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INTEGRATING ARTIFICIAL INTELLIGENCE INTO SUCCESSION PLANNING AND LEADERSHIP DEVELOPMENT IN HIGHER EDUCATION

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Abstract: This study evaluates and examines the use of artificial intelligence (AI) in succession planning and leadership development in higher education institutions. The primary focus is on how AI can enhance the effectiveness and efficiency in identifying and developing potential leadership candidates while addressing existing challenges. The review employs a comprehensive literature search strategy, involving four major databases: Scopus, Web of Science, ABI/INFORM Collection, and Google Scholar. Inclusion criteria ensure that relevant, up-to-date, and high-quality literature is gathered for analysis. The review findings indicate that the use of AI in succession planning and leadership development in higher education promises significant advancements. AI can enhance the effectiveness of succession planning by providing deeper analysis of talent and skills while addressing the digital transformation challenges faced by higher education institutions. The implementation of AI in this context has the potential not only to improve leadership quality but also to strengthen strong leadership continuity for the future. This review offers insights into best practices, challenges, and future potentials for AI usage in succession planning and leadership development in higher education institutions, along with recommendations for more effective implementation.

Keywords: Artificial Intelligence, Succession Planning, Leadership Development, Higher Education, Digital Transformation

1. Introduction

Succession planning and leadership development in higher education institutions are critical aspects that are increasingly highlighted in academic literature. Competent and visionary leadership is key in managing change, addressing challenges, and maintaining the quality of educational services (Hilb, 2020). The use of artificial intelligence (AI) in this context is becoming more important, especially in the era of the Fourth Industrial Revolution, which brings new challenges and opportunities (Yigitcanlar et al., 2020; Trunk et al., 2020).

Research shows that succession planning and leadership development are essential to prepare leaders who are adaptive and responsive to change (Kuleto et al., 2021). Higher education institutions are required to develop leadership capable of effectively managing digital transformation (Anshari, 2022; Barriga et al., 2022). A well-thought-out succession planning strategy and effective leadership development are crucial to ensuring the continuity of strong leadership (Barton et al., 2022; Aljohani et al., 2022).

Moreover, succession planning helps retain talent and expertise while enhancing job satisfaction. Leadership development is also important in preparing qualified future leaders and reinforcing a positive organizational culture. Therefore, effective succession planning and leadership development can improve the overall performance of the organization (Li, 2022; Santana et al., 2023).

Beyond the education sector, Industry 4.0 is changing paradigms in various industries, including the food industry, with the adoption of smart technologies such as AI (Akyazi et al., 2020). It is also important to consider the ethical implications of using AI in various processes (Gerke et al., 2020). AI has the potential to enhance financial inclusion (How et al., 2020) and education, from improving student skills to increasing the efficiency of learning processes (Tanveer et al., 2020; Yigitcanlar et al., 2020). AI can also ensure security in educational systems and improve business processes in educational institutions (Ahmed et al., 2021; Wamba-Taguimdje et al., 2020).

In the healthcare field, AI promises significant transformation, although it requires careful ethical considerations (Ezanno et al., 2021; Arnold, 2021). The concept of augmented intelligence (IA) has also emerged to enhance human problem-solving capabilities (Sadiku et al., 2021).

This review aims to evaluate and examine recent research on the use of AI in succession planning and leadership development in higher education. The main focus is on how AI can enhance effectiveness and efficiency in identifying and developing potential leaders while addressing existing challenges. Through a review of the latest research, this review is expected to provide insights into best practices, challenges, and the future potential of AI use in succession planning and leadership development in higher education institutions, as well as provide recommendations for more effective implementation.

The use of artificial intelligence (AI) in succession planning and leadership development in higher education institutions promises significant advances in identifying, developing, and retaining leaders who are adaptive and responsive to change. Recent studies show that AI can enhance the effectiveness of succession planning by providing deeper analysis of talents and skills, while addressing the challenges of digital transformation faced by universities. Thus, the implementation of AI in this context not only has the potential to improve the quality of leadership in educational institutions but also strengthens the continuity of strong leadership for the future.

2. Literature Review

The literature search strategy for the topic of artificial intelligence (AI) integration in succession planning and leadership development in higher education involves the use of four major databases: Scopus, Web of Science, ABI/INFORM Collection, and Google Scholar. Scopus, as the largest database, provides access to millions of journal articles, conferences, and patents, with advanced search features and an intuitive user interface. Web of Science, with its wide reputation, offers high-quality scientific literature from various fields of study and provides citation analysis tools to identify research trends and the influence of specific researchers or articles. ABI/INFORM Collection, focused on business and economics, also includes relevant literature on human resources and management, while Google Scholar, though not as rigorous in terms of peer review, provides access to a wide range of academic documents.

Inclusion criteria for this literature search ensure that the selected literature is relevant and of high quality. The selected literature must directly relate to the integration of artificial intelligence in succession planning and leadership development in higher education, be published in reputable academic journals, and have undergone a rigorous peer-review process. Exclusion criteria ensure that irrelevant or low-quality literature is excluded. Literature that is not available in full-text format, does not meet academic quality standards, or is not available

in a language understood by the researcher or without available translations, is not included. By applying these criteria, the researcher ensures that the selected literature is relevant, high-quality, and supports the research being conducted.

3. Method

Screening and Selection Process

The process of screening and selecting literature for the topic "Integration of Artificial Intelligence in Succession Planning and Leadership Development in Higher Education" involves a systematic series of steps to ensure the inclusion of relevant and high-quality sources.

The first step is to conduct searches in the chosen databases: Scopus, Web of Science, ABI/INFORM Collection, and Google Scholar, using predetermined keywords. These keywords include "artificial intelligence," "succession planning," "leadership development," "higher education," "learning management system," and "adaptive learning."

After that, an initial screening is performed based on titles and abstracts to eliminate articles that are clearly irrelevant. At this stage, inclusion and exclusion criteria are applied, focusing on relevance to the topic, publication quality, availability of full text, publication years (2020-2024), and language.

Articles that pass the initial screening will have their full texts examined to determine their relevance and compliance with the inclusion criteria. Special attention is given to the methodology, results, and discussion sections to assess the depth of coverage on the topic.

Next, the quality of the articles is considered by examining the reputation of the journal, the rigor of the peer-review process, the credibility of the authors, and the reliability of the research findings. Articles that do not meet the established quality standards will be excluded.

Relevant data is extracted from the selected articles, including key findings, methodologies used, theoretical frameworks, and other information critical to addressing the research questions or objectives. The extracted data is then synthesized to identify themes, patterns, gaps, and insights related to the integration of artificial intelligence in succession planning and leadership development in higher education.

The findings are then critically analyzed and interpreted for their implications for theory, practice, and future research. This literature screening and selection process is thoroughly documented, including the reasons for inclusion/exclusion decisions, challenges encountered, and a final list of selected sources.

The results of the findings are reported transparently and comprehensively in research outputs such as literature reviews, research papers, or reports. By following this systematic screening and selection process, researchers can ensure the identification and inclusion of high-quality literature relevant to their topic of interest, thereby enhancing the credibility and validity of their research findings.

The discussion and conclusions section should answer your research questions and explain what your results mean. In other words, the majority of the discussion and conclusions section should be an interpretation of your results. It should be formatted using 12 point, Times New Roman, single spaced.

Data Extraction and Synthesis

After the screening process, the next step in the research is data extraction and synthesis. In the extraction phase, important information from the selected articles is systematically extracted.

This involves recording key findings, methodologies used, theoretical frameworks, and other relevant information to answer the research questions. The extracted data is then organized and synthesized to identify patterns, themes, and gaps in the literature. The synthesis process allows researchers to combine findings from various sources into a more comprehensive picture of the topic under investigation. The extracted and synthesized data will be used to analyze the theoretical and practical implications of integrating artificial intelligence in succession planning and leadership development in higher education. The results from this extraction and synthesis stage will serve as the foundation for developing conclusions and recommendations in the research.

4. Result and Discussion

A comprehensive literature search yielded a number of publications relevant to the topic of using AI in succession planning and leadership development in higher education.

Table 1. Literature Review of Selected Articles

Literature Review		Selected Articles
157	102	1. Social, Legal, and Political: 23 2. Education and Health: 15 3. Computer Science and Information Systems: 34 4. Agriculture and Environment: 4 5. Economics, Management, Business: 26

The Role of AI in Succession Planning in Higher Education

1) Identifying high-potential candidates

In an increasingly technology-driven era, the application of artificial intelligence (AI) techniques in talent analytics and predictive modeling has expanded the scope of human resource management. With the help of AI, organizations can efficiently collect, analyze, and leverage employee data to forecast individual performance, identify potential, and design development strategies. AI also supports the processes of employee evaluation and performance assessment. However, challenges related to data privacy, ethics, and employee technology adoption still need to be addressed.

Akyazi et al. (2020) discuss the changes in skills required by the workforce in the food industry due to the advancements of Industry 4.0, involving digital technologies such as robotics, AI, and the Internet of Things (IoT). The transformation of business models and manufacturing processes in the food industry due to these new technologies demands new skills for workers to adapt. Bates et al. (2020) examine the utilization of AI in the context of digital learning and predicting student outcomes, showcasing AI's potential to help predict and understand the processes and results of student learning.

In the healthcare sector, Gerke et al. (2020) emphasize the importance of building a responsible, sustainable, and inclusive foundation in AI development, ensuring that this technology can be utilized ethically and responsibly. Other research by Grewal et al. (2020), Hilb (2020), Calabrò et al. (2020), Basri (2020), and Ali and Choi (2020) discusses the utilization of AI across various sectors such as marketing, government, and smart cities, highlighting the growing trend of AI application.

Kashive et al. (2020) explore the potential of AI in enhancing online learning experiences. They investigate how AI can strengthen personal learning profiles (PLP), personal learning

networks (PLN), and personal learning environments (PLE) of learners, as well as how these factors impact perceptions of ease of use, effectiveness, and utility of online learning platforms. The authors highlight that AI can play a crucial role in creating appropriate learning environments by tailoring learner profiles. AI-based talent analytics and predictive modeling allow organizations to better understand learners' preferences, learning styles, and knowledge gaps, and subsequently customize online learning experiences to meet individual needs (Kashive et al., 2020). This personalization can enhance perceptions of ease of use, effectiveness, and utility of online learning platforms, ultimately increasing user satisfaction and intention to use.

Kashive et al. (2020) highlight the importance of integrating user perceptions of PLP (Personal Learning Profile), PLN (Personal Learning Network), and PLE (Personal Learning Environment) into the Technology Acceptance Model (TAM). By integrating user perceptions into TAM, research can better understand the factors influencing the adoption and success of AI-based online learning systems. This provides insights into how personal learning characteristics impact the acceptance and use of AI-enhanced online learning technology.

According to Thillaivasan and Wickramasinghe (2020), AI and automation have the potential to significantly impact leadership, human capital, and organizational performance. AI is seen as the most disruptive technology, with widespread effects on businesses, the workforce, and industries. They conceptualize the impact of AI-driven digital transformation and automation on organizational performance, emphasizing the need for transformational leaders to envision the potential for performance enhancement through AI technology and to develop strategies for digital transformation.

Ayad et al. (2021) explain that AI can be used to analyze data related to employee performance, potential, and characteristics. By leveraging AI algorithms, organizations can predict performance, promotion opportunities, and potential employee turnover risks. AI also assists in the recruitment and selection process by providing more objective and accurate competency-based assessments. AI helps in effectively planning and allocating human resources, predicting workforce needs, and identifying competency gaps that need to be addressed through training and development programs.

Jabarulla and Lee (2021) emphasize that AI-powered talent analytics enables organizations to more effectively and efficiently collect, analyze, and utilize employee data. Through this approach, organizations can identify patterns, trends, and insights that are useful for predicting employee performance, potential, and retention (Jöhnk et al., 2021; Kitsios & Kamariotou, 2021). AI-based predictive modeling aids in strategic decisions related to talent, such as recruitment, development, and succession management (Kuleto et al., 2021).

Studies by Lee and Yoon (2021) and Lesica et al. (2021) demonstrate the great potential of AI-powered talent analytics in enhancing the effectiveness and efficiency of talent management practices. However, its implementation needs to consider ethical, privacy, and data security aspects (Hutter & Hutter, 2021; Hickman et al., 2021). Employee acceptance of AI in the workplace is also crucial (Fukumura et al., 2021; Giannakos et al., 2022).

Waltersmann et al. (2021) explain that AI applications can improve efficiency in human resource management, such as recruitment, career development, and employee retention. AI enables comprehensive analysis of employee performance, competencies, and preferences, using predictive models to identify potential candidates and formulate more effective talent management strategies. Thiebes et al. (2021) also highlight the need to discuss ethical, privacy, and fairness issues in the application of AI in talent management.

From the literature review, it can be concluded that artificial intelligence (AI) technology and predictive models have brought significant transformation to talent management practices. With the help of AI, organizations can efficiently collect, analyze, and utilize employee data to forecast individual performance, identify potential, and design development strategies. AI also plays a role in supporting employee performance evaluation and assessment processes. Challenges related to data privacy, ethics, and employee adoption of technology still need to be addressed. Understanding AI-powered talent analytics, predictive modeling, and AI-assisted performance evaluation and assessment allows organizations to leverage this technology to improve the effectiveness of their human resource management.

2) Succession risk assessment

The development of artificial intelligence (AI) technology has had a significant impact on human resource management (HRM). AI is used in workforce analytics and scenario planning to forecast individual performance, identify potential, and develop development strategies. How et al. (2020) demonstrate that AI has a major impact on HRM across various industries, including the food industry, by leveraging AI for employee data analysis and planning future workforce needs.

Grewal et al. (2020) add that AI in HR analytics helps organizations identify factors influencing employee retention and develop more effective strategies. Radanliev et al. (2020) explain that AI and machine learning are used to analyze employee data and predict future scenarios, including the risk of employee turnover. Thillaivasan and Wickramasinghe (2020) note that AI can predict turnover risk based on historical data and behavioral patterns, helping organizations take preventive actions.

Bozkurt et al. (2021) state that AI is used to analyze employee data such as productivity and absenteeism, as well as to predict turnover risks. Jöhnk et al. (2021) show that AI-enabled workforce analytics helps organizations collect and analyze employee performance and engagement data, as well as identify risks related to employee retention. Margherita and Bua (2021) explain that AI helps organizations understand employee dynamics, identify risks, and develop more effective HRM strategies.

Lins et al. (2021) add that AI can detect signs of employee boredom or dissatisfaction and anticipate potential employee turnover. Mhlanga (2021) states that AI is used to predict employee turnover risks, helping organizations take preventive actions. Johnstone (2021) notes that AI-enabled workforce analytics allows organizations to make more effective planning and decision-making related to HRM.

Arslan et al. (2022) emphasize that collaboration between human workers and AI robots presents unique challenges in HRM, particularly in building trust and managing expectations. Kase et al. (2022) show that AI and advanced analytics help organizations understand workforce trends, identify future skill needs, and develop more effective HRM strategies. Jiang et al. (2022) note that AI helps organizations create scenario planning that considers various factors that may affect the future workforce.

Larey et al. (2022) find that AI models are used to identify high-risk employees likely to leave the organization, enabling the development of more proactive retention strategies. Harborth and Kümpers (2022) state that virtual reality and augmented reality technologies are used to support employee training and skill development. Oosthuizen (2022) emphasizes that AI helps organizations analyze workforce data comprehensively and make more accurate strategic planning.

Ansari et al. (2023) indicate that AI helps organizations predict employee turnover risks and develop more effective mitigation strategies. Siradhana and Arora (2023) state that AI-based

workforce analytics assist organizations in collecting, analyzing, and utilizing data to make workforce-related decisions. Vora et al. (2023) explain that AI is used to identify employees at high risk of leaving the organization, enabling the development of targeted interventions to retain key talent.

On the other hand, Radanliev et al. (2020) note that machine learning algorithms can be trained using historical flight data to predict the likelihood of flight disruptions, helping airlines make better decisions. Mukhamediev et al. (2022) add that AI is used to predict potential flight risks, assisting airlines in taking preventive measures. Askin et al. (2023) find that AI is employed to analyze historical flight data and other factors to identify patterns leading to flight disruptions, enhancing the reliability and operational efficiency of airlines.

Ferrara (2024) highlights issues of fairness and bias in AI-supported predictions of employee turnover risks, as well as potential benefits such as increased operational agility and reduced costs. Graepel and Abbas (2024) state that the integration of machine learning algorithms and FinTech within Workday systems enhances financial analytics capabilities, risk assessment, and fraud detection.

The development of AI has significantly impacted HRM, aiding organizations in analyzing employee data, predicting risks, and more accurately and effectively planning scenarios. Challenges related to ethics, transparency, and accountability in the implementation of AI technology also need to be addressed.

3) Personalized leadership development plans

The development of artificial intelligence (AI) technology has brought significant advancements in the fields of career development and human resource management. Ali and Choi (2020) explain that AI can analyze employee performance data, preferences, and personal development history to detect skill gaps and provide recommendations for appropriate training programs. Basri (2020) emphasizes the importance of individual data analysis in optimizing training programs, aligning with Grewal et al. (2020), who demonstrate that AI can assist in planning employee career paths by mapping skills and interests, as well as providing recommendations for suitable positions.

Bates et al. (2020) add that this approach is effective in enhancing employee motivation and productivity through measurable skill improvement. This viewpoint is supported by Calabrò et al. (2020) and Gerke et al. (2020), who observe the expanding use of AI in human resource management in line with technological advancements and workplace digitalization.

Trunk et al. (2020) highlight the potential of AI in providing tailored training and mentoring recommendations based on personal data analysis, interests, and individual skills. Yigitcanlar et al. (2020) reinforce these findings by explaining how AI can be used for career path analysis and automatic identification of skill gaps. Bozkurt et al. (2021) also emphasize the role of AI in analyzing career pathing and identifying individual training needs.

Lee and Yoon (2021) show that an AI approach to providing individualized training recommendations can enhance training effectiveness by delivering content that meets individual needs. Kuleto et al. (2021) explore the potential of AI-powered systems in skill gap analysis and career path planning, which can help individuals strategize their steps toward achieving their career goals.

Kitsios and Kamariotou (2021) stress the importance of developing AI algorithms that understand individual context and preferences to offer more accurate and personalized career advice. Jöhnk et al. (2021) observe the impact of AI technology in human resource management, particularly in career planning and employee skill development. Margherita and

Bua (2021) illustrate how AI can identify individual training needs and provide tailored recommendations for employees.

Lins et al. (2021) explain that AI-powered career pathing and skill gap analysis can help organizations map potential career paths for employees based on their current skills and competencies. Adams-Prassl (2022) emphasizes the role of AI in assisting workers in identifying the skills they need to develop and providing suitable training recommendations. Aljohani et al. (2022) review how AI can be utilized to map career paths and analyze skill gaps, enhancing the effectiveness of employee career development.

Weber-Lewerenz (2021) and Thiebes et al. (2021) highlight the importance of corporate digital responsibility in developing AI systems to support employee careers. Anshari et al. (2022) assert that knowledge management is crucial for helping organizations adapt to the era of Industry 4.0. Chubb et al. (2022) emphasize AI's potential in providing tailored training and coaching recommendations aligned with individual needs, sharpening organizational social and cultural responsibilities.

Chen et al. (2022) explain how AI can analyze employee capability gaps to formulate effective career development plans. Joe and Suganya (2022) stress that AI can provide tailored training and mentoring recommendations according to individual needs, helping employees develop the necessary skills to achieve their career goals. Harborth and Kumper (2022) underline the contributions of AI-powered career pathing and skill gap analysis in assisting organizations to identify skill gaps and design career development plans that align with business needs.

Wani et al. (2022) investigate how AI can utilize personal data and individual career objectives to deliver appropriate training recommendations. Trim and Lee (2022) explain that AI can automatically perform career path analysis and identify skill gaps. Ansari et al. (2023) explain that AI can analyze individual data to provide personalized training and mentoring recommendations.

Bahroun et al. (2023) explore the use of AI in career planning and skill gap analysis, while Chen (2023) shows that AI can provide more individualized training recommendations based on employee needs. Ekuma (2023) emphasizes that this approach can enhance employee development effectiveness compared to generic methods. Corvite et al. (2023) explain that AI can be used in career path analysis and skill gap identification.

George and Wooden (2023) and Ibrahim et al. (2023) support the use of AI to help employees plan their career development paths. Langer et al. (2020) assert that AI-powered career pathing and skill gap analysis assist individuals in planning and managing their career trajectories. Siradhana and Arora (2023) study how AI can be utilized to identify individual development needs and provide tailored training recommendations. Rožman et al. (2023) investigate how AI can help individuals plan and manage their career paths. Zhang and Chen (2023) show that AI-based systems can enhance employee engagement and maximize their potential.

Akram (2024) highlights that AI-based solutions can assist organizations in identifying employee competency gaps and providing appropriate personal development recommendations. Graepel and Abbas (2024) indicate that AI training and mentoring recommendation systems can effectively help individuals identify and fill their skill gaps. Manoharan et al. (2024) examine the impact of AI on workplace environments. Dieterle et al. (2024) in their systematic review uncover ethical dilemmas associated with AI use in education, including issues of access, representation, algorithms, interpretation, and citizenship.

The development of artificial intelligence (AI) technology has transformed paradigms in career development and human resource management (HRM), providing powerful tools for analyzing

employee data, identifying skill gaps, and designing tailored training strategies. AI enables organizations to efficiently plan career paths based on individual skills and interests, enhancing employee motivation and productivity, as well as optimizing overall human resource development. While offering these significant benefits, ethical challenges such as transparency and fairness in AI usage must also be considered to ensure responsible and inclusive implementation in the workplace.

The Integration of AI in Leadership Development Programs in Higher Education

1) AI-powered learning and training

The development of learning technology has provided adaptive and personalized learning experiences. Akyazi et al. (2020) highlight how Industry 4.0 technologies, such as AI, machine learning, and IoT, enhance efficiency in the food industry and demand new skills from the workforce (Bates et al., 2020). Calabrò et al. (2020) add that adaptive learning systems can adjust content, strategies, and feedback based on learners' profiles and preferences, supporting engagement and learning success.

The use of AI in education opens opportunities for automated feedback and coaching that supports the learning process (Gerke et al., 2020). Grewal et al. (2020) show that AI is capable of analyzing learning data and providing personalized suggestions to improve learning outcomes. Interest in adaptive and personalized learning experiences continues to grow (Yigitcanlar et al., 2020; Trunk et al., 2020; Wamba-Taguimdje et al., 2020).

The development of learning technology has provided adaptive and personalized learning experiences. Amoako et al. (2021) emphasize that AI, through data analysis and modeling, can provide feedback and guidance that align with students' abilities, interests, and learning styles. This is supported by Andronie et al. (2021) and Ahmed et al. (2021), who highlight increased engagement and motivation in learning, as well as optimal learning outcomes, thanks to AI technology. However, the implementation of AI in education must also consider ethical aspects, privacy, and data security (Yigitcanlar et al., 2020; Trunk et al., 2020).

Bozkurt et al. (2021) assert that AI technology enables the development of adaptive learning systems that can tailor content and activities to students' learning styles, interests, and abilities. Damiani et al. (2021) and Doherty et al. (2021) emphasize the use of AI to provide more personal and timely feedback and guidance, while Eitel-Porter (2021) explains that AI coaching can help students overcome learning challenges. The opportunities and challenges in developing adaptive and personalized learning experiences are also explored by Kuleto et al. (2021) and Jabarulla & Lee (2021), who demonstrate AI's contribution to improving learning quality.

Lins et al. (2021) and Margherita and Bua (2021) propose that AI technology can analyze individual preferences and needs to provide learning experiences tailored to students' learning styles and goals. Mingotto et al. (2021) show that AI feedback helps students understand their strengths and weaknesses, while Thiebes et al. (2021) state that adaptive learning allows content and methods to be adjusted based on individual students' needs. Adams-Prassl (2022) adds that AI integration can facilitate a more adaptive learning experience through AI-generated feedback and guidance, significantly enhancing student engagement and achievement (Sawers et al., 2021).

In the context of smart city development, Zamponi and Barbierato (2022) explain AI's role in transforming various aspects of modern life. The use of AI for feedback and guidance is also supported by Jiang et al. (2020), who find that this technology can empirically enhance student engagement and achievement.

The development of learning technology, particularly through the integration of artificial intelligence (AI), has transformed the educational paradigm by providing adaptive and personalized learning experiences. AI enables deep data analysis to generate feedback and guidance tailored to individual students' learning styles, interests, and abilities, enhancing overall engagement and learning outcomes. While offering these significant benefits, ethical, privacy, and data security challenges must be seriously considered to ensure responsible and inclusive implementation across all aspects of learning.

2) AI-assisted leadership assessment and evaluation

In a dynamic and complex business era, leadership development becomes crucial for organizations to remain relevant and competitive. The use of artificial intelligence (AI) in leadership assessments, such as 360-Degree Assessments and Multi-Rater Assessments, allows organizations to gain deep insights into their leaders' performance and behaviors (Lillywhite & Wolbring, 2020). This approach provides detailed and personalized feedback from various sources, such as supervisors, peers, and subordinates, which is essential for the holistic development of leadership competencies (Jiang et al., 2022).

How et al. (2020) demonstrate how AI can be used to predict the intentions of potential customers in financial services, highlighting the technology's potential to provide valuable insights for service providers lacking a computer programming background. On the other hand, a study by Radanliev et al. (2020) explores the impact of Industry 4.0 on future leadership competency needs, while Pilozzi and Huang (2020) emphasize the application of 360-degree feedback in intervention efforts related to Alzheimer's disease, underscoring the flexibility and relevance of this evaluation method in various contexts.

The integration of AI in leadership evaluation not only enhances the efficiency and accuracy of the assessment process but also supports the development of leaders who are adaptive and responsive to rapidly changing business contexts (Santos et al., 2021).

By combining traditional approaches with technological innovations, organizations can more effectively identify, develop, and leverage leadership talent to achieve long-term strategic goals.

3) Leveraging AI for leadership program design and delivery

The use of artificial intelligence (AI) in the personalization and optimization of programs has become a primary focus in recent research. How et al. (2020) highlight that AI enables real-time program adjustments based on user preferences and needs, analyzing data to provide personalized recommendations. Graepel and Abbas (2024) add that AI can enhance the efficiency of employee development programs by tailoring content and flow based on individual data.

Wang et al. (2023) explain that AI can analyze data to predict user interests and goals, optimizing program content and delivery to make it more relevant. Adams-Prassl (2022) and Angelucci et al. (2022) also confirm that AI allows for automatic adjustments of program features based on user behavior. Aljohani et al. (2022) emphasize that AI can improve efficiency and productivity through resource optimization in programs.

On the other hand, AI-Assisted Virtual Coaching and Mentoring are receiving increasing attention. Gerke et al. (2020) reveal that this technology provides relevant feedback and monitors user progress in real time, supporting individual performance development. Santana et al. (2023) explain that AI-Assisted Virtual Coaching offers tailored feedback and support based on individual needs, enhancing engagement in the coaching process.

Rožman et al. (2022) highlight that AI facilitates the virtual development of individual competencies by providing relevant recommendations and monitoring effective interactions.

Trim and Lee (2022), as well as Thamik and Wu (2022), emphasize AI's role as a virtual assistant that provides interactive feedback, creating a natural and personalized mentoring experience for users.

The use of artificial intelligence (AI) in the personalization and optimization of programs has paved the way for significant improvements in user experience efficiency and relevance. AI allows for real-time adjustments to programs based on individual preferences, needs, and behaviors, both in the context of employee development and virtual coaching. By carefully analyzing data, AI can deliver precise recommendations and relevant personalized feedback, supporting performance improvement and user engagement in various learning and professional development settings.

4) Challenges and Considerations in Integrating AI

The use of artificial intelligence (AI) in various contexts has raised several important ethical issues. Bias in AI algorithms, as discussed by Yigitcanlar et al. (2020), Arnold (2021), and Margherita & Bua (2021), can lead to unfair or discriminatory decisions due to unrepresentative training data or incorrect assumptions. This issue underscores the need to manage and mitigate bias to ensure that AI systems operate fairly and inclusively.

The lack of transparency in AI systems, as revealed by Amoako et al. (2021) and Rafanelli et al. (2022), complicates understanding how decisions are made. Adequate transparency is necessary to ensure that the AI decision-making process can be understood and effectively audited by stakeholders, reducing the potential for misunderstanding or distrust in this technology.

Accountability is a critical issue related to the use of AI in decision-making that has significant consequences. Ahmed et al. (2021) and Weber-Lewerenz (2021) highlight the importance of having clear mechanisms for holding accountable the decisions produced by AI systems. This not only ensures the ethical use of AI technology but also helps address the risks of errors or misuse that may occur.

Data privacy is a major concern in the use of AI that relies on massive datasets. Calabrò et al. (2020) and Chaudhry & Kazim (2022) emphasize the need for stringent regulations to protect personal data from misuse or breaches. Measures such as data encryption and access controls become crucial to ensure the security and integrity of data in AI management.

The adoption of AI within organizations requires not only adequate technological readiness and infrastructure (Basri, 2020; Anshari, 2022) but also cultural transformation and employee competency development (Wamba-Taguimdje et al., 2020; Lee & Yoon, 2021). Effective change management, as noted by How et al. (2020) and Freeman et al. (2021), is necessary to seamlessly integrate AI technology and gain support from all stakeholders.

By seriously addressing these issues, it is hoped that AI implementation can be conducted more fairly, safely, and effectively, maximizing the benefits of this technology while minimizing the risks associated with its ethical and security aspects.

5. Conclusions

Succession planning and leadership development in higher education institutions are becoming increasingly important, especially in the face of the challenges posed by the Fourth Industrial Revolution. Research indicates that effective succession planning and leadership development can prepare leaders who are adaptive and responsive to change. Colleges and universities need to cultivate leadership capable of effectively managing digital transformation. The use of artificial intelligence (AI) in succession planning and leadership development has the potential

to enhance effectiveness and efficiency in identifying and developing potential leaders. Recent literature reviews show that AI can improve the effectiveness of succession planning by providing deeper analyses of talent and skills, as well as helping to address the digital transformation challenges faced by higher education institutions. Implementing AI in this context not only has the potential to enhance the quality of leadership within educational institutions but also strengthens the continuity of strong leadership for the future. The use of artificial intelligence in succession planning and leadership development in higher education institutions promises significant advancements in preparing leaders who are adaptive and responsive to change.

Higher education institutions must prioritize the development of leadership capable of effectively managing digital transformation. Leadership skills in managing technological change and innovation are becoming increasingly crucial in the 21st-century learning environment. This is essential to ensure strong and adaptive leadership continuity in facing future challenges. The use of artificial intelligence (AI) in succession planning and leadership development processes can enhance effectiveness and efficiency. AI can help identify the talents and skills of potential leaders more deeply, as well as assist in addressing digital transformation challenges. Institutions should consider the ethical implications of using AI in these processes. A strong ethical framework is needed to ensure that AI is utilized responsibly and does not result in unintended negative consequences. AI-supported leadership development can strengthen a positive organizational culture and increase job satisfaction in the higher education environment, contributing to overall organizational performance. By considering these implications, higher education institutions can strategically leverage artificial intelligence to enhance succession planning and leadership development, enabling them to better face future challenges.

Further research is needed to explore the long-term impacts of using artificial intelligence (AI) in succession planning and leadership development processes in higher education institutions. This will help identify potential benefits and challenges associated with the comprehensive implementation of AI. Cross-cultural comparative studies on best practices in AI-supported succession planning and leadership development can provide valuable insights. Differences in cultural and organizational contexts may affect the effectiveness of technology use in these processes. In-depth research on the ethical frameworks and policies required to ensure responsible AI use in succession planning and leadership development is essential. This is important to minimize the risks of bias and unintended negative consequences. Studies examining the impact of AI-based leadership development on organizational culture, job satisfaction, and institutional performance can yield valuable insights. A better understanding of these aspects can help optimize the benefits of technology in this context. Longitudinal studies on the competencies and leadership readiness of alumni involved in AI-based leadership development programs can reveal the long-term effects of such initiatives. By exploring these research directions, higher education institutions can gain a deeper understanding of the potential and challenges of using artificial intelligence in succession planning and leadership development, as well as develop effective and ethical approaches to leverage technology for organizational advancement.

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