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Research Article

Systematic Literature Review on The Role of Digital Talents in Corporate Digital Transformation

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ABSTRACT

Introduction: The digital economy and Industry 4.0 have intensified the global demand for digital talent, yet a significant talent gap persists, worsened by the VUCA environment and COVID-19. This study addresses the urgent need to bridge this gap by exploring the role of digital talent in driving corporate digital transformation and identifying strategies for effective talent development.

Objectives: This paper aims to systematically review existing studies on the role of digital talent in digital transformation in organizations to suggest opportunities for future research in this area.

Methods: This study uses the PRISMA (Preferred Reporting Items for Systematic Review and Meta-Analysis) method, obtaining 11 empirical and theoretical papers sourced from searches in Scopus and Google Scholar related to the role of Digital Talent in Digital Transformation. This study groups the results of previous studies related to the role and position of Digital Talent in Digital Transformation in corporations (organizations), both in terms of empirical analysis and theoretical analysis.

Results: The results of the research provide information for practitioners and Human Capital enthusiasts regarding development trends and the role of Digital Talent in Digital Transformation in corporations (organizations) and can be a guide for further research related to digital talent and digital transformation in organizations.

Conclusions: Aligning higher education with the digital skills demanded by employers is crucial to bridging the global digital talent gap. The Industry 4.0 era necessitates ICT proficiency across all job levels, emphasizing digital talent, fluency, networks, and platforms. Governments, higher education institutions, and businesses must collaborate to develop strategic digital plans and foster dynamic digital ecosystems. Digital talent is a key driver of innovation, with skills like data-driven decision-making, cloud computing, and IoT expertise becoming essential. Companies are increasingly integrating digital tools into talent management, though traditional methods like face-to-face interviews remain prevalent. Critical success factors for digital readiness include digital agents, tools, systems, and a supportive ecosystem. This paper presents a critical review of existing research on the role of digital talent in digital transformation and suggests new variables, measurements, analytical methods, and new issues for researchers in this field. Thus, this paper identifies literature gaps that still require further empirical investigation and appropriate ways to close them.

Keywords: Systematic literature review, Digital Talent, Digital Transformation, Talent Management, Industry 4.0

INTRODUCTION

The digital economy has transformed business models and corporate talent. The gap between talent supply and demand poses a serious dilemma for many companies (Cardenas-Navia, I., & Fitzgerald, B. K, 2019). The impact of VUCA & the Covid-19 Pandemic has accelerated digital adoption, where Digital transformation occurs permanently & massively, 40 million people go online for the first time in Southeast Asia (Google, Temasek & Bain, 2020). Industry 4.0 is increasingly focused on digitalization where the world's digital transformation has an impact on 65% of Global GDP (2021), driving a value of $ 6.8 Trillion (IDC, 2020). The global economic landscape is changing, the rapid use of robotics, AI, IoT, Cloud, big data, 3D printing technology in various industries (UNCTAD, 2019). In Indonesia, there is a phenomenon digital talent gap, where the World Bank estimates that in 2015 - 2030 there will be a shortage of 9 million skilled and semi-skilled ICT workers in Indonesia (WorldBank: Preparing ICT Skills for Digital Economy: Indonesia within the ASEAN context). There is a competition for talent with digital skills (digital skill-set) where Indonesia graduates 40,000 - 50,000 ICT graduates every year, but it is not enough to produce quality graduates to meet market demand (GeekHunter, 2020)

Despite the supportive role of talent development (PT) practices in companies (Ndolo, 2017; Lapiso & Berhanu, 2019), the shortage of Talents in the global labor market in recent years is a compelling reason for the need for research in the domain of talent development practices (Kim and McLean, 2012; Collins, Macnamara, & Cruickshank, 2018). Several studies have discussed the rapid decline in the workforce in most developed countries due to the retirement of the baby boomer generation and the declining birth rate making it difficult to find the best jobs for qualified people at the right time (Macnamara, & Cruickshank, 2018; Kim & McLean, 2012). Consequently, successful conventional PT programs need to be updated appropriately to address innovative issues such as job shortages. The introduction of PT programs in organizations affects company outcomes, including efficiency and job satisfaction (Lawler, 2008; Joo & McLean, 2020), finding this significant influence, scholars suggest that in order to be successful in handling talented personnel; especially senior managers who are the center of human resource organizations (Companies that aim to achieve excellence by recruiting, retaining, managing, coordinating, and developing workers) will devote their time on average in managing Talent (Lawler, 2008; Amberg & McGaughey, 2019).

According to (Zacher, Rudolph, Todorovic, & Ammann, 2019; Garavan et al., 2012; Hedayati Mehdiabadi and Li, 2016). There is a lack of research in the field of talent development, especially digital talent. Providing a structure or pattern that describes the boundaries and scope of talent development work, the organization's main PT strategy and possible significant outcomes will provide a perfect picture that will improve the way companies recognize and interpret talent development practice methods.

OBJECTIVES

This study aims to classify the results of the analysis of the investigations observed on the digital talent development approach in organizations, taking into account the year of the study, the country where the study was conducted, talent development practices, related to meetings and things that are very important.

To achieve these objectives, this study attempts to answer the following questions.

RQ1. What is the main subject of investigation for Digital Talent?

RQ2. What method did the author use for Digital Talent Development? RQ3. What year and source country was the study conducted?

RQ3. What are the key outcomes of Digital Talent, organizational outputs, and implementation issues related to the study?

In order to fully identify the operational boundaries of Talent Management techniques, the following classifications are established for Talent Management: Functional, Exclusive Talent Management, Realistic, Inclusive Talent Management,

Elite Talent Management, and Full Inclusive Talent Management (Swailes and Blackburn, 2016; De Boeck, Meyers, & Dries, 2018). Three typologies highlight the recruitment, development, and retention of talents considered as proactive workers within the company, Although the above classification holds talents can be qualified for all workforces. Compared to MT, PT fields and operational boundaries can be divided into two different categories: exclusive and inclusive (Iles et al., 2010; Swailes; Garavan et al., 2012; and Blackburn, 2016; Charalampous & Papademetriou, 2019). Exclusive PT treats high-potential, high-performing, and proactive employees as Talents, while inclusive talent development PT emphasizes the development of every potential personnel and believes that all workers are Talents. (Swailes et al., 2010 Illes et al., 2012; Brown, O'Kane, Mazumdar, & McCracken, 2019).

METHODS

In this paper, the researcher applies the 2015 PRISMA-P criteria to ensure the quality of research included in the review search and selection process, explaining how studies were found, reviewed, evaluated for eligibility, and included in the study. The primary procedure used to answer the questions of this analysis is a systematic review of the literature, which is "a type of inquiry that explores, critiques, and synthesizes the demonstrative literature on a subject in an integrated manner to produce the most current context and perspective on the topic." (Torraco, 2005, p.356). Consequently, current empirical investigations need to be examined and integrated scientifically to create a new paradigm in the field of talent development.

Table 1. Stages of Systematic Literature Review

No	Stage	Phase
I	Planning a Review(Planning the Review)	0. Identification of the need for review (Identification for the need for a review) 1. Arrangementproposal forreview (Preparation of a proposal for a review) 2. Development of a review protocol
II	Conducting a Review	3. Identification of research 4. Selection of studies/Research (Selection of studies) 5. Study quality assessment 6. Data extraction and progress monitoring (Data extraction and progress monitoring) monitoring progress) 7. Data synthesis (Data synthesis)
III	Reporting & Dissemination (Reporting & Dissemination)	8. Report and recommendations 9. Practicing evidence (Getting evidence into practice)practice)

Source: David Tranfield, Denyer David, and Smart Palminder. "Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review." British Journal of Management, 14 (2003)

This literature review research is derived from online databases Scopus and Google Scholar) in the last 5 years. The query range includes all major HRD journals published (such as Human Resource Development International and European Journal of Training and Development and Human Resource Development Quarterly and Human Resource Development Review).

To complete this systematic review of the literature, the Tranfield, Denyer, & Smart (2003) methodology was adopted. This methodological proposal divides the systematic review into three stages: review planning, review implementation, and finally reporting and dissemination. Table 1 summarizes the stages and phases proposed by Tranfield, Denyer, & Smart.

Table 2. Search Methods Focused on Associated

No	Database	Year Range	Query Results	Information
1	Scopus	2017-2025	368	Scopus Web Search
2	Google Scholar	2017-2025	241	Search with Publish or Perish
	Total		609	

From the data extraction procedure, 609 publications were obtained provided by the database query and the article query was assessed based on its significance to study the area matching with the supporting standards for Inclusion. After the removal of 159 records that were duplicates, 450 journals were carefully selected as eligible articles for title and abstract screening. When reviewing the titles and abstracts, 382 were found to not meet the selection criteria because they did not refer to the topic of Talent Management, Digital Talent or came from low-quality sources. Finally, 11 out of 68 articles were classified as the most suitable journals for final exploration based on the inclusion/exclusion criteria. Figure 1 illustrates the selection process of the papers included in the study.

Inclusion and Exclusion Criteria

The criteria consisted of a literature review of all (quantitative, qualitative, and mixed methods) peer-reviewed, scientific investigative research using English language texts meeting the criteria for Inclusion. Articles were excluded from additional screening to investigate Talent from an institutional, gaming, and recreational perspective because Talent from these disciplines has a different connotation than what HRD considers Talent or is related to developing leaders, developing managers, developing careers, or learning abilities. Therefore, journals that did not explicitly clarify the impact on the field of Talent Management or Talent Development were excluded from this study. Examples include journals that are purely about developing leaders and do not discuss how leadership development correlates with Talent Development, the journal does not comply with the existing literature evaluation Inclusion standards. Furthermore, almost eight articles using qualitative methodology have been disqualified after analyzing the documents because they do not discuss the research data collection methods. So it is impossible to assess the reliability of the results.

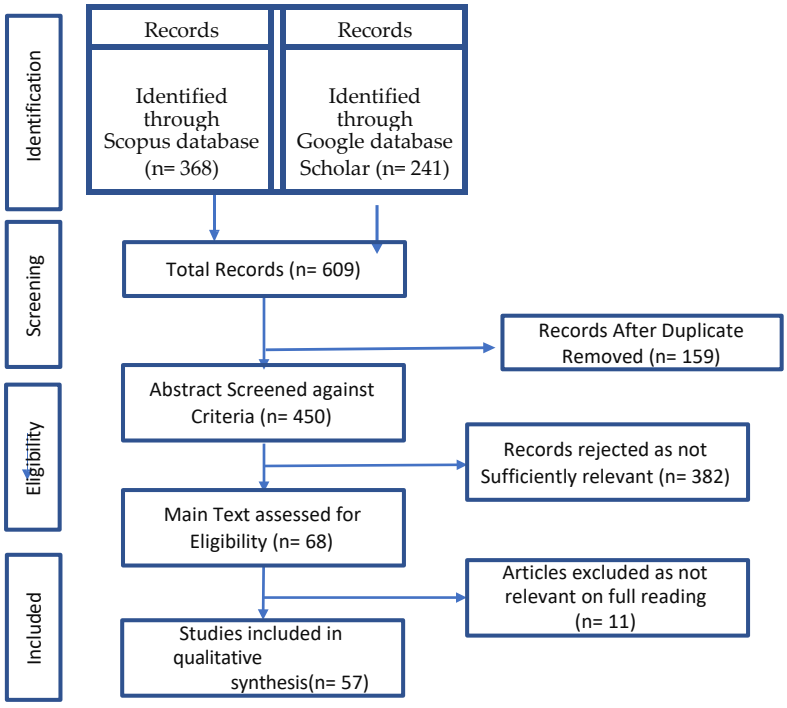

Figure 1. PRISMA-P. Flowchart showing the paper selection process.

Table 2. Exclusion Criteria

Filter	Criteria
1	Eliminate duplication between database sources
2	Title and abstract screening
3	Irrelevant topics
4	Overall not relevant to the topic

Data Extraction

Abstract screening was conducted to determine which studies would be used. The PRISMA-P 2015 statement was used to coordinate, from various perspectives, the investigation of the last 57 articles: on the problems and results of the implementation of Talent Development interventions. The main emphasis of this study is Talent Management or Talent Development; its denotation Exclusive or Inclusive, the purpose of the study, is the main concentration of the study. From 609 journal papers from the Scopus and Google Scholar database sources, 57 journal papers were produced that matched the search criteria filters.

Table 3. General Analysis of Selected Documents

No	Author and Title of Research	Year	Doc Type	Author Keywords	Research methods	Respondent Location	Industry	Research Focus
[1]	Cardenas-Navia, I., & Fitzgerald, B. K The digital dilemma: Winning and losing strategies in the digital talent race	2019	Journal Paper	Blended professional, digital, skills, partnerships, reskilling, talent	Qualitative Approach	CompanyDigital in the United States: AT&T, PWC	Digital Company	The Influence of Supply and Demand for Digital Skills; Strong talent acquisition and skills enhancement strategies in efforts to maximize value from digital business models in digital company.
[2]	Gaye Karacay, et al **Talent Development for Industry 4.0**	2018	Book	Talent Development, Industry 4.0	Qualitative Approach	Not-Specified	Not-Specified	Management InfluenceTalent in value creation. High potential and high performing employees are an important source of value creation for every business.
[3]	uğba KaraboğaYonca, et al **Sustainable Digital Talent Ecosystem in the New Era: Impacts on Businesses, Governments and Universities**	2021	Paper	Digital talent management, digital transformation, government role, corporation role, university role	Qualitative Approach	Türkiye	Not-Specified	The Influence of Digital Talent on Individual Innovation Behavior and Skills in the Era of Revolution 4.0
[4]	Mehraj Udin Ganaie, et al **Talent Management and Value Creation: A Conceptual Framework**	2017	Journal Paper	Talent Management, Competency Focus, Talent Pooling, Talent Investment, Talenting, Value Creation	Qualitative Approach	Not-Specified	Not-Specified	Analyzing the employee life cycle from talent attraction, and acquisition, training, evaluation, and development in a study of the main digital tools used in corporations. Talent management should include steps to maintain key talent positions

[5]	Riri Nofrita, et al **The Effect of Digital Talent on Individual Innovation Behavior, Skills of Revolution Industry 4.0 as Mediator Variables**	2020	Journal Paper	Revolution Industry 4.0, Digital Talent, Individual Innovation Behavior, Skills of Revolution Industry 4.0, SEM-PLS	SEM-PLS	Indonesia	Not-Specified	The influence of SMEs on digital utilization priorities with long-term and strategic Talent Management, on sustainability future business
[6]	Pedro César Martínez-Moránm et al **The Digital Transformation of the Talent Management Process: A Spanish Business Case**	2021	Journal Paper	talents; digital transformation; talent management; talent attraction; talent acquisition; talent development; talent retention; digitization; social networks; e-HRM; sustainability	Qualitative Approach; Online Survey	Spain, 200 Respondentsfrom 180 companies	Multi Industry	InfluenceDigitalization in the role of HR practitioners requires a different set of competencies in organizations that are transforming towards digital. Key findings: The main themes are the ability to design, extract, understand, analyze, interpret and apply information (data);
[7]	Monica Yanuardani, et al **Exploring Talent Management Potential in Digital-Savvy SMEs: A Case Study from Yogyakarta, Jakarta, and Bandung**	2018	Journal Paper	talent management; small-medium enterprises; digital-savvy talent; Indonesia's digital economy	Qualitative Approach; SurveyOnline & Data Analysis; Cluster Analysis	Indonesia	SME; Multi Industry	The development of a model to assess digital readiness (Digital Readiness/DR), as an organizational development tool. As well as mapping Key Success Factors for the organization's digital readiness in Industrial Era 4.0.
[8]	Michiel J. van den Berg, et al **An exploration of key human resource practitioner competencies in a digitally transformed organization**	2020	Journal Paper	digitalization;digitally transformed organization; HR transformation; HR competencies; talent management.	Qualitative Approach, 43 respondents through purposive sampling procedures.	South Africa	Multi Industry	AnalyzeDigital Talent policy in Indonesia with output in the form of recommendations for government input. Respondents with Qualitative Observation, Qualitative Interviews and Data Secondary.
[9]	Mansoor Ahmed Soomro, et al **DIGITAL READINESSMODELS: A SYSTEMATIC LITERATURE REVIEW**	2020	Conference Proceedings	Digital Readiness, Digitalization, Fourth Industrial Revolution, Industry 4.0, Industrial Revolution 4.0.	Systematic Literature Review(SLR), 57 Papers	Malaysia	Multi Industry	DiscussDigital Talent Capability Modeling in Indonesian Telecommunication Companies Affected by Turbulence (VUCA)
[10]	Daughter of Azizatun Nafi'ah, et al **POLICY READINESSDIGITAL TALENT IN INDONESIA**	2021	Journal Paper	Readiness, Policy, Digital Talent, Transformation	Qualitative Approach	Indonesia	Multi Industry	Influence of Industry 4.0 in Talent Development in Companies. The advancement of digital technology collectively known as Industry 4.0 is changing the world. dynamics of most industries and drive development needsSuitable talent.
[11]	Tubagus Arief Fahmi, et al **Digital Talent Capability Model for Transforming Technology-Based Holding Companies**	2020	Journal Paper	Attitudes to Change, Culture, Digital Literacy, Digital Talent Capability, Performance	Qualitative approach, purposive sampling respondents.	Indonesia	Digital Company	Influencerapid digital transformation worldwide on the huge increase in demand for digital talent creates a gap. A strategy is needed to attract digital talent to the government, companies, and universities.

RESULTS

The article selection process, conducted using the PRISMA method, identified four key literature sources that serve as primary references for this study. These articles were published across different years and appeared in various journals, as outlined in Table 4.

Table 4. Journal name and year of articles

Article	Journal	Year
1	Journal of Management Development	2025
2	Sustainability (Switzerland)	2024
3	Journal of Information Systems Engineering and Management	2025
4	Journal of Open Innovation: Technology, Market, and Complexity	2021

As illustrated in Table 4, research specifically addressing Strategic digital talent in corporate remains scarce within the 2014–2025 timeframe. However, over the past five years, particularly since 2021, studies on digital talent in corporate settings have gradually begun to surface, albeit in limited numbers.

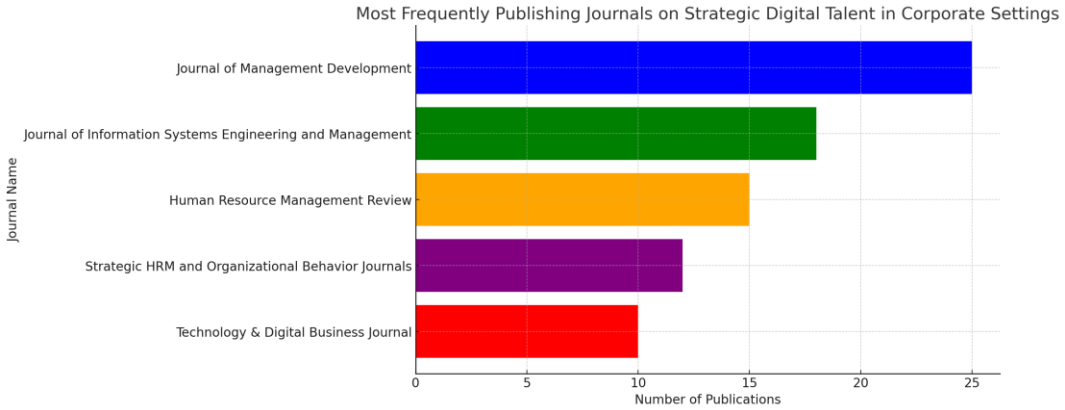

Figure 2. Most Frequently Publishing Journals on Strategic Digital Talent in Corporate Settings

The bar chart provides a comprehensive visualization of the most prolific academic journals publishing research on strategic digital talent in corporate environments. By quantifying the frequency of publications, this chart highlights the dominant sources shaping the academic discourse in this domain. At the forefront, the Journal of Management Development emerges as the leading publication, signifying its pivotal role in disseminating research on digital talent strategies, workforce transformation, and organizational development. This journal's prominence suggests that it serves as a key platform for scholars exploring the intersection of human resource management (HRM) and digitalization. Following closely behind, the Journal of Information Systems Engineering and Management has also published a significant number of studies in this area. Its focus on the technological and managerial aspects of information systems indicates that digital talent strategy is not only an HR concern but also a critical component of corporate digital transformation efforts.

The Human Resource Management Review ranks among the top contributors as well, reinforcing the notion that digital talent development and strategic HRM are integral to modern workforce management. Research published in this journal often emphasizes talent acquisition, retention, and competency frameworks within digitally evolving organizations. Other high-impact sources include specialized publications on strategic HRM, organizational behavior, and technology-driven business transformation. The presence of journals focused on digital business and corporate innovation suggests

that the concept of digital talent extends beyond traditional HR functions, integrating with broader business strategy and technological advancement.

This visualization underscores the interdisciplinary nature of strategic digital talent research, spanning HRM, business management, and information systems. It also reflects the growing scholarly interest in how organizations adapt their talent management practices in response to rapid technological change. By identifying these key publishing sources, the chart provides a valuable reference for researchers seeking authoritative studies in this evolving field.

Notably, the Journal of Management Development and the Journal of Information Systems Engineering and Management are among the primary publications featuring articles on this topic. Meanwhile, Figure 5 presents the ten most frequently cited keywords across these four studies.

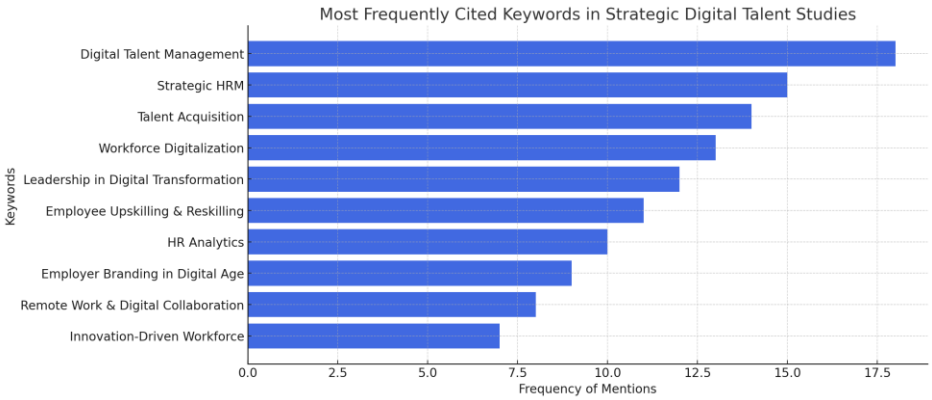

Figure 3. Most Frequently Publishing Journals on Strategic Digital Talent Studies

The bar chart presented above visualizes the ten most frequently referenced keywords associated with strategic digital talent in corporate environments. The frequency values represent the number of times each keyword was cited across the four studies. Notably, Digital Talent Management, Strategic HRM, and Talent Acquisition emerge as the most dominant themes, underscoring their pivotal role in shaping corporate digital talent strategies. In contrast, while Remote Work & Digital Collaboration and Innovation-Driven Workforce are cited less frequently, they nonetheless signify evolving trends that are reshaping workforce dynamics in the digital era.

Table 4. Publisher Journal

Publisher	Volume Journal
Sage Publications India Pvt. Ltd	8
Emerald Publishing	15
Green Open Access	5
Gold Open Access	4
International Academy of Global Business and Trade	5
Allied Business Academies	5
Routledge	6
IBIMA Publishing	4
SRAC - Romanian Society for Quality	3
John Wiley and Sons Inc.	2
Total	57

Based on Table 4, In this systematic literature review (SLR) analysis, Emerald Publishing emerges as the most significant contributor, with 15 journals forming the core of the reviewed literature. This highlights Emerald's strong presence in

academic publishing, particularly in business, management, and social sciences. Following closely, Sage Publications India Pvt. Ltd ranks second, contributing 8 journals out of the 57 papers analyzed. Sage is renowned for its high-impact scholarly publications across various disciplines. The dominance of these publishers indicates their extensive coverage of relevant research topics, ensuring the availability of high-quality, peer-reviewed articles that serve as critical references for this study.

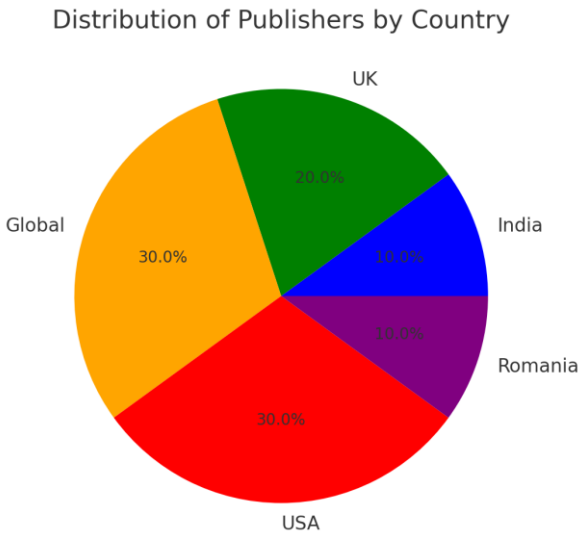

Figure 4. Distribution of Publishers by Country

The distribution of academic journal publishers across various countries reflects a diverse landscape of scholarly dissemination. The United States and the United Kingdom emerge as dominant players, collectively accounting for a significant portion of the publishing ecosystem. The United States leads with 30%, represented by renowned publishers such as John Wiley and Sons Inc., Allied Business Academies, and IBIMA Publishing. These entities have established themselves as pillars of academic research, particularly in business, management, and applied sciences. Similarly, the United Kingdom contributes 20%, with Emerald Publishing and Routledge standing out as key contributors to high-impact journals in social sciences, business, and humanities. These publishers are known for their rigorous peer-review processes and global reach. A noteworthy trend is the rise of global publishing models, including Green Open Access and Gold Open Access, which together account for 30% of the total. These platforms emphasize accessibility and knowledge democratization, catering to an evolving academic landscape where open-access research is increasingly valued.

Meanwhile, India and Romania contribute 10% each, represented by Sage Publications India Pvt. Ltd. and SRAC - Romanian Society for Quality, respectively. These publishers, while smaller in scale, play crucial roles in regional and specialized research dissemination. This distribution underscores the influence of traditional Western academic publishers while highlighting the expanding role of open-access frameworks and emerging markets in global knowledge exchange.

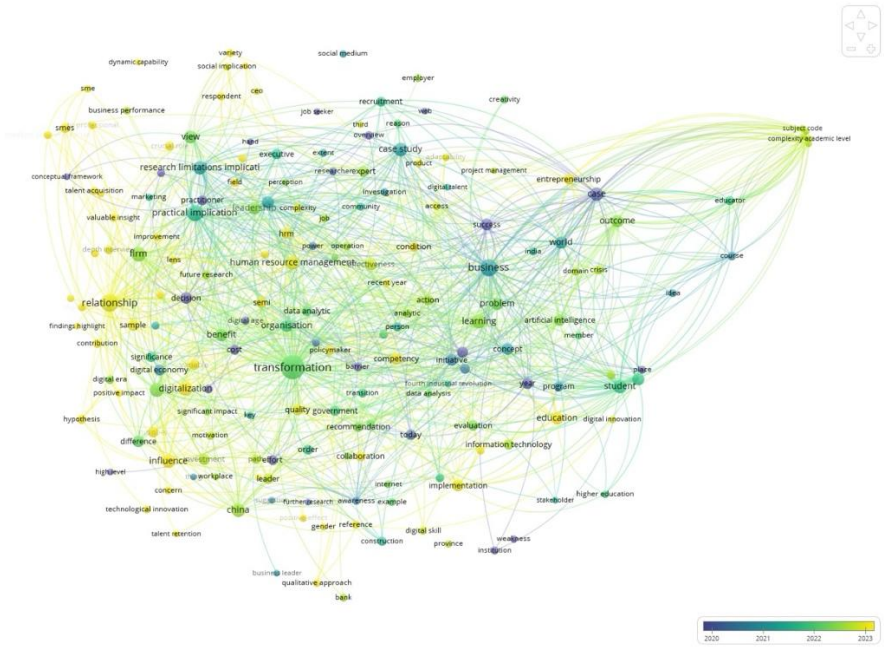

Figure 5. Bibliometric network visualization generated using VOSviewer

The image presents a bibliometric network visualization generated using VOSviewer, a sophisticated tool designed for mapping and analyzing scientific literature. Below is a detailed breakdown of the key elements depicted in the visualization: The graphic functions as a bibliometric network map that shows the co-occurrence patterns of keywords in scholarly works about strategic digital talent in business environments. The network's nodes (circles) each represent a distinct keyword, and the links (lines) that connect them show how frequently these phrases occur together in the body of research under analysis. These links' density and strength shed light on the field's prevailing research themes and new developments.

The magnitude of each node within the visualization denotes the recurrence rate of a given keyword across the analyzed body of literature. Larger nodes signify terms that appear with greater frequency, underscoring their prominence within the discourse on strategic digital talent. These high-frequency keywords serve as thematic pillars within the field, shaping the intellectual framework of research on digital workforce strategies. Notably, terms such as “transformation,” “business,” “human resource management (HRM),” and “digitalization” emerge as dominant constructs, reinforcing their integral role in contemporary discussions surrounding digital talent management.

In contrast, smaller nodes correspond to less frequently cited keywords, which, despite their lower occurrence, remain pertinent to the field. These terms may represent emerging paradigms or underexplored dimensions within the scholarly landscape. For instance, “remote work,” “digital collaboration,” and “competency development”—while not as recurrent as core concepts—signify evolving trends in corporate digital talent strategies. Their presence, albeit less pronounced, suggests growing academic and industry interest in the adaptation of workforce structures, technological integration, and skill development in an increasingly digitalized corporate environment.

The color gradient within the visualization, as illustrated in the legend at the bottom-right, offers a chronological perspective on the evolution of research trends. Studies from earlier years (2020–2021) are represented in blue, while more recent contributions (2022–2023) are depicted in shades of green to yellow, signaling the progression of academic focus over time.

This temporal mapping facilitates a comparative assessment of research development, shedding light on shifting academic priorities in the field of strategic digital talent.

1. Early-stage research (2020–2021, blue nodes):
   Initial studies predominantly explored fundamental themes such as digital transformation, human resource management (HRM), and organizational change. These early investigations established the conceptual framework for understanding the role of digital talent within corporate strategies.
2. Mid-phase research (2021–2022, green nodes):
   During this period, there was a notable shift towards competency development, digital skills, and HR analytics as organizations began actively implementing digital talent management practices. This phase reflects a growing emphasis on enhancing workforce capabilities in response to technological advancements.
3. Recent research trends (2023, yellow nodes):
   The latest studies indicate an increased focus on emerging paradigms such as workforce agility, remote collaboration, and digital innovation. The prominence of these yellow nodes suggests that scholars are increasingly examining how digital talent is strategically utilized within dynamic, technology-driven corporate landscapes.

Key outcomes of Digital Talent

Developing digital talent yields several pivotal outcomes that significantly enhance organizational performance and adaptability.

1. Enhanced Innovation and Competitiveness
   A workforce proficient in digital skills drives innovation, enabling the development of new products and services that meet evolving market demands. This adaptability fosters a competitive edge, as organizations can swiftly respond to technological advancements and shifting consumer preferences (Business–Higher Education Forum (2019)
2. Improved Employee Retention
   Investing in digital upskilling contributes to higher employee satisfaction and retention rates. Professionals are more likely to remain with organizations that support their career growth through continuous learning opportunities, reducing turnover and associated recruitment costs (Liu Y et al, 2024)
3. Operational Efficiency
   Digitally adept employees streamline processes, automate routine tasks, and leverage data analytics to inform decision-making. This efficiency leads to cost reductions and optimized resource allocation, enhancing overall productivity (Chu F et al, 2024)
4. Attraction of Top Talent
   Organizations known for their commitment to digital development attract high-caliber candidates seeking progressive work environments. This reputation facilitates the acquisition of talent essential for sustaining growth in the digital era. (Jiagui L, et al, 2024)

DISCUSSION

Organizational outputs

Organizational outputs resulting from the role of digital talents in corporate digital transformation encompass enhanced operational efficiency, accelerated innovation, improved decision-making, increased market competitiveness, and heightened customer satisfaction. Digital talents serve as key enablers in leveraging emerging technologies, streamlining processes, and fostering a culture of continuous improvement.

Organizations that integrate digital talents experience optimized workflows, automation of repetitive tasks, and improved cross-functional collaboration. This leads to reduced costs, increased productivity, and the ability to scale operations efficiently. Digital talents drive innovation by integrating advanced technologies such as artificial intelligence, big data analytics, and cloud computing into business strategies. They enable rapid prototyping, data-driven experimentation, and agile development, ensuring that companies remain at the forefront of technological

advancements. Digital transformation enables organizations to harness real-time analytics and predictive modeling, allowing leaders to make informed strategic decisions. Digital talents facilitate the implementation of sophisticated data systems that enhance risk assessment and market forecasting.

Companies with strong digital talent capabilities gain a competitive edge by responding swiftly to industry shifts and consumer demands. This agility enables firms to launch new digital products, personalize customer experiences, and adapt to evolving trends. Digital talents contribute to the development of seamless, omnichannel customer experiences, improving engagement and satisfaction. By integrating AI-driven chatbots, personalized marketing, and customer analytics, businesses can enhance service delivery and build long-term customer loyalty.

Cardenas et al. (2019) emphasize that robust talent acquisition and continuous upskilling initiatives are fundamental in optimizing returns on digital business models. As businesses increasingly integrate advanced technologies such as artificial intelligence, big data analytics, and automation, the demand for highly skilled professionals continues to escalate. Organizations that fail to invest in talent development risk losing their competitive edge in an era characterized by rapid digital transformation.

A key strategy to bridge this skills gap is fostering strategic business-higher education partnerships. According to the Business–Higher Education Forum (2019), such collaborations allow educational institutions to adapt their curricula in response to evolving industry needs, ensuring graduates possess the necessary competencies to thrive in the digital economy. These alliances not only facilitate a seamless transition from academia to industry but also play a crucial role in upskilling legacy employees—workers whose skills may be outdated but who remain valuable assets within an organization. By proactively aligning workforce development strategies with technological advancements, businesses can enhance employee adaptability, innovation capacity, and long-term sustainability. Ultimately, a symbiotic relationship between enterprises and academic institutions is essential to fostering a highly skilled workforce capable of driving digital transformation and economic growth.Aligning higher education pathways and credentials with the cross-sector digital skills needed by employers in the region can maximize the region's digital talent pool.

Establishing networks between businesses and universities with diverse missions and student populations can significantly enhance talent development and diversify the talent pool. Such collaborations enable the alignment of academic curricula with industry needs, ensuring that graduates are equipped with relevant skills. For instance, the University of Greenwich has been recognized for promoting social mobility by helping individuals from disadvantaged backgrounds secure higher-paying jobs through tailored apprenticeship programs that address specific employer requirements (Hughes et al, 2024).

Additionally, implementing a broad and agile employer upskilling strategy can yield swift outcomes and mitigate the risks associated with unsuccessful technology acquisitions. Companies like Johnson & Johnson and DHL have adopted AI-driven processes to assess and plan worker skills, identify training needs, and support internal hiring, thereby enhancing workforce capabilities and retention. (Yu G. 2024). By proactively investing in employee development, organizations can adapt more effectively to technological advancements and maintain a competitive edge.

Riri Nofrita, et al, digital talent has a positive relationship with Skills Revolution Industry 4.0. The majority of innovation behavior indicators are comfortable with ambiguity, customer-centricity, entrepreneurial mindset, data-driven decision making, cloud computing, search engine optimization, web development, chief internet of things officer, data architect, data engineer, and data scientist.

In the Skills Revolution Industry 4.0 construct, the indicators produced are Skills Revolution Industry 4.0 critical thinking, monitoring, complex problem solving, leadership, analytical thinking, creativity, initiative, and responsibility. In the individual innovation behavior construct, the indicators produced are exploring new opportunities, championing new ideas, implementing new ideas, and problem-solving abilities.

The relationship between digital talent and individual innovation behavior is influenced by the construct of Skills Revolution Industry 4.0 as a mediator. The results of this study, the construct of Skills Revolution Industry 4.0, can mediate the relationship between digital talent and individual innovation behavior. The built-up model of this research

can describe the relationship between the construct of digital talent and skill 4.0, digital talent on innovation behavior, and the mediation relationship between digital talent and individual innovation behavior using the construct of skill.

The development of the industrial revolution 4.0 is increasingly rapid. The demands of mastery, digital competence, skills, and innovation will persist permanently. The development of the revolution is also referred to as the need for human resources in a digital world. In this study, the model built can describe the competence of students as individual job seekers in the future.

Digitalization or technology competency requires mastery of digital talent. Mastery of digital talent is about using digital devices and managing and building new technologies. Digital talent that has a positive influence on Skills Revolution Industry 4.0 is a supporting factor in taking and deciding to use technology. Skills Revolution Industry can be a catalyst for accelerating the birth of technological innovation. The role of digital talent and individual innovation behavior is connected to Skills Revolution Industry 4.0

Implementation issues related to the talent digital

The deployment of digital talent strategies presents multiple obstacles, including skill shortages, resistance to transformation, integration hurdles, and the challenge of cultural adaptation. Many enterprises face difficulties in sourcing professionals proficient in cutting-edge technologies such as artificial intelligence, big data, and cybersecurity. Furthermore, employees accustomed to conventional processes often resist adopting new digital methodologies, impeding transformation initiatives. Successfully incorporating digital talent into existing frameworks necessitates strategic alignment, comprehensive training programs, and strong leadership support. Encouraging a digital-first mindset remains a significant challenge. Without a well-defined strategy, organizations risk suboptimal utilization of digital expertise, resulting in inefficiencies, diminished productivity, and stalled transformation efforts. These approaches underscore the importance of strategic partnerships and continuous learning in fostering a resilient and competent workforced. Automation of business processes along with the emergence of new business models driven by the latest innovations in digital technologies has profoundly changed the dynamics of most industries. In line with this transformation, the ‘way of doing’ of work has also changed, and these new work systems and designs impose new skill requirements on employees. (Gaye Karacay, et al, 2018)

For strategic workforce planning, companies need to start by understanding the scope and content of changing job requirements and workforce skill needs. Next, they need to evaluate the availability of talented employees with the right skills and abilities needed for the future within their current organizational content.

At the same time, they need to know how to attract and recruit new talent with the necessary skills. The Industry 4.0 era requires all employees, even workers with low-skilled jobs, to have a collection of ICT skills. However, Industry 4.0 requires all employees, even workers with low-skilled jobs, to have a collection of ICT skills. 4.0 requires critical employee skills to encompass more than just core skills; indeed, for successful implementation of hard-skills employees must have soft-skills as collaboration, communication and autonomy to be able to carry out their work in a hybrid operating system.

In digital work design, digital talent, digital fluency, digital networks, and digital platforms will be the most prominent words. As a result of the efforts rapid digital transformation across the globe, the huge increase in demand for digital talent has led to a digital talent gap across the globe. (uğba KaraboğaYonca, et al, 2021). The digital talent shortage is not just a business issue. Digital brains are the most valuable asset for a country. Technology alone is not enough to build a country. It is only possible by understanding technological innovation in the most accurate way and utilizing it to its full potential through a workforce with that knowledge and skills. To that end, the government, higher education institutions, and businesses in a country must work together to prepare and implement a strategic digital plan on what a country can do to close the digital talent gap.

Partnerships between universities, businesses and government are essential to support a vibrant digital ecosystem in the country with network systems, digital platforms and digital talent. Digital talent management in the new era is one of the basic responsibilities of companies. To turn digital transformation investments across the organization into business success, companies need to improve the digital skills and capabilities of their workforce at all levels.

Therefore, companies and governments must make strategic plans to attract digital talent and maintain their position. Digital talent development for universities is essential to prepare digitally skilled new graduates for a digitally dominated business environment and to strengthen a country's economic development and global reputation (Aybek, 2017).

For government institutions, investing in digital transformation and developing digital talent is more important than ever as citizens demand simplified and digitized public services, modernized bureaucracies, high levels of transparency, accountability, and participation in public operations (Mergel, Gong, & Bertot, 2018; BCG, 2019).

Public institutions need to engage with their country's digital ecosystem to compete with the private sector and to attract digital talent to a country. In this paper, we highlight the importance of collaboration between government, business, and higher education institutions to create a digital talent ecosystem in a country to address the global digital talent gap. The overall goal of their collaboration is to develop strong ties among partners for the transfer of knowledge, technology, and organization to support digital skills development. We hope that this study can serve as a guide for government, private industry, and higher education institutions on how to address the digital talent gap. Mansoor Ahmed Soomro, et al, 2020 do systematic literature review explores 22 existing digital readiness models that answer the first research question of this study. The review further explores 119 available model dimensions used by different authors and companies to evaluate digital readiness, which answers the second research question of this study. Furthermore, based on a systematic review of existing models and model dimensions, this paper proposes four critical success factors that are essential to ensure a company's digital readiness: (a) Digital Agents and Skills, (b) Digital Tools and Applications, (c) Digital Systems and Infrastructure, and (d) Digital Ecosystem and Culture.

This finally answers the third research question of this paper through the SLR methodology. This paper has several contributions from a theoretical perspective. First, a systematic literature review of digital readiness models follows a well-structured and replicable methodology. Second, it provides an original contribution in the form of four critical success factors that can be considered as key ingredients for achieving digital readiness in companies.

Binti Azizatun Nafi'ah, et al , 2021. The need for digital skills is inevitable. In Indonesia, there is still a gap between existing skills and the digital skills needed. The government has provided a policy to improve digital skills through the digital talent scholarship program and pre-employment cards. The government's response to the digital talent gap has been a little slow due to the focus on fixinginternet network that drains high funds. Meanwhile, the current training has not yet achieved maximum results because...no internships or direct practice in companies. Recommendations for developing the current digital skill era are to prioritize improving human resource skills to be able to operate digital. Skills improvement can be done through employee exchanges, recruitment innovation, establishing partnerships with digital platforms, acquiring digital companies, and forming digital-based business incubators.

This study shows how organizations prepare for their digital transformation by enhancing organizational capabilities. The digital talent capability model is also developed in this study as a subsystem of organizational capabilities, which is built from organizational culture, digital literacy, attitude towards change, and performance. This model can diagnose the readiness of digital talent to be given a role, performe digital transformation initiatives, and making decisions using information systems and technology to deliver results to the organization. By using the model, organizations and practitioners can predict and facilitate change efforts, for example, to attract, retain, and develop their digital talent capabilities to transform the organization to achieve better performance. This will be beneficial for current talents as Telkom employees and future talents to prepare themselves to meet these basic requirements before joining Telkom's digital ecosystem.

This model provides theoretical contributions through the interaction of the elements that make up the model as part of a complex organizational system relevant to digital transformation. This model also shows the central role of attitude to change as an individual transformation that follows organizational change. This element fills the gap of how an individual contributes more to the organizational transformation process because it shows cognitive reactions to change. Being central and completing the model by providing assurance to the individuals involved to achieve better performance. The limitation of this study is that the digital culture framework practiced in Telkom comes from the established framework

built by the Open Road Community (2019). The author suggests further research on the possibility of certain behaviors resulting from common collective perceptions in problem solving.

CONCLUSION

Aligning higher education pathways and credentials with the cross-sector digital skills needed by employers in the region can maximize the region's digital talent pool. The Industry 4.0 era requires all employees, even workers with low-skilled jobs, to have a set of ICT skills. In digital work design, digital talent, digital fluency, digital networks and digital platforms will be the most prominent words. As a result of rapid digital transformation efforts worldwide, the huge increase in demand for digital talent has led to a digital talent gap worldwide. The digital talent shortage is not just a business issue. Digital brains are a country's most valuable asset. The government, higher education institutions, and businesses in a country must work together to prepare and implement a strategic digital plan on what a country can do to close the digital talent gap. Partnerships between universities, business and government are essential to support a dynamic digital ecosystem in the country with network systems, digital platforms, and digital talents.

Human talent management orientation is very important for strategic growth and competitive advantage of the company. Digital talent has a positive relationship with Skills Revolution Industry 4.0. The majority of innovation behavior indicators are comfortable with ambiguity, customer-centricity, entrepreneurial mindset, data-driven decision making, cloud computing, search engine optimization, web development, chief internet of things officer, data architect, data engineer, and data scientist. Digitalization or technology competency demands mastery of digital talent. Mastery of digital talent is about using digital devices and managing and building new technologies. Digital talent that has a positive influence on Skills Revolution Industry 4.0 is a supporting factor in taking and deciding to use technology. Skills Revolution Industry can be a catalyst for accelerating the birth of technological innovation. The role of digital talent and individual innovation behavior is connected to Skills Revolution Industry 4.0.

The growing trend of companies using professional social networks to find needed talent. At the talent assessment stage, they still prefer to use more traditional methods, such as face-to-face interviews. Once the candidate becomes an employee, direct and face-to-face communication dominates other means, although there is an increase in online formats regarding company data and knowledge transfer. Companies incorporate digital resources into the talent cycle, in detection, attraction, recruitment and retention. The speed at which these are incorporated differs for each phase. in the following areas: (1) contextualizing HR data and information; (2) continuous learning; (3) stakeholder relationship management and (4) cultivating positive organizational practices. Four critical success factors that are essential to ensure a company's digital readiness: (a) Digital Agents and Skills, (b) Digital Tools and Applications, (c) Digital Systems and Infrastructure, and (d) Ecosystem and Culture. Skills improvement can be done through employee exchange, recruitment innovation, establishing partnerships with digital platforms, acquiring digital companies, and forming digital-based business incubators.

RECOMMENDATION

This paper recommends future research related to the role of Digital Talent in digital transformation in organizations presented in the following State of The Art (SOTA) model: (1) Research Subjects focus on Digital Talent; (2) Digital Talent Development in Corporations/Business Groups; (3) Digital Talent Development to increase innovation; (4) Digital Transformation Acceleration influenced by Turbulence (VUCA and Covid-19)

REFERENCES

[1] Amping, A., Amirah, MMA, Sholehah, DPT, Handoyo, ADY, Shihab, MR, Ranti, B., & Hidayanto, AN (2019, September). Telecommunication Business Transformation Towards Competitive Advantage: Case Study of PT. Indonesian Telecommunication. In 2nd International Conference of Computer and Informatics Engineering, IC2IE 2019 (pp. 210-215). Institute of Electrical and Electronics Engineers Inc.

[2] Becky Frankiewicz, Tomas Chamorro-Premuzic (2020), Digital Transformation Is About Talent, Not Technology, https://hbr.org/2020/05/digital-transformation-is-about-talent-not-technology

[3] Berg, Michiel & Stander, Marius & Van der Vaart, Leoni. (2020). An exploration of key human resource practitioner competencies in a digitally transformed organisation. SA Journal of Human Resource Management. 18. 10.4102/sajhrm.v18i0.1404.

[4] Burchardt, C., & Maisch, B. (2019). Digitalization needs a cultural change–examples of applying Agility and Open Innovation to drive the digital transformation. Procedia CIRP, 84, 112-117

[5] Benevene, P., & Cortini, M. (2010). Interaction between structural capital and human capital in Italian NPOs: Leadership, organizational culture and human resource management. Journal of intellectual Capital, 11(2), 123-139.

[6] Capgemini. (2017). The Digital Culture Journey: All On Board!. Digital Transformation Review, 10.

[7] Cardenas-Navia, I., & Fitzgerald, B. K. (2019). The digital dilemma: Winning and losing strategies in the digital talent race. Industry and Higher Education, 33(3), 214–217. doi:10.1177/0950422219836669

[8] Chu F.; Zhang J.; Pellegrini M.M.; Wang C.; Liu Y. (2024). Staying connected beyond the clock: a talent management perspective of after-hours work connectivity and proactive behaviours in the digital age. https://www.scopus.com/inward/record.uri?eid=2-s2.0-85202018158&doi=10.1108%2fMD-07-2023-1186&partnerID=40&md5=37c74af73704593ba445860007ff197c

[9] Choi, M. (2011). Employees' attitudes toward organizational change: A literature review.

[10] Colbert, A., Yee, N., & George, G. (2016). The digital workforce and the workplace of the future. Academy of Management Journal, 59(3), 731-739.

[11] Development and Learningin Organizations: An International Journal. doi:10.1108/dlo-02-2019-0044

[12] Fahmi, Tubagus & Tjakraatmadja, Jann & Ginting, Henndy. (2020). Digital Talent Capability Model for Transforming Technology-Based Holding Companies. The Asian Journal of Technology Management (AJTM). 13. 190-201. 10.12695/ajtm.2020.13.3.1.

[13] Human Resource Management, 50(4), 479-500.

[14] Hughes H.P.N.; Davis M.C. (2024). PREPARING A GRADUATE TALENT PIPELINE FOR THE HYBRID WORKPLACE: RETHINKING DIGITAL UPSKILLING AND EMPLOYABILITY. https://www.scopus.com/inward/record.uri?eid=2-s2.0-85199454626&doi=10.5465%2famle.2023.0106&partnerID=40&md5=fb0eb0d25597d700f79c564f2a473be6

[15] Ganaie, Mehraj Udin & Haque, Mohammad. (2017). Talent management and value creation: A conceptual framework. Academy of Strategic Management Journal. 16. 1-9.

[16] Gilch, P. M., & Sieweke, J. (2020). Recruiting digital talent: The strategic role of recruitment in organizations' digital transformation. German Journal of Human Resource Management: Zeitschrift Für Personalforschung, 239700222095273.doi:10.1177/2397002220952734

[17] Jorge Cruz-Cárdenas, Ekaterina Zabelina, Jorge Guadalupe-Lanas, Andrés Palacio-Fierro, Carlos Ramos-Galarza, COVID-19, consumer behavior, technology, and society: A literature review and bibliometric analysis, Technological Forecasting and Social Change, Volume 173, 2021, 121179, ISSN 0040-1625, https://doi.org/10.1016/j.techfore.2021.121179. (https://www.sciencedirect.com/science/article/pii/S0040162521006120)

[18] Karacay, G. (2018). Talent Development for Industry 4.0. In Springer Series in Advanced Manufacturing (pp. 123-136). (Springer Series in Advanced Manufacturing). Springer Nature. https://doi.org/10.1007/978-3-319-57870-5_7

[19] Li, Jiagui & Lam, Johnny. (2024). Macao's academic book publishing industry: A SWOT and PEST analysis. Learned Publishing. 37. 98-108. 10.1002/leap.1598.

[20] Liu, Y., Zeng, N., Papadonikolaki, E., Maritshane, K., Chan, P.W. (2024). The future of digitalized project practices through data-savvy talent: A digital competence formation perspective. https://www.scopus.com/record/display.uri?eid=2-s2.0-85189041129&doi=10.1016%2fj.plas.2024.100120&origin=inward&txGid=0a2bf39cea71b5191905d33749962895

[21] Nair, K. (2019). Overcoming today's digital talent gap in organizations worldwide.

[22] Nofrita, Riri & Kamil, Insannul & Jonrinaldi, Jonrinaldi & Yuliandra, Berry & Halim, Irsyadul. (2020). The Effect of Digital Talent on Individual Innovation Behavior, Skills of Revolution Industry 4.0 as Mediator Variables. Jurnal Optimasi Sistem Industri. 19. 133. 10.25077/josi.v19.n2.p133-143.2020.

[23] Martinez-Moran, Pedro & Fernández-Rico, Jose & Díez, Fernando & Eizaguirre, Josu. (2021). The Digital Transformation of the Talent Management Process: A Spanish Business Case. Sustainability. 13. 2264. 10.3390/su13042264.

[24] Sapra, H., Subramanian, A., & Subramanian, K. (2011). Corporate Governance and Innovation: Theory and Evidence. SSRN Electronic Journal. doi:10.2139/ssrn.1103676

[25] Seher, Ogrenci & Alpkan, Lütfihak & Karacay, Gaye & Bulut, Cagri. (2023). The Nature and Layers of Dynamic Capabilities of Firms Engaging in Business Model Innovations: A Qualitative Study on Information Technology Firms in Istanbul's Science-Parks. International Journal of Innovation and Technology Management. 20. 10.1142/S0219877023500426.

[26] Soomro, Mansoor & Hanafiah, Mohd Hizam & Abdullah, Nor. (2020). DIGITAL READINESS MODELS: A SYSTEMATIC LITERATURE REVIEW. 9. 3596-3605.

[27] The Business-Higher Education Forum (BHEF). (2024). Expanding Internships Harnessing Employer Insights to Boost Opportunity and Enhance Learning. https://www.bhef.com/sites/default/files/BHEF_Expanding_Internships.pdf

[28] Tuğba Karaboğa & Yonca Gürol & Ceylan Merve Binici & Pınar Sarp, 2020. "Sustainable Digital Talent Ecosystem in the New Era: Impacts on Businesses, Governments and Universities," Istanbul Business Research, Istanbul University Business School, vol. 49(2), pages 360-379, November.

[29] Yanuardani, Monica. (2018). Exploring Talent Management Potential in Digital-Savvy SMEs: A Case Study from Yogyakarta, Jakarta, and Bandung. Jurnal Perencanaan Pembangunan: The Indonesian Journal of Development Planning. 2. 10.36574/jpp.v2i2.42.

[30] Yu, Guohua. (2024). Digital transformation, human capital upgrading, and enterprise ESG performance: Evidence from Chinese listed enterprises. Southwest University, China. https://www.scopus.com/inward/record.uri?eid=2-s2.0-85217491533&doi=10.24136%2foc.3058&partnerID=40&md5=c6ffcc05b55e2cf0e2a1428865f1927a