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Revolutionising Talent Management in Society 5.0: Empowering Organisations Through Collaborative Talent Management in the Intelligence Era

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Abstract: - Collaborative intelligence and collaborative talent management represent emerging concepts in the dynamic landscape of business. The significance of collaborative talent management cannot be overstated, as it has become a pivotal approach for augmenting performance, fostering innovation, and improving efficiency across various sectors. Concurrently, the notion of collaborative intelligence quotient (CIQ) is a developing area of research that holds the potential to inform and revolutionise talent management practices through the perspectives of neuroscience which aligns well with Industry 5.0. At its core, collaborative intelligence embraces fundamental principles of cooperation, coordination, and open communication. By embracing these principles, organisations can strengthen their ability to navigate the intricacies of the contemporary business environment while simultaneously enhancing diversity, performance, innovation, and efficiency. This paper adopts a narrative literature review methodology to underscore the significance of collaborative intelligence and collaborative talent management in tackling challenges and fostering a competitive advantage across diverse sectors. Furthermore, the paper critically analyses and disseminates various potential avenues for future research. Future researchers are encouraged to deepen the understanding of collaborative talent management by examining interdisciplinary barriers, digitalisation, leadership styles, performance measurement, and cross-sector collaboration. These research avenues hold the potential to advance the field of collaborative talent management and contribute to its continuous evolution. It underscores their importance and outlines future research opportunities, shedding light on the transformative potential of these concepts in fostering organisational success and competitive advantage using artificial intelligence and across various sectors.

Keywords: collaborative intelligence, collaborative talent management, Society 5.0, Industry 5.0, artificial intelligence

I. INTRODUCTION

The dynamic business environment has undeniably transformed organisational operations and the global workforce landscape. For instance, the Covid-19 pandemic created a pessimistic view of the workforce, manifesting in occupational stress, financial constraints, employee burnout, and declining self-efficacy [1]. Furthermore, the advent of Industry 4.0, characterized by automation and digitalisation, has led to a reduction in the number of labourers required in the market [2-3]. However, Grabowska et al. [4] postulate a more unassuming rationale, suggesting that the transition from Industry 4.0 to 5.0 focuses on the humanisation of industries to maintain resilience and sustainability, with the roots of these concepts embedded in human collaboration [5]. Azizi et al. [6] also emphasises the importance of resilient leadership in navigating the ever-changing business environment.

In this rapidly changing landscape, organisations face challenges such as recruiting and retaining the right employees, adapting to emerging rivalries in the labour market, technological advancements, data security, national regulatory changes, economic fluctuations, evolving resource needs, and internal politics. Consequently, Lee et al. [7] highlight the significance of effective global talent management in fostering organisational resilience. They acknowledged the remarkable resilience of multinational corporations during the pandemic, attributing it to strong talent management support from their global network of subsidiaries.

The talent management field first garnered attention when Michaels et al. [8] published "The War for Talent," acknowledging the critical role of talent in driving corporate performance. Gallardo-Gallardo et al. [9] posit that organisational context is crucial in talent management, which comprises dynamic processes centred on attracting,

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identifying, engaging, retaining, developing, and deploying talents. Talents are thus regarded as dynamic strategic resources essential for sustaining an organisation's competitive advantage.

Industry 4.0 is primarily focused on leveraging the Internet of Things and digital automation to create a "Smart Factory" [10], which integrates interconnected networks of grids, mobility, logistics, buildings, and products. In the manufacturing sector, Möller et al. [11] predict the emergence of "intelligent manufacturing", a concept that, although currently vague, entails self-adaptability, self-awareness, condition monitoring, and configurability principles using machine learning characteristics. This new paradigm will involve interconnected networks of artificial intelligence, simulation, manufacturing execution systems, and integrated planning and scheduling systems.

Nevertheless, Ivanov [12] envisions Industry 5.0 as the integration of collaboration, coordination, communication, automation, data analytics processing, and identification of technological principles. This new industrial revolution will be driven by four critical areas—organisation, management, technology, and performance assessment—and can be investigated on three levels: societal, network, and plant.

II. THE AMBIGUOUS SOCIETY 5.0

Numerous scholars have expressed concerns about the implications of automation in Industry 4.0 for sustainable industrialisation, arguing that it neglects social and environmental priorities [13]-[14]. Industry 4.0 was originally conceived to eliminate human involvement in production operations, with the substitution of autonomous artificial intelligence as the primary solution to the increasing costs of manufacturing [15]. However, to fully realize the potential of Industry 5.0, researchers argue that a comprehensive “Society 5.0” is essential [13]-[14], [16]-[18].

“Society 5.0” envisions a future where technology and artificial intelligence are humanised during Industry 5.0, with the digitalised manufacturing environment centred around workers' needs. This process could involve understanding the changeover process, identifying improvements, implementing proposals, and concluding with evaluative control, which may include training if necessary [17]. Another conceptualisation suggests that Society 5.0 involves humans using knowledge extracted from big data and artificial intelligence in a multitasking interaction with Industry 5.0, highlighting the importance of human higher-order thinking, knowledge, comprehension, and various levels of critical thinking, such as analysis, synthesis, evaluation, and innovation [16]. Researchers also propose that Society 5.0 comprises interactions between human intelligence, knowledge, the Internet of Things, and robots in environmental protection, emphasizing new research in business administration and organisational governance [13], [18].

During Industry 4.0's information society, people's limited knowledge and information sharing hindered the adoption of unified values, potential outcomes, and collaboration among cross-sector team members [14], [19], [20]. Scholars predict that Society 5.0 will leverage artificial intelligence and new technologies to connect people through knowledge and information sharing, leading to the creation of new business chains and social norms [13], [16]-[18], [21]-[22], [23]. Konno and Schillaci [24] suggest that the success of Society 5.0 hinges on the practical application of intellectual capital through knowledge creation, sharing, and innovation. However, Kazemian and Grant [25] emphasise the importance of knowledge sharing in the contemporary business environment while acknowledging widespread barriers such as resistance to online collaboration, emotional apprehension, knowledge deprivation, and constraints related to organisational pressure, content quality, and time.

The human-centric approach to resilience can only be realized if all "members" of Society 5.0, whether human or non-human stakeholders, collaborate and interact to achieve shared organisational objectives [26]-[27]. Despite the growing recognition of the importance of building a Society 5.0, the conceptualisation of its humanisation components remains in its nascent stages.

III. THE REVIEW OBJECTIVE

Whysall et al. [28] observed that the rapid changes in the business environment during Industry 4.0 generated ambiguity in strategic human resource management, suggesting that managers must explore innovative talent management strategies. While some scholars argue that the talent management field is still in its infancy [29]-[30], others have struggled with establishing a precise definition of talent management [31]-[35]. Consequently, many assumptions and philosophies in the literature are highly varied, rendering them vague [31], [36]-[39]. Sparrow [40] critiqued the field's theoretical foundations, noting that less than 30 per cent of the body of knowledge contains theoretical framing, which is often superficial, fragmented, and lacking in theoretical underpinnings. This indicates an urgent need to align talent management theory and practice with more dynamic and collaborative initiatives.

Schweer et al. [41] cited findings from The Hackett Group, which showed that well-established talent management increased earnings by approximately 18 per cent and significantly enhanced organisational performance. Consulting companies such as IBM and McKinsey & Company often recommend collaborative and social networking tools to foster well-networked organisations that deliver higher market shares. However, collaborative talent management through collaborative intelligence is a relatively new endeavour, particularly during the transition from Industry 4.0 to 5.0. Although academic literature in this area is still underdeveloped, industrial practitioners have started discussing the potential benefits of strategic talent management through collaboration between human and artificial intelligence networks.

Practitioners have highlighted the use of HR data analytics or collaborative intelligence to cultivate collaborative potential within organisations [42]-[47]. Some practitioners have explored social collaboration theory using talent visualisation tools [47], while others have emphasised collaborative partnerships between the HR department and learning and development experts [46]. Talent mobility through network mapping [43] and the collaboration between human and artificial intelligence [48] have also been proposed. However, a clear definition and grounded concept for collaborative talent management have yet to be established.

This article employs a narrative literature review methodology, as proposed by Ferarri [49], to critically investigate the current understanding of collaborative intelligence and collaborative talent management. By synthesising findings from the review, the author aims to conceptualise how collaborative intelligence can be leveraged as a strategic talent management tool to facilitate workforce collaboration within organisations. This approach could contribute to the humanisation of Industry 5.0 by exploring how people can collaborate with one another while being supported by resources such as robots, artificial intelligence, and other technologies. The paper also offers an initial examination of the current literature on collaborative intelligence and collaborative talent management, highlighting the opportunities and challenges faced by organisations in the transition from Industry 4.0 to 5.0. By utilising a narrative literature review methodology, we will attempt to synthesise existing research to identify the literature gaps and potential application of collaborative intelligence as a strategic talent management tool for facilitating workforce collaboration within organisations. This work contributes to the ongoing discourse on the humanisation of Industry 5.0, emphasising the importance of collaboration between human and artificial intelligence networks to achieve a competitive advantage and foster organisational resilience.

The current findings will present a robust theoretical framework that incorporates collaborative intelligence in collaborative talent management activities to address the gaps in the existing literature. The significance of this work lies in its potential to inform organisational leaders and human resource professionals on the value of harnessing collaborative intelligence as a strategic approach to talent management. By doing so, organisations can better navigate the dynamic business environment and address challenges posed by rapid technological advancements, evolving workforce expectations, and shifting labour market dynamics. Furthermore, this study serves as a foundation for future research on the integration of human and artificial intelligence networks in the context of talent management and the broader implications of such integration for organisational governance and sustainability.

In a nutshell, this article will offer valuable insights into the emerging field of collaborative talent management and provides a basis for further exploration and development in both theory and practice. As we continue to witness the evolution of Industry 5.0 and Society 5.0, it is essential to understand and harness the power of collaborative intelligence, enabling organisations to thrive in an increasingly interconnected and complex global landscape.

IV. COLLABORATIVE INTELLIGENCE

The concept of collaborative intelligence, which traces its roots back to the early days of human society, has evolved over time to address the changing needs of an increasingly interconnected world. Malone [50] first introduced the term "collective intelligence" to describe the synergistic effects of cooperation and innovation among a group of talented individuals. As D'Almeida and Ingle [51] noted, fostering cross-sector collaborative research and development is essential to address the challenges posed by the rapid changes in industry and society.

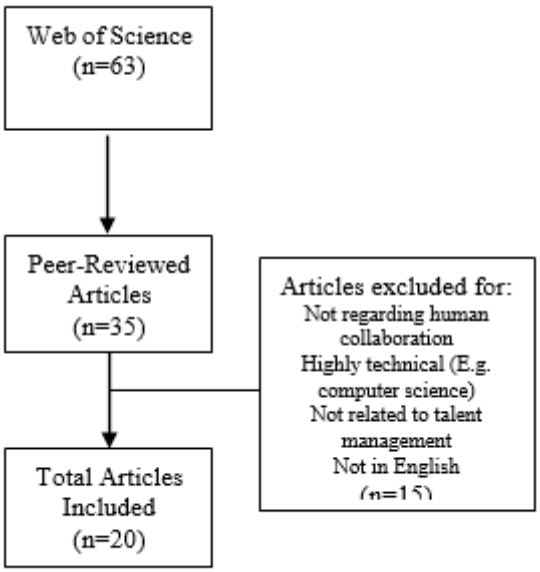

Fig. 1. Flow Chart for Literature Selection

Collaborative intelligence is grounded in the social dynamics of cooperation and coordination, which have been explored by numerous researchers [52]-[58]. Similarly, Gittell's [59] Relational Coordination Theory highlights the importance of relationships and communication in effective collaboration, with shared goals, shared knowledge, and mutual respect as its three core dimensions. This theory suggests that collaboration can be further enhanced through formal organisational structures that support and reinforce these relationship dimensions. Yalenios and D'Armagnac [60] also added that fostering open communication and exploration of collaboration opportunities in the workplace can lead to the development of situational solutions that benefit both teams and organisations.

Markova and McArthur [61] expanded on the concept of collaborative intelligence by introducing the Collaborative Intelligence Quotient (CIQ), which emphasises the importance of developing a "mind share" mindset as opposed to the traditional "market share" approach. This framework which was viewed from the perspective of neuroscience, encourages the acceptance and appreciation of human diversity as a source of innovation and strength in collaborative initiatives. The CIQ framework consists of four components: mind patterns, thinking talents, inquiry, and mind share. Each component plays a vital role in facilitating effective collaboration by promoting better communication, problem-solving, and understanding of different perspectives. Although this humanistic model holds promise for enhancing collaborative efforts, it remains in the early stages of development and requires further empirical validation.

Ultimately, the concept of collaborative intelligence represents a critical and evolving area of research that can potentially inform and transform talent management practices in the context of Industry 5.0. By embracing the principles of collaborative intelligence and fostering a culture of cooperation, coordination, and open communication, organisations can enhance their ability to navigate the complex and rapidly changing landscape of the modern business environment.

V. METHODOLOGY

In order to conduct the narrative review of the literature on collaborative talent management, a search was conducted using the Web of Science database. The initial search using the keywords "collaborative talent management" yielded only two articles, with one appearing unrelated to the topic of interest. Consequently, the search terms were revised to "collaborative collaboration in talent management" without quotation marks, which resulted in a total of 63 articles.

Upon reviewing the abstracts and content of these articles, 20 were selected for inclusion in the narrative review, based on their relevance to human collaboration, non-technical aspects, and talent management (see Figure 1 for the flow chart detailing the article selection process). The selected articles spanned various industries and fields. Articles from the healthcare sector included studies by Kovacs and Drozda [62], Veith and Marin [63], and Wijaya et al. [64]. Research and higher education-related articles were contributed by Barnes et al. [65], Borah et al. [66], Huang and Brown [67], Kumaraswamy and Chitale [68], Saetnan and Kipling [69], and Samuel et al. [70].

Additional articles explored leadership and human resource aspects of collaborative talent management, such as those by Ibarra and Hansen [71], Maheshwari et al. [72], Makarius and Srinivasan [73], Schweer et al. [41], and Yalenios and D'Armagnac [60]. Contributions from the fields of internet and technology included works by Camarinha-Matos and Afsarmanesh [74] and Suzuki and Yamamoto [75]. Articles related to advertising and marketing were provided by Addison et al. [76] and Patwardhan et al. [77], while those focused on construction and geo-analytics included studies by Ma et al. [78] and Walker and Lloyd-Walker [79].

VI. FINDINGS

A. Medical and Healthcare

Within the medical and healthcare sector, collaboration has been considered a valuable approach to improve patient care and treatment outcomes. One early example of such collaborative efforts dates back to Veith and Marin [63], who examined a multispecialty approach to provide optimal endovascular treatment using innovative endovascular technologies. This collaborative approach sought to enhance the relationship between vascular surgeons and other interventionalists, such as radiologists, when employing these technologies. By fostering collaborative leadership, the authors argued that the resulting synergies could address staffing shortages in the treatment of vascular diseases and enhance overall efficiency. However, they also acknowledged that resistance from various stakeholders might present challenges to the successful implementation of these cross-functional initiatives. Despite these obstacles, they contended that collaboration could reduce costs by preventing segmented care, averting unnecessary procedures driven by financial incentives, and minimizing bias in treatment selection based on a physician's background or skills.

In a more recent study, Kovacs and Drozda [62] investigated team-based cardiac care, which draws on the resources, skills, and ideas of various specialists to provide improved patient care. The authors suggested a shift towards team-based education, rather than focusing solely on individual training. However, they also identified challenges such as the lack of medical certifications designed to assess the performance of medical teams and the need to provide patients' data for team purposes. To address these issues, they called for increased resources to be allocated towards the establishment of innovation centres dedicated to advancing team-based cardiac care.

Wijaya et al. [64] presented another example of collaborative initiatives in healthcare, describing how Siloam Hospital in Thailand collaborated with marketing and talent management departments through virtual communication to measure and enhance patient satisfaction. The authors found that the virtual format yielded more positive outcomes than negative ones, leading to an 80 per cent increase in the patient satisfaction index within six months. This case study highlights the potential benefits of integrating collaborative talent management strategies across different functional areas to improve patient care outcomes.

B. Leadership and Human Resource

In the realms of leadership and human resource management, fostering a collaborative workforce has become increasingly important in achieving a competitive advantage. Ibarra and Hansen [71] highlighted the significance of a collaborative leadership style in driving a talented workforce. They emphasized competencies in four domains: assuming a global connector role, attracting diverse talents, acting as a role model of a good collaborator in top management, and providing strong support for employees' collaboration. The authors pointed out that many leaders fail to harness the power of a well-connected company, often focusing on command-and-control leadership styles instead. They acknowledged that the challenges associated with a well-networked organisation include differences in operating ethos, beliefs, and diversity management.

Empirical studies have demonstrated that fostering a collaborative network in talent sourcing can contribute to increased revenues for an organisation. Schweer et al. [41] reported that companies such as McKinsey & Company and IBM, which invested in social networking and collaborative tools for daily operations, experienced higher profits and market share than less connected competitors. The authors also noted that organisational network analysis could reveal the effectiveness of collaboration within a company and how well employees work together in assigned teams. Utilising network analysis data, managers can identify four categories of employees: high-performing talent, marginalized talent, hidden talent, and underutilized talent. While the information derived from these categories may not initially seem valuable, carefully connecting these talents can significantly impact an organisation's performance. Interestingly, only 20 per cent of an organisation's employees are high-performing. As companies allocate resources to these individuals, it is essential to consider connecting marginalised, hidden, and underutilised talent to explore untapped revenue sources.

Talent management in human resources has evolved to incorporate collaborative efforts from diverse fields. Maheshwari et al. [72] identified employer branding as crucial for maintaining long-term, trust-based collaborative relationships between an organisation's human resource and marketing departments. This approach relies on marketing concepts derived from signalling theory and reputation management literature, emphasising workplace attractiveness in terms of corporate culture, job nature, career opportunities and growth, and competitive compensations. Makarius and Srinivasan [73] likened talent management to supply chain management, recommending efficient collaboration between organisations and talent suppliers. This method involves strategic sourcing, a strategy aimed at mitigating risks such as mismatching and controlling the demand and supply of talent. Yalenios and D'Armagnac (2022) suggested that maintaining a high-quality alignment of the human resource ecosystem promotes collaborative work within an organisation. This dynamic ecosystem requires companies to execute a three-step framework of alignment-disalignment-realignment in response to the ecosystem's needs, ensuring readiness for disruption when external dynamics demand change.

C. Internet and Technology

The role of digitalisation in fostering collaboration has become increasingly crucial across various aspects of talent management. In the early stages of business digitalisation, there was a high demand for frameworks explicitly designed for distributed collaborative-development environments. Suzuki and Yamamoto [75] introduced SoftDock, an integral framework widely employed as a model in the application development for diverse purposes, including medical record systems, hypermedia model management, digital libraries, and distance learning. This

framework represented an essential advancement in digital collaboration, allowing for increased efficiency and adaptability in various industries.

Camarinha-Matos and Afsarmanesh [74] examined a novel digital ecosystem encompassing technological, organisational, and social paradigms. This ecosystem facilitated a network of collaborative support for aging professionals, enabling them to continue making valuable contributions to their respective industries after retirement while addressing the demand for skilled and experienced workforces. This research holds significant implications for the literature, as it offers the potential to extend the professional lives of senior individuals while balancing work with social and leisure activities. Moreover, the inter-generational interactions supported by this ecosystem can help to eliminate elderly ghettos in urban areas, fostering a more inclusive and diverse community.

The studies by Suzuki and Yamamoto [74] and Camarinha-Matos and Afsarmanesh [75] highlight the transformative power of digitalisation in collaborative talent management. By harnessing technological advancements, organisations can develop innovative solutions to address industry challenges, improve collaboration across diverse teams, and promote social inclusion for aging professionals, thus enabling a more sustainable and productive workforce.

D. Marketing and Advertising

The dynamic marketing and advertising sector represents another area where collaborative talent management plays a significant role. In the United States, although the need for the creative sector to involve collaboration from diverse creative talents is critical, it is seldom discussed in academia. The increasing demands of 21st-century digital media further complicate the evolution of creative agencies, necessitating an extensive talent pool, including business and marketing specialists, data analysts, technology and digital content specialists, media and account planners, artists, and writers [77]

Patwardhan et al. [77] argued that to thrive in the dynamic digital marketing environment, leaders must continually find innovative ways for people to collaborate, adapt, and negotiate. This need calls for a holistic structural change within the organisation, shifting toward a more horizontal hierarchical design as opposed to the traditional vertical structure. Successful leaders exhibit transformative soft skills and leverage relationships to foster a collaborative culture throughout the organisation.

Similarly, Addison et al. [76] highlighted the scarcity of B2B collaboration in marketing, as traditional marketing benchmarks rooted in opportunism and self-serving sales tactics hinder the growth of many potential entrepreneurial practices. The authors proposed an alternative approach called Intellectual Capital Sharing (ICS), which deviates from traditional selling methods by offering free consultations to share knowledge, experience, and capabilities, helping business partners address challenges while promoting customer value co-creation. Addison et al. [76] identified four affective aspects in selling that nurture collaborative partnerships: relating, bonding, caring, and building trust.

Both Patwardhan et al. [77] and Addison et al. [76] emphasise the importance of collaboration in marketing and advertising, underscoring the need for structural changes, innovative leadership, and alternative strategies such as ICS to facilitate more effective partnerships. By embracing a more collaborative approach, organisations can harness the diverse talents within their teams, fostering innovation and enhancing overall performance in the dynamic marketing landscape.

E. Project Management and Construction

Walker and Lloyd-Walker [79] highlighted the prevalence of integrating project or program alliances in the project procurement of engineering projects, such as construction, utilities, sewage, water, rail, and road. They introduced the concept of relationship-based project procurement (RBP) taxonomy, a collaborative framework comprising

platform foundational facilities, behavioural factors, and deliberately arranged processes, routines, and means designed to achieve desired outcomes. The infrastructural elements provide a robust foundation for collaboration at the platform level, while the behavioural elements emphasise the importance of authentic leadership, trust-control balance, commitment to innovation, and specific mindsets or cultural factors. To support and encourage these behavioural elements, carefully designed processes, routines, and means are considered essential.

In a related sub-segment field known as geo-analytics, Ma et al. [78] illuminated the need to leverage multidisciplinary stakeholders within the construction sector. They proposed a visualisation-based method comprising eight core activities, with various activities and experts interconnected through a web-based workspace of online tools and resources. The geo-analytic process encompasses resource collection and context definition, data processing, data analysis, data visualisation, geo-analysis model construction, model effectiveness evaluation, geographical simulation, and decision-making. In their case study, Ma et al. [78] discovered that the proposed prototype system effectively fosters collaboration and mitigates the challenges associated with specific interdisciplinary issues, establishing a solid participatory foundation for constructing feasible solutions to the problem at hand.

Overall, both Walker and Lloyd-Walker [79] and Ma et al. [78] emphasise the significance of collaboration and multidisciplinary stakeholder engagement in project management and construction. By adopting innovative frameworks like RBP taxonomy and visualisation-based methods in geo-analytics, organisations can enhance collaboration, improve decision-making, and effectively address complex interdisciplinary challenges in the construction sector.

F. Research and Higher Education

Research and development play a critical role in addressing sustainability and climate change concerns in various sectors, including food and agriculture. Saetnan and Kipling [69] examined the potential of knowledge hubs in facilitating interdisciplinary collaboration through the establishment of MACSUR (Modelling European Agriculture with Climate Change for Food Security), which brought together 70 institutes across 18 countries. This network of agricultural economists, farmers, livestock experts, crop scientists, and grassland specialists aimed to elucidate the impacts of climate change on food production. The authors emphasised the benefits of such international scientific collaborations, including enhanced research impact, increased likelihood of high-quality publications, higher citation rates for internationally co-authored papers, and novel discoveries resulting from the convergence of diverse ideas. However, they also identified several barriers to collaboration, such as disciplinary reward systems, perceptions of trade-offs and career advancement, academic biases, and disciplinary norms, practices, and language. Saetnan and Kipling [69] demonstrated the potential for effective collaboration through the establishment of knowledge hubs and digital network analytics, contingent on long-term institutional and resource support to sustain networking activities.

In a related study, Huang and Brown [67] employed Social Network Analysis to illustrate the dynamics of research collaboration among researchers in higher education institutions. They emphasised the importance of embracing diversity, avoiding coercive collaborations, and optimising team size. Collaborative talent management in higher education necessitates a comprehensive learning system that enables knowledge sharing, facilitates communication, and fosters interaction between industry and academia, alongside a reward system recognising knowledge-sharing efforts [68]). Barnes et al. [65] also presented the need for an institutional culture promoting equity, inclusion, ethical care, collaboration, and adequate resources and support for academics' career progression in higher education institutions.

Furthermore, Samuel et al. [70] stressed the importance of external collaborations with industry partners in providing relevant higher education curricula that equip graduates with the skills and knowledge needed for specific industries. Their case study explored the collaboration between a research university and a community college in the context of the manufacturing sector. Overall, these studies highlight the value of interdisciplinary and

inter-institutional collaboration in research and higher education settings to address pressing global challenges and foster innovation and knowledge creation.

VII. DISCUSSION

Collaborative talent management has emerged as a vital approach for bolstering performance, innovation, and efficiency across a diverse array of sectors, encompassing medical and healthcare, leadership and human resources, internet and technology, marketing and advertising, project management and construction, as well as research and higher education. Despite the relatively limited scope of extant literature pertaining to collaborative talent management, the narrative review furnishes essential insights into the indispensable role of collaboration in surmounting challenges and cultivating a competitive advantage. Notwithstanding the advancements in grasping the significance of collaboration, several literature gaps and potential areas for future research subsist.

One domain meriting further investigation concerns the interdisciplinary barriers impeding efficacious collaboration. The literature delineates numerous obstacles to interdisciplinary collaboration, including reward systems, trade-offs and career advancement, academic biases, and disciplinary norms, practices, and language [70], [78], [79]. Future research should concentrate on unearthing pragmatic strategies to surmount these barriers, thereby fostering more effective interdisciplinary collaborations. It is conceivable that overcoming such barriers may necessitate a reconceptualisation of the reward systems and a reframing of disciplinary norms and practices to create an environment conducive to interdisciplinary exchange.

Performance measurement and evaluation of collaborative talent management constitute another area requiring further exploration. The literature emphasises the importance of collaboration in enhancing performance and outcomes [80]. However, there is limited research on the most effective methods for measuring and evaluating the impact of collaborative talent management on organisational performance. Future studies could devise robust metrics and assessment tools to quantify the benefits of collaborative initiatives and pinpoint areas for improvement, thereby enabling organisations to make informed decisions regarding their collaborative efforts.

Another area of interest is the role of digitalisation in facilitating collaboration. While the literature alluded the importance of digitalisation [74]-[75], there is limited research on optimising various digital tools and technologies for collaborative talent management. Future studies could delve into the development of innovative digital platforms and tools designed to foster collaboration across diverse industries and sectors. One possible avenue for exploration could involve examining the efficacy of existing digital tools and identifying the unique features that contribute to successful collaborative environments. Perhaps, it may delve into the prospective applications of digital automation in collaborative endeavours that capitalise on diversity, drawing upon the neuroscientific principles from the CIQ framework [61].

Fig. 2. Research Gaps of Collaborative Talent Management

Furthermore, a deeper investigation into leadership styles and collaborative culture is crucial. Although the literature acknowledges the significance of collaborative leadership styles in motivating a talented workforce [81], there is limited empirical evidence on the most effective leadership styles and practices that engender a collaborative culture. Future research could scrutinise the specific leadership attributes and behaviours that yield successful collaborative talent management, potentially shedding light on the ways in which these attributes and behaviours can be nurtured and cultivated within an organisation.

Lastly, the potential benefits and challenges of cross-sector collaboration constitute an underexplored area. The narrative review has predominantly focused on collaboration within specific sectors; however, limited research exists on the potential advantages and obstacles related to fostering collaborative talent management across different industries and sectors. Future research could probe the opportunities and challenges associated with cross-sector collaboration, identifying best practices and strategies for successful cross-sector collaboration. This exploration may reveal unique synergies and opportunities for innovation that would otherwise remain untapped.

VIII. LIMITATION

The present narrative literature review, while informative, has several limitations. First, its scope is constrained by the relatively limited body of literature on collaborative talent management, which may result in an incomplete understanding of the topic. Furthermore, the review's focus on specific sectors may limit its generalisability to other industries and contexts, while the cross-sector collaboration remains underexplored. Additionally, the review does not offer a quantitative empirical data, which might have provided more robust evidence and insights.

The review primarily emphasises the identification of research gaps rather than engaging in a thorough examination of the intricacies of collaborative talent management through rigorous methodologies and findings. Consequently, it does not provide a comprehensive assessment of the quality and validity of the extant literature, which could have informed the development of future research questions and directions. Despite these limitations, the review offers a valuable starting point for understanding the significance of collaborative talent management and highlights the need for further investigation in several key areas identified.

IX. CONCLUSION

In conclusion, this article provides a critical examination of the extant literature on collaborative intelligence and collaborative talent management, emphasising the challenges and opportunities organisations face during the transition from Industry 4.0 to 5.0 [4]. Through a narrative literature review methodology, we synthesise existing research to conceptualise the potential application of collaborative intelligence as a strategic talent management tool for facilitating workforce collaboration within organisations. This current paper contributes to the ongoing discourse on the humanisation of Industry 5.0 [13]-[14], stressing the importance of collaboration between human and artificial intelligence networks in achieving a competitive advantage and fostering organisational resilience.

The findings, as illustrated in Figure 2, accentuate the necessity for a more robust theoretical framework that encompasses dynamic, collaborative talent management activities to address ambiguity and fragmentation in the current literature. Collaborative intelligence is the essential competence to enable these activities. Furthermore, this study underscores the crucial role of interdisciplinary collaboration between academic researchers and industrial practitioners in shaping the future of talent management and human resource strategies, particularly as society transitions into Industry 5.0.

The significance of this work lies in its potential to inform organisational leaders and human resource professionals about the value of harnessing collaborative intelligence quotient as a strategic approach to talent management. By doing so, organisations can better navigate the dynamic business environment and address challenges posed by rapid technological advancements, evolving workforce expectations, and shifting labour market dynamics [82]. Additionally, this study serves as a foundation for future research on the integration of human and artificial

intelligence networks, particularly in the context of talent management and the broader implications of such integration for organisational governance and sustainability.

The CIQ framework, consisting of four components: mind patterns, thinking talents, inquiry, and mind share [61], plays a vital role in facilitating effective collaboration by promoting better communication, problem-solving, and understanding of different perspectives. Despite the promise this humanistic model holds for enhancing collaborative efforts, it remains in the early stages of development and necessitates further empirical validation.

As the concept of collaborative intelligence represents a critical and evolving area of research, its potential to inform and transform talent management practices in the context of Industry 5.0 cannot be overstated. Embracing the original principles of collaborative intelligence and fostering a culture of cooperation, coordination, and open communication [50], organisations can enhance their ability to navigate the complex and rapidly changing landscape of the modern business environment while embracing the diversity of talents that enable innovations [83].

In light of the presented findings, future research should prioritise interdisciplinary barriers to collaboration, digitalisation's role in collaboration, leadership styles and collaborative culture, performance measurement and evaluation, and cross-sector collaboration opportunities and challenges. Investigating these areas will likely reveal unique synergies and opportunities for innovation that would otherwise remain untapped, ultimately contributing to the enhancement of collaborative talent management practices across various industries and sectors.

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