



Diversity UIKA Bogor
E-ISSN: 2776-9798

Diversity
JURNAL ILMIAH PASCASARJANA

<http://ejournal.uika-bogor.ac.id/index.php/diversity>

Literature Review: Leadership and Decision-Making to Strengthen HR Competency in AI Emergence

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DOI : [10.32832/djip-uika.v14i2.17024](https://doi.org/10.32832/djip-uika.v14i2.17024)

ABSTRACT

Leadership in AI emergence era is encountering substantial changes in the business environment as AI is implemented across organizations. This requires leaders to be able to implement the right strategies in the decision-making process to keep the new HR skills relevant. People who are not adaptive will easily be replaced by people who are better at new technologies, hence HR competencies are the main-focus that must be developed in organizations. Artificial Intelligence (AI) is an augmentation agent that makes it easier for humans to carry out their activities, in addition to having a very important role in leadership and decision-making, as well as strengthening the HR competency function. This research aims to describe the leadership and decision-making used in strengthening HR competencies in AI emergence using the literature review method. As a result, effective leadership and decision-making related to AI integration can improve productivity, innovation, and job satisfaction (HR competencies), enabling organizational competitiveness in the business environment to continue to grow. To improve organizational performance, leaders must be able to use AI technology in the decision-making process as it transforms into a human assistant that provides effective data-driven insights.

Keywords: Leadership, Decision-Making, HR Competency, AI

Literature Review: Kepemimpinan dan Pengambilan Keputusan untuk Memperkuat Kompetensi SDM dalam Kemunculan AI

ABSTRAK

Kepemimpinan di era kemunculan AI menghadapi perubahan substansial dalam lingkungan bisnis seiring dengan penerapan AI di seluruh organisasi. Hal ini menuntut para pemimpin untuk dapat menerapkan strategi yang tepat dalam proses pengambilan keputusan agar keterampilan SDM yang baru tetap relevan. Orang-orang yang tidak adaptif akan dengan mudah digantikan oleh orang-orang yang lebih baik dalam teknologi baru, oleh karena itu kompetensi SDM menjadi fokus utama yang harus dikembangkan dalam organisasi. Artificial Intelligence (AI) merupakan agen augmentasi yang memudahkan manusia dalam menjalankan aktivitasnya, selain memiliki peran yang sangat penting dalam kepemimpinan dan pengambilan keputusan, juga memperkuat fungsi kompetensi SDM. Penelitian ini bertujuan untuk mendeskripsikan kepemimpinan dan pengambilan keputusan yang digunakan dalam memperkuat kompetensi SDM dalam kemunculan AI dengan menggunakan metode studi literatur. Hasilnya, kepemimpinan dan pengambilan keputusan yang efektif terkait integrasi AI dapat meningkatkan produktivitas, inovasi, dan kepuasan kerja (kompetensi SDM), sehingga daya saing organisasi di lingkungan bisnis dapat terus berkembang. Untuk meningkatkan kinerja organisasi, para

pemimpin harus dapat menggunakan teknologi AI dalam proses pengambilan keputusan karena teknologi ini bertransformasi menjadi asisten manusia yang memberikan wawasan berbasis data yang efektif.

Kata kunci: Kepemimpinan, Pengambilan Keputusan, Kompetensi SDM, AI

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INTRODUCTION

The emergence of AI in business strategic decisions is a very important development for the business world as it offers many opportunities to create value, encourages rethinking of conventional strategic planning methods, and drives the development of new business models (Kaggwa et al., 2024). According to Wamba-Taguimdje et al. (2020), AI is a collection of ‘theories and techniques used to create machines capable of simulating intelligence’. The broad term artificial intelligence (AI) refers to the use of computers to simulate intelligent behavior with little or no human interaction.

Meanwhile, according to Mikalef & Gupta (2021) Artificial Intelligence (AI) is the capacity of a system to recognize, understand, draw conclusions, and learn from data to meet predefined goals for organizations and society. Furthermore, Mikalef & Gupta (2021), concluded that AI serves as an augmentation agent to help humans complete challenging and time-consuming activities, rather than necessarily replacing humans. Machine learning, computer vision, natural language processing, robotics, and more are forms of AI. As a result, the term ‘AI’ is increasingly used to describe any machine that imitates human cognitive functions, such as ‘learning’ and ‘problem-solving’ (IBM, 2020).

In modern business management, success depends on the symbiotic relationship between AI and participative leadership. AI can transform many aspects of business, including its role in gaining competitive advantage, transforming digital marketing strategies, optimizing financial management, and driving human-machine working environments. Amidst these technological advancements, there is a growing paradigm of participative leadership. This paradigm allows employees to be actively involved in the decision-making process and ensures that human and technological expertise are well integrated (Sarioguz & Miser, 2024).

To fulfill many challenges in the modern world, AI has a unique role to play. This is driven by living in an era where data infrastructure and processing power provide the foundation for truly transformational AI applications and innovations. Although investment in change management is still limited, employees are more optimistic about the possibility that AI can help their careers. 82% of respondents said they believe that working with AI will improve their job performance and satisfaction (Deloitte, 2022). The study findings (Mikalef & Gupta, 2021) also show that artificial intelligence improves organizational performance and creativity.

The number of businesses using AI has increased by 270% in four years: 2016-2019 (Gartner, 2019). Meanwhile, a recent International Data Corporation survey in 2018 found that 24.6% of Indonesian organizations surveyed are integrating AI into their operations. This figure is higher than its regional competitors Thailand, at 17.1%, and Singapore at 9.9%, so Indonesia is considered to have an opportunity as the 'next frontier' for AI (Goode & Kim, 2021).

AI is being integrated into the workplace on an unprecedented scale. AI is currently used by 75% of knowledge workers, and 46% of users started using it less than six months ago, so AI is succeeding in improving employees' ability to be more creative (84%), save time (90%), concentrate on the most important tasks (85%), and enjoy work more (83%). The top 5% of users used Copilot the most to summarise eight hours of meetings in March (Microsoft and LinkedIn, 2024).

On the other hand, human resources (HR) in the organizational environment, not only confront the challenges of the expanding digital axis but also encounter threats or risks to the role of HR as a workforce or employee. So that human resources who are unable to adapt quickly, can be replaced by the development of AI technology. Damingun (2017) in Fajriyani et al. (2023) stated that with the demands of global business competition, especially in terms of human resource management, the current trend is that employees will perform optimally if they have the right competencies and expertise in their fields. According to Ramly & Tanjung (2021), employee and organizational performance is strongly influenced by the character, skills, and spirituality of human resources in the workplace. So, improving the quality of human resources, including strengthening work competencies, must be a top priority for companies.

So, to support the organization to encounter its resolutions, a solutive and innovative leader is needed, especially in the decision-making process. This decision-making is expected to influence the strengthening of HR competencies to be able to compete in the context of increasing their capabilities in a dynamic business environment. However, there are still various obstacles associated with this process. Wang et al. (2020) revealed, that the limit conditions that regulated the decision have also received less attention in the history of research. In addition to factors related to the decision-making process, many other factors can influence one's mental understanding of decision-making. Lee (2018) in Cai et al. (2024), in addition, previous research has focused more on the influence of individual perspectives on the decision-making process and less on the influence of decision-making outcomes.

In the decision-making process at the managerial level, according to Taherdoost & Mitra Madanchian (2023), the working frameworks and instructions provided by the decision-making models used can optimize the decision-making process and make better decisions. They can be used to make effective decisions in

complicated cases. Furthermore, (Taherdoost & Mitra Madanchian, 2023) stated to improve the overall quality of decisions, it is crucial to understand the cognitive biases that can affect decision-making. Decision-makers can make more rational and objective choices by identifying and mitigating these biases. In addition, the incorporation of advanced technologies such as machine learning and AI can improve the decision-making process by providing data-driven insights and predictive analytics, allowing companies to gain more information and make better choices.

Enholm et al. (2022) divides the analysis of its findings into three parts, which include the identification of enablers and inhibitors of AI use consisting of technological resources, organization, environment, and certain conditions that affect the adoption of AI. Next, the different cases of AI where organizations can use AI technology to automate work or add humans for internal and external needs. Using AI to improve internal business processes where customers are not in direct contact with the AI solution is an internal goal. In addition, using AI in products and services that are directly related to customers is an external goal. Finally, the impact of AI is mainly how it changes the organization and affects competitive performance.

Enholm et al. (2022) its findings also revealed that to achieve competitive advantage and create business value, AI is becoming more important for businesses. However, many AI-focused efforts have failed despite a lot of time, effort, and resources spent. There is no clear understanding of how AI can create value for businesses and what kind of value can be expected from it.

The future of business management hinges on the ability to integrate AI technologies and participatory leadership principles. This synergy not only transforms customer experience, operational efficiency, and financial strategy but also creates a workplace where creativity, collaboration, and continuous learning are the keys to success. As organizations embark on this transformation journey, the dual power of AI and participatory leadership promises a sustainable and adaptive approach to thrive in the ever-changing contemporary business landscape (Sarioguz & Miser, 2024).

According to Nguyen & Shaik (2024), AI can change the way communication, decision-making, and efficiency in organizations. Artificial intelligence-driven tools, such as LLM, allow leaders to gain unprecedented information and insights, enable data-driven decision-making, and foster team collaboration. However, data privacy, algorithmic bias, and job displacement are some of the issues with AI adoption.

Based on the formulation of the problems that have been elaborated, this research is focused on describing how leadership and decision-making strengthen HR competencies in the emergence of AI.

RESEARCH METHODS

This research is a literature review method that uses secondary data. A literature review, also known as a Review Article, is a study that analyses and synthesizes the existing literature by identifying, questioning, and advancing the components of a theory through an examination of a group of previous studies (Post et al., 2020). This method is sourced from reading, reviewing, comparing, and summarising various current information from peer-reviewed journal articles, and previous research that discusses leadership and decision-making to strengthen human resource competencies in the emergence of AI.

The method of analysis in this research uses a descriptive approach, so it is expected to present output that is relevant to the problem to be discussed. This research uses 5 articles as the main source in the discussion, consisting of (Nguyen & Shaik, 2024), (Tang & Gu, 2024), (Shah, 2024), (Almaududi Ausat et al., 2022), (Asbari et al., 2021). Meanwhile, the process of conducting a literature review in this research is by looking for similarities (compare), looking for differences (contrast), and criticizing the weaknesses of the article.

RESULTS AND DISCUSSION

In the era of emerging artificial intelligence, leadership offers a significant amount of leeway in deciding on numerous strategic policies that come from the decision-making process. It is anticipated that the interaction between leadership and the decision-making process will give organizational management roles a fresh perspective so they can work together more successfully when confronted with shifting external circumstances. It is imperative for leaders to consistently create a dynamic work environment that is both favorable to and adaptive to changes, including the introduction of new technologies that facilitate human-machine collaboration. Additionally, it is anticipated that this will support HR competencies to stay current with the AI era's technical advancements and to further realize innovation and enhanced performance.

Leadership. De Jong & Den Hartog, (2007) in (Wen et al., 2019), leadership is defined as the practice of persuading others to take action to achieve a desired outcome. According to Kalsoom et al., (2018) in (Wen et al., 2019), leadership is the most important component of an organization and the most important skill for organizational leaders. Employee performance is directly and indirectly affected by leadership. Meanwhile, according to Othman, et.al (2014) in (Wen et al., 2019), there is no progress for the organization from the individual efforts of one or two people alone. Organizational progress is achieved through the cooperation of all members of the organization. The organization's strategic targets are

strongly linked to performance and employee performance is directly influenced by leader and overall team performance.

Transformational Leadership. Bass & Riggio, (2018) in Lawrence et al. (2024), According to transformational leadership theory, a leader can inspire and motivate followers by promoting innovation and building a shared vision. This type of leadership encourages innovation and proactive problem-solving, which makes it particularly relevant in situations where the development of creative communities is of utmost importance. Studying transformational leadership theory involves understanding how leaders can change organizational culture, structure the organization, and implement management strategies to achieve organizational goals. (Iqbal Muhammad, 2021).

Bass & Avolio (2000) in Asbari et al. (2021), said that transformative leaders have three characteristics, namely (a) raising followers' awareness of the importance of process and effort, (b) encouraging followers to prioritize group interests over individual interests, (c) directing followers' needs from material things to higher levels, such as actualization and pride. Furthermore, according to Asbari et al. (2021) transformational leadership has a significant influence on readiness for change; transformational leadership and readiness for change also have a significant influence on the relationship between transformational leadership and employee performance.

Transactional Leadership. Robbins et al., (2009) in (Wen et al., 2019), transactional leadership is leadership that uses punishment and reward to lead followers. Transactional leaders are responsible for explaining and completing tasks. Bruce Avolio and Bernard Bass, (1991) in (Deshwal & Ashraf Ali, 2020), transactional leadership differs from transformational leadership, where additional rewards are prioritised over performance. According to Domingo & Sa, (2017) in (Deshwal & Ashraf Ali, 2020), transactional leadership focuses less on emotion and inspiration, in contrast to transformational leadership, where performance is tied to additional rewards. Most leaders, for example, not only lead people but also manage resources, such as budgets, facilities, and vehicles.

Thought Leadership. Thought leadership is defined by Mccrimmon & Mccrimmon (2011) in Wen et al. (2019), as a leadership style that is predicated on the ability of concepts to alter our way of thinking. A thinking leader offers fresh ideas to subordinates or superiors. Barry and Gironda (2017), as cited Wen et al. (2019) discovered that thought leaders had traits such as endorsing novel concepts, inspiring others to overcome obstacles, converting ideas into reality, and formulating workable plans.

Servant Leadership. Servant leadership is when a leader serves his or her followers by emphasizing empathy, humility, and commitment to the well-being

of others (Greenleaf, 2019 in Lawrence et al. (2024)). This model suggests that leaders should act as servants to their communities.

Situational Leadership. According to Northouse (2021) in Lawrence et al. (2024), situational leadership theory is effective leadership to accommodate the needs of a particular situation or group. Leaders must assess how ready their followers are and then adjust their leadership style accordingly.

Adaptive Leadership. Adaptive leadership theory emphasizes the use of people for adaptive coping to overcome difficult challenges ((Bagwell, 2020 in Lawrence et al. (2024)). This model is relevant for Local Chief Executives (LCEs), who help navigate the dynamic city governance landscape.

Decision-Making. Collier (2015) in Mukhtamar et al. (2024) defines decision-making as a process of identifying problems, setting solution objectives, making initial decisions, developing, evaluating alternatives, and then choosing one alternative and implementing it. According to Smith (2014) in Mukhtamar et al. (2024), decision-makers who want to make the right decisions should avoid inconsistent information from employees so that they can recognize the consequences of their decisions and only make decisions as a result of the various options available.

AI can help government decision-making by collecting, organizing, and analyzing data from multiple sources more quickly (Lazer et al., 2020). The AI-based tracking system enables leaders to allocate resources and make informed decisions by automating the process of data collection and analysis (Nguyen & Shaik, 2024). The findings of Mukhtamar et al. (2024) that the decision-making process and the achievement of organizational goals require the application of appropriate decision-making models, the use of appropriate techniques, and consideration of bias.

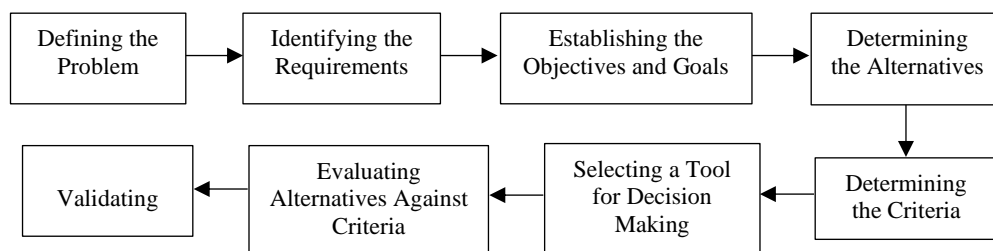


Figure 1. Decision-Making Process Steps (Taherdoost & Mitra Madanchian, 2023)

The decision-making model according to Taherdoost & Mitra Madanchian (2023) is as follows: (1) Normative model: normative decision frameworks are theories that help managers make choices by examining the level of team participation. These theories cover decisions made by rational decision-makers considering

maximum utility to obtain optimal choices under uncertain circumstances that may hinder decision-making; (2) Descriptive models: according to Currey & Botti in 2003, naturalistic decision-making studies are descriptive rather than prescriptive and examine how people use their experiences to make decisions in real-world situations. The focus is on three factors that influence decisions: decision-maker attributes, such as knowledge and experience; job factors, such as their level of complexity; and environmental factors.

The descriptive model is divided into two: Rational models and Bounded rational models. Rational models make decisions with certainty, as discussed in the normative model. In other words, decision-makers know the alternatives, decision criteria, and results, so they can make the optimal choice and finally implement the choice. Whereas in Bounded Rational Models, according to Lunenburg FC in 2010, in many decision-making processes, it is not possible to agree on all the above steps thoroughly due to various constraints such as time, time, information, cost, etc. As a result, decision-making is based on a list of solutions. As a result, decision-making is based on an incomplete list of solutions, limited rationality, and considering advice, intuition, and experience. Whenever a situation is faced, decisions are always made based on partial or even inadequate understanding.

HR Competency

According to Ramly et al. (2024), competencies refer to skills, attitudes, and knowledge that are assigned differently in each industry. Competence, personality, and spirituality are very important in the workplace and directly affect the level of organizational performance. According to the Pumping HR model, the three variables can be depicted as a tree complete with analogies of roots trunk, fruit or leaves, and spirituality. The root analogy is spirituality, the stem analogy is competence, and the fruit or leaf analogy is performance. In the Iceberg theory, personality is in between the root and the trunk, which is part of the subconscious (Ramly & Tanjung, 2021).

The tree model illustrates the principle of success. The success principle is demonstrated by the tree model. In this instance, the foundations are aspects of spirituality that give people the ability to succeed in the things they undertake. While personality factors like leaves aid in human development and enable people to continue producing work, competency variables enhance human success as it advances in carrying out its operations.

Overall, the influence of Big Data, Automation, and AI on human resource performance is positive and highly relevant in today's digital age. Companies that can adapt and manage these technologies wisely will have a significant competitive advantage, increase productivity, and optimize the management of their human resources (Pratama et al., 2023). There are many challenges to HR

competencies in the digital era, including rapid technological change, the need for new soft skills and technologies, a supportive organizational culture, and the role of government and educational institutions in improving HR quality. As a result, organizations must make the right plans to improve HR competencies in the digital era (Fajriyani et al., 2023).

Types of Competences. Some of the superior competencies required for human resource development (Tarigan et al., 2024), namely (1) Digital Capabilities: this capability focuses on training the knowledge skills, attitudes, and awareness needed to understand information technology; (2) Application of Digital Capabilities; (3) Human Value Enhancement. It focuses on developing and improving human resources so that they can survive.

Table 1. Gap Analysis

No.	Authors / Publication Year	Research Title	Method / Analysis Techniques	Major Conclusions
1.	<ul style="list-style-type: none"> • Daniel Schilling Weiss Nguyen, • Mudassir Mohiddin Shaik (Nguyen & Shaik, 2024) 	Impact of Artificial Intelligence on Corporate Leadership	Systematic Literature Review, supported by academic analysis of relevant literature and industry.	The study discovered that via examining changing AI dynamics and leadership, it promotes the responsible adoption of AI and suggests LLM as a viable remedy that encourages the integration of AI benefits in a balanced manner while lowering the risks involved in a corporate setting.
2.	<ul style="list-style-type: none"> • Abu Muna Almaududi Ausat, • Suherlan, • Tepi Peirisal, • Zaenal Hirawan (Almaududi Ausat et al., 2022) 	Effect of Transformational Leadership on Organizational Commitment and Work Performance	Quantitative techniques based on variance Structural Equation Modeling (SEM) and Partial Least Squares (PLS) are used to gain a better understanding of the relationships between variables.	Organizational commitment and performance are positively and significantly impacted by transformational leadership. The organization's dedication to performance is also strong. In contrast, there is no discernible relationship between transformative leadership and performance and organizational commitment.
3.	<ul style="list-style-type: none"> • Neil Shah (Shah, 2024) 	Artificial Intelligence and Leadership: How Artificial Intelligence is Changing the Leadership Role	Reading up on the latest scientific research to comprehend the potential and difficulties of AI applications. Additionally, a narrative for identifying AI's most useful roles as a human assistant is revealed by data analysis employing qualitative analysis to examine how AI affects decision-making processes, operational efficiency, and social ramifications.	The study highlights how crucial it is for leaders to embrace AI as an ally; in order to do this, the program for developing leaders needs to be modified. However, there were several restrictions on the study. These include the review's qualitative character, time limits, and the potential for skewed usage of the literature. The study's conclusion called for AI to be acknowledged as a human assistant. It pushes businesses to develop leaders for a day when artificial intelligence (AI) and human leadership collaborate to manage the intricacies of the digital world.
4.	<ul style="list-style-type: none"> • Xiuli Tang, and • Yingkang Gu (Tang & Gu, 2024) 	Influence of Leaders' Emotional Labor and Its Perceived Appropriateness on Employees' Emotional Labor	The Emotion as Social Information (EASI) model is used in this study as a theoretical framework to examine how employees' emotional work is impacted by their leaders' emotional work and perceived appropriateness.	The findings demonstrated that employees tended to surface actions regardless of whether the leader's perception of these actions was deemed appropriate or not. On the other hand, the impact of perceived conformity regarding the leader's in-depth actions varied, with employees being significantly influenced to participate in the in-depth actions themselves by the leader's appropriate display of these actions. There was also discussion of the findings' shortcomings and managerial implications.
5.	<ul style="list-style-type: none"> • Masduki Asbari, • Dylmoon Hidayat, • Agus Purwanto (Asbari et al., 2021) 	Managing Employee Performance: From Leadership Readiness for Change	One mediating component in this study was preparedness for change. 220 completed sample questionnaires that were selected at random provided the data. Using SmartPLS 3.0 software, the SEM method was used to analyze the data.	The study's findings demonstrate that transformational leadership significantly affects change readiness, that the relationship between transformational leadership and employee performance is positively and significantly impacted by readiness for change, and that employee performance is significantly impacted by both transformational leadership and readiness for change. Partially, readiness for change acts as a mediator.

From Table 1, several similarities were found in research methods, including paper 1 and paper 3 which used the literature review method. Paper 2 and paper 5 are research with quantitative methods and both use SEM as a data processing technique and PLs as data analysis. Paper 4 uses the Emotion as Social Information (EASI) model which is used to measure the emotional expression of leaders that can influence the emotions, attitudes, and behavior of their followers.

All five articles discuss the influence of AI on leadership practices in business organizations and explore the benefits and challenges that may arise when AI adoption is implemented to support organizational leadership. The result is that transformational leadership in the AI era has a positive influence on organizational commitment, and improved performance as it is the most change-ready.

Paper 1: discusses how the positive and negative impacts of AI use on corporate leadership by exploring the multifaceted relationship between corporate leadership and AI, not just scientific research which is a practical necessity for companies that want to thrive in the digital era. This study still has some weaknesses, because it only conducts research at the corporate leader level, and does not review leaders at other levels, so there is no comparative analysis in terms of leadership levels. This research also does not present more extensive empirical evidence, although it has mentioned case studies such as Adobe's performance management system, but the study is only theoretical. Thus, more data is needed as well as more detailed case study studies that can be used in supporting the research results. The proposed solution, which suggests the utilization of the Local Machine Learning Model (LLM) to address data privacy issues, is limited, so a more in-depth analysis of the practical considerations in implementing the proposed solution is needed.

Paper 2: discusses the impact of transformational leadership on organizational commitment and performance in Small and Medium Enterprises in the food and beverage sector in Karawang Regency, Indonesia. Paper 2 has some weak points, namely organizational commitment, which is a mediator in the relationship between transformational leadership and performance, does not have a significant effect in influencing the relationship. On the other hand, this study needs to conduct further exploration to use other variables that can affect the relationship between the two mediated variables. The study used a questionnaire distribution to collect data and was conducted online so there may be many respondents who do not match the characteristics of the sample in the study. The study in paper 2 explains what the endogenous and exogenous variables are but does not explain in more detail what indicators are the basis for operational variables. Another possible limitation is that the demographics of the respondents are not widely explained.

Paper 3: discusses a comprehensive evaluation of the changing relationship between leadership and artificial intelligence (AI) in many fields, such as business management, education, and industry. However, the focus of the research was to understand the opportunities and challenges associated with AI applications by conducting a review of current scientific literature. In paper 3, there is a shortcoming in that the research only focuses on contemporary scientific literature that has a certain time limit, so there is a potential for bias in certain literature sources. This research is also qualitative, so data analysis is not comprehensively explained and leads more to the subjectivity of the author. In addition, there is no mention of how the data is considered contextually and the lack of empirical data validation.

Paper 4: discusses how leaders' emotional management affects employees' emotional labor, as demonstrated by frequent interactions in hotel organizational management practices. In this study, a two-subject experimental design based on the EASI model was used, namely leader emotional labor consisting of surface acting vs. deep acting; and perceived appropriateness consisting of appropriate vs. inappropriate. The research in paper 4 has several weaknesses including the limited number of respondents used because there are only 120 front-line people in Shanghai hotels, whereas if it is carried out by taking a larger number of samples/respondents, it allows for more representative results. In addition, this research was conducted in Shanghai, China and the results of the study could be different if conducted in a different cultural context. This study also tested causal relationships with experimental settings that do not reflect the real situation in the field.

This study only examines employees' perceptions of leaders' emotional labor based on self-reporting which may be biased or inaccurate. The study also used only one experimental method to explore the role of perceived behavioural congruence. It is recommended that this research adds other methods to integrate, such as using questionnaires to explore the role of factors such as motivation and attribution style in influencing employee perceptions.

Paper 5: discusses the importance of transformation and innovation strategies for organizations around the world that must be ready to change, especially when facing the industrial revolution 4.0. In paper 5, there are several weaknesses identified including using a research sample in only one type of industry, namely the chemical industry, so that the generalization of the research results is only limited to that industry. If the research uses a region, country, or SMEs and larger organizations, it allows for more widespread generalization. In collecting data using a self-report questionnaire survey method, this survey is prone to common method bias.

This study also only uses the mediating variable readiness for change, but other mediating variables are not included to enrich the research model such as management knowledge, competence, motivation, and organizational culture, which can affect employee performance. There are measurements of construct variables, such as transformational leadership and employee performance, but measurements are made only using respondents' perceptions, so the objectivity of the measurements is doubtful. The research design uses cross-sectional, this research design is not able to capture the dynamics of changes between variables over time. There is no specific explanation of the respondents' demographic data, such as gender, position, assignment, and others that can provide a broader context. The research in paper 5 also does not explain the procedure of SEM-PLS modelling and suggested model evaluation.

CONCLUSION

The AI emergence in today's modern business organizations cannot be separated from the demand for leaders to be more innovative and solutive in integrating technology so that HR competencies can be improved. A leadership paradigm that involves employees in the decision-making process is also important in ensuring the synergy of human-machine expertise so that its utilization is more optimal and effective for the organization.

AI as an ally that becomes a human assistant, can help solve various complex and challenging tasks and activities. Therefore, organizations need to conduct good, measurable, and appropriate change management to accommodate HR concerns in the use of AI so that their competence remains significant. Leadership and decision-making on the right AI integration can improve employee performance, creativity, and job satisfaction including strengthening HR competencies. In addition, many AI applications are useful for improving HR competencies because they can help develop professional skills.

Therefore, the most appropriate leadership to be implemented in the era of AI emergence is transformational leadership which is more ready for change, because it can help employees to increase awareness of the importance of process and effort in achieving goals, encourage employees to prioritize group interests over individuals, and direct employees to self-actualization. Organizations can leverage AI to drive innovation and efficiency, paving the way for them to thrive in an increasingly competitive business world.

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