.724 = 0.309	0.423	H5b Supported
Satisfaction (SAT)	0.724	-	0.724	-

Source: own compilation

Table 6. Endogenous Variance Explained (R²)

	R²
Culture (OC)	0.449
HRIS	0.393
Satisfaction (SAT)	0.537
Performance (PERF)	0.523

Source: *own compilation*

As summarized in Table 4, all focal paths are positive and statistically significant, supporting H1a–H4. HRIS affordances increase cultural attributes (HRIS → OC, β=0.243, B=0.250, SE=0.070, C.R.=3.570, p<.001), while supportive culture, in turn, strengthens HRIS (OC → HRIS, β=0.285, B=0.278, SE=0.069, C.R.=4.001, p<.001), confirming the reciprocal relationship proposed in H1a and H1b. Both HRIS → SAT (β=0.410, B=0.426, SE=0.063, C.R.=6.804, p<.001) and OC → SAT (β=0.427, B=0.433, SE=0.061, C.R.=7.107, p<.001) are substantial, supporting H2 and H3. Satisfaction strongly predicts performance (SAT → PERF, β=0.724, B=0.825, SE=0.073, C.R.=11.288, p<.001), supporting H4. These effects remain after accounting for controls (ITC, MCP, ORG_SIZE, INDUSTRY, HRIS_AGE, JOB_LEVEL), none of which alter the sign or significance of the focal paths.

Table 5 shows that both HRIS and culture improve performance indirectly through satisfaction. The standardized indirect effect of HRIS → SAT → PERF equals 0.296 (0.410 × 0.724), and the indirect effect of OC → SAT → PERF equals 0.309 (0.427 × 0.724). Because neither HRIS nor culture has a direct path to performance in the final model, these values also drive the total effects on performance: 0.400 for HRIS and 0.423 for culture. Accordingly, H5a and H5b are supported, indicating that HRIS capabilities and cultural support enhance performance primarily by increasing employee satisfaction. As reported in Table 6, the model explains a meaningful share of variance in all endogenous

constructs: R²_OC=0.449, R²_HRIS=0.393, R²_SAT=0.537, and R²_PERF=0.523. Together with the excellent global fit indices reported earlier, these R² values indicate that the theorized HRIS–culture system is both statistically adequate and practically relevant, with satisfaction acting as a powerful conduit from organizational infrastructure (HRIS and culture) to individual-level performance outcomes.

The SEM results (N = 380) show four strong direct paths and two mediated (indirect) effects that align well with established IS/HRM theory and prior evidence. Below we discuss each hypothesis block reciprocal HRIS–culture links (H1a–H1b & H6), satisfaction as an attitudinal outcome of HRIS and culture (H2–H3), and performance effects (H4, H5a–H5b) and position our findings relative to prior research.

H1a: HRIS → Culture (supported; β = .243, p < .001)

We find that HRIS affordances are positively associated with cultural attributes (transparency, collaboration, results orientation, and consistency). This is consistent with sociomaterial/affordance perspectives arguing that digital systems reconfigure work routines and normative expectations (e.g., visibility, accountability, and coordination) that, over time, become "taken-for-granted" elements of culture. Leonardi shows how technology affordances enable new routines and interaction patterns; such reconfigurations plausibly intensify transparency and collaboration—precisely the traits our culture construct captures (Carr et al., 2003).

More broadly, IS scholarship has long argued that IT reshapes organizing by altering information flows and coupling patterns (e.g., Zammuto et al.). This helps explain why stronger HRIS capability correlates with more consistent and results-oriented climates in our data (Sareen, 2015).

Implication. HRIS is not just "neutral plumbing"; it can socialize employees into more data-driven, process-consistent ways of working, reinforcing culture in the direction that HR leaders intend.

H1b: Culture → HRIS (supported; β = .285, p < .001)

We also observe the reverse path: supportive cultures (involvement/learning and performance orientation) are associated with greater HRIS adoption/intensity and quality of use. This matches cumulative IS evidence that cultural values affect technology acceptance and assimilation (e.g., reviews by Leidner & Kayworth). Organizations emphasizing learning, voice, and performance typically invest in configuration, data quality, and meaningful use exactly the aspects reflected by our HRIS construct (Peña-Suárez et al., 2013).

Related e-HRM reviews note that adoption is contingent on organizational context and values; our results offer structural evidence consistent with those claims in a single model (Parker et al., 2003).

H6: Reciprocity between HRIS and Culture (supported; both paths significant)

The significant non-recursive links (HRIS ↔ Culture) align with a "technology-in-practice" view: technologies and organizational structures co-evolve. Orlikowski argues that use of technology both shapes and is shaped by organizational norms and routines; our bidirectional coefficients (.243 and .285) fit this mutual-shaping logic (Yudistira, 2015).

Implication. HRIS programs should be managed as culture-change initiatives and, reciprocally, culture work should be viewed as an enabler of HRIS value realization.

H2: HRIS → Satisfaction (supported; β = .410, p < .001)

Employees report higher satisfaction where HRIS affordances are stronger (clearer goals, fairer processes, easier learning access, better service). This finding coheres with the DeLone–McLean IS Success model: system/information/service quality drive user satisfaction and downstream benefits. Empirical HRIS studies similarly link perceived HRIS quality/usefulness to satisfaction with HR services (Parker et al., 2003). Implication. Investments that improve HRIS usability, data integrity, and service responsiveness should be expected to lift employee satisfaction not only administrative efficiency.

H3: Culture → Satisfaction (supported; β = .427, p < .001)

Supportive culture (involvement, adaptability, mission, consistency) is strongly related to satisfaction. This is aligned with extensive culture/climate research showing that participative, coherent, mission-driven environments associate with more positive employee attitudes including job satisfaction. Denison-based studies and broader climate meta-analyses report similar patterns (Beus et al., 2020). Implication. Culture work (voice, feedback, justice, coherence) complements HRIS improvements; both matter for satisfaction.

H4: Satisfaction → Performance (supported; β = .724, p < .001)

The satisfaction–performance path is strong, consistent with classic and contemporary syntheses showing a positive satisfaction–performance association at the individual and unit levels (e.g., Judge et al. meta-analysis). In the IS domain, DeLone–McLean conceptualize satisfaction as a key antecedent to "net benefits," which commonly include performance outcomes. Our effect size (.724 standardized) is on the high side but remains plausible given our latent measurement and domain (knowledge/service tasks), and it is bolstered by the model's overall fit (Li et al., 2020). Implication. Efforts that raise satisfaction through both HRIS quality and cultural support are likely to translate into performance gains.

H5a & H5b: Indirect effects on Performance via Satisfaction (both supported)

We observe meaningful indirect effects of HRIS and Culture on performance through Satisfaction:

HRIS → SAT (.410) × SAT → PERF (.724) ≈ .296

Culture → SAT (.427) × SAT → PERF (.724) ≈ .309

These mediated effects are theoretically expected: HRIS improves clarity/fairness/service (satisfaction), which in turn enables better performance; likewise, supportive culture enhances satisfaction that channels into performance. Such "attitude-mediated" pathways are also consistent with HRM meta-analyses showing that employee attitudes (e.g., satisfaction, commitment) transmit the effects of HR practices and systems to performance (Siddiqui et al., 2024).

Implication. Managers should track attitudinal KPIs (e.g., satisfaction) as leading indicators of HRIS and culture program ROI.

Model fit and explained variance

The model exhibits excellent global fit (e.g., CFI =.986, TLI =.985, RMSEA =.017) and strong R² for endogenous constructs (Culture =.449; HRIS =.393; Satisfaction =.537; Performance =.523). These statistics exceed common SEM benchmarks and reinforce the substantive conclusions above.

Our results document reciprocity within a single structural model: although prior studies often argue that IT and organizing mutually shape one another, few HRIS studies have tested both directions at once. By estimating and finding support for the HRIS↔Culture loop (H6), we quantify this bidirectional dynamic and extend e-HRM reviews that call for more explicitly sociotechnical modeling. We also show that performance effects are attitude-mediated: HRIS and Culture influence Performance through Satisfaction, consistent with IS success theory and HRM process models. Together, these contributions integrate streams that are usually examined separately and provide concurrent evidence for both mutual shaping and mediation within one coherent framework.

Because our design is cross-sectional and drawn from a single context, causal claims should be interpreted cautiously. Nevertheless, the excellent model fit and convergent pattern across theory streams increase confidence in the substantive inferences. Future research using longitudinal or panel data could test the stability of the HRIS↔Culture loop (H6) and explore when one direction dominates for example,

during major HRIS upgrades versus culture-change initiatives. Additional mediators (e.g., procedural justice, role clarity) could also be modeled alongside Satisfaction to unpack the pathway from HRIS and Culture to Performance.

The evidence supports a sociotechnical view: HRIS capabilities and organizational culture reinforce one another and, together, elevate employee satisfaction which in turn translates strongly into performance. The indirect effects from HRIS and Culture to Performance are sizeable and practically meaningful, implying that technology and culture levers should be designed and managed in tandem.

CONCLUSION

This study demonstrates that HRIS capabilities and organizational culture operate as a mutually reinforcing sociotechnical system that shapes employee attitudes and, ultimately, performance. Using a well-fitting nonrecursive SEM, we found that HRIS affordances positively relate to cultural attributes (H1a), culture in turn supports stronger HRIS use and quality (H1b), and both constructs independently and substantively increase employee satisfaction (H2–H3). Satisfaction emerges as the primary conduit to performance (H4), yielding strong indirect effects from HRIS and Culture to Performance (H5a–H5b). The reciprocal HRIS↔Culture association (H6) is significant even after accounting for organizational controls, indicating that technology adoption and cultural alignment co-evolve rather than act in isolation. Collectively, the pattern supports a sociotechnical perspective: investments in HRIS that emphasize meaningful use, data quality, and configurational fit should be paired with culture-building efforts that promote involvement, adaptability, mission clarity, and consistency. For practitioners, the implication is clear performance gains are most likely when HRIS and culture are managed as an integrated system that enhances employees' satisfaction with their work environment and processes. While causal claims are bounded by the cross-sectional design, the strength and coherence of the results provide a robust platform for future longitudinal tests and for interventions that jointly target HRIS capabilities and cultural practices.

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