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LEVERAGING NEUROLEADERSHIP AND ADOPTING AI TO IMPROVE HUMAN CAPITAL DEVELOPMENT IN IT&C BUSINESS ORGANISATIONS

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Abstract

This paper aims to explore how business organisations in the Romanian IT&C sector strategically implement neuro-leadership principles to accelerate the adoption and implementation of artificial intelligence (AI) technologies, thus enhancing human capital development and promoting sustainable competitive advantages. Applying the focus group method, dynamic discussions were held with 10 representatives of Romanian IT&C companies to highlight how these business organisations strategically implement neuro-leadership principles and adopt AI technologies in human capital management. The results of the research, divided into four main themes, reveal the importance of neuroleadership in improving employee competencies as well as overcoming the challenges associated with implementing AI in organisations. Research provides new and relevant insights for leaders in business organisations to effectively adapt to the complexity of technological change caused by AI adoption in human resource management. At the same time, the results reveal the importance of fostering a culture of continuous learning and development to harness the potential benefits of AI, while mitigating the risks associated with this approach. The originality of the paper is derived from the merging of the fields of leadership, neuroscience, and AI, thus providing a comprehensive understanding of the dynamics shaping organisational responses to technological innovation. The research addresses a notable gap in

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the literature by exploring concrete strategies to accelerate AI adoption through neuroleadership principles, enriching the literature on this multidimensional relationship.

Keywords: neuro-leadership, neuro-leaders, human capital, artificial intelligence (AI), artificial intelligence technologies, employees, and business organisations

JEL Classification: O32, J24, D83, D84.

Introduction

In a society undergoing constant transformation and change, driven by the rapid evolution of technology, AI is emerging as an essential element in the digitisation process, reshaping traditional practices (Allioui and Mourdi, 2023). AI has become an important source of innovation in organisational performance and adaptation of business models, bringing human capital development to the forefront to support such transformation in technically orientated organisations operating in the IT&C sector. AI will fundamentally change the way organisations work and their expectations of employee skills, often compared to the fourth Industrial Revolution (McKinsey, 2022).

Management and leadership practice are seen as important factors in the implementation of AI in business organisations: the confidence that management shows in AI, in conjunction with how they translate it into the company, is fundamental to the adoption of these technologies (Barton et al., 2022). Organisations therefore need neuroleaders who can be agents of change, who can provide clarity to employees in the face of AI-generated uncertainty, who consider human behaviour and the natural reaction of employees to technological developments that fundamentally transform the organisation. The integration of neuroscience concepts into traditional leadership practices, known as neuroleadership, combines knowledge from psychology and elements of human brain anatomy to enable neuroleaders to develop effective strategies and approaches to managing AI within organisations (Pittman, 2020).

Even though leadership theory and AI adoption are widely debated and researched topics, there is an absence of research investigating the integration of neuro-leadership principles in the implementation of AI in business organisations to develop and strengthen human capital. Recent literature addresses the importance of management and leadership practices in AI implementation in business organisations (Nguyen et al., 2022), but does not address concrete ways in which neuro-leadership principles can be strategically leveraged to accelerate the adoption and implementation of AI in business organisations, supporting human capital development.

Therefore, this paper aims to explore how business organisations strategically implement neuroleadership principles to accelerate the adoption and implementation of AI technologies in human resource management, promoting innovation and generating competitive advantage. The research problem is translated into practice using a qualitative methodology, which is based on the focus group method. It was carried out among different representatives from the Romanian IT&C sector.

The paper adds value to the literature by proposing a new perspective on how neuro-leadership can be integrated into the business strategies of organisations implementing AI

in the management of their human capital. Focusing on the technical elements of AI adoption, the research extends studies focused on intellectual capital theory, pointing to the essential role of neuro-leadership and managerial skills in managing the organisational change process (Andronie et al., 2021; Dijmărescu et al., 2022) and the relevance of AI acceptance by employees. By investigating the connection between neuro-leadership and AI adoption, the paper makes a significant contribution to our understanding of how human factors influence the successful implementation of this technology and support an organisational culture oriented towards continuous learning and development of employee competencies.

In terms of structure, the paper begins with a section devoted to reviewing the current state of the literature on key concepts, followed by a section detailing the research methodology. The results section then brings to the fore a critical analysis of the focus group discussions, divided into four thematic categories. The discussions interweave the approach and connect the results of the paper with other previous findings and conclusions in the literature. The paper concludes with a conclusion section, outlining theoretical contributions and managerial implications, along with limitations and future research directions.

1. Review of the scientific literature

1.1 Human capital theory

Investing in human capital is essential for increasing the competitiveness of business organisations, but also for improving the living standards of citizens (Cabrilo and Kianto, 2023). Intellectual capital encompasses the beliefs, attitudes, and actions of the employees of a business organisation, as well as those in leadership positions, which together synergistically contribute to achieving the greatest potential for intellectual development (Quintero-Quintero et al., 2021). Of course, intellectual capital is closely related to human capital, which refers to the traits, skills, and knowledge of individuals that can be developed over time and that together contribute to supporting the growth of the business organisation (Amayew et al., 2019). Closely related to intellectual capital is the training, evaluation, development, recruitment, and motivation of employees. These processes need to be carried out in such a way that they ensure added value for the business organisation (Vătămănescu et al., 2023). Employees of business organisations must possess the ability to learn, innovate, think creatively, and contribute to organisational change; thus, they become a vital source of innovation and renewal of the company's strategy (Quintero-Quintero et al., 2021), which is essential in achieving sustainable market success and generating competitive advantage (Cawthorpe, 2023).

The direction followed by the development of human capital theory goes beyond traditional workforce management and moves toward new strategies to strengthen and develop the potential of everyone within the business ecosystem (Todericiu, 2021). The performance and productivity of an organisation is improved through the effective management of intellectual capital, which includes the skills, experiences, relationships, processes, inventions, and ideas of the employees of the business organisation and the impact of these vectors on the community (Ausat et al., 2022). Careful management of human (intellectual) capital at different organisational levels has produced a richer understanding of the complex dynamics of the business organisation by facilitating and accelerating learning dynamics,

identifying performance-generating practices, and disseminating them within the organisation (Quintero-Quintero et al., 2021). At the same time, business organisations are aided to achieve higher performance through continuous monitoring of human resource development and their intellectual growth strategies. This involves identifying factors that contribute to organisational change and promoting innovation, particularly within economic entities (Hashim et al., 2015; Iwata and Hoskins, 2020), but also in other fields such as art and sports (Byrnes, 2022; Ciocan and Milon, 2017; Byrnes, 2022). Other authors (Dokthaisong, 2021; Rzepka and Witkowski, 2023) warn that as AI becomes increasingly prevalent within organisations, there will be a need to redefine effective leadership by integrating emotional intelligence in order to complement AI-based decisions, and thus ensure effective human capital management.

1.2. Application of neuro-leadership principles in the context of human capital development in business organisations

In addressing organisational dynamics and effectiveness, the interdependence between human capital and leadership plays a key role (Ismail et al., 2023). This relationship is based on an understanding of the complex interaction between acquired skills, know-how, and competencies of the workforce, that is, the leadership techniques that direct and coordinate human resources (Gheerawo et al., 2021; Trifan et al., 2022). From a neuroscientific perspective, researchers are exploring ways to influence human brain responses so that company employees can better contribute to the achievement of organisational goals, be inspired or motivated to perform tasks, and be encouraged to take responsibility (Rodrigues et al., 2023). This delineates the concept of neuroleadership, which is a multidisciplinary field and combines neuroscience and leadership (Cleotenberg and Waslany, 2023).

The literature (Tomlinson, 2021) also addresses the concept of neuroplasticity, which highlights the human brain's capacity to adapt to change. Neuroplasticity constitutes a key factor in leadership, representing the brain's ability to learn new things from the environment (Swingle, 2018). Leaders of business organisations that use neuroplasticity, that is, applying neuroleadership concepts in the management of their companies, can help their employees to become more effective in performing their tasks, to acquire the skills they need more deeply and even faster, that is, to adapt faster to challenges and/or responsibilities (Gheerawo et al., 2021). Leaders of such organisations contribute to the continuous improvement of their employees and promote a culture of change (Sivalingam et al., 2017).

Neuroleadership relies to a great extent on the emotional intelligence of the subjects (Ruiz-Rodriguez et al., 2023). Influencing them and determining them to emphasise a certain behaviour depends to a great extent on the ability of leaders in a business organisation to understand the neurological mechanisms that generate emotional regulation and foster empathy by exploring neuroscientific findings. This understanding becomes crucial to developing the kind of interpersonal connections necessary to maintain productive leadership, i.e., to ensure positive dynamics among business organisation employees, especially in small and medium enterprises (Ruiz-Rodríguez et al., 2023).

Understanding the neurological underpinnings of leadership facilitates the delineation of the neuroscience of social behaviour, as it helps to boost the participation, motivation, and

performance of business organisation employees (Gkintoni et al., 2022). Leaders of business organisations who exhibit neuroleadership skills have the ability to get their staff to collaborate and communicate effectively, control their emotions, and find the motivation to contribute effectively to the achievement of organisational goals, i.e., in the rapid, rigorous, and efficient execution of their tasks. By understanding the fundamental processes of the human brain from the perspective of leadership implications and decision making (Nuez et al., 2023), business organisations can facilitate human capital development through the application of neuroleadership (Rodrigues et al., 2023). AI will become the backbone of organisations' competitive advantage through strategic and operational decision-making capabilities (Torre et al., 2019).

1.3. Synergies between Neuro-leadership and AI in human capital management of the Business Organisation

The attention paid in the literature to the implications and especially the applications of AI in business organisations has skyrocketed in recent years, and it is considered a new industrial revolution (Badghish and Soomro, 2024). The implementation of AI-based technologies in business organisations and their processes enables companies to improve their performance. Compared to other information technologies, AI-based technology includes systems capable of learning, adapting, and connecting very quickly to any change, providing significant benefits to business organisations, such as the ability to anticipate market turbulence in a timely manner, identify market opportunities, and extract the most relevant information from existing data (Wei and Pardo, 2022).

AI is radically transforming the way business organisations hire, manage, and interact with staff. By adopting AI-based technologies, these business organisations can improve their hiring procedures, can more accurately assess employee performance, provide employees with real-time feedback on task performance, thus contributing to continuous improvement in employee performance (Cawthorpe, 2023), and increase staff work productivity (Chowdhury et al., 2023). AI combined with the organisation's employees forms a collective intelligence that facilitates teamwork, creativity, and the rapid making of the most appropriate decisions, leading to innovation and improvement in task performance and administrative activities (Malone, 2019). Due to the increased efficiency of tasks performed by machines compared to manual work, the integration of AI-based systems into the human resources framework of the business organisation allows for better and efficient human capital management (Lim et al., 2019), while they become more flexible and adaptable to changes (Chamorro-Premuzic et al., 2017).

Neuroleadership has a major impact in business organisations, being able to improve decision-making, to streamline the emotional regulation of those involved, and to contribute to the identification of the most appropriate solutions to the challenges and problems encountered. At the same time, neuroleadership facilitates collaboration between management and employees and makes it easier for the business organisation to adapt quickly to change when necessary (Gkintoni, 2022). Neuro-leadership can interact excellently with AI, as its combination provides business organisations with new insights into human behaviour (Roman et al., 2022) and employee motivation and performance, respectively (Lim et al., 2019). Today, business organisations have the ability and

opportunity to maximise their human capital development efforts by embracing and applying the principles of neuroleadership and incorporating AI into the conduct of work tasks and daily activities, respectively (Tiwari et al., 2021).

Combining the fundamentals of neuroleadership with AI in the context of human capital development provides crucial insight and allows business organisations to reconsider their approach and perspectives on reporting to employees (Qin et al., 2023). The integration of AI with neuroleadership enables the enhancement of business organisation effectiveness, as employees can receive real-time feedback on the performance of tasks and work carried out based on preset indicators. Obtaining this feedback helps employees reach their full potential and significantly improve their skills (Khoruzhy et al., 2023).

By adopting the principles of neuroleadership combined with the use of AI, business organisations can improve their ability to recognise, develop, and engage employees in the most effective way possible in their daily tasks and activities. Furthermore, it allows complex and difficult tasks to be assigned according to the competencies and skills, that is, prior knowledge and individual performance of employees (Johannessen, 2020), which implicitly contributes to streamlining processes within companies and increasing their performance. In fact, business organisations can thus significantly improve their productivity, being able to efficiently manage tasks and day-to-day operations by incorporating AI technology into intraorganisational procedures, i.e., human resource management (Roman et al., 2022; Khoruzhy et al., 2023; Qin et al., 2023).

AI has a substantial impact on the HR department, which is vital for the success of the business organisation, as it can help through the adoption of AI-based technologies, the proper recruitment of the workforce, and the identification of the best talent (Kshetri, 2021) or can contribute to a more accurate and rapid evaluation of employee performance (Tian, 2020). AI-based technologies help neuroleaders minimise bureaucracy and recruiters to select the most suitable candidates according to job requirements or organisational needs, saving time and resources, i.e., increasing the productivity of the department and the whole organisation (Kiran, 2021). In fact, AI-based technologies not only simplify the recruitment process, but also make it more rigorous and objective, and less prone to errors or biases in candidate selection (Vrontis, 2022). It is the task of neuro-leaders to choose AI tools that allow them to support the development and/or continuous training of human capital, to define or modify objectives specific to the responsibilities, but also to the competences and skills of each employee, along with the individual and continuous monitoring of overall job performance and efficiency in performing tasks, and to generate feedback.

2. Research methodology

2.1 Research objectives and topics

The purpose of this research is to explore how business organisations in the Romanian IT&C sector strategically implement neuroleadership principles to accelerate the adoption and implementation of AI technologies in human resource management, thus contributing to the development and strengthening of human capital. Through this strategic approach, the increase in organisational performance is considered, as well as the effective use of innovation in the generation of competitive advantages. In this regard, the research is based on the following objectives:

1. Analysis of the concept of neuroleadership and its implications on the development of human capital within business organisations in the IT&C sector by exploring the leaders' perceptions of these entities. This objective was transposed into topics 1 and 2 of the research, which facilitated the exploration of participants' perceptions of the evolving leadership role and the synergies between neuro-leadership and AI technologies used within the organisations under analysis.
2. Examining the processes and procedures required within business organisations in the IT&C sector in the effective adoption of AI in human resource management, objective transposed into research topic 3.
3. Assessing how the integration of AI technologies and tools influences human capital development within business organisations in the IT&C sector, objective transposed into research topic 4.

Thus, the four research themes that facilitated the dynamic exchange of ideas, opinions, and perspectives from the participants are:

Topic 1: Understanding the concept of neuro-leadership and human capital development in business organisations in the IT&C sector in Romania. This theme aims to highlight the importance of applying the principles of neuroleadership in the development of human capital in business organisations to better respond to current market challenges and to allow them to rapidly adapt to change, considering maintaining or increasing employee satisfaction (Ruiz-Rodriguez et al., 2023; Guarnier & Chimenti, 2024). In fact, business leaders must understand the implications of integrating these principles to properly manage and improve human capital development.

Topic 2: The general attitude of the respondents towards the synergies assumed by the implementation of neuro-leadership principles in human resources management within business organisations in the IT&C sector in Romania by applying AI-driven technologies. This theme highlights the connection between the application of neuro-leadership practices and the adoption of AI in business organisations in the IT&C sector in Romania, focussing on how neuro-leaders can support, through their competencies, employees, and teams in performing their tasks and in adapting to change (Badenhorst, 2015; Grunwald, 2021). Certainly, the use of AI-driven technologies enables the development of various necessary competencies for employees to accomplish their tasks in organisations. Neuroleadership must contribute to reducing employee resistance to using AI-driven technologies, especially given the fact that these technologies can improve efficiency, thereby fostering competition to elevate the performance of the business organisation.

Topic 3: Criteria to evaluate the degree of readiness of business organisations in the IT&C sector in Romania for the adoption of AI-driven technologies in human resources management. This topic focusses on assessing the vectors (processes, procedures, tasks, and activities) that a business organisation needs to consider in the successful integration and adoption of AI-based technologies, which are capable of enabling human capital to use them to improve organisational performance. Of course, this analysis implies examining organisational processes and procedures capable of determining whether the company is mature enough to embrace change and manage the risks associated with the adoption of AI. The smaller and more innovative business organisations are in adopting AI, the less resistant they are to change because they are more agile and able to make decisions quickly (Hradecky et al., 2022).

Topic 4: The importance perceived by the participants regarding the impact of the use of AI-driven technologies in the development of human capital within business organisations in the IT&C sector in Romania. This theme aims to outline how respondents perceive the benefits and competitive advantages that AI-based technologies can generate for human capital development within business organisations (Krakowski et al., 2023), in order to improve employee learning processes. At the same time, the aim was to highlight the role of neuro-leadership in overcoming the obstacles, potential risks, and disadvantages associated with implementing AI within these organisations. Thus, this theme aims to showcase the negative aspects of AI adoption in business organisations, such as those caused by cyber security threats or ethical issues arising from insufficient legislative regulations (Bhatt and Muduli, 2022).

2.2. Research design

In transposing the research scope, a qualitative study was conducted through a focus group among representatives of business organisations in the IT&C sector in Romania that apply the principles of neuro-leadership. Resorting to focus group-based research is considered appropriate for analysing topics with a high degree of novelty, but also those based on social components (Nyumba et al., 2018). By involving participants in structured discussions, focus groups allow the exploration of different perspectives on the topic addressed in an interactive way, encouraging all participants to share their knowledge and their own beliefs about the proposed topic through dynamic and informative discussions (Smithson, 2007).

The focus group consisting of representatives of business organisations in the IT&C sector in Romania that apply the principles of neuroleadership was organised in February 2024. It was attended by 10 representatives (see Table no. 1), a number considered adequate and relevant for such an approach (Cortini et al., 2019). The research participants come from different organisations in the IT&C (software development) industry. The organisations are at least 9 years old in the market and have an annual turnover of more than 10 million euros. Their focus is on providing software development and consulting services to a portfolio of more than 120 clients both in Romania and in EU countries. The companies have more than 100 employees.

Table no. 1. Information about the focus group participants

Name	Role	Experience in business organisations	Age	Gender
A.P.	Talent and Recruitment Director	7	35	Female
E.F.	People & Culture Director	5	25	Female
S.G.	People & Culture Specialist	2	23	Female
O.A.	HR Manager	10	40	Female
R.S.	Customers Director	8	27	Male
A.I.	HR Manager	4	32	Female
L.P.	HR Manager	4	30	Female
A.B.	Project manager	6	28	Female
A.T.	Project Manager	2	31	Male
S.I.	Project Manager	3	27	Male

Inclusion and exclusion criteria were used in the selection of the focus group participants. Thus, the inclusion criteria for participants are: 1. higher education; 2. The organisations to which they belong have at least 50 employees; 3. the participants have at least three employees; 4. current/previous experience in leadership positions; 5. international experience; 6. the participants' interest in new leadership practices, organisational psychology, and/or neuroscience. At the same time, certain exclusion criteria were used to exclude participants, namely: 1. not having participated in similar research in the last 6 months; 2. the existence of any conflict of interest with the research team (relatives/relatives); 3. lack of consent to participate in the research.

The focus group lasted 60 minutes and was conducted online, in Romanian, using the Microsoft Teams platform. The questions asked in the focus group were not previously distributed to the participants. The debate was recorded using the Record function in the MS Teams application. The authors transcribed the ideas mentioned by each participant during the debate. Consent to participate in the research, i.e., to record the discussions, was obtained from all participants beforehand. At the same time, the authors informed the participants about the purpose of the research and the methodology, i.e. the process of information collection and processing. Personal data such as their role in organisations, years of experience, age, etc. were collected with their consent. In order to ensure the confidentiality of the information, personal data were anonymised.

The focus group discussions were subsequently translated into English, as due to the research topic, the participants used English terminology quite frequently, which they know from their professional work. Concepts from leadership, psychology, and neuroscience are often taken up in English due to their prevalence in the literature and international business practices. Once transcribed, the data was subsequently subjected to content analysis.

3. Research results

Topic 1. Although neuroleadership has an inherent element of novelty, being a concept that is not yet present in the life of business organisations, participants shared several valuable insights into their perception of the concept and its relationship with, or contribution to, human capital development. Following the discussion, participants reached a consensus that neuro-leadership involves understanding how the human brain works, highlighting skills such as emotional intelligence.

“Neuro-leadership is a type of leadership that focusses on how the brain works and is more connected to people” (Female, 32).

“Neuroleadership helps form more well-rounded, healthier teams that allow an understanding of human behaviour and how it works” (Male, 27).

This perception suggests a natural transition to an innovative leadership approach, based on the principles of traditional workforce management in organisations, but relying heavily on empathy, authenticity, and the creation of a psychologically safe working environment. Participants recognise the potential of neuroleadership to help support and encourage

healthy team dynamics, improve the work environment, and encourage organisational performance by adopting a positive attitude to change.

“More authenticity leads to better performing teams” (Female, 35).

“Neuroleadership helps employees successfully overcome changes and challenges within the team and achieve the task” (Male, 31).

“Through neuroleadership organisations can provide employees with a more flexible and engaging work environment” (Female, 40).

The focus group went on to highlight the connection between neuro-leadership and human capital development in business organisations. Participants perceive neuroleadership as an ally that, once used, facilitates the unlocking of human potential within organisations, as neuroleaders better understand employees and can better connect with those they work with. At the same time, the strategic impact that neuro-leadership can generate in a business organisation was also highlighted, as it is the driver for the adoption of organisational change, by promoting adaptability to market development and/or unforeseen tasks, i.e. it can contribute to a better management of the increasingly complex activities that organisations face in today's turbulent environment. The responses underline the potential of neuro-leadership to manage work teams well, but also to shape character and to foster the development of human capital within organisations, preparing them to better adapt and cope with change.

“Human capital has the opportunity to be better prepared in the face of modern challenges and the high level of uncertainty caused by frequent market changes” (Woman, 25).

“Neuro-leadership can ensure a greater sense of responsibility within teams, it is coupled with leaders' confidence in their people and in reducing stress caused by increasingly complex tasks” (Female, 23).

Looking at the barriers, potential risks, and drawbacks associated with implementing AI-based technologies for human capital development, and the role of neuroleaders in mitigating these challenges, research participants had mixed views. While some identified data privacy or the potential for error in making decisions based solely on algorithmic calculations as obstacles to this approach, others brought up the social component, such as resistance to change or the fear felt by coworkers that the employee of the future might be replaced more quickly by AI. A big concern is that the adoption of AI in organisations will lead to a decrease in human interaction, and neuroleaders will have to work harder to reconnect people and maintain a sense of cooperation and collaboration.

“Humans rely too much on AI to generate things instead of creating, and too much AI will surely lead to hiding or even blocking the feelings behind human actions” (Female, 28).

Topic 2. Discussing the connection between neuroleadership and AI, participants revealed a wide range of opinions and perceptions toward the key competencies they associate with neuroleadership. In particular, they referred to the role of AI in facilitating and developing

these skills and agreed that emotional intelligence is emerging as a fundamental skill, along with conversational intelligence, active listening, and effective communication. During the discussions, participants stressed the importance of emotional regulation as an essential skill for neuroleaders and concluded that managing one's own emotions is essential before understanding the emotions of others. Participants were able to identify what the core competencies of neuroleaders should be: curiosity, innovation, and adaptability, considering that a successful neuroleader should have "curiosity and be innovative" (Female, 28), respectively, be "curious and kind to the team" (Female, 35). The majority of participants felt that it was important for neuroleaders to be drivers of change in business organisations and highlighted the ability of AI to help them by providing them with relevant data quickly and efficiently, as well as acting as a conversation partner able to foster cognitive flexibility and a mindset geared towards supporting the development of the organisation.

"Being a neuro-leader in your own organisation means being a change agent and having a growth mindset (development) and a high degree of cognitive flexibility" (Female, 40).

Using AI technologies, organisations can provide neuro-leaders with resources and tools to continuously refine and/or develop their skills, help them support learning among employees, and advise them in adapting to environmental changes and challenges. In fact, AI can improve leadership practices in the organisation through analytical and critical support.

"Talking to an AI-programmed robot is a great way to understand how you can approach different situations or even simulate a future conversation you are going to have with employees, which helps you look at it from multiple perspectives and scenarios" (Male, 27).

Participants also pointed out the limitations of using AI-based technologies to address the emotional aspects of leadership, as it involves the use of large volumes of data that do not include empathy and/or human intuition algorithms. However, participants believe that AI-based technologies can be used because they can generate new creative ideas, simplifying and streamlining the decision-making process by grounding them in historical data and facts.

"AI in the business organisation will help to improve strategies and identify better approaches, but it will lack the emotional side because AI is based only on data and facts" (Male, 31).
"AI can help decision-making from a data-driven perspective, but it does not take into account human emotion" (Female, 27).

Even though the synergies between neuroleadership and AI are increasingly evident, one point remains unwavering: emotion is a sine-qua non condition of human nature that, for the moment, is not replicated by AI.

Topic 3. Participants almost unanimously stress the importance of having processes and procedures in place within business organisations to enable human capital to reap the benefits of using AI-based technologies. By their very nature, business organisations are

subject to failure if they do not have such internal regulations, as organisational chaos can set in relatively quickly, especially as employees do not necessarily work in an organised way and lose efficiency if they do not have appropriate models of best practice in place, i.e. if they do not have adequate experience to adapt to new situations. Participants identify various key areas where such internal rules should be established and documented, including key competencies, learning and/or training, performance management, providing feedback, ensuring quality management, or even making various forecasts.

“The use of AI-based technologies in relation to company employees should be based on a quality management system in which the roles of each party are clearly defined, but also performance management and different learning procedures” (Woman, 35).
“It is very important that everyone knows what they have to do in order to understand their role in the AI adoption process and how they can contribute” (Female, 40).

Clearly, defining the roles and responsibilities of employees is an essential component in integrating AI-based technologies within business organisations to maximise their impact and benefits on human capital development. The existing regulation within business organisations on how neuroleaders should use data obtained using AI-based technologies was an important focus of the focus group. The participants felt that each company should define its own legal framework, as well as the applicability and limits of the use of data obtained in this way. Of course, this would include the establishment of protocols for data management, current data protection agreements, and the use of data based on ethical principles.

“Organisations should establish clear processes and procedures for managing AI-generated data about their employees” (Male, 27).
“The use of data obtained from employees through AI-based technologies should be regulated through ethical guidelines, as most are in the early stages of discovering the benefits and use of AI and often ethical principles are not followed” (Female, 30).

In the key indicators for assessing the readiness of a business organisation to adopt AI technologies for human resource management, participants considered that it depends on the level of openness of employees to embrace change, the support for such an approach by neuroleaders, which can thus become promoters of change, and the support for the use of AI within the organisation and investment in it to increase business efficiency.

“Adoption of AI-based technologies depends on the number of promoters and the openness of neuro-leaders, who can drive the use of AI within their own companies if they understand its benefits” (Female, 23).
“The use of AI within the company also depends to a large extent on the level of the openness of employees to accept change or how curious they are about it” (Female, 28).

Following the debate, it was concluded that the real adoption of AI-based technologies must consider and start with people: if employees are motivated, engaged, and truly understand how these new technologies can help them automate their repetitive work, then they will be more open to adopt and use such technologies. Continuous learning and fostering a growth-orientated mindset in the organisation they are part of are among the key

competencies of neuro-leadership, so organisations that cultivate and foster these types of leader are more likely to be successful in the marketplace.

“The basis would be to make sure that people in the organisation share this interest in adopting AI and understand its benefits and limitations” (Female, 40).

Topic 4. Participants shared their views on the concrete contexts in which AI can be used in business organisations to support, develop, and/or train human capital. Most participants highlighted the opportunity to create and develop personalised learning initiatives, tailored to their needs and expectations, career development and/or pathways, and individual skill level. Thus, it was felt that ‘AI can be used for personalised learning materials’ (Female, 28), which would facilitate the development of effective learning tools that could be tailored to each employee's learning style. Business organisations will also be able to see real benefits in the development of employee creativity, as they will have more cognitive space to generate creative and new ideas as a result of some of the repetitive tasks previously carried out being automated using AI technology.

Participants also noted that for human capital development, business organisations could resort to the use of virtual assistants to provide personalised support and guidance to employees during their learning, training, and/or acquisition of different skills in the workplace. However, organisations can fundamentally change the traditional learning process and create a framework in which each employee, through the use of AI, is provided with personalised recommendations for the development of their skills and competencies. In fact, two focus group participants mentioned that they used AI as a virtual assistant, which put them in real-life scenarios and facilitated interactive learning experiences. In this way, the participants simulated difficult situations or discussions they were about to face in their own organisation, and the AI-based technology helped them, by simulating different specific contexts and by dialoguing on some concrete situations, to be more prepared for real situations.

Participants also explored ways in which the use of artificial intelligence in developing and/or improving human capital can help business organisations gain new competitive advantages. They highlighted the potential to increase the profitability of companies by adopting AI-based technologies in human capital development and highlighted the impressive ability of these technologies to help improve operations, saving time and enabling better work productivity and shaping employee creativity.

“AI used to manage employees in the organisation saves time and reduces costs and the business is more profitable” (Female, 40).

“An AI technology means reduced costs, time efficiency, more accurate deliverables” (Male, 27).

“If AI is used in the management of company employees, it means that employees spend less time on recurring tasks” (Male, 31).

In the adoption and implementation of AI-based technologies for the human capital management of the business organisation, neuro-leaders are seen as essential pillars of this

process, but also of managing the challenges generated by AI, guiding employees towards the acceptance of these technologies. At the same time, neuroleaders are also responsible for empowering employees to embrace change and perceive it as an opportunity for personal development as well as a threat. By fostering a mindset of self-development, neuroleaders encourage the employee, emphasising cognitive flexibility and neuroplasticity, which helps employees to develop new neural connections and better cope with the challenges of performing tasks at work.

“Neuroleaders must be intermediaries between employees and AI, achieving a fusion between emotions and rationality, guiding staff to accept change” (Male, 27).

“Neuroleaders, by being able to understand how human behaviour works, can better manage resistance to change, ensuring a smoother transition to AI practices and tools” (Female, 40).

4. Discussions

AI has the potential to boost an organisation's productivity in various ways, notably by mitigating risks through more accurate predictions, simplifying the adoption of existing technologies, and increasing creativity and innovation (Damioli et al., 2020). In business organisations that have integrated AI, it has been noticeable that the entire structure and hierarchy of the role of human capital has been altered, and they have become more efficient and agile, using fewer procedures. Their operating costs decreased, and employees relatively quickly became more competent (Rony and Yahaya, 2021). If an organisation's staff understands, trusts, and embraces AI, the potential benefits of this interaction are manifold, both for the individual and especially for the organisation. The degree to which advanced AI systems enhance creativity and organisational performance depends primarily on how staff interact with and understand these systems. The level of human capital preparation is an important factor that ensures the smooth integration of AI within the business organisation (Soni, 2023). AI helps organisations to find the best solutions to solve complex problems more efficiently, which increases company productivity and helps them to be more prepared for uncertainty; they become more efficient and agile (Ramachandran et al., 2021).

Neuroleadership is a topic with multiple implications and facets and is still in the early stages of academic research (Psychogios, 2021), especially in terms of its application in business organisations. The literature is extremely scarce in analysing the impact and effects of neuro-leadership in developing and/or enhancing human capital by integrating AI into daily activities carried out in the workplace (Khoruzhy et al., 2023; Qin et al., 2023). From a practical perspective, a neuro-leader must have a transformation-orientated vision, welcome change, provide direction to the team he or she leads, and lead to the transformation of organisations (Trifan et al., 2022). The neuro-leader can help create a work environment where human capital develops easily and quickly. In the Romanian business environment, Teac (2023) introduces neuromanagement as a new opportunity, proposing it as a potential way to explore the intersection between neuro-leadership and human capital development.

Recent literature (Gheerawo et al., 2021; Riva et al., 2021, Tomlinson, 2021) finds that relevant aspects influencing neuroleadership include employee agility, emotional and social intelligence, self-development mindset, as well as performance-orientated attitude, rapid learning and empathy. Business organisations can make the most of their efforts to create human capital by adopting neuroleadership practices and integrating AI into their daily activities (Tiwari et al., 2021).

Conclusions

Society is on the verge of a technological revolution that is set to fundamentally change the way international economic actors, jobs, and the individual-team-organisation triad look. Throughout the evolution of humankind the only constant has been change, individuals are once again forced to adapt in the face of dual innovation: on the one hand, AI represents a significant opportunity for automating repetitive aspects of work, enabling the efficient integration of human-technology interaction; on the other, AI is perceived as a threat to the status quo with potentially destabilising potential for those who are not prepared to adopt and adapt to it.

From a theoretical perspective, the paper extends research focussing on intellectual capital theory, which is addressed in relation to neuroscience and the implementation of AI-based technologies in the workplace. The research results revealed both opportunities and challenges associated with the implementation of AI in the development of human capital in business organisations. While there is significant potential to increase operational efficiency and organisational performance through the use of AI in human resource management, there are associated risks and barriers, such as concerns about the privacy of employee data, resistance to the adoption of these technologies, or paradigm shifts in the workplace. Like any technological innovation, AI is not a zero-sum game, but a complex system that encompasses benefits, risks, and obstacles.

From a managerial perspective, the paper addresses the crucial role played by neuroleaders in addressing the challenges induced by the use of AI-based technologies in human capital management within their own organisations. Neuro-leaders can act as agents of change, guiding employees, teams, and the whole organisation to embrace the changes proposed by AI, helping to combine emotions (the human factor) with rationality (the technological factor). Through conversational intelligence and emotional regulation, neuroleaders can facilitate an optimal transition to AI-driven practices and promote a growth mindset within organisations by cultivating the belief that learning is continuous.

Among the limitations, the generalisability of the results to other industries or other countries to Romania and the IT&C sector can be pinpointed. The sampling and methodology used is another limitation of the research, the small size of the number of participants influencing the representativeness and generalisability of the results.

In terms of future research directions, a deeper exploration of how AI can be integrated into human resource development programmes to enhance human capital development can be foreshadowed. Research could also focus on developing models and tools to assess organisational maturity in adopting AI. Finally, other industries could also be considered to explore the impact of AI and the role of neuroleadership, such as the automotive or energy industries.

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