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**RAQAMLI IQTISODIYOTDA INSON RESURSLARINI BOSHQARISH:
XODIMLAR SAMARADORLIGINI OSHIRISH CHORALARI,
IMKONIYATLARI VA STRATEGIYALARI**

**УПРАВЛЕНИЕ ЛЮДСКИМИ РЕСУРСАМИ В ЦИФРОВОЙ
ЭКОНОМИКЕ: ВЫЗОВЫ, ВОЗМОЖНОСТИ И СТРАТЕГИИ
ПОВЫШЕНИЯ ЭФФЕКТИВНОСТИ ПЕРСОНАЛА**

MANAGING HUMAN RESOURCES IN THE DIGITAL ECONOMY: CHALLENGES, OPPORTUNITIES, AND WORKFORCE ENHANCEMENT STRATEGIES

Annotatsiya: Ushbu maqolada tashkilotlarning tezlashib borayotgan raqamli transformatsiya sharoitida inson resurslarini boshqarish yondashuvlari o'rganilgan. Tadqiqotda narrativ tahlil qilish asosida asosiy muammolar — ko'nikmalar taqchilligi, raqamli iste'dod boshqaruvi va moslashuvchan HR tuzilmalari tomonidan yaratilayotgan imkoniyatlar o'rganilgan. Rivojlangan va shakllanayotgan raqamli iqtisodiyotlarda faoliyat yurituvchi HR-menejerlar uchun ish kuchini rivojlantirishning amaliy strategiyalari tahlil qilingan.

Kalit so'zlar: raqamli iqtisodiyot, inson resurslarini boshqarish, raqamli transformatsiya, ish kuchini rivojlantirish, HR tahlil, tashkiliy muammolar, strategiya

Аннотация: В данной статье рассматриваются подходы организаций к управлению человеческими ресурсами в условиях ускоряющейся цифровой трансформации. На основе нарративного обзора 13 рецензируемых источников, подкреплённого организационными кейсами, в исследовании выявлены основные вызовы — дефицит навыков, сопротивление персонала и риски для благополучия сотрудников, — а также возможности, создаваемые HR-аналитикой, цифровым управлением талантами и гибкими HR-структурами. Синтезированы практические стратегии развития рабочей силы для HR-менеджеров в условиях как развитой, так и формирующейся цифровой экономики.

Ключевые слова: цифровая экономика, управление человеческими ресурсами, цифровая трансформация, развитие рабочей силы, HR-аналитика, организационные вызовы, HR-стратегия.

Abstract: This paper examines how organizations manage human resources under conditions of accelerating digital transformation. Through a case-informed narrative review of 13 peer-reviewed sources, the study maps the principal challenges organizations face, including skill gaps, employee resistance, and wellbeing risks, alongside the opportunities generated by people analytics, digital talent management, and agile HR structures. Practical workforce enhancement strategies are synthesized for HR managers operating in both advanced and emerging digital economies.

Keywords: digital economy, human resource management, digital transformation, workforce development, people analytics, organizational challenges, HR strategy

Introduction

The digital economy is distinct from the manufacturing economy in which we traditionally lived. Digital transformation is the process by which new technologies transform the ways business is done, reverberating through competitive ability and whole industries. Digital transformation is no longer an optional strategy for businesses, it is a process industries need to embrace if they are to continue to exist [1]. Manufacturers are deploying robots in their factories, firms in service industries are substituting artificial intelligence for traditional approaches, and even age-old industries that have long managed to avoid technology, such as healthcare and education, are changing their organizations to accommodate the emergence of new digital technologies and data systems.

Human Resource Management is central to enabling successful transformation towards the digital economy. Very often organizations fail to adopt and roll out technology because those organizations are unable to build the required capacity and competency on part of their human resources in order for those technologies to succeed, because they are unready for the cultural and behavioral shifts that must occur in the adoption and rollout of those technologies, and because they are unable to keep their workforces adequately engaged during times of disruption in transition [2]. However, most organizations tend to assess HR in the Digital Economy with HR frameworks suited to very different environments characterized by hierarchical structures, elongated cycles of planning, competency profiles organized around specific functions or groups of jobs, and training around skill sets which have a life measured in decades. Such models are not appropriate for environments characterized by rapid technological advances, constant shifts in what the timelines for developing technologies ought to be, and constant redefinition of competencies required for getting the work done.

Although the importance of HRM in successfully embedding technology into organizations has been discussed broadly in the literature, the literature is a bit fragmented in that research on challenges and opportunities in HR in the Digital Economy typically does not connect to the evidence on what is actually working in practice. This study aims to address the fragmentation, in part via case study approach informed “narrative literature review”, explicitly addressing the challenges and opportunities of digital HRM, drawing on some cases that include human resources (however abstracted and removed) in the discussion of HR managerial needs that these cases reflect: cases that are grounded in the lived practice of embedding information technology into organizations rather than reflecting prescriptive postulates.

Literature Review.

The literature provides a clear definition of the term “digital economy.” It refers to the use of digital technologies (such as AI, cloud computing, the Internet of Things, big data analytics, and automation) to transform the processes of production, distribution, and consumption of goods [14].

We can identify three main stages of transformation: digitization, digitalization, and digital transformation [1]. Most organizations in developed countries have already completed stage 1 and are now undergoing stages 2 and 3. Countries with developing economies face the challenge of shortening the timeline for this transformation due to institutional and infrastructure constraints.

The digital revolution differs from previous technological transitions in terms of its scale and speed. While previous industrial revolutions affected a single industry or production process over the course of decades, the current digital revolution is simultaneously impacting numerous sectors, such as sales, manufacturing, and so on [1]. Studies have shown that there is a significant gap between the pace of technological progress and the pace at which people develop the skills to use new technologies. This presents organizations with a significant challenge in the area of human resource management in the digital economy [2].

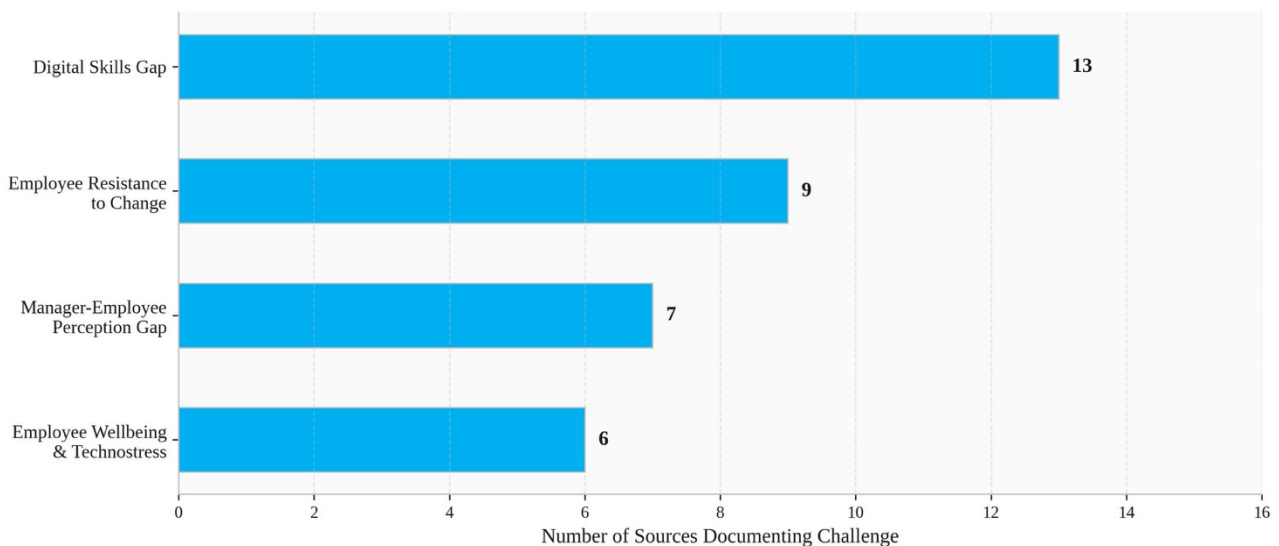
The digital skills gap is generally identified as the major obstacle facing organizations today. The gap occurs when there is a difference between the skills/competencies that an organization requires and the skills and/or competencies currently possessed by its employees. However, the gap does not refer solely to the lack of IT skills in workers; studies show that there is a systematic divergence in how managers and employees perceive their organization's capability, regardless of level of individual capability and identified barriers to innovation [3].

Literature indicates that resistance to technology by employees is often misdiagnosed. In a case study on small and medium-sized enterprises, it was found that employee resistance to digitisation occurs largely as a result of structural factors rather than employee attitudes. Employees will resist digitisation due to the perceived threat to their job security, if they do not have the structural capacity to develop the new capabilities required for digitisation, and if their conversational norms do not provide them with psychological safety to experiment as part of the transition to digitisation as a result of using digital technology [4].

A further consideration regarding the effect of digitalization on employee wellbeing is the effect of digitalization on employee wellbeing. A recent review of the literature examining the effect of artificial intelligence on employee skill and wellbeing found that reskilling employees on a continual basis due to rapid advancements in technology has created a significant increase in stress for employees; in fact, employees have expressed a high level of anxiety concerning their ability to retain their current skill set, their loss of autonomy, and uncertainty regarding the longevity of their job [5].

An analysis of recent trends in employment indicates that digitalization has resulted in a decline of soft skills in the workforce (e.g., critical thinking, adaptability, interpersonal coordination), which negatively impacts the ability of employees to manage the psychological demands placed upon them in rapidly changing work environments [6]. Therefore, any digital transformation strategy that fails to consider employee wellbeing is at risk of creating employee disengagement and turnover that will undermine the investment required to improve employee performance.

Figure 1. Frequency of HR Challenges Documented Across 13 Reviewed Sources.

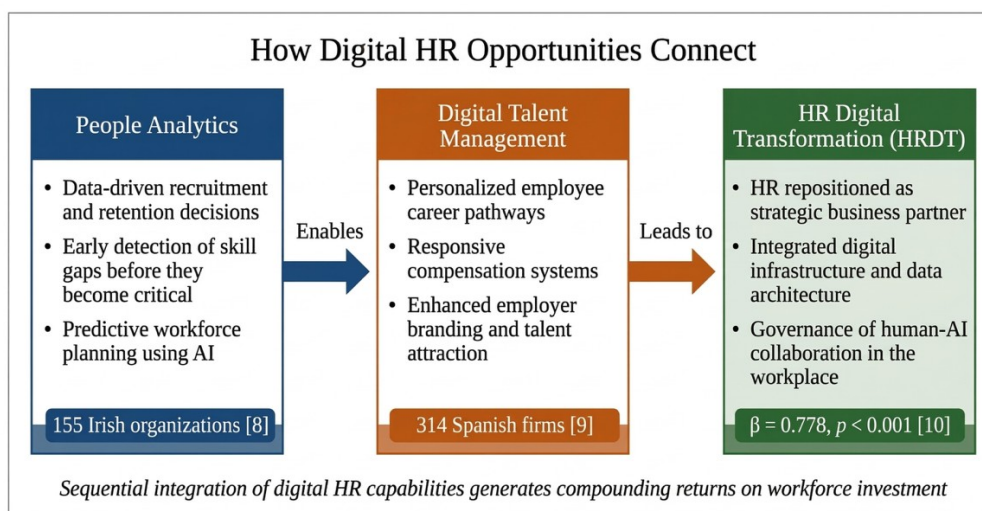


Source: compiled by the authors.

Besides current HR management concerns involving respective technology forces that have led to the above, particularity of the new abilities that organizations can gain within the same technology forces are significant. One of the relevant examples will be demonstrated by the development of People Analytics, using data analytics and artificial intelligence when making HR decisions. The Big Data Analytics Doctrine demonstrates how this platform provides the HR with a chance to manage the workforce in a strategic, rather than reactive, manner founded on experience, as well as finding out high potential employees before their exit, forecasting where skills gaps are likely to arise, and creating measurable interventions to serve the intended purpose of closing the skills gaps [7]. This statement will be supported by referring to the structural equation modeling in 155 Irish Organizations that provide empirical evidence to prove that the availability of technology by HR has facilitated people analytics, thus enhancing decision making by HR in comparison to evidence-based management, and positively affecting the organizational performance [8].

So-called digital talent management platforms can also offer organizations additional opportunities. They enable organizations to develop their ability to attract and retain talented employees. A study involving 314 Spanish companies undergoing digital transformation revealed a strong positive correlation between a company's level of digital maturity and its ability to attract and retain talented employees by strengthening its employer brand, creating flexible compensation systems, and developing more personalized career paths [9].

Figure 2. How Digital HR Opportunities Connect: From Analytics to Strategic Transformation.



Source: compiled by the authors.

The digital transformation of human resource management (HRM) provides organizations with enhanced data about the value employees place on their jobs, which makes them easier to respond to the needs of individual employees faster than traditional HR systems allow; HR systems that are digitally transformed have the added benefit of reducing friction costs associated with employee movement and development within an organization. Structural equation modeling has demonstrated that digital HR transformation has a direct positive impact ($\beta = 0.778, p < 0.001$) upon organizational effectiveness as evidenced through the experiences of 284 HR professionals, with talent acquisition and training/development being the most significant aspects [10].

Accordingly, the extent to which HRM has itself morphed into a digitally enabled strategic function as a result of its digital transformation – referred to as human resource digital transformation (HRDT) – represents a very significant long-term value creation opportunity [11]. Organizations that successfully build out an HRDT initiative by integrating digital infrastructure, data architecture and development of individual capabilities such that there is a cohesive HRDT capability will enable HRM to function as a true strategic partner to the business and not just as an administrative support function. This strategic shift for HR professionals will require a fundamental change in skillsets from those traditionally required in process management and compliance to new skills necessary for effective data literacy, strategic foresight and governance of human-AI collaboration in the workplace.

While there is no shortage of literature related to the challenges and opportunities of digital HR management, two primary gaps exist. First, the majority of published research addresses only the challenge or opportunity components of the digital HR management equation as opposed to researching how organizations address these two dimensions concurrently. In reality, the challenges and opportunities associated with implementing digital HR systems are not sequential but instead are concurrent endeavors that have to be managed. For example, as organizations strive to close skill gaps they are also developing analytic capabilities; while managing resistance to the new digital tools they are moving to implement; and while improving employee well-being they are also accelerating the timelines

associated with HR transformation. Organizations need a framework that encompasses a complete picture. Second, there is very limited empirical evidence relative to HR challenges and opportunities in emerging and transition economies where there is weak institutional support, under-developed digital infrastructure, and often much stronger competitive pressure to digitalize than in advanced western economies [12].

Methodology.

Our study employs a narrative review methodology based on specific examples. We analyzed peer-reviewed literature published between 2020 and 2025 using the Scopus search platform and three targeted search terms: “ digital economy, human resources management, challenges, skills shortage, resistance to change, employee well-being,” “HR analytics, automation, flexible approach to HR management, opportunities of digital transformation,” and “digital transformation of HR, case studies, manufacturing and service companies, HR management strategy.” The search was limited to Q1 and Q2 journals. Sources were selected based on their direct relevance to the challenges or opportunities of digital HR management, resulting in a final corpus of 13 peer-reviewed articles.

The examples examined cover various sectors: organizations in the banking sector [3], manufacturing companies [12], Italian industrial enterprises [13], and small and medium-sized enterprises [4]. The analytical procedure consisted of three stages. First, we classified the problems and opportunities by topic. Second, we identified patterns common to all examples by examining which problems and opportunities consistently arose in different organizations. Third, we developed a model by mapping the relationships between specific problems and organizational responses—strategic, structural, or technological—which, based on the available data, are the most effective for addressing them.

Results.

The synthesis of the reviewed literature produces an integrated framework of five principal challenges and five corresponding opportunities in digital HR management (Table 1). The framework shows the relationship between the challenge and opportunity dimensions that most existing literature treats separately. Each challenge identified in the literature has a corresponding organizational capability or strategic response.

Table 1. Integrated Framework of Digital HR Management Challenges and Opportunities.

Challenges	Opportunities
Digital skills gap among existing workforce	People analytics for evidence-based HR decisions
Employee resistance to technological change	Automation of administrative HR processes
Perception gap between managers and employees on digital readiness	Digital talent management and retention systems
Employee wellbeing and technostress	Agile HR structures enabling

under rapid digitalization	continuous organizational adaptation
Ethical and privacy risks from data-driven HR systems	Virtual HRD platforms for scalable workforce development

Source: compiled by the authors based on reviewed literature.

The explicit finding that is present across the body of literature examined is that organisations that are approaching their digital HR challenges in isolation (e.g. using analytics but not developing the skills required to analyse the data or building talent platforms but not addressing resistance received) consistently underperform compared to organisations that address the challenge and opportunity dimensions of the digital HR space as an integrated system. This finding was documented in the analysis of 26 major manufacturing companies. These companies exhibited a pattern of only focusing on operational efficiencies gained by implementing digital technologies while not developing the capability to innovate with digital tools had achieved operational improvements as a result of the digitalisation but had not achieved the growth and competitive repositioning that a more holistic digital approach would have produced [12]. Consistently, the ability to manage the human element of digital transformation, as opposed to the technology itself, has been shown to be the constraining factor affecting the performance of organisations in their digital performance.

Discussion.

In this review, we have attempted to present a comprehensive framework that highlights dynamics that are not mentioned in the existing literature. It is important to note that the challenges and opportunities of digital human resources management are structurally interconnected. For example, the lack of digital skills is a significant issue, as organizations are unable to fully implement their data-driven HR solutions due to employees' lack of sufficient digital literacy skills [7]. In addition, employee resistance to technological change serves as both a challenge and a diagnostic signal that the organization has failed to create the necessary psychological safety, developmental support, and role clarity for the transition to digital technologies [4].

The relationship between these two dynamic streams affects HR strategy. Organizations that build their digital HR strategy sequentially will not be able to keep up with technological advancements compared to those organizations that adopt a comprehensive, parallel strategy for developing new capabilities while simultaneously implementing the necessary cultural and structural changes [2]. A sequential approach, where each dynamic component is considered in isolation from the others, leads to organizations continuing to address the challenges associated with previous dynamic components in the future.

Special attention should be given to the aspect of employee well-being, as it is one of the least developed in practice. Research clearly shows that the constant need for re-skilling in the digital economy leads to high levels of stress, and that unmanaged "tech stress" directly undermines organizations' ability to achieve the increased productivity and reduced turnover that they rely on as part of their digital HR strategy investments [5]. Organizations that allocate significant resources to

developing and supporting digital tools and analytics systems, but create an environment of constant change and stress for their employees, face a paradox: the opportunities they gain from their technology investments are diminished by the lack of engagement and turnover caused by chronic stress.

The importance of HRM in AI-based transformation strengthens the argument for an integrated digital HR strategy. As organizations become increasingly reliant on AI to facilitate work processes and HR faces the dual challenge of appropriately governing these systems while developing the competencies necessary for employees to successfully leverage the systems [2].

Conclusion.

This article presents three main conclusions regarding human resources management in the modern digital economy.:

First, digital HR challenges and opportunities are structurally interconnected and must be addressed simultaneously rather than sequentially. **Second**, the human factor drives the digital performance of an organization (e.g., leadership commitment, HR strategic positioning and capability development in the workforce) and that the technology itself is not the limiting term in an organization's digital performance.

Third, employee wellbeing is not a secondary concern but a prerequisite for transformation success. For HR practitioners, five priorities emerge from the evidence: build diagnostic capability before investing in solutions; address resistance structurally rather than through communication campaigns; treat people analytics as a precondition for evidence-based decisions; integrate wellbeing management from the outset of any transformation initiative; and position HR as a governance function for human-AI collaboration as AI embeds into organizational decision-making. Organizations should develop their people analytics infrastructure as a requisite condition for making evidence-based development decisions; this is not merely a destination of effort.

There are a number of limitations present within this study. The narrative review methodology used within this study was appropriate for the purpose of consolidating heterogenous evidence; however, the results do not provide the same level of statistical precision that would be available through the meta-analytic methodology of analysis. Furthermore, the case examples are derived from the literature that was reviewed and not independently collected field research, which limits the contextual support available for organizations within this study. Future studies may need to explore longitudinal designs for evaluating the success of digital HR transformation, conducting comparative studies of the various institutional contexts where this research has been limited, particularly in the developing and transitional countries, as well as conducting experimental studies on specific HR interventions developed to address the challenges and opportunities that were described within this framework.

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