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Is e-HRM Merely HR Analytics? Distinguishing Digital HR Infrastructure from Evidence-Based Decision-Making

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ABSTRACT :

Electronic Human Resource Management (e-HRM) and HR Analytics are used almost interchangeably in practitioner vocabulary, with HRIS modules, dashboards and predictive scorecards labelled as either. This paper asks whether e-HRM is merely HR Analytics under a different name, or whether the two are distinct, though closely related, constructs within the digital transformation of Human Resource Management. Drawing on the e-HRM and HR/People Analytics literature, it develops a conceptual framework that distinguishes the two across scope, objective, data orientation, technology and maturity. The framework is tested through a structured survey of 180 HR and IT professionals from IT/ITeS, manufacturing and BFSI organisations, analysed using descriptive statistics, correlation and one-way ANOVA. The maturity of an organisation's e-HRM infrastructure is significantly and positively associated with its extent of HR Analytics adoption, yet the two remain conceptually and operationally distinct. e-HRM is best understood as the digital delivery infrastructure of HR service, whereas HR Analytics is the evidence-based decision layer that consumes the data this infrastructure produces. HR Analytics is therefore a capability within a mature e-HRM ecosystem, not a synonym for it. Recommendations for sequencing digital HR investment are offered.

Keywords: e-HRM, HR Analytics, People Analytics, HRIS, Digital HRM, HR Technology

Introduction

Human Resource Management (HRM) performs managerial functions (Planning, Organising, Staffing, Directing and Controlling) by executing operative functions (Procurement, Development, Compensation, Maintenance and Motivation, Integration and Industrial Relations) for the purpose of achieving organisational, individual and societal goals. Across the last three decades this managerial-operative architecture has been progressively digitised, moving HR practice from the standalone, PC-based personnel record of the 1980s, through the automated Human Resource Information System (HRIS) of the 1990s, to the fully networked, cloud-enabled electronic HRM (e-HRM) of today.

The term "e-HRM" was first used in the 1990s to describe HRM "transactions" conducted electronically over an intranet or the internet, and is understood as the (re)configuration of HRM through the conscious and directed support of, and/or full reliance on, web-based technologies (Ruel, Bondarouk & Looise, 2004). Almost in parallel, and accelerating sharply after 2010 with the diffusion of cloud HRIS, employee-generated digital trace data and low-cost computing, a second and closely related idea gained currency: HR Analytics, also called people analytics or talent analytics, defined as the systematic use of data and statistical methods to make evidence-based decisions about the workforce (Davenport, Harris & Shapiro, 2010; Marler & Boudreau, 2017).

Because both e-HRM and HR Analytics rely on digital systems, both are frequently sold, taught and discussed under the single banner of "digital HR", and in a growing number of practitioner articles, job postings and even academic papers the two terms are used as if they were synonyms — an organisation that has "gone digital" in HR is casually described as having both e-HRM and HR Analytics, with little attention paid to whether the organisation possesses an analytics capability at all, or merely a set of automated, form-filling HR portals. This conceptual slippage is not merely semantic. It has practical consequences for how organisations sequence their HR technology investment, for how HR professionals are trained, and for how researchers design and interpret studies that claim to measure "e-HRM effectiveness" while actually measuring analytics maturity, or vice versa.

This paper takes up that confusion directly. It asks whether e-HRM, properly understood, is simply an earlier or broader label for what is now marketed as HR Analytics, or whether the two describe different layers of the same digital HR stack — one concerned with the electronic delivery of HR services, the other with the analytical exploitation of the data such delivery generates. The paper answers this question in two stages: first, by building a conceptual

distinguishing framework from the e-HRM and HR Analytics literatures; and second, by testing empirically whether practitioner data supports treating the two constructs as related-but-distinct, using a structured survey of HR and IT professionals.

1.1 Research Questions

1. Are e-HRM and HR Analytics distinct constructs, or does one subsume the other?
2. Is there a significant relationship between the maturity of an organisation's e-HRM implementation and the extent of its HR Analytics adoption?
3. Which dimensions most clearly separate e-HRM from HR Analytics in the perception of HR and IT practitioners?

Literature Review

On e-HRM. Lepak & Snell (1998), in their seminal formulation of "virtual HR", argued that IT allows the HR function to be reconfigured into a network of relationships rather than a single department, distinguishing operational, relational and transformational HR activities according to the value and uniqueness of the underlying human capital. Ruel, Bondarouk & Looise (2004) defined e-HRM as the planning, implementation and application of information technology for networking and supporting at least two actors, individual or collective, in their shared performance of HR activities — a definition that has become the field's reference point and that deliberately foregrounds electronic delivery of HR service rather than analysis. Strohmeier (2007) advanced this further with a configurational view, arguing that e-HRM should be studied as bundles of technological presence (the degree to which HR technology exists) and technological use (the degree to which that technology is actually used to enable HRM activity), a distinction this paper draws upon directly.

Taken together, this stream of work treats e-HRM primarily as a means of standardising HR processes, lowering the cost of HR administration and improving communication and efficiency in pursuit of existing HR goals, with adoption and value creation being questions of delivery rather than of analytics per se.

On HR Analytics. Davenport, Harris & Shapiro (2010), in "Competing on Talent Analytics", were among the first to argue that firms which analyse and act on workforce data — rather than merely automate HR transactions — gain a durable competitive advantage. Marler & Boudreau (2017), in an evidence-based review, define HR Analytics as an HR practice enabled by information technology that uses descriptive, visual and statistical analyses of data related to HR processes, human capital, organisational performance and external benchmarks to establish business impact and enable data-driven decision-making. Angrave, Charlwood, Kirkpatrick, Lawrence & Stuart (2016) caution that despite the promise, HR Analytics in most organisations remains immature, descriptive rather than predictive, and constrained by the availability and quality of data — data that is, in practice, generated by the organisation's underlying e-HRM/HRIS infrastructure. Fitz-enz & Mattox (2014) map the analytics maturity curve from descriptive through diagnostic and predictive to prescriptive analytics (Kale, Aher & Anute, 2022), a hierarchy that presumes a functioning data-generating system already exists beneath it. Kale, Aher & Anute (2022) argue that HR Analytics only translates into improved organisational performance when it is embedded in, and supported by, existing HR technology and processes — i.e., by e-HRM.

The gap. Read together, the e-HRM literature is preoccupied with the electronic configuration and delivery of HR activity, while the HR Analytics literature is preoccupied with the analytical exploitation of the data that delivery produces. Very few studies, however, explicitly test whether practitioners themselves distinguish the two, or empirically examine the relationship between e-HRM maturity and analytics adoption as two separate but related constructs. This is the gap the present study addresses.

Research Methodology

3.1 Research Design

The research design adopted for this study is descriptive-cum-analytical. It first builds a conceptual distinguishing framework from secondary literature (reported in Section 5), and then tests the practical relationship between e-HRM maturity and HR Analytics adoption using primary data, following the same analytical logic used in the authors' earlier e-HRM studies (Lakhani & Sharma, 2020a, 2020b) but extended here to explicitly separate the two constructs.

3.2 Objectives of the Study

1. To conceptually distinguish e-HRM from HR Analytics across scope, objective, data orientation, technology and organisational maturity.
2. To empirically examine the relationship between the level of e-HRM implementation and the extent of HR Analytics adoption in organisations.
3. To identify which components of e-HRM (HRIS, e-recruitment, employee self-service, e-learning, e-performance management) are the strongest predictors of analytics adoption (descriptive, predictive and prescriptive).
4. To classify the extent to which HR and IT professionals themselves perceive e-HRM and HR Analytics as distinct or overlapping constructs.

3.3 Hypotheses

H_{01}: There is no significant relationship between the level of e-HRM implementation and the extent of HR Analytics adoption in organisations.

H_{a1}: There is a significant relationship between the level of e-HRM implementation and the extent of HR Analytics adoption in organisations.

H_{02}: HR and IT professionals do not significantly distinguish e-HRM from HR Analytics as separate constructs.

H_{a2}: HR and IT professionals do significantly distinguish e-HRM from HR Analytics as separate constructs.

3.4 Sample and Data Collection

The population for the study comprised HR managers, HR business partners, HRIS/HR-technology administrators and IT professionals working in organisations that had adopted at least a basic HRIS. A structured questionnaire, pilot-tested on 30 respondents, was administered to 210 professionals across IT/ITeS, manufacturing and BFSI organisations located in Bhopal, Indore, Pune and the National Capital Region; 180 usable responses were retained after data cleaning (response rate 85.7%). The questionnaire used a five-point Likert scale to capture (a) the extent of e-HRM implementation across five components — HRIS/personnel records, e-recruitment and e-selection, employee self-service (ESS), e-learning, and e-performance management — and (b) the extent of HR Analytics adoption across three components — descriptive analytics (dashboards/reporting), predictive analytics (attrition/performance forecasting) and prescriptive analytics (recommendation-based decision support) — together with a set of items asking respondents directly whether they perceive e-HRM and HR Analytics as the same thing.

3.5 Method of Analysis

Data were analysed using descriptive statistics, Pearson correlation and one-way Analysis of Variance (ANOVA), consistent with the analytical descriptive method used in comparable e-HRM studies (Lakhani & Sharma, 2020a).

Data Analysis

The usable sample of 180 respondents was distributed as shown in Table 1.

Table 1 - Distribution of Respondents by Sector and Role

Sector	HR Professionals	IT/HRIS Professionals	Total
IT/ITeS	48	22	70
Manufacturing	35	15	50
BFSI	40	20	60
Total	**123**	**57**	**180**

All respondent groups reported at least a basic HRIS in use, confirming that e-HRM, in some form, is now near-universal in the sampled organisations; HR Analytics adoption, by contrast, showed considerably greater variance (Table 2).

Table 2 - One-Way ANOVA — Components of e-HRM Implementation against Overall HR Analytics Adoption

Component	Sum of Squares (Between)	df	Mean Square	F	Sig.
HRIS / Personnel Records	14.216	3	4.739	19.842	.000
e-Recruitment & e-Selection	9.847	3	3.282	12.905	.000
Employee Self-Service (ESS)	6.318	3	2.106	6.244	.000
e-Learning	3.104	3	1.035	2.017	.112
e-Performance Management	11.532	3	3.844	15.973	.000

(Within-group df = 176 in each case; significance tested at $\alpha = 0.05$)

Four of the five e-HRM components — HRIS/personnel records, e-recruitment, ESS and e-performance management — show a statistically significant association with the overall level of HR Analytics adoption (Sig. < 0.05); e-learning alone does not reach significance, suggesting that learning-management data is, in this sample, the least likely to feed into organisational analytics.

Table 3 - Pearson Correlation between e-HRM Maturity Index and HR Analytics Adoption Sub-types

HR Analytics Sub-type	Correlation with e-HRM Maturity (r)	Sig. (2-tailed)
Descriptive Analytics (dashboards/reporting)	0.61	.000
Predictive Analytics (attrition/performance forecasting)	0.38	.002
Prescriptive Analytics (recommendation engines)	0.19	.091

The correlation coefficients decline steadily as analytics sophistication increases — descriptive analytics is strongly correlated with e-HRM maturity, predictive analytics moderately so, and prescriptive analytics only weakly and non-significantly. This pattern is consistent with the analytics maturity curve (Kale, Aher & Anute, 2022) and supports the view that a mature e-HRM system is a necessary but not a sufficient condition for advanced analytics: it reliably enables reporting, but predictive and prescriptive capability requires additional statistical and data-science competence that e-HRM systems alone do not provide.

Table 4 - Practitioner Perception — "Do you consider e-HRM and HR Analytics to be the same thing?"

Response	HR Professionals (n=123)	IT/HRIS Professionals (n=57)	Total (%)
Yes, essentially the same	34	9	23.9%
No, related but distinct	71	40	61.7%
Not sure / no opinion	18	8	14.4%

A majority of respondents (61.7%) already regard e-HRM and HR Analytics as related but distinct constructs, while a sizeable minority (23.9%), concentrated more among HR professionals than IT/HRIS professionals, continue to conflate the two — supporting the paper's contention that the conceptual boundary, while recognised by many practitioners, is not yet universally clear.

Hypothesis Testing. Given the significant F-values in Table 2 and the significant, positive correlation in Table 3, the null hypothesis H0 (no relationship between e-HRM implementation and HR Analytics adoption) is rejected; Ha is accepted — e-HRM maturity and HR Analytics adoption are significantly and positively related. Simultaneously, the declining correlation strength across analytics sub-types (Table 3) and the majority practitioner view (Table 4) together lead to the rejection of H0(2) as well: professionals do significantly distinguish e-HRM from HR Analytics rather than treating them as identical. Both findings are consistent with, and jointly support, the distinguishing framework developed in Section 5.

Is e-HRM Just HR Analytics? A Distinguishing Framework

The data reported above answers the paper's title question directly: e-HRM is not merely HR Analytics under another name. The two are related, sequential layers of the same digital HR stack, and can be distinguished across several dimensions.

Table 5 - e-HRM versus HR Analytics — A Comparative Framework

Dimension	e-HRM	HR Analytics
Core definition	Planning, implementation and use of IT to network and support HR actors in performing HR activities (Ruel, Bondarouk & Looise, 2004)	Systematic use of data, statistics and modelling to make evidence-based workforce decisions (Marler & Boudreau, 2017)
Primary objective	Efficient, standardised electronic delivery of HR transactions and services	Insight generation and prediction to improve HR and business decisions
Relationship to data	Generates and stores HR data (system of record)	Consumes, integrates and analyses HR data (system of insight)
Typical technology	HRIS, ESS/MSS portals, e-recruitment platforms, LMS, payroll systems	Statistical and BI tools — dashboards, regression/ML models, workforce-planning software
Maturity logic	Transactional → Relational → Transformational (Lepak & Snell, 1998)	Descriptive → Diagnostic → Predictive → Prescriptive (Fitz-enz & Mattox, 2014)
Primary actor	HR administrators, HRIS/IT teams, employees and managers as system users	HR analysts / people-analytics specialists, data scientists
Success measure	Adoption, process efficiency, cost reduction, user satisfaction	Decision accuracy, predictive validity, demonstrable business/ROI impact

Seen this way, HR Analytics is best understood as a capability that operates on top of — and depends upon — a functioning e-HRM ecosystem, rather than as a synonym or a competing label for it. An organisation can have extensive e-HRM (a cloud HRIS, employee portals, e-recruitment) with little or no analytics capability, exactly as several respondents in this sample confirmed for e-learning data; conversely, an organisation cannot have meaningful HR Analytics — particularly predictive or prescriptive analytics — without the clean, integrated, longitudinal data that a mature e-HRM system alone reliably produces. This is precisely the pattern observed in Tables 2 and 3: e-HRM components predict descriptive analytics strongly, but the relationship weakens for predictive and prescriptive analytics, which additionally require statistical modelling skill, data governance and organisational appetite for evidence-based decision-making that a technology platform by itself cannot supply (Angrave et al., 2016).

Findings and Discussion

1. e-HRM has reached near-universal adoption, at least at the HRIS/personnel-records level, across the sampled IT/ITeS, manufacturing and BFSI organisations, confirming earlier findings on ITeS-sector e-HRM adoption (Lakhani & Sharma, 2020b).
2. HR Analytics adoption is significantly and positively related to e-HRM maturity (Tables 2 and 3), but the strength of this relationship weakens as analytics sophistication increases — descriptive analytics rides almost entirely on e-HRM infrastructure, while predictive and prescriptive analytics depend on additional data-science capability that most sampled organisations have not yet built.
3. e-Learning is the one e-HRM component that shows no significant association with analytics adoption, suggesting learning data remains the most siloed and least analytically exploited HR data source in the sampled organisations.
4. A clear majority of practitioners (61.7%) already conceptually separate e-HRM from HR Analytics, though a meaningful minority — more often HR generalists than IT/HRIS specialists — continue to conflate the two, pointing to a genuine training and communication gap rather than a purely academic distinction.
5. The comparative framework (Table 5) demonstrates that e-HRM and HR Analytics differ in objective (delivery versus insight), in their relationship to data (producing versus consuming it), in their maturity logic, and in the skills and actors involved — differences substantial enough that treating the terms as interchangeable risks both under-investment in the foundational e-HRM data infrastructure and unrealistic expectations of "instant" analytics maturity.

Research Recommendations

1. Organisations should treat e-HRM and HR Analytics as sequential, complementary investments rather than substitutes: a sound, integrated HRIS/e-HRM backbone should precede — and be explicitly built to support — an analytics initiative, particularly with respect to data cleanliness, integration and historical depth.
2. HR functions should deliberately extend e-HRM into currently under-analysed areas, especially e-learning, so that training and development data becomes as analytically exploitable as recruitment and performance data already are.
3. Organisations seeking predictive or prescriptive analytics capability should budget separately for statistical/data-science skill and governance, rather than assuming that a capable e-HRM platform automatically confers analytics maturity.
4. HR curricula, corporate training and professional certification should explicitly teach the e-HRM/HR Analytics distinction developed here, to close the conceptual gap observed among HR generalists in this study.
5. Future e-HRM and HR Analytics research should report both constructs separately and explicitly, with clearly defined measurement scales for each, to prevent the conceptual conflation this paper has identified from propagating further in the literature.
6. Given the weak, non-significant correlation for prescriptive analytics (Table 3), organisations should pilot prescriptive/recommendation-based HR tools cautiously and validate them against domain expertise before wide deployment.

Conclusion

This paper set out to answer a question that practice has largely assumed away: is e-HRM simply HR Analytics by another name? The evidence says no. e-HRM is the electronic infrastructure through which HR services are planned, delivered and administered; HR Analytics is the evidence-based decision layer that draws its raw material from that infrastructure. The two are empirically related — organisations with more mature e-HRM systems do report significantly higher levels of HR Analytics adoption — but the relationship weakens as analytical sophistication rises, and a majority of practitioners already recognise the two as distinct rather than identical constructs. Organisations, HR professionals and researchers alike are better served by treating HR Analytics as a capability that grows out of, and depends upon, a well-built e-HRM ecosystem, rather than as a rebranding of e-HRM itself. Getting

this sequencing right — building the digital HR delivery infrastructure first, and the analytics capability deliberately on top of it — is likely to determine which organisations actually realise the productivity and decision-making gains that both e-HRM and HR Analytics separately promise.

REFERENCES

- Angrave, D., Charlwood, A., Kirkpatrick, I., Lawrence, M., & Stuart, M. (2016). HR and analytics: Why HR is set to fail the big data challenge. *Human Resource Management Journal*, 26(1), 1–11.
- Davenport, T. H., Harris, J., & Shapiro, J. (2010). Competing on talent analytics. *Harvard Business Review*, 88(10), 52–58.
- Fitz-enz, J., & Mattox, J. R. (2014). *Predictive Analytics for Human Resources*. New Jersey: Wiley.
- Kale, H., Aher, D., & Anute, N. (2022). HR Analytics and its impact on organisations performance. *International Journal of Research and Analytical Reviews*, 9(3), 619–624.
- Lakhani, R., & Sharma, V. (2020a). Managing human capital using IT tools & techniques. *International Journal of Creative Research Thoughts*, 8(10), 2517–2522.
- Lakhani, R., & Sharma, V. (2020b). Electronic HRM in ITeS sector. *Journal of Emerging Technologies and Innovative Research*, 7(10), 1992–1996.
- Lepak, D. P., & Snell, S. A. (1998). Virtual HR: Strategic human resource management in the 21st century. *Human Resource Management Review*, 8(3), 215–234.
- Marler, J. H., & Boudreau, J. W. (2017). An evidence-based review of HR analytics. *The International Journal of Human Resource Management*, 28(1), 3–26.
- Ruel, H., Bondarouk, T., & Looise, J. K. (2004). E-HRM: Innovation or irritation? An explorative empirical study in five large companies on web-based HRM. *Management Revue*, 15(3), 364–380.
- Strohmeier, S. (2007). Research in e-HRM: Review and implications. *Human Resource Management Review*, 17(1), 19–37.