BABEȘ-BOLYAI UNIVERSITY CLUJ-NAPOCA
The Faculty of Economics and Business Administration

PhD Thesis

Digital transformation of human resource management

SUMMARY

Scientific Coordinator
Assoc. Prof. Dr. Emil Lucian Crișan

Ph.D. Candidate
ANDA-LARISA ȘTEF (căs. DRĂGAN)

Cluj-Napoca
2026

Contents of the thesis

Abstract 9
List of Tables 11
List of Figures 12
List of Abbreviations 13
1. Introduction 14
2. The Digital Transformation of Human Resource Management: a Review of the Literature 18
2.1. Conceptual Foundations: Defining the Digital Transformation of HRM 18
2.2. The Evolution of HR Function Digitalization 20
2.3. The Digital Transformation of Core HR Sub-functions 21
2.3.1. Digital Recruitment and Selection 21
2.3.2. Performance Management and Learning and Development 21
2.4. Factors Shaping HR DT: Perceptions, Barriers, and Organizational Conditions 22
2.5. The Impact of Digital Transformation on HRM and Organizations 25
2.6. Conclusions 26
3. Digital Maturity and Digital Transformation Maturity Models: A Systematic Literature Review 28
3.1. Introduction 28
3.2. Review of Literature 31
3.2.1. Traditional Maturity Models 31
3.2.2. Maturity Models in Studies on Digitalization 32
3.3. Research Methodology 37
3.4. Research Results 40
3.4.1. Context 40
3.4.2. Intervention 47
3.4.3. Outcomes 48
3.4.4. Mechanisms 49
3.4.4.1. DT Outcomes 49
3.4.4.2. DT Processes 49
3.4.4.3. Mixed (Results and Processes) 50
3.4.4.4. Strategic DT 50
3.5. Discussion 51
3.6. Conclusions 54
4. Forms, Not Stages: A Configurational Account of Digital Maturity in the Human Resource Function 58
4.1. Introduction 58
4.2. Literature Review 60
4.2.1. From Staged Approaches to Digitalization to the Configurational Interpretation of DT in HR 60
4.2.2. Configurations, Organizational Development, and Non-linearity in the DT of HR 65
4.3. The Theoretical Model 67
4.3.1. Technological Conditions 71
4.3.2. Resource-Based Conditions, Resource-Based View 72

4.3.3. Institutional Conditions, Institutional Theory 73
4.3.4. Interpretive Conditions, Sensemaking....75
4.3.5. The Family of Conditions as a Configurational Architecture 76
4.4. Empirical Research Methodology....77
4.4.1. Research Design and Justification of the Multi-Case Qualitative Approach 77
4.4.2. Selection of Organizations and Sample Profile....79
4.4.3. Data collection and respondent profile....84
4.4.4. Coding Strategy and Operationalization of Analytical Themes....86
4.4.5. Stages of Analysis: Intra-Case Analysis, Inter-Case Analysis, and Configurative Aggregation....92
4.4.5.1. Stage 1: Intra-case Analysis....92
4.4.5.2. Stage 2: Cross-case Analysis 92
4.4.5.3. Stage 3: Configurational Aggregation 93
4.4.6. Operationalization of the Theoretical Model in Empirical Analysis....94
4.4.7. Criteria for aggregating organizations into configurations and axes of description....95
4.4.8. Methodological Rigor and Analytical Transparency....96
4.5. Results of the Thematic Empirical Analysis....97
4.5.1. Results of the empirical analysis by analytical themes 97
4.5.1.1. HR Technologies by Sub-Function - Analytical Theme 1 (T1)....98
4.5.1.2. Degree of Integration and Use - Analytical Theme 2 (T2) 100
4.5.1.3. The Significance of HR Digitalization - Analytical Theme 3 (T3) 102
4.5.1.4. Interpretation of the HR Role - Analytical Theme 4 (T4) 104
4.5.1.5. Assessment of the Current Configuration - Analytical Theme 5 (T5)....105
4.5.1.6. Dominant Institutional Logics Invoked - Analytical Theme 6 (T6) 106
4.5.1.7. Legitimizing Limits - Analytical Theme 7 (T7) 108
4.5.1.8. Enabling Resources - Analytical Theme 8 (T8)....110
4.5.1.9. Constraints and Path Dependencies - Analytical Theme 9 (T9)....112
4.5.1.10. Retrospective Transitions and Invoked Past - Analytical Theme 10 (T10)....114
4.5.1.11. Perceived Results - Analytical Theme 11 (T11)....115
4.5.2. Synthesis of Results by Families of Conditions 116
4.6. Configurations of the Digital Transformation of Human Resource Management....118
4.6.1. Identified Configurational Profiles....121
4.6.1.1. Configuration 1: Operational Efficiency Consolidators 121
4.6.1.2. Configuration 2: Capability-Constrained Operational Adopters 124
4.6.1.3. Configuration 3: Strategically Aspiring Transformers 126
4.6.1.4. Configuration 4: Routinized but Incomplete Transformers....129
4.6.1.5. Configuration 5: Relational / Employee-Experience Digitalizers 132
4.6.2. Comparative Analysis of the Identified Configurations....135
4.7. Discussions 139
4.7.1. Reframing HR Digital Maturity as a Configurational Outcome 139
4.7.2. HR Digitalization through a Resource-Based Lens....142
4.7.3. HR Digitalization through an Institutional Lens 143
4.7.4. HR Digitalization through a Sensemaking Lens 145
4.7.5. Configurationality as Integrative Logic: How the Three Lenses Operate Together 146

4.8. Conclusions....147
4.8.1. Theoretical Contributions of the Configurational Study....147
4.8.2. Empirical Contributions of the Configurational Study....148
4.8.3. Positioning Relative to the Literature on Digital Transformation and Configurational Analysis....149
4.8.4. Practical Implications of the Configurational Findings for HR....150
4.8.5. Limitations and Future Directions Specific to the Configurational Study....151
5. General Conclusions, Research Limitations, and Future Directions....153
5.1. Synthesis of Contributions and General Conclusions....153
5.2. Main Findings of Research....153
5.3. Theoretical Contributions....155
5.4. Methodological Contributions....156
5.5. Practical Implications....157
5.6. Limitations of the Research....158
5.7. Future Research Directions....159
5.8. Final Reflections....161
References....162
Appendices....194
Appendix no. 1 – Interview guide....194

Keywords: *digital transformation, human resource management, digital maturity, digital maturity models, configurational analysis, e-HRM, Resource-Based View, institutional theory, sensemaking.*

Summary

Digital transformation is one of the phenomena that most strongly shape today's business environment. Broadly defined as the process by which digital technologies generate profound changes in organizations' business models, products, and structures (Vial, 2019), it has evolved from an emerging trend into a strategic imperative across all economic sectors (Hanelt et al., 2021; Kraus et al., 2022). The literature draws an important conceptual distinction between digitization (the conversion of information from analogue to digital format), digitalization (the use of digital technologies to transform existing processes), and digital transformation (the profound and systemic change of business models, structures, and organizational culture through digital technologies) (Vial, 2019; Gong & Ribiere, 2021). The latter involves not only the adoption of digital tools but a fundamental strategic reorientation that affects organizational structures, processes, competencies, and values (Warner & Wäger, 2019).

Within this context, the human resources (HR) function occupies a unique and dual position. On the one hand, it is the object of digitalization: its own processes (recruitment, performance management, learning and development, payroll, and workforce planning) are among those most actively reshaped by digital technologies. On the other hand, it is simultaneously the agent of digitalization: the organizational function responsible for managing the human impact of technological change across the organization, supporting employees and managers in navigating the demands of a digitalized workplace. This duality makes HR a particularly rich and underexplored site for studying how digital transformation unfolds inside organizations. Yet the understanding of how organizations specifically integrate digital solutions into HR processes, what factors facilitate or constrain this integration, and what distinct forms HR digitalization takes in practice remains partial and fragmented in the literature (Strohmeier, 2020; Dash et al., 2023).

The thesis starts from the premise that HR digital maturity cannot be adequately understood through the stage-based linear models dominant in the literature, which treat organizations as progressing uniformly along a universal scale. We propose a fundamental reconceptualization: HR digital maturity as a configurational outcome, determined by the simultaneous interaction of technological infrastructure, the degree of platform integration and effective use, the meanings attributed to digitalization by organizational actors, the complementary resources available, and institutional pressures. The research unfolded in three cumulative steps, each answering a question that immediately opened a more complex one:

- We first built the conceptual foundations of the thesis, clarifying what HR digitalization means, how it has evolved, what it looks like across core HR sub-functions, and which individual, organizational, and technological factors shape its trajectory (Chapter 2);

- We then conducted a systematic literature review of digital maturity models (DMMs) and digital transformation maturity models (DTMMs), based on a corpus of 60 sources indexed in Web of Science and structured through the CIMO (Context – Intervention – Mechanism – Outcome) framework, with the initial intention of developing a digital maturity model specific to the HR function (Chapter 3);
- The findings of the review changed the direction of the research: instead of building a new maturity scale, we conducted a qualitative multi-case study across 29 organizations in Romania to investigate empirically what forms HR digital maturity takes in practice and what combinations of conditions explain them (Chapter 4).

The first contribution of the thesis, presented in Chapter 2 and built on the article "Analysis of the impact of human resources employees' perceptions on the process of digital transformation" (Ștef & Crișan, IIMT Journal of Management, Emerald, 2024), establishes the conceptual architecture on which the rest of the work rests. The chapter maps the terminological landscape of HR digitalization, from digitization and digitalization to e-HRM, Digital HR, and digital transformation proper. E-HRM represents the integration of IT content and tools into traditional human resource management and involves the design, implementation, and use of information technology by at least two individual or collective actors (Ruël et al., 2004; Bondarouk & Ruël, 2009; Marler & Fisher, 2013). Digital HR marks a qualitative evolution from e-HRM: whereas the latter focused primarily on the digitization and automation of administrative processes, Digital HR involves the use of data, artificial intelligence, and predictive analytics to transform strategic decisions regarding human capital (Sivathanu & Pillai, 2018; Thite, 2022). People analytics, the systematic use of employee data to inform organizational decisions, is one of the most advanced manifestations of this evolution (Marler & Boudreau, 2017). The conceptual spectrum of HR digitalization is therefore a continuum that runs from the simple digitization of documents, through the automation of administrative processes, to the strategic digital transformation of the function (Bondarouk et al., 2017; Thite, 2022).

From a historical perspective, HR digitalization has followed a relatively well-documented trajectory: a first stage, in the 1990s and early 2000s, dominated by human resource information systems (HRIS) focused on automating administrative tasks; a second stage, roughly between 2000 and 2015, marked by the proliferation of e-HRM solutions and ATS platforms, the extension of functionalities to recruitment, training, and performance evaluation, and the emergence of cloud solutions; and a third stage, currently underway, characterized by the integration of artificial intelligence, machine learning, and analytics into all HR sub-functions (Kavanagh & Johnson, 2017; Strohmeier, 2007; Thite, 2022). The COVID-19 pandemic significantly accelerated this third stage, forcing organizations to adopt digital solutions for remote work, virtual onboarding, and performance management in hybrid environments (Caligiuri et al., 2020; Collings et al., 2021). The chapter then examines two sub-functions in which transformation is particularly visible. In recruitment and selection, digitalization spans the entire talent acquisition cycle, from digital employer branding and professional networks,

to the automatic screening of applications through ATS and AI algorithms (which, however, raise ethical questions about potential algorithmic bias), to online assessment and digital onboarding (Tambe et al., 2019; Köchling & Wehner, 2020). In performance management and learning and development, digital platforms have enabled a shift from retroactive annual reviews to continuous feedback and real-time goal tracking, while LMS and LXP platforms have dramatically expanded access to training; the literature stresses, however, that simply transferring traditional processes to digital platforms does not automatically generate improvements and that a fundamental redesign of the process is necessary (Cappelli & Tavis, 2016).

A central element of Chapter 2 concerns the factors that shape HR digital transformation. The relationship between employee perceptions and digital transformation has been analysed within the technology adoption paradigm, and the Unified Theory of Acceptance and Use of Technology (UTAUT) provides a comprehensive explanatory framework through its four constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003). Drawing on our earlier study, the thesis extends UTAUT by introducing employees' perceptions of the organization's digital transformation efforts as an additional explanatory construct and shows that HR employees' perceptions are heterogeneous: the four attitude typologies identified range from positively engaged to sceptical and disappointed and are shaped by the quality of organizational communication (Ștef & Crișan, 2024). Beyond individual perceptions, HR digitalization is constrained by organizational and technological barriers: resistance to change, the lack of digital skills among HR staff, system fragmentation into "digital silos", the lack of alignment between the HR digitalization vision and business strategy, and data privacy and regulatory compliance requirements (GDPR) (Mazurchenko & Maršíková, 2019; Trenerry et al., 2021; Tursunbayeva et al., 2020). A recognized limitation of UTAUT is that it primarily explains individual technology adoption without capturing broader organizational dynamics such as strategic alignment, institutional pressures, or digital maturity configurations (Dash et al., 2023), a limitation that motivates the expansion of the analytical perspective in the subsequent chapters.

The conclusions of Chapter 2 can be summarized as follows. First, HR digital transformation is not a linear and uniform process but a contextual one, influenced by individual factors (perceptions, competencies, attitudes toward change), organizational factors (culture, communication, strategy), and technological factors (platform maturity, degree of integration). Second, HR employees' perceptions are heterogeneous. Third, the actual benefits of HR digitalization (operational efficiency, decision-making quality, employee experience) depend critically on the quality of implementation, strategic alignment, and investment in the digital skills of HR staff (Strohmeier, 2007; Bondarouk et al., 2017). If digitalization trajectories are this varied and context-dependent, a practical question immediately arises: what instruments exist to help organizations systematically assess where they stand and where they need to go?

The second contribution of the thesis, presented in Chapter 3 and based on the article "Digital Maturity and Digital Transformation Maturity Models: A Systematic Literature Review" (Ștef, Crișan & Vărărean-Cochișa), published in Information Systems and e-Business Management (Springer), answers this question. The chapter grew out of a concrete intention embedded in the research design: to develop a new digital maturity model specific to the HR function. To do so responsibly, it was first necessary to map the instruments already available in the academic literature. DMMs generally assess the level of digital technology use in current organizational processes, in a static and retrospective approach, whereas DTMMs adopt a dynamic approach that combines strategic planning, change management, and organizational culture to facilitate continuous digital transformation (Warner & Wäger, 2019; Gökalp & Martinez, 2022; Thordsen & Bick, 2023). The use of the two terms, however, involves a theoretical ambiguity, as many authors use them interchangeably (Chanias et al., 2019; Omol et al., 2024). The literature also criticizes the theoretical foundation and empirical validation of these models, whose levels are more conceptual than evidence-based (Lasrado et al., 2015; Zabukovšek et al., 2023), their rigid and generic character, which may overlook sector-specific and cultural nuances (Anschütz et al., 2024), and the lack of associated practical tools (Schumacher et al., 2016). Analysis of how maturity models are used and how they create value for organizations is rarely conducted (Thordsen & Bick, 2023). We therefore addressed the following research question: How do DMMs and DTMMs differ in terms of their creation, use, and the outcomes associated with their use?

The systematic review followed the recommendations of Tranfield et al. (2003) in three stages: planning, implementation, and reporting. The search in the Web of Science database, conducted in February 2024, generated an initial set of 387 sources, of which 164 were retained after removing duplicates. Screening of titles and abstracts led to the selection of 96 articles, which were read in full and reviewed independently by at least two researchers, with discrepancies resolved by consensus; the full evaluation yielded 60 relevant sources, coded using the CIMO framework. This approach allows the identification of the explanatory mechanisms of a phenomenon, that is, the logical links between context, intervention, and outcomes (Denyer et al., 2008). Regarding context, the triggers for model development are predominantly theoretical (28 sources), followed by mixed (17) and practical (15) triggers, and manufacturing dominates the applications (22 sources). Regarding intervention, the mixed construction approach is the most common (35 sources), and the integrated dimension, combining operational, organizational, and strategic elements, predominates (37 sources); most models adopt a five-level structure (26), followed by six-level structures (13). Regarding outcomes, we distinguished generic solutions (17) and specific solutions (43), the latter being holistic (22), operational (12), and process-oriented (9).

The main result of the review is the identification of four mechanisms through which maturity models are constructed and used in studies on digitalization: the mechanism centred on DT outcomes (11 sources), associated with DMMs as static diagnostic tools; the mechanism centred on DT processes (9 sources), associated with DTMMs and with the concept of dynamic

capabilities (Teece, 2010; Warner & Wäger, 2019); the mixed mechanism, combining outcomes and processes (37 sources), which resonates with the literature on organizational ambidexterity; and the strategic DT mechanism (3 sources), which offers a socio-technical and systemic view (Gökalp & Martinez, 2021; Aras & Büyüközkan, 2023). Beyond the DMM–DTMM dichotomy, the findings also offer practical guidance: DMMs suit organizations at the beginning of their digitalization or operating in stable environments, DTMMs suit those already engaged in continuous transformation, hybrid models suit those that need both diagnostic assessment and strategic flexibility, and strategic models suit large organizations seeking to align digital transformation with long-term business strategy.

More importantly for the trajectory of the thesis, the review showed that virtually all existing models share the same epistemological limitation: they assume that organizations progress along a single, universal, linear scale. This stage-based logic may be useful in stable and homogeneous contexts, but it does not match empirical reality, in which organizations with similar technology portfolios reach profoundly different forms of HR maturity depending on available resources, the institutional pressures they face, and how organizational actors interpret the significance of digitalization. None of the 60 models analysed simultaneously operationalizes the technological, resource-based, institutional, and interpretive dimensions within an integrated framework applied to the HR function. Building yet another maturity model within the same linear logic would have reproduced precisely the limitations identified (Fiss, 2007; Teichert, 2019; Aras & Büyüközkan, 2023). The research therefore made a decisive pivot: rather than answering "how should a maturity scale for HR be designed?", it turned to a fundamentally different question: "what forms does HR digital maturity actually take in practice, and what combinations of conditions explain those forms?". This reorientation from scale-building to configurational inquiry is the conceptual hinge on which the entire thesis turns.

The third, central, and most extensive contribution is presented in Chapter 4. Research on digital transformation has evolved in three successive waves: models focused on individual adoption, such as TAM (Davis, 1989) and UTAUT (Venkatesh et al., 2003); the Technology–Organization–Environment framework (Tornatzky et al., 1990), which extended the analysis to the organizational level; and, currently, digital maturity models, which place organizations on a developmental trajectory. The configurational perspective, developed by Miller (1986) and Doty et al. (1993) and applied to digital transformation by Vial (2019) and Furnari et al. (2021), argues that organizational outcomes are the product of specific combinations of conditions rather than the additive effect of isolated variables. The principle of equifinality, central to this logic, implies that different organizations can achieve functional forms of HR digitalization through different combinations of conditions, without following a single normative path. The study pursued three research questions: (1) what combinations of technological, interpretive, resource-related, and institutional conditions characterize the digital transformation of the HR function; (2) how organizational actors interpret the significance of HR digitalization, the role of the HR function, and the value generated by technology; and (3) through which distinct

configurations HR digital transformation manifests itself, and what logic of organizational becoming these configurations express.

The theoretical model uses the general framework of digital transformation proposed by Vial (2019) as a conceptual scaffold, neither as a coding scheme nor as a sequence of stages, and integrates three complementary perspectives, organized into four families of conditions and one outcome. Technological conditions describe the material basis of HR digitalization: which sub-functions are covered digitally and how integrated and routinized the adopted systems are (Zmud & Apple, 1992; Ruël et al., 2004). Resource conditions describe what the organization can actually do, based on the Resource-Based View (Barney, 1991; Bharadwaj, 2000; Melville et al., 2004). Institutional conditions describe what the organization is pressured or authorized to do, based on institutional theory (DiMaggio & Powell, 1983; Oliver, 1991; Suchman, 1995). Interpretive conditions describe what organizational actors understand they are doing when they digitalize the HR function, based on the sensemaking perspective (Orlikowski & Gash, 1994; Weick et al., 2005; Maitlis & Christianson, 2014). The outcome, the perceived value that the configuration produces, sits on the dependent side of the model rather than being a fifth condition. On this basis, the thesis proposes the following operational definition: HR digital maturity represents the degree to which the digital configuration of the HR function (the combination of existing infrastructure, the degree of integration and use, the meanings attributed to digitalization, available resources, institutional pressures, and the results produced) enables the function to create value aligned with organizational objectives. The definition is configurational, contextual, and non-normative: maturity does not increase through the addition of technologies, but through the reconfiguration of relationships among the elements of the configuration (Fiss, 2007; Vial, 2019; Furnari et al., 2021; Bansal et al., 2023).

The empirical research adopted a qualitative, multi-case, cross-sectional design with abductive reasoning, aimed at the theoretical elaboration of an existing construct (Fisher & Aguinis, 2017). The purposefully selected sample, chosen for theoretical and informational variation, comprises 29 organizations: 19 large, 9 medium-sized, and one small; 21 belong to multinational groups or have international exposure, and 8 have predominantly Romanian capital. The organizations come from diverse sectors: financial services, IT and consulting, manufacturing, automotive, FMCG, distribution, agriculture, energy, defence, entertainment, and HR services. Data were collected through semi-structured interviews with key informants who have direct visibility into digitalization practices and decisions (HR directors, HR managers, HR business partners, HR specialists, HR digitalization leads, and learning and development managers), based on an interview guide structured around the four families of conditions and the perceived outcomes, with the HR Body of Knowledge as the reference for sub-function coverage (HRCI, 2012). Interviews were recorded with participants' consent and fully transcribed and coded.

Coding followed a directed content analysis approach (Hsieh & Shannon, 2005): initial codes were derived from the theoretical model and refined abductively through repeated returns to the

transcripts, and the results were presented through a Gioia-style data structure (first-order concepts, analytical themes, aggregate families) as a tool for analytical transparency (Gioia et al., 2013). This produced 11 analytical themes: T1 – HR technologies by sub-function; T2 – degree of integration and use; T3 – meanings attributed to digitalization; T4 – interpretation of the HR role; T5 – assessment of the current configuration; T6 – dominant institutional logics; T7 – legitimization of limits; T8 – enabling resources; T9 – constraints and path dependencies; T10 – retrospective transitions; T11 – perceived outcomes. The analysis proceeded in three stages: intra-case analysis, in which each organization was reconstructed across T1–T11 with dominant and secondary subcategories; cross-case analysis, through the comparison of profiles; and configurational aggregation, in which organizations were grouped by configurational coherence and dominant logic rather than by a single score. The aggregation was guided by five explicit criteria: internal coherence of the case, inter-case similarity, configurational differentiation, analytical fit, and the link to the logic of digital transformation.

The results of the thematic analysis show, first, that HR digitalization clearly originates in the administrative core. Payroll and core HRIS are digitalized in 26 of the 29 organizations, analytics and reporting in 23, recruitment and selection in 21, performance management in 18, learning and development and compliance in 15 each, and communication and engagement in 14. Only 10 organizations have broad coverage, 17 selective, and 2 narrow, while integrated suites are present but not dominant (7 organizations, compared with 11 mixed and 11 point-solution-led architectures). Regarding integration (T2), acceptance appears in 26 organizations, routinization in only 10, and a hybrid state, in which digital systems coexist with Excel, email, or parallel manual workflows, in 15: HR digitalization is widely accepted but rarely routinized. The dominant meaning attributed to digitalization (T3) remains operational (efficiency, automation, reduced manual work), present in 27 organizations, although transformational meanings appear in 17 and relational ones in 12. The HR role (T4) is interpreted as guided in all 29 organizations: HR is active in using, explaining, and implementing technologies, but most often within a framework defined by the group, IT, vendors, or the business, without being the main architect of the digital configuration. Although 28 organizations describe their configuration as digital-heavy (T5), 22 of them simultaneously mention transitions, inactive modules, parallel systems, or fragmentation.

With regard to institutional conditions, HR digitalization is legitimized predominantly through coercive logic (T6), present in 26 organizations: legislation, audit, reporting, group requirements, global standardization, security, ESG, or compliance; normative logic appears in 20 organizations and mimetic logic in 14. The theme of legitimizing limits (T7) shows that organizations most often accept limits as dictated by context (acquiescence, 25 organizations), negotiate them step by step (compromise, 15), or maintain parallel processes and postpone full integration (avoidance, 11); explicit rejection of a digital direction appears in a single case, in the form of a principled refusal to use artificial intelligence in recruitment. Enabling resources (T8) are almost equally human (27 organizations) and infrastructural (25), while IT-enabled intangibles (leadership, digital culture, governance) appear less often (13) but distinguish the

more established cases. Constraints (T9) form the densest theme, with 150 codings: leadership, priority, and resource rigidity appears in 23 organizations, data and process fragmentation in 19, infrastructure lock-in in 16, ecosystem dependency in 15, and the human digital capability gap in 27 of the 29 organizations. The past is invoked (T10) mainly to illustrate operational gains, the move from paper and Excel to automation (24 organizations), but strategic narratives appear in 17. Perceived outcomes (T11) are operational in 26 organizations and, with the same frequency, mixed or unclear: digitalization reduces manual work and increases speed and traceability, but it also creates new verification tasks, data dependencies, resistance to self-service, and fragmentation.

The synthesis by families of conditions leads to the study's most important empirical finding, which contradicts the implicit premise of most stage models that more technology means more digital maturity (Teichert, 2019; Aras & Büyüközkan, 2023): technological coverage (T1) does not reliably predict the degree of use and integration (T2), the meaning attributed to digitalization (T3), or the perceived outcomes (T11). When integration is robust, the meaning of digitalization matches objectives, and resources support daily use, organizations with selective or narrow coverage can produce significant operational effects. Platforms do not define HR digital maturity; their configuration does (Marler & Fisher, 2013; Bondarouk et al., 2017; Furnari et al., 2021).

Configurational aggregation led to the identification of five configurations of HR digital maturity, each representing a distinct and internally coherent form of digitalization rather than a step on a scale:

1. Operational Efficiency Consolidators (5 organizations): digitalization is functional but centred on the administrative core (personnel administration, payroll, reporting, compliance), with narrow-to-selective and predominantly point-solution-led architectures. Technology is seen as a tool for efficiency and control, legitimized by coercive and normative pressures, and limits are accepted as part of the context. The value produced is speed, control, and error reduction, without a strategic repositioning of the HR function.
2. Capability-Constrained Operational Adopters (8 organizations): technologies have been adopted in several areas, but use remains uneven, fragmented, or dependent on limited resources. The main constraint is not the absence of technology but the difficulty of mapping processes and data before integration, compounded by resource rigidity, capability gaps, and external dependencies. Outcomes are mixed: operational improvements accompanied by duplicated work, manual checks, and partial implementations.
3. Strategic Value-Oriented Transformers (7 organizations): digitalization is explicitly linked to data, governance, standardization, reporting, and the relationship with the business, under pressures such as ESG reporting, audit, or group-level standardization. HR becomes a strategic actor in digital governance, and limits are legitimized through

compromise. The defining paradox of this configuration is that the more HR uses digitalization as a strategic lever, the more acutely it feels the distance between ambition and technical consolidation: the configuration is aspirationally advanced but infrastructurally incomplete.

4. Emerging Integrators, focused on consistency and control (5 organizations): the most routinized configuration in the sample, with broad, often suite-led HR stacks, interfaces and automations, and strong HR IT resources. The value produced is real (consistency, control, traceability, and data-driven repositioning of HR), yet residual fragmentation, user resistance to self-service, and integration gaps persist. Routinization alone does not produce complete transformation: the configuration is advanced, but not completed.
5. Relational Hybrids, focused on employee-facing HR (4 organizations): digitalization is more advanced in areas facing employees, candidates, and managers (communication, access to information, self-service, learning, employee experience) than in the overall HR architecture. Technology is interpreted as a means of connection, service, and transparency, and the outcomes consist of accessibility and visibility, while the administrative and strategic layers remain partly manual or disconnected.

The comparative analysis shows that the five configurations differ not only in the number of technologies but, above all, in how technology is integrated into processes, interpreted by actors, institutionally legitimized, supported by resources, and limited by constraints. Data integration, the shared cross-cutting challenge, takes different forms: in the first configuration it is absent or not yet attempted; in the second it is underway but generates duplicated work and resistance; in the third it is partially resolved but costly, and its limits become more visible precisely because of the configuration's ambitions for data governance; in the fourth it is advanced and largely automated; and in the fifth, even a sophisticated digital ecosystem can contain disconnected sub-systems. The configurations demonstrate equifinality (different organizations reach functional forms of digitalization through different combinations of conditions) and causal asymmetry: a broad HR stack does not guarantee strategic results, and the absence of a complete suite does not preclude significant relational or operational effects.

The discussion interprets the configurations through the three theoretical lenses. Through the Resource-Based View lens, the data confirm the complementarity thesis at the level of the HR function: HR digital infrastructure does not generate value through its mere existence, but through its combination with appropriate human IT resources and IT-enabled intangibles (Bharadwaj, 2000), while infrastructure lock-in, data fragmentation, and the capability gap act as path dependencies that impede transformation not for lack of intent but because of the cost and complexity of reconfiguring existing resources and routines (Barney, 1991; Teece et al., 1997). Through the institutional lens, the study confirms the coexistence of the three mechanisms of isomorphism (DiMaggio & Powell, 1983) and shows that their relative weight varies systematically across configurations; moreover, by shifting attention from why organizations adopt to how they justify the limits of digitalization, the study shows that digital

isomorphism in HR produces discursive rather than practical uniformity: organizations with different practices invoke the same institutional justifications (the group, legislation, the budget) to legitimize their distinct current states (Oliver, 1991; Meyer & Rowan, 1977; Liang et al., 2007). Through the sensemaking lens, the meaning attributed to digitalization structures configurations continuously, not only at the moment of adoption, and retrospective narratives function as mechanisms of prospective sensemaking that guide future directions (Weick et al., 2005; Stigliani & Ravasi, 2012); HR negotiates the meaning of digitalization within a network of actors (the group, IT, vendors, the business) rather than determining it unilaterally (Maitlis, 2005). The higher-order contribution is that the three lenses operate configurationally, not additively: the same coercive pressures that, in the first configuration, stabilize digitalization at administrative consolidation produce, in the third, the legitimization of strategic ambition, because the interpretive frame and the resource base are different. Same condition, different configuration, different effect.

The thesis thereby reframes the central diagnostic question from "at what level does the organization stand on a scale of one to five?" to "what form of maturity does the current configuration express, and what is the decisive constraint for the next qualitative leap?". The configurations should be read not as fixed positions on a maturity scale, but as patterns of organizational becoming, each showing what has become possible within a specific combination of conditions, what has remained blocked, and what kind of recalibration might enable the next reconfiguration (Vial, 2019; Warner & Wäger, 2019).

The general conclusions of the thesis can be summarized in five main findings. The first is that HR digital transformation is not a linear, uniform, and predictable process, but a contextual, complex, and configurational one: organizations do not go through the same stages in the same order, do not start from the same point, and do not aim for the same ideal maturity model. The second concerns the role of individual perceptions: the success of HR digitalization depends not only on available technological resources but also on how HR employees understand and interpret digital change, and the quality of organizational communication proves to be a determining factor. The third concerns the limitations of existing digital maturity models, whose main weakness is the assumption of linearity. The fourth is the reconceptualization of HR digital maturity as a configurational outcome, empirically supported by the five configurations, which demonstrate the principle of equifinality. The fifth is the ubiquity of the digital capability gap, present in 27 of the 29 organizations, the most recurrent obstacle to HR digitalization regardless of configuration or size: investments in platforms without training, support, and behavioural change are insufficient and may even be counterproductive.

The thesis makes multiple theoretical, methodological, and practical contributions:

1. First, it contributes to the literature on technology adoption in HR by extending the UTAUT framework with employees' perceptions of the organization's digital transformation efforts, shifting the focus from individual adoption decisions to the

communication and sensemaking processes that shape them, and bridging individual-level adoption models and organizational-level configurational analysis.

2. Second, it contributes to digital transformation theory by extending Vial's (2019) framework to the level of the HR function, operationalizing the interdependent building blocks of digital transformation through 11 analytical themes and demonstrating that the interdependence of these dimensions, not their isolated presence, defines HR digital maturity. It also clarifies the terminology and the mechanisms through which DMMs and DTMMs are built and used, offering prescriptive knowledge on choosing the appropriate model for an organization's context.
3. Third, it extends the Resource-Based View, institutional theory, and the sensemaking perspective to the level of the HR function: it shows that the resources–capabilities–complementarities triad directly explains variation in HR digitalization, adds the legitimization of limits (T7) to the institutional literature and extends Oliver's (1991) typology to the digital domain, and shows that retrospective narratives function as mechanisms of prospective sensemaking. The thesis's higher-order contribution is that the three lenses operate simultaneously and configurationally within each organization, and HR digital maturity is the product of their interaction, not the sum of their independent effects.
4. Fourth, methodologically, the thesis integrates three complementary layers of research (the conceptual study, the systematic review, and the qualitative multi-case study) that address the same phenomenon at different analytical levels and validate one another. The system of 11 analytical themes (T1–T11) offers a transparent, theoretically grounded, and replicable coding frame for future studies on other samples or in other national contexts, and the configurational typology provides an operational alternative to stage-based diagnoses. The study is one of the first systematic applications of the configurational perspective to digital HR (Furnari et al., 2021).
5. Fifth, empirically, the thesis provides a typology of five configurations that demonstrates the equifinality of HR digitalization, a principle formulated theoretically but rarely validated in HR contexts (Doty et al., 1993; Fiss, 2011); it identifies the decoupling between technological coverage and the form of transformation; it identifies the digital capability gap as the most pervasive bottleneck; and it shows that clear operational outcomes and mixed outcomes coexist with nearly identical frequencies, so that managerial assessments must hold both dimensions together.

For practitioners, the first implication is that HR digital maturity cannot be achieved simply by purchasing platforms. Organizations advancing toward more mature configurations are not those with the most extensive technology stacks, but those that possess a reconfiguration capability: the ability to map processes, integrate data from disparate systems, build business cases for digital investments, and collaborate effectively between HR, IT, and the business. The second implication is that configurational diagnosis offers an operational alternative to stage-

based diagnoses, with each configuration implying a specific set of priorities: operational consolidators need, before a complex stack, to integrate the administrative core and reduce manual work; constrained adopters must prioritize process standardization, data mapping, and the development of digital skills; strategic transformers must translate the strategic meaning of digitalization into routines, interfaces, and data governance; emerging integrators must manage residual tensions between systems and user behaviours; and relational hybrids must link employee-facing areas to a more coherent HR architecture and analytics. The third implication concerns the importance of perception management and organizational communication: organizations that listen to and actively involve employees in the digital transformation process are more likely to succeed than those that impose change without adequate communication.

Although the thesis makes valuable theoretical and practical contributions, it has limitations that must be acknowledged:

1. The conceptual component on HR employees' perceptions draws on a single organizational context, a multinational IT corporation, which gives it analytical depth but limits the generalizability of the perception typologies to other sectors or types of organizations.
2. The systematic review is restricted to English-language sources indexed in Web of Science and excludes grey literature (reports, white papers, industry publications), which may omit relevant studies from other databases, languages, or practical perspectives.
3. The sample of the empirical study is concentrated in Romania and consists mostly of large or medium-sized organizations with significant international presence, which limits the direct transferability of the configurations to small firms without international exposure, the public sector, or economies with different institutional characteristics. The objective of a qualitative multi-case study, however, is analytical generalization, the extension of theory rather than of frequencies.
4. The data primarily reflect the perspective of HR professionals, while the perspectives of employees, line managers, and IT teams are less visible, even though technical and organizational interpretations of the same technology can diverge significantly (Orlikowski & Gash, 1994).
5. The data are cross-sectional and capture a snapshot of the digital configuration at a given moment rather than a trajectory, and the outcomes are coded from respondents' narratives rather than derived from objective performance data.
6. Assigning a case to a configuration relies on judgements of similarity and difference that cannot be fully formalized, although coding followed a transparent, theoretically grounded, and iterative strategy.

These limitations open clear directions for future research. A first direction is to test the configurations on larger samples and in different national contexts, in the public sector or in

SMEs, and to compare emerging economies in Central and Eastern Europe with economies at a higher level of digital maturity, in order to understand how the national economic and institutional context mediates HR digital transformation. A second direction is the application of Qualitative Comparative Analysis (QCA), which would allow formal testing of the necessary and sufficient conditions for the various configurations and would give practitioners a more precise diagnostic tool. A longitudinal design tracking the same organizations over several years would allow the observation of transitions between configurations and of the mechanisms that trigger or block them; the current data suggest several plausible trajectories, for example from consolidation to strategic aspiration when the meaning of digitalization shifts, or from constrained adoption to integration when key bottlenecks are systematically addressed, which remain to be validated empirically. Further directions include extending the analysis to a multi-stakeholder level (employees, line managers, IT teams), integrating objective HR performance data (time-to-hire, cost-per-hire, engagement, HR productivity) in a mixed-methods design that would move the analysis from description to prediction, and investigating whether generative artificial intelligence and people analytics tools reconfigure existing maturity frameworks or generate new forms of HR digitalization, a question made more pressing by the fact that several organizations in the sample mentioned their intention to adopt AI capabilities in HR processes soon.

Finally, the digital transformation of the human resources function is neither simple, nor linear, nor uniform, and for this very reason it deserves serious analytical attention that goes beyond both the uncritical enthusiasm of managerial discourse and reflexive scepticism toward any technological innovation. HR digital maturity is not a destination, but a continuous process of recalibrating the relationship between digital infrastructure, people's competencies, the meaning that organizational actors ascribe to change, and the contextual pressures that shape the possibilities for action.