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Research Article

Utilization of Blockchain Technology in Talent Management: Increasing Transparency and Security of the Employee Recruitment Process

Idris Idris*1,Awal Nopriyanto Bahasoan2

[1]Department of Management, Faculty of Economics , Universitas Tadulako, Jl. Soekarno Hatta KM.9, Tondo, Palu, Central Sulawesi, 94148, Indonesia. Email: azis_idris62@untad.ac.id.*Corresponding author

[2]Department of Management, Faculty of Economics, Universitas Sulawesi Barat, Jl. Prof. Dr. Baharuddin Lopa, SH., Majene, West Sulawesi, 91412, Indonesia. Email: awalnopriyanto@unsulbar.ac.id. *Corresponding author

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ABSTRACT

Blockchain technology has become a promising innovation that improves transparency and security in talent management, especially in recruitment and human resource management, to find, develop, and retain employees. This article explores how blockchain can address key challenges such as data manipulation, time efficiency, and document authenticity in recruitment. Using the Systematic Literature Review (SLR) approach, the study analyzed 50 indexed scientific articles from high-reputation journals published in the last decade. The results of the review show that blockchain can provide solutions for verifying candidate certification, simplifying the selection process, and maintaining the integrity of employee data. In addition, implementing this technology can also speed up decision-making time and reduce operational costs. However, there are obstacles, such as limited infrastructure, high initial implementation costs, and the need for better regulation. This article provides recommendations for further research related to blockchain adoption in various industry contexts. With blockchain's great potential, this technology is hoped to become a new standard in a more efficient and secure employee recruitment system.

Keywords: Blockchain, Talent Management, Recruitment, Data Security.

INTRODUCTION

In the digital era, human resource management (HR) faces great challenges regarding transparency and security, especially in recruitment. Traditional recruitment often faces serious problems, such as manipulating candidate data, inaccuracies in the document verification process, and the risk of leaking sensitive information. This condition requires innovative solutions to overcome these weaknesses effectively (Biea et al., 2024; Gierlich-Joas et al., 2020; Kişi, 2022).

Blockchain technology is emerging as a breakthrough in the world of technology that offers decentralized systems with a high level of security. Blockchain can ensure transparency in every data transaction, reduce the potential for information manipulation, and provide a digital footprint that can be verified instantly. This potential makes blockchain a relevant tool for increasing efficiency and trust in HR recruitment (Balconi et al., 2022; Blessing Dienyu Ucha et al., 2024; Kandpal et al., 2023).

However, although blockchain technology has many advantages, its implementation in talent management is still relatively new and lacks research. This suggests that a literature gap needs to be bridged to understand how blockchain can be applied practically and effectively in recruitment. Therefore, this research aims to explore the potential of blockchain in creating a safer, more transparent, and more efficient recruitment system (Ebinger & Omondi, 2020; Mazharunnisa et al., 2024; Peisl & Shah, 2019).

Blockchain is an innovative technology that solves various problems in traditional systems, including human resource management. With its decentralized nature, blockchain allows every data transaction to be recorded transparently and cannot be manipulated, making it a highly secure and reliable tool. In recruitment, blockchain can provide a clear digital footprint for every process step, from application submission to candidate credential verification (Anaam et al., 2023; Sulaiman et al., 2022).

Security is one of the main advantages of blockchain over traditional systems. Each data stored in the blockchain is uniquely encrypted and can only be accessed by authorized parties. Thus, the risk of data manipulation, document forgery, or leakage of candidate information can be minimized. Additionally, the blockchain's ability to track every activity in the system allows organizations to increase confidence in the hiring process(Anaam et al., 2023; Dong et al., 2024; M. Mallick et al., 2022).

In addition to transparency and security, operational efficiency is another important aspect of blockchain. The typically time-consuming process of verifying a candidate's credentials, such as checking for educational or work experience certifications, can be done automatically and instantly using blockchain. This reduces operational time and costs and allows for faster decision-making. With such a wide range of benefits, blockchain has great potential to transform organisations' recruitment and talent management processes (Alnuaimi et al., 2023; Tariq et al., 2023).

Traditional recruitment processes often face significant challenges, such as manipulating candidate information that can interfere with decision-making. Falsification of certifications, work history, or other qualification data is becoming a common problem that is difficult to detect quickly. The lengthy manual verification process that requires third-party involvement often adds complexity and operational costs, impacting the organization's overall efficiency (Baniata & Kertesz, 2022; Kuznetsov et al., 2024; K. Singh et al., 2020).

Blockchain offers an innovative solution to this problem by enabling instant and accurate data verification. This technology allows organizations to check the validity of a candidate's documents directly from the source without an intermediary. This improves the reliability of the information received and builds trust between employers and candidates, making the recruitment process more transparent and trustworthy (Junlu et al., 2021; H. Li et al., 2021).

In human resource (HR) management, blockchain has a big role in improving operational efficiency and data security. This technology allows any employee data, such as education certificates, work history, and assessment results, to be stored decentralized. With its immutable nature, blockchain ensures that the data remains safe from manipulation, increasing trust in talent management systems (Lei et al., 2024; G. Xu et al., 2022).

Additionally, blockchain can speed up decision-making by automating the verification process that previously took a long time. Smart contracts in the blockchain allow for the automated execution of various administrative tasks, such as contract signing or payroll processing. This provides an additional advantage for the organization by reducing administrative workload and allowing HR teams to focus on talent development strategies (T. Kim et al., 2020; Martinez et al., 2019).

Although blockchain has been widely used in the financial and logistics sectors, its application in talent management is still in its infancy. This lack of adoption is largely due to the lack of in-depth research on the potential of blockchain in addressing specific HR issues. This gap raises an urgent need to explore how blockchain technology can be integrated into talent management practices (Ramachandran et al., 2023).

This research is crucial to understand further the challenges and opportunities of blockchain adoption in recruitment. By identifying the key benefits, implementation barriers, and application scenarios across various industries, this research is expected to pave the way for further studies and drive wider adoption of the technology in HR.

This article explores how blockchain can improve transparency and security in the recruitment process. By reviewing relevant literature using the Systematic Literature Review (SLR) approach, this study seeks to identify patterns, trends, and gaps in implementing blockchain in talent management.

More specifically, this research aims to provide insight into how blockchain can help overcome frequent recruitment problems, such as data manipulation and lack of efficiency. Through this exploration, it is hoped that this research can be a reference for academics and practitioners in developing more innovative technology-based recruitment strategies.

This research has significant value for HR practitioners and policymakers who want to optimize the recruitment process in their organizations. Organizations can improve security and transparency in employee data management by adopting blockchain, creating a more efficient and trustworthy recruitment system.

In addition, this research also makes an academic contribution by bridging the literature gap on blockchain adoption in talent management. The results of this study are expected to be relevant for the HR sector and open up opportunities for similar technology applications in other industries that face similar challenges in data management.

Research Methods

This study uses the Systematic Literature Review (SLR) approach to identify, evaluate, and synthesize relevant literature on blockchain applications in talent management. This approach was chosen because it allows the researcher to get a structured and comprehensive picture of the topic under study. By utilizing SLR, this study refers to a clear protocol to ensure the validity and reliability of the review results (F. A. Sunny et al., 2022; Van Nguyen et al., 2023)

The data sources in this study come from leading scientific databases such as Scopus, IEEE Xplore, SpringerLink, and ScienceDirect. The database was chosen because of its credibility in providing quality and indexed articles globally. The articles reviewed are limited to literature published in the last 10-year span (2015-2025) to ensure that the analysis is based on the latest findings. In addition, only articles that discuss blockchain in the context of HR or talent management are included in the study (Bellucci et al., 2022; Y. Wang et al., 2019).

The literature search process uses keywords specifically designed to ensure the relevance of the search results. Keywords such as "blockchain in HR," "recruitment transparency," and "blockchain for talent management" are used in combination to gain broad coverage. Furthermore, Boolean logic operators are applied to narrow the search results to be more specific and by the research focus. This process resulted in 150 articles that became the initial material for the analysis.

The literature selection stage has two main steps: initial selection based on abstracts and in-depth selection based on the article's content. Articles irrelevant to the topic or not meeting the inclusion criteria are excluded from the initial selection. As a result, as many as 50 articles were selected for further analysis. The articles are then evaluated based on methodologies, findings, and contributions to the existing literature to gain in-depth insights (Paliwal et al., 2020; Pournader et al., 2020).

The analytical framework used in this study is a thematic approach, which allows the identification of patterns, trends, and gaps in the analyzed literature. The collected data is grouped into key themes, such as the benefits of blockchain in recruitment, implementation challenges, and recommendations for future technology applications. This approach helps organize findings systematically and easily (Alkhudary et al., 2020; Queiroz et al., 2019).

This research also has several limitations that need to be noted. One is that it focuses only on English-language articles, which can lead to geographic bias by excluding literature from non-English territories. In addition, the article selection process can be affected by subjectivity in determining the relevance of the literature. Therefore, validation is carried out by cross-checking against previous studies to ensure the accuracy and reliability of the analysis results.

Discussion

Benefits of Blockchain in Recruitment

Blockchain significantly contributes to improving the recruitment process's transparency and efficiency. One of the key benefits identified in the literature is the ability of blockchain to automatically verify candidate documents, such as education and work experience certifications. Many studies have mentioned that blockchain allows organizations to validate documents directly from their source without the involvement of third parties. This increases the speed of the selection process and ensures the accuracy and integrity of the data obtained. Candidates feel more confident that their data is managed ethically in a transparent system.

In addition to efficiency, blockchain helps reduce reliance on third parties to verify candidate documents. Many studies show that external verification agencies are often time-consuming and costly. With blockchain, the need to utilize third-party services can be minimized, so organizations can instantly validate candidate information through an encrypted system. This provides significant operational efficiency and allows companies to allocate resources to other strategic tasks.

Transparency is one of the important elements that blockchain offers in recruitment. In traditional systems, candidates often do not have adequate access to monitor the status of their applications. In contrast, blockchain allows real-time tracking where candidates can see every step of the selection process. This improves the candidate's experience and builds trust between the company and the job applicant. From a company's perspective, this transparency helps create a good reputation and strengthen professional relationships with candidates.

One of the key benefits identified is blockchain's ability to process data objectively. Some studies have stated that blockchain-based systems reduce the risk of bias in the manual selection process. Candidate data is processed based on pre-determined objective criteria without human manipulation, thus creating a fairer opportunity for all job applicants. This is important in building a recruitment system that is more inclusive and based on meritocracy.

Blockchain also offers long-term efficiencies in the management of candidate data. Some literature found that organizations can securely store candidate data in blockchain systems for future use. With this system, candidate data no longer needs to be re-entered whenever they apply for a different position within the same organization. This provides convenience for candidates while reducing the administrative workload of the HR team.

However, the benefits of blockchain are not limited to speed and efficiency. In surveys reported in the literature, many candidates stated that using this technology has improved their recruitment experience. A faster, transparent, and secure process gives candidates a positive impression of the organization, directly impacting the company's reputation in the eyes of job seekers.

With all its benefits, blockchain has shown its potential as a tool that supports HR operations and significantly improves the candidate experience. The technology offers holistic solutions to a wide range of challenges faced in recruitment, making it an essential innovation for the future of talent management.

Table 1. Benefits of Blockchain in Recruitment

Benefit	Key findings	Source
Document Verification	Validates candidate data directly from the source, improving accuracy.	(Hyla & Pejaś, 2020; Mahlaba et al., 2024; Rasool et al., 2020)
Dependency Reduction	Reduce the need for third-party services and increase efficiency.	(Panda et al., 2021; Sarfaraz et al., 2021; T. Xu et al., 2022; H. Zhao et al., 2024)
Real-Time Transparency	Candidates can track the status of their applications in real-time.	(X. Liu et al., 2021; J. Sunny et al., 2020; Susanto & Kemaluddin, 2023; Zhu, 2022)
Bias Reduction	Data processing is based on objective criteria, creating fairness.	(Longo et al., 2019; Van Nguyen et al., 2023; Viriyasitavat & Hoonsopon, 2019; Zhou et al., 2024)
Data Management	Candidate data can be reused for the future.	(X. Li et al., 2022; Van Nguyen et al., 2023; L. Xue et al., 2022; Yaqoob et al., 2022)
Candidate Experience	Candidates feel more satisfied with a fast and transparent process.	(Bai & Sarkis, 2020; GE et al., 2022; Q. Xue, 2024)

Employee Data Security

Blockchain significantly improves data security in employee information management. One of its main advantages is storing candidate data in an encrypted system that can only be accessed by authorized parties. Many studies have shown that this technology reduces the risk of data manipulation and leakage, especially on sensitive information such as a candidate's work history and personal information. In a blockchain system, any data changes are recorded as an immutable digital footprint, thus providing an additional layer of protection for employee data.

In addition to data encryption, blockchain's decentralized nature is important in improving security. The data stored in the blockchain is not centralized on a single server but spread across various network nodes. This makes the blockchain more resilient to cyberattacks such as hacking or ransomware, which are usually a major threat to traditional, centralized systems. In some studies, companies that adopted blockchain reported a decrease in data leakage incidents by more than 40%.

The transparent digital footprint in blockchain also greatly benefits data access management. With this technology, companies can track who is accessing employee data when access is made, and for what purpose. This increases accountability in data management and helps organizations ensure that applicable privacy policies use employees' personal information. Candidates and employees feel safer knowing their data won't be misused.

Blockchain also allows integration with additional security technologies, such as two-factor authentication (2FA) and biometric recognition. This combination of technologies provides stronger protection, especially against threats at the user level. Some literature mentions that companies that adopt this integration feel more confident in protecting employee data from unauthorized access.

However, while blockchain provides high security, some challenges must be addressed. Access points, such as the user's device, are still weak points vulnerable to attacks. This requires training and increasing digital literacy among users, including the HR team responsible for data management. Many studies recommend a holistic approach to managing these security risks, including involving all stakeholders in the implementation process.

Blockchain's data security is also relevant in sectors that require high protection, such as banking and healthcare. In this sector, strict privacy regulations are often a challenge. Blockchain helps

organizations meet these requirements by providing high transparency and security while complying with regulations such as GDPR (General Data Protection Regulation).

Blockchain provides a revolutionary approach to protecting employee data in the digital age. This technology reduces the risk of data leakage and builds trust between companies and candidates, making it a highly relevant tool for improving security in human resource management.

Table 2. Employee Data Security

Security Aspects	Key findings	Source
Data Encryption	Candidate data is protected through high-level encryption technology.	(X. Li et al., 2020; Liang et al., 2021, 2023; B. Liu et al., 2020; Lv et al., 2021)
Decentralized System	Reduce the risk of hacking because data is not centralized on a single server.	(Feng et al., 2019; He et al., 2020; Si et al., 2019; Verma et al., 2022; P. Zhang & Zhou, 2020)
Digital Footprint	Increase transparency in tracking employee data access.	(Ahmad et al., 2022; Bułkowska et al., 2023; Loreti et al., 2023; Mukherjee et al., 2023; J. Sunny et al., 2020)
Additional Security Integrations	The combination of 2FA and biometrics improves data protection.	(Bamashmos et al., 2024; Gope & Sikdar, 2019; Lee & Jeong, 2021; McCabe et al., 2024; S. Zhang et al., 2024)
Relevance in Sensitive Sectors	Help meet privacy regulations in the banking and healthcare sectors.	
Access Point Challenges	Risks to user devices require digital literacy training.	(Arbabi et al., 2023; Sharma et al., 2023; Vazirani et al., 2020; S. Xu et al., 2024; R. Zhang et al., 2022)
Regulatory Compliance	Ensuring data security is compliant with regulations such as GDPR.	(Barati et al., 2020; Han & Park, 2022; Haque et al., 2021; Truong et al., 2020; L. Wang et al., 2023)

Efficiency of the Recruitment Process

Blockchain plays an important role in improving operational efficiency in the recruitment process. One of the main ways blockchain achieves this is by automating various administrative tasks previously done manually. For example, smart contracts can automatically verify candidate documents such as education certificates, work experience, and portfolios. This technology allows administrative tasks without human intervention, reducing the time needed to complete the selection process.

Smart contracts speed up the process and ensure that each selection stage is carried out consistently and accurately. Many studies state that automation can reduce the time spent on the recruitment process by 30-50% compared to traditional methods. This efficiency is especially important for companies that recruit on a large scale or in highly competitive industries.

In addition, blockchain reduces reliance on physical documents in the recruitment process. Companies can significantly reduce paper usage by storing candidate data in an encrypted digital format. This not only saves costs but also supports environmental sustainability efforts. Some literature states that organizations that use blockchain can save up to 20% on operational costs.

The transparency that blockchain offers also contributes to efficiency. Candidates can track the status of their applications in real-time without frequently contacting the HR team to request updates. Instead, companies can better monitor workflows and ensure that each application is processed according to the specified schedule.

However, the literature also notes that this efficiency highly depends on the company's technological readiness. Small companies that do not have adequate technological infrastructure may face challenges in adopting blockchain-based systems. In these cases, initial investment in building infrastructure is often the main obstacle.

One of blockchain's advantages is its long-term efficiency. By storing candidate data in an integrated system, companies don't have to repeat the data collection process every time a candidate applies for a

new position. This provides great benefits for companies that often hire in large numbers or have an extensive database of candidates.

Blockchain offers a highly relevant solution for creating a faster, cost-effective, and environmentally friendly recruitment process. This technology improves efficiency, candidate experience, and company reputation.

Table 3. Efficiency of the Recruitment Process

Efficiency Aspect	Key findings	Source
Process Automation	Administrative tasks are carried out with *smart contracts*.	(Dolgui et al., 2020; Muneeb et al., 2022; Osterland & Rose, 2020; A. Singh et al., 2020; Zheng et al., 2020)
Time Reduction	Reduce recruitment duration by 30-50%.	(J.-S. Kim & Shin, 2019; Martinez et al., 2019; Ran et al., 2024; Wadhwa et al., 2022)
Cost Reduction	Reduce operational costs by up to 20%.	(Chod et al., 2017; Ran et al., 2024; Schmidt & Wagner, 2019)
Environmental Support	Reduce reliance on physical documents, supporting sustainability.	(Alofi et al., 2024; Park & Li, 2021; Radmanesh et al., 2023; Tijan et al., 2019)
Real-Time Transparency	Candidates and companies can monitor the status of the application directly.	(Bułkowska et al., 2023; Khatoon et al., 2019; Ran et al., 2024)
Technology Challenges	Small companies face obstacles in infrastructure readiness.	(S. Biswas et al., 2020; Y. Liu et al., 2020; Mohamed et al., 2021)
Long-Term Efficiency	Candidate data can be reused without reprocessing.	(Islam et al., 2024; Kumar et al., 2023; Y. Zhao et al., 2024; Zhuang et al., 2020)

Implementation Challenges

While blockchain offers significant benefits in recruitment, its implementation is inseparable from various complex challenges. One of the main challenges is the high initial cost of adopting this technology. Much of the literature mentions that the necessary infrastructure, such as decentralized servers, specialized software, and integration with existing systems, requires large investments. This cost is often a significant obstacle for small and medium-sized companies, especially if they do not have adequate technological resources.

In addition to costs, the lack of experts in blockchain technology is also a major obstacle. Many studies have found that organizations struggle to find or train staff with the technical competence to manage blockchain systems. This shortfall slows the implementation process and adds to operational costs as organizations must allocate additional funds for training or hiring external experts. In this situation, small companies are more hampered than large ones.

Immature regulations are another challenge that is often mentioned in the literature. Many countries do not have clear legal guidance on using blockchain in human resource management. This legal uncertainty has discouraged organizations from adopting this technology widely, as they are concerned about legal risks or compliance issues that may arise. In some cases, regulatory differences between countries are also a challenge for multinational companies looking to adopt blockchain in their various operational locations.

Resistance from internal employees is also an obstacle often faced during the implementation process. HR teams, the main users of blockchain systems, are usually reluctant to adapt to new technologies that are considered complicated or different from the traditional methods they are already good at. This requires a huge effort to provide training and change employees' mindsets to accept blockchain technology as a tool that supports their work.

In addition, the complexity of blockchain technology is an obstacle that cannot be ignored. Organizations need a deep understanding of how blockchain works to integrate this technology into their business processes. Without adequate knowledge, the risk of implementation errors becomes greater, ultimately costing the organization financially and operationally.

Blockchain adoption is often limited to large companies with sufficient resources and infrastructure. Small companies, on the other hand, face challenges competing in adopting this technology due to budget and expertise constraints. This creates a gap between large and small companies regarding their ability to utilize blockchain technology effectively.

The literature recommends cross-sectoral collaboration between governments, industry, and technology providers to address these challenges. Clear regulation, human resource training, and the development of more affordable blockchain solutions can help accelerate the adoption of this technology in different types of organizations. With the right strategy, blockchain can be implemented more broadly and inclusively.

Table 4. Implementation Challenges

Challenge	Key findings	Source
High Initial Costs	Blockchain infrastructure requires large investments, hindering small organizations.	(B. Biswas & Gupta, 2019; Cui et al., 2024; L. Liu et al., 2023; Wong et al., 2020; Yadlapalli et al., 2022)
Shortage of Experts	The lack of trained human resources adds to training costs and slows implementation.	(B. Biswas & Gupta, 2019; Elbashbishy et al., 2022; Lizcano et al., 2020; Rana et al., 2022; Teisserenc & Sepasgozar, 2021)
Immature Regulation	Legal uncertainty reduces organizations' interest in adopting blockchain.	(Alzahrani et al., 2023; Kosmarski, 2020; Rana et al., 2022; Steiu, 2020; Upadhyay, 2020)
Internal Resistance	Employees are reluctant to adapt to new technologies that are considered complicated.	(Abbate et al., 2022; Jang et al., 2024; P. Liu et al., 2021; Rana et al., 2022; Walsh et al., 2021)
Complexity of Technology	Lack of understanding of blockchain increases the risk of implementation errors.	(Al Amin et al., 2023; Luthra et al., 2023; Mohanta et al., 2019; Tijan et al., 2019; Yadlapalli et al., 2022)
Adoption Gap	Small companies have difficulty competing with large organizations in adopting this technology.	(Alshareef & Tunio, 2022; Clohessy & Acton, 2019; Rana et al., 2022; Wong et al., 2020)
Strategic Solutions	Cross-sector collaboration is needed to overcome these obstacles.	(Du et al., 2023; Jiang et al., 2019; J. Li et al., 2019; Z. Yang et al., 2022; H. Zhang et al., 2024)

Regulations and Standards

The lack of clear regulations regarding the use of blockchain is one of the main obstacles to adopting this technology in the human resources sector. Most of the literature analyzed states that existing regulations do not cover the specific use of blockchain, thus creating legal uncertainty for organizations looking to implement this technology. This uncertainty affects the organization's confidence in the legality and sustainability of blockchain technology.

Differences in regulations between countries are also a major challenge, especially for multinational companies operating in various regions. With its global nature, Blockchain often has to adapt to different legal frameworks in different countries. Some countries have strict data privacy regulations, such as the GDPR in Europe, while others still do not have specific rules. This creates barriers to the integration and adoption of this technology on a global scale.

Operational standards for blockchain in talent management have also not developed well. Organisations often have to develop their systems without tested guidelines or standards, potentially creating inconsistencies in implementation. This affects the reliability and interoperability of blockchain technology in various sectors.

Collaboration between the government and the private sector is urgently needed to create regulations that support blockchain adoption. Some literature states that clear regulations will increase organisational trust and encourage technological innovation. These regulations should cover data privacy, security, and legal compliance so organisations can use blockchain without worrying about legal risks.

In addition to regulation, global standards that govern how blockchain works and apply across various sectors are needed. These standards will help ensure blockchain technology can be integrated with

other systems and used worldwide. Several studies recommend the establishment of an international body tasked with developing and overseeing blockchain standards.

Mature regulations and standards are also important to protect the rights of candidates and employees. With regulations, candidates can feel more confident that their data is protected and used by legal provisions. Regulation provides legal certainty for companies, allowing them to focus on developing technology without worrying about legal implications.

With comprehensive regulations and standards, blockchain has the potential to become one of the most reliable technologies in human resource management. This technology will help organisations improve efficiency and operate according to applicable rules and norms.

Table 5. Regulations and Standards

Regulatory and Standard Aspects	Key findings	Source
Lack of Regulation	Existing regulations do not cover the specific use of blockchain.	(Bernal Bernabe et al., 2019; Jabbar et al., 2021; J. Li et al., 2019; Politou et al., 2021; Rana et al., 2022)
Differences Between Countries	Different regulations create challenges for multinational companies.	(Bernal Bernabe et al., 2019; Dick & Praktiknjo, 2019; Karuppiah et al., 2023; Lu et al., 2019; Rana et al., 2022)
Operational Standards Do Not Exist Yet	Organisations must develop systems without standard guidance.	(Babich & Hilary, 2020; Ghode et al., 2020; Jabbar et al., 2021; Rana et al., 2022; Teisserenc & Sepasgozar, 2021)
Public-Private Collaboration	It is needed to create regulations that support innovation.	(Bernal Bernabe et al., 2019; Garcia-Garcia et al., 2020; Unalan & Ozcan, 2020; Xing et al., 2021; R. Yang et al., 2020)
Protection of Candidate Rights	Regulations ensure that candidate data is used ethically and legally.	(Bernal Bernabe et al., 2019; Dick & Praktiknjo, 2019; Lu et al., 2019; Rana et al., 2022)
Global Standards	It is necessary to ensure interoperability and wide-scale adoption.	(Anthony Jnr, 2024; Chaouni Benabdellah et al., 2023; Ghode et al., 2020; Lohachab et al., 2022; Teng et al., 2021)
Legal Certainty	The regulation provides confidence for organisations to adopt the technology.	(Alzahrani et al., 2023; Balasubramanian et al., 2021; De Filippi et al., 2020; Ghode et al., 2020; Y. Xu et al., 2023)

Conclusion

Blockchain has great potential to revolutionise the recruitment process by offering efficient, transparent, and secure solutions. This technology allows for automatic verification of candidate documents, such as education and work experience certifications, thereby reducing the risk of counterfeiting and speeding up processing times. Additionally, blockchain increases transparency by providing a digital footprint that allows candidates and companies to track every stage of the process in real time. These benefits help companies save time and money and create a better experience for candidates, ultimately improving the organisation's reputation.

Even so, blockchain implementation is inseparable from various challenges. High startup costs, lack of experts, and technological complexity are major obstacles, especially for small and medium-sized companies. Additionally, the lack of clear regulations and global standards on using blockchain in human resource management creates legal uncertainty for organisations. Collaboration between governments, industry, and technology providers is urgently needed to develop policies that support and promote the widespread adoption of these technologies.

With mature regulations and standards, blockchain can be a reliable tool to improve talent management efficiency, transparency, and security. This technology provides practical solutions for organisations and supports fairness and inclusivity in recruitment. With a strategic and collaborative approach, existing challenges can be overcome, allowing blockchain to be widely adopted as a new standard in human resource management.

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