International Journal of Accounting, Management and Economics Research

IJAMER

Vol.2, No.1, 2024, pp. 45-60

E-ISSN: 2988-6406, P-ISSN: 2988-6392

https://ijamer.feb.dinus.ac.id/index.php/ijamer/

HOW CAN BLOCKCHAIN IMPROVE EMPLOYEE PERFORMANCE?

Zora Calista Susilo [1], Tito Wira Eka Suryawijaya [2*], Santi Isnaini [3], Thant Thet Oo Khant [4]

[1.3] Department of Communication Science, Universitas Airlangga, INDONESIA
[2] Department of Management, Universitas Dian Nuswantoro, INDONESIA
[4] Master of Management Department, Universitas Airlangga, MYANMAR

[*]*Corresponding Author: 211202080011@mhs.dinus.ac.id*

Received: January 2024; Revised: March 2024; Published: June 2024

Abstract : *Entering the era of the Internet of Things (IoT), one of the main challenges faced by human resources (HR) departments related to human resource management information systems (HRIS) is employee data security and process efficiency which can affect overall organizational productivity. The aim of this research is to provide companies with an in-depth understanding of the potential and implications of using blockchain technology in human resource management information systems (HRIS) and its impact on employee performance. This study uses a quantitative approach with the survey method. The research population comes from HRD professionals who work in companies at various company levels in all industrial fields in the Java-Bali region.PData collection uses an online questionnaire with an interval scale.There were 350 samples taken by purposive sampling and tested using the Partial Least Squares method. Research resultshow that adoption of blockchain technology modifies the relationship between key human resource management variables, such as job satisfaction, transparency, work culture, and work motivation, with employee performance, revealing complex dynamics that require a deeper understanding in dealing with technological developments. This research has limitations in taking respondents because the number taken as samples is still relatively small, namely only in the Java-Bali regions and the variability of the data is still not balanced in terms of sex, length of work and company level. Thus, this research does not just explore the relationship between variables,However also presents findings that provide deep insight into the role of blockchain technology in the transformation of human resource management.*

Keywords: *Blockchain, HRIS, Technology Adoption, Employee Performance.*

INTRODUCTION

An effective human resource management (HR) system is the core of an organization's success in achieving its business goals. However, currently many companies still rely on mixed methods, namely conventional systems and information systems that involve human interaction in operations and data access(Fachrunnisa & Hussain, 2020). Currently we have entered the era of the Internet of Things (IoT), there are many losses that can occur if we still use conventional methods, namely data security. Apart from that, the use of conventional methods is also less efficient in the process and these two issues can affect the overall productivity of the organization. Data security and process efficiency require solutions in the form of technological innovation, one of which is blockchain. Blockchain, as an innovative

technology, offers a potential solution to improve security, transparency and efficiency in HR management(Xu et al., 2016).

Blockchain technology has changed the paradigm of storing, verifying and exchanging information by leveraging a digital ledger that offers unmatched security, transparency and resilience(Haryani et al., 2023). In contrast to conventional systems that rely on a central authority, such as a bank or government, blockchain uses a decentralized computer network to verify and store data. Previous research states that there is no difference in the viewpoints of HR and non-HR employees in all contexts regarding blockchain in HRM. The study also analyzes employees' opinions regarding the benefits, organizational barriers and possibilities of using blockchain in HRM(Mishra & Venkatesan, 2021). The information provided in this paper comes from various published sources(Agrawal et al., 2023). Another study suggests that industrial managers need to pay attention to human resource management indicators, such as collaboration, engagement, actualization, perception, and teamwork, to improve leadership quality and its impact on employee performance(Godavarthi et al., 2023).

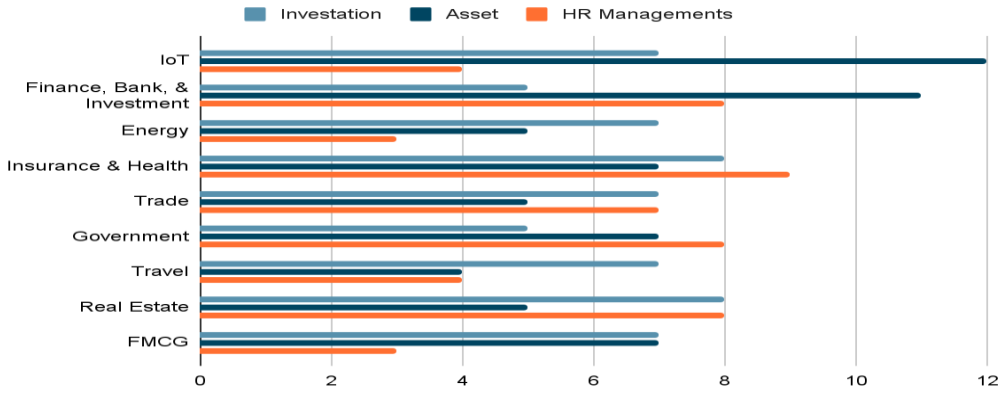

Figure 1. Data on Industrial Sectors/Agencies Using Blockchain in the World
Source:(Mishra & Venkatesan, 2021)

This means that each transaction is recorded as a block that is permanently linked to the transactions before and after it, forming an immutable chain of information(Godavarthi et al., 2023; Mishra & Venkatesan, 2021) (Princess, 2022). This innovative technology, as a trustless system, eliminates the need for intermediaries, reduces costs, increases transparency and strengthens security(Suryawijaya, 2023). The potential application of Blockchain technology in human resource (HR) management can be seen through efforts to simplify and secure related processes. One positive impact is on the recruitment process, where candidates can create a secure digital identity that can be verified by multiple organizations, reducing time and the risk of errors.

HR departments, which often manage sensitive information can leverage blockchain technology for secure and tamper-proof decentralized data storage. This not only reduces the risk of data breaches or cyberattacks, but also facilitates more transparent and fair employee performance evaluations. Implementing a blockchain-based reward system allows employers to provide incentives and bonuses to employees securely and transparently(Maria et al., 2022). Using this technology can also simplify the payroll process, eliminate middlemen such as banks, and give employees real-time access to their benefits information. Blockchain-based smart contracts offer automation and simplification of the contract management process. These contracts are executed automatically when certain conditions are met, increasing efficiency and reducing the risk of manual intervention. Overall, blockchain technology promises significant transformation in human resource management, opening up opportunities to increase efficiency, transparency and security. Further research and practical implementation will be

key to realizing the full potential of this innovation in the HR context.

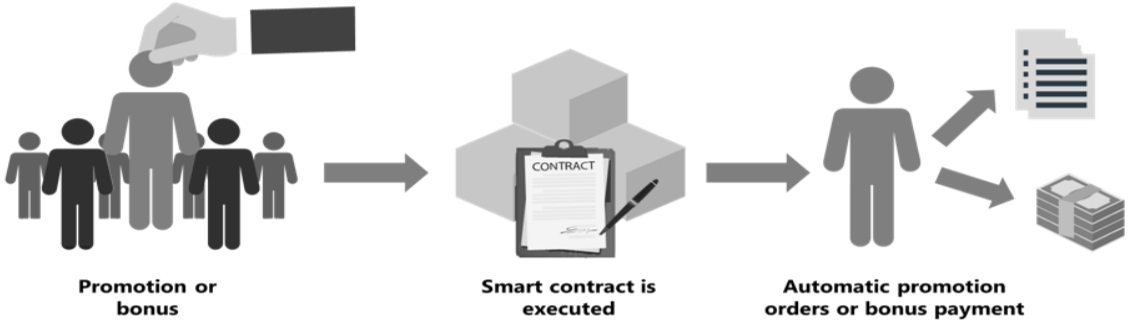

Figure 2. Concept of Using Blockchain in HRM
Source: Author's Elaboration, 2023

Previous research, such as that conducted by Ramachandran et al., (2023) has analyzed a number of key issues in the application of blockchain technology (BT) in human resource management (HRM), especially related to regulation, staffing, development and change management. The results highlight key implementations of BT in HRM and produce a framework to support HR professionals in decision making. Meanwhile, research by(Abidin, 2016) emphasizes the positive influence of job security on job satisfaction.(Hofmann & Strobel, 2020) found that Human Capital plays an important role in keeping professors satisfied and retaining talented lecturers through disclosure of information and transparency regarding their structure, distribution of resources, and performance. Deeper,(Wibowo, 2018) confirms that compensation has a significant influence on employee performance, contributing to a broader understanding of employee performance variability.

The development of this literature is strengthened by relevant theories from (Bratton & Gold, 2012) which state a number of things that influence employee performance. The theory put forward identifies work motivation, job satisfaction, and compensation as central factors that have a positive influence on employee performance, forming a strong foundation for this research. Furthermore, this literature highlights the relationship between data security and employee satisfaction and performance, emphasizing the importance of data protection as a key element in the modern work environment. In addition, the impact of work culture on job satisfaction and compensation is also emphasized. Meanwhile, (Stone & Dulebohn, 2016) developed a theory that job satisfaction and employee performance are synchronously influenced by transparency and work culture. Furthermore, data security will affect employee work motivation and job satisfaction.

The aim of this research is to provide companies with an in-depth understanding of the potential and implications of using blockchain in human resource management information systems (HRIS) and its impact on employee performance. This research will discuss how blockchain implementation can improve data security, transparency, and efficiency of HR processes, as well as provide practical guidance for implementing this technology in a corporate environment. This research is expected to provide significant benefits, both in academic and industrial contexts. For the academic world, this research can be a contribution to further understanding of the potential of blockchain in transforming HR processes. For industry, the results of this research can provide practical guidance for implementing blockchain to improve HR management performance with a positive impact on data security and operational efficiency. However, there are research gaps that can be explored further. So far, the research focus has mainly been on the recruitment process and system implementation. Further research can expand the scope to explore the influence of blockchain on employee performance.

LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT

In the continuously evolving digital era, the question of how blockchain technology can enhance employee performance has become increasingly important in the context of human resource management (HRM). Blockchain Technology Adoption (BTA) is a key aspect in understanding the potential influence of this technology on employee performance. BTA refers to the level of adoption and implementation of blockchain technology in various organizational operational aspects. Previous research has highlighted that the adoption of blockchain technology has the potential to streamline business processes, improve efficiency, and enhance data security. Consequently, the integration of blockchain into human resource management systems (HRM) can have a significant impact on key HRM variables.

One relevant variable in this context is compensation. Fair and adequate compensation has long been recognized as a crucial factor in influencing work motivation and employee performance. Blockchain can enhance transparency and accountability in compensation systems, ensuring that salaries and other incentives are paid timely and in accordance with employment contracts. In this regard, Blockchain also plays a role in enhancing employees' trust and satisfaction with the company's compensation system (Anwar & Abrar, 2023; Hakim & Muhdi, 2020). Furthermore, data security is a major concern in the context of blockchain implementation. By leveraging blockchain technology, employee data can be securely stored and encrypted, reducing the risk of data breaches and identity fraud. This not only enhances the security of employees' personal information but also instills confidence in employees that their information is well protected by the company (AlShalaan & Fati, 2023).

Transparency is a crucial aspect in ensuring successful adoption of blockchain technology in the HRM context (Brandes & Darai, 2017). Blockchain offers the ability to create automatic and trustworthy evidence of transactions and processes, providing greater transparency in HRM policies, decision-making, and company procedures. With greater transparency, employees can feel more motivated and engaged in company activities, thereby enhancing their performance (Hofmann & Strobel, 2020). Work culture is also an important variable to consider in this context. A strong and positive work culture can enhance work motivation, job satisfaction, and overall employee performance. The integration of blockchain into work culture can create a more open, collaborative, and innovative environment, fostering the growth and development of employees (Godavarthi et al., 2023; Haryani et al., 2023).

Work motivation and job satisfaction are directly related to employee performance. High work motivation can improve productivity and individual performance, while job satisfaction can have a positive impact on employee retention, loyalty, and organizational commitment. Blockchain can play a role in enhancing work motivation and job satisfaction by providing a fair, transparent, and trustworthy system, as well as offering blockchain-based incentives to motivate employees to achieve higher performance (Maria et al., 2022; Parker et al., 2021; Stone & Dulebohn, 2016). In the context of employee performance, blockchain can have a significant impact on operational efficiency, data accuracy, and better decision-making (Nowiński & Kozma, 2017). By leveraging blockchain technology, performance measurement processes can be automated and trustworthy, resulting in more accurate and reliable data (Ramachandran et al., 2023). This enables managers to make better decisions in managing employee performance and identifying areas where improvement is needed (Suryawijaya, 2023). Thus, understanding how blockchain can influence employee performance is a crucial step in optimizing human resource management in this digital era. By considering key variables such as BTA, compensation, data security, transparency, work culture, work motivation, job satisfaction, and employee performance, organizations can design effective strategies to adopt and integrate blockchain technology into their HRM practices.

RESEARCH METHODS

This research methodology adopts a quantitative approach with a focus on people who work in Human Resources Development (HRD) positions. The research population consists of HRD professionals who work in companies at PT and CV level including SMEs in various industrial fields in the Java-Bali region. The research sample was selected using the Purposive Sampling method with a total of 350 respondents (Banning, 2023). The research was conducted between January and June 2023, providing sufficient time for a representative profile of respondents (see Table 1).

Table 1. Respondent Profile

Profile	Classification	Numbers	Percentage
Gender	Man	241	68,9%
	Women	109	31,1%
Domicile	Banten	13	3,7%
	DKI Jakarta	132	37,7%
	West Java	18	5,1%
	Central Java	9	2,6%
	DIY	32	9,1%
	East Java	119	34,0%
	Bali	24	6,9%
	East Nusa Tenggara	1	0,3%
	West Nusa Tenggara	2	0,6%
Age	24 - 32 Years	131	37,4%
	33 - 47 Years	122	34,9%
	>47 Years	97	27,7%
Company Level	PT	143	40,9%
	CV	199	56,9%
	SMEs	8	2,3%
The type of company	Start Up	217	62,0%
	Government Company	74	21,1%
	Private Company	59	16,9%
Length of work	13 years old	51	14,6%
	35 years old	80	22,9%
	>5 Years	219	62,6%

Source: Author Data, 2023

The research instrument used was an online questionnaire designed to explore how blockchain adoption can help employee performance (see Figure 1). An interval scale from 1 to 10 is used in the questionnaire to provide flexibility in expressing the respondent's level of perception of the variables studied (Einola & Alvesson, 2021). The data analysis technique applied is Structural Equation Modeling with the Partial Least Squares method (Hair & Alamer, 2022). Which allows exploration of complex relationships between variables and testing of hypotheses. To support this analysis, the latest version of SmartPLS software was used. During the research, compliance with the research code of ethics was a top priority. All actions taken during data collection and analysis will be in accordance with the principles of research integrity and maintain the confidentiality of information obtained from respondents. The sustainability of this research is dependent on strict adherence to research ethics to ensure the validity and reliability of the resulting findings.

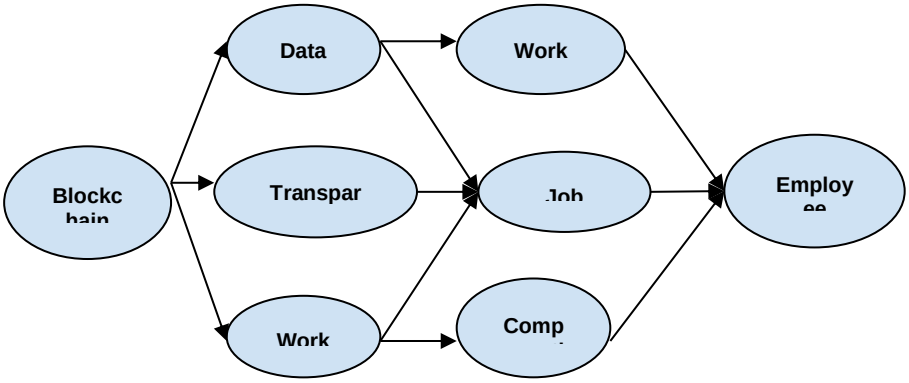

Figure 3. Research Conceptual Framework
Source: Author's Elaboration, 2023

Based on the literature review that has been carried out in the introductory section and in line with the research objectives, the following are the relationships between variables that will be built in this research using the following operational definitions:

Table 2. Operational Definition of Research Variables

Variable	Indicator	Relevant Research
Blockchain Technology Adoption (BTA)	BTA 1. Level of Integration	(Fachrunnisa & Hussain, 2020; Mishra & Venkatesan, 2021)
	BTA 2. User Engagement	
	BTA 3. Training and Support	
	BTA 4. Perceived Benefits	
Compensation (Cm)	Cm 1. Competitive Salary	(Anwar & Abrar, 2023; Godavarthi et al., 2023; Stone & Dulebohn, 2016)
	Cm 2. Benefits Package	
	Cm 3.Performance-Linked Incentives	
	Cm 4. Salary Growth Opportunities	
Data Security (DS)	DS1. Encryption Measures	(Abidin, 2016; AlShalaan & Fati, 2023; Bhave et al., 2020)
	DS2. Access Controls	
	DS3. Regular Security Audits	
Transparency (Tr)	Tr1. Information Clarity	(Brandes & Darai, 2017; Maas & Yin, 2022)
	Tr2. Communication Openness	
	Tr3. Accessibility of Information	
Work Culture (WC)	WC1. Team Collaboration	(AlShalaan & Fati, 2023; Huo & Jiang, 2023; Joseph et al., 2023; Stone & Dulebohn, 2016)
	WC2. Leadership Style	
	WC3. Innovation Support	
Work Motivation (WM)	WM1. Training Opportunities	(Anwar & Abrar, 2023; Budnick et al., 2020; González-González & García-Almeida, 2021; Gupta, 2022; Hakim & Muhdi, 2020; Kanat-Maymon et al., 2020; Parker et al., 2021; Zhang et al., 2023)
	WM2. Recognition and Rewards	
	WM3. Career Advancement	
Job Satisfaction (JS)	JS1. Facilities	(Aung et al., 2023; Gopalan et al., 2023; Hofmann & Strobel, 2020; Huang et al., 2023)
	JS2. Bonuses and Honour System	
	JS3. Supervisory Support	
	JS4. Work-Life Balance	
Employee Performance (EP)	EP1. Goal Achievement	(Abdelwahed et al., 2023; Anwar & Abrar, 2023; Dagnew Gebrehiwot & Elantheraiyan, 2023; Huo & Jiang, 2023; Srimulyani et al., 2023)
	EP2. Quality of Work	
	EP3. Timeliness	
	EP4. Adaptability	

Source: Author's elaboration, 2023

RESULTS AND DISCUSSION

RESULTS

Evaluation of the Measurement Model (Inner Model)

This research evaluates the internal model through the application of a convergent validity test by considering the Convergent Validity Test value, where the minimum Average Variance Extracted (AVE) value must exceed the threshold of 0.5. Reliability testing is also carried out by paying attention to the Composite Reliability value which is expected to exceed 0.7 to ensure the reliability of the model being tested (Magno et al., 2022).

Table 3. Results of Convergent Validity Test and Reliability Test

Variable	Composite Reliability	AVE
Blockchain Technology Adoption (BTA)	0.821	0.556
Compensation (Cm)	0.838	0.586
Data Security (DS)	0.735	0.516
Transparency (Tr)	0.784	0.551
Work Culture (WC)	0.851	0.660
Work Motivation (WM)	0.799	0.580
Job Satisfaction (JS)	0.846	0.589
Employee Performance (EP)	0.781	0.582

Source: Author's elaboration, 2023

Table 3 depicts the Average Variance Extracted (AVE) values for all variables, which consistently exceed 0.5. This shows that the data obtained in the context of this research can be considered valid. Along with that, the Composite Reliability results show that the value for each variable exceeds the threshold of 0.7. Therefore, it can be concluded that this research shows a substantial level of reliability and validity of the data(Jimada-Ojuolape & Teh, 2022).

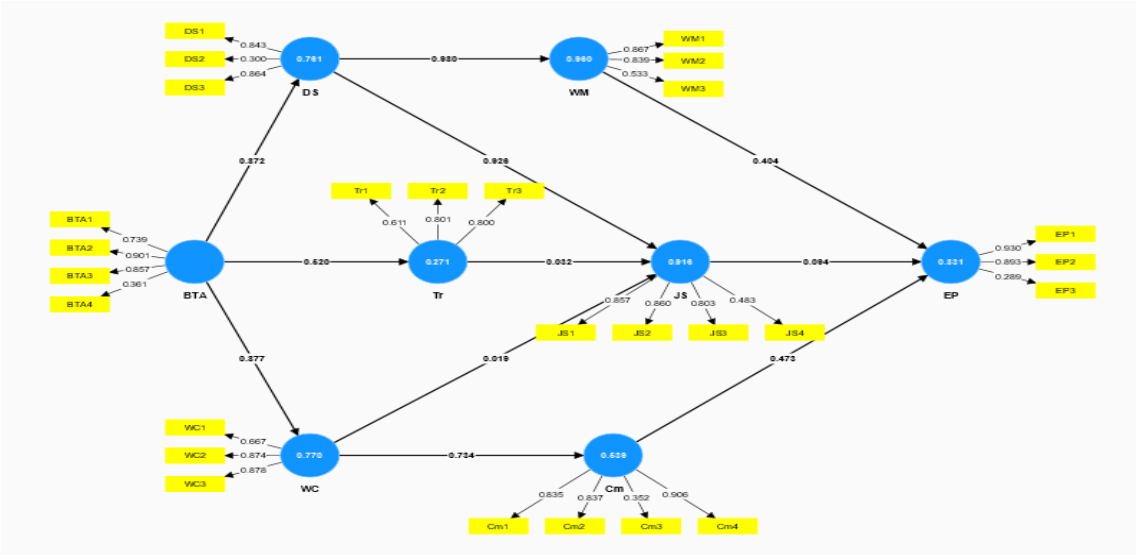

Figure 4. Path Coefficients analysis results
Source: Author's Elaboration, 2023

Structural Model Evaluation (Outer Model)

Evaluation was also carried out on the structural model using the R-Square test, as depicted in Table 4. The evaluation results show that the R-Square value is close to 1, although it has not yet reached the middle value of the R-Square test criteria range for the Transparency (Tr) variable, which is between 0 and 1. Therefore, it can be concluded that the variability in

the dependent variable in this study is explained by the model to an adequate level.

Table 4. Structural Model Evaluation Results Based on the R-Square Test

	R-Square	R-Square Adjusted
Compensation (Cm)	0.539	0.534
Data Security (DS)	0.761	0.759
Employee Performance (EP)	0.831	0.825
Job Satisfaction (JS)	0.916	0.913
Transparency (Tr)	0.271	0.263
Work Culture (WC)	0.770	0.768
Work Motivation (WM)	0.960	0.959

Source: Author's elaboration, 2023

Evaluation of model suitability is also presented in this study. The evaluation results show that the value of the estimated model is lower than the saturated model, indicating that the model in this study can be considered adequate because it exceeds the Goodness of Fit threshold of 0.08 (see Table 5).

Table 5. Fit Model

	Saturated Model	Estimated Model
SRMR	0.190	0.179
d_ULS	13.711	12.130
d_G	n/a	n/a
Chi-square	∞	∞
NFI	n/a	n/a

Source: Author's elaboration, 2023

Hypothesis testing

Hypothesis testing is carried out using bootstrapping techniques. The total effects results were found which are presented in table 6. From the results presented, there are five relationships that have no influence with the results of P Values >0.05. Overall, it can be concluded that the construct relationships established in this research are in good condition.

Table 6. Total Effects Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistic (|O/STDEV|)	P Values
BTA -> Cm	0.644	0.683	0.066	9.722	0.000
BTA -> DS	0.872	0.885	0.031	28.066	0.000
BTA -> EP	0.729	0.773	0.059	12.465	0.000
BTA -> JS	0.841	0.859	0.036	23.167	0.000
BTA -> Tr	0.520	0.542	0.146	3.565	0.000
BTA -> WC	0.877	0.893	0.025	35.305	0.000
BTA -> WM	0.855	0.868	0.034	25.002	0.000
Cm -> EP	0.473	0.418	0.161	2.934	0.003
DS -> EP	0.483	0.489	0.149	3.238	0.001
DS -> JS	0.926	0.898	0.148	6.281	0.000
DS -> WM	0.980	0.980	0.009	103.389	0.000
JS -> EP	0.094	0.130	0.393	0.240	0.810
Tr -> EP	0.003	0.013	0.036	0.084	0.933
Tr -> JS	0.032	0.037	0.080	0.398	0.690
WC -> Cm	0.734	0.765	0.059	12.346	0.000
WC -> EP	0.349	0.369	0.128	2.719	0.007
WC -> JS	0.019	0.047	0.140	0.134	0.893
WM -> EP	0.404	0.424	0.312	1.394	0.196

Source: Author's elaboration, 2023

DISCUSSION

How Blockchain Technology Adoption Can Impact Job Satisfaction?

Job satisfaction has a significant influence on employee performance (Arvidsson et al., 2022; Huang et al., 2023). Employee job satisfaction is influenced by several factors, one of which is appropriate reward which is related to a clear wage and bonus system and a supportive work environment which is related to personnel system facilities. This is in line with the factors that influence employee performance on the organizational side, which include salaries and bonuses (compensation) as well as the certainty of the existing personnel system (Paparang et al., 2021).

In several other studies, when the technology variable was included, the results showed that technology could increase job satisfaction. This is caused by an increase in technological innovation used to support employee work. The first is in research in the banking sector, when banking companies use technology to follow company needs and technological developments which in the end are able to increase job satisfaction. Then, in other research regarding the use of AI to provide performance feedback to employees. From AI technology, employees finally get performance evaluations and recommendations for performance improvement which is one of the factors of job satisfaction, namely a clear personnel system (Ramachandran et al., 2023; Stone & Dulebohn, 2016).

Figure 5. Blockchain Implementation Helps HRM Performance
Source: Author's Elaboration, 2023

However, this research tries to investigate whether the adoption of blockchain technology can modify or change the significance of the influence of job satisfaction on employee performance. The results of the analysis show that when the Blockchain Technology Adoption variable is included in the model, job satisfaction no longer has a significant influence on employee performance. That is, Blockchain Technology Adoption seems to be a variable that modifies the relationship between job satisfaction and employee performance. These findings suggest that when organizations adopt blockchain technology, the factors that typically influence employee job satisfaction and performance may experience dynamic changes (Beck et al., 2018). Therefore, it is important to understand that in the context of technology adoption, traditional factors may no longer have the same impact on the relationship between job satisfaction and employee performance. The practical implications of these findings may provide organizations with insight into how technology adoption may modify key aspects of human resource management, and may require adjustments to human resource management strategies.

Blockchain and Transparency for Corporate Governance

Previously, research showed that transparency has a significant impact on employee performance, especially in the context of organizations that apply the principles of good corporate governance (Effendi, 2009; Sabrina, 2021). The concept of transparency in this research is defined through four indicators, namely access to accurate information, providing clear information regarding procedures and costs, ease of accessing information, and

establishing a complaint mechanism if violations occur (Malinauskaite & Jouhara, 2024). These four indicators are in line with factors known to influence employee performance, especially from an organizational and corporate governance perspective. In several other studies, technology is very helpful in providing transparency in the disclosure of financial reports (Maas & Yin, 2022). Financial disclosure can increase public trust, especially employees, in the company. In the government sector, technology can be used to increase regional income through the tax service process, thereby improving the performance of the government sector(Han & Hong, 2019).

However, when the blockchain technology adoption variable was introduced, the analysis results showed that transparency no longer had a significant influence on employee performance. This finding attracts attention, because previously transparency was identified as a factor capable of positively influencing employee performance. An explanation for the insignificant effect of transparency on employee performance when BTA is included can be found in conditions where the company does not apply the principles of good corporate governance (Basir, 2023). This means that if the organizational structure decides not to provide access to information and involve employees in decision making, then transparency will have no impact on employee performance (Malinauskaite & Jouhara, 2024; Sabrina, 2021). The importance of decisions in corporate governance as an organizational factor is a key element that explains why the adoption of blockchain technology does not have a significant influence on the relationship between transparency and employee performance (Waltl et al., 2019). This research contributes to understanding the complex dynamics between technological factors, corporate governance, and their impact on employee performance in the context of blockchain technology development.

Blockchain-Based Work Culture

The influence of Blockchain Technology Adoption on the relationship between Work Culture and Job Satisfaction is the main focus in this discussion. Work culture has been recognized as having a significant impact on job satisfaction according to previous research (Kanat-Maymon et al., 2020). When a company succeeds in creating a work culture that is able to shape the habits, rules and values adhered to by employees, this creates an ecosystem that supports employee professional growth and development (Zhang et al., 2023). These development opportunities are often the main indicator of employee job satisfaction. However, the findings in this study bring new understanding regarding the role of Blockchain Technology Adoption in moderating the relationship between Work Culture and Job Satisfaction(Hakim & Muhdi, 2020). The results of data analysis show that when the BTA variable is included, the impact of work culture on job satisfaction is no longer significant. This may be caused by the existence of other indicators in work culture that were not identified in this research (Stoll et al., 2019).

Previous research states that technology can influence the work culture of a company. This influence is in the form of the use of technology for communication at work. Initially work had to be done in the office, but now it can be done from various places. This kind of work culture started before COVID-19 (Richards et al., 2024). This flexibility can increase employee job satisfaction because employees can choose where they want to work as comfortably as they want.

Work culture has abstract dimensions, such as company values, which are often difficult to measure physically (Nowiński & Kozma, 2017). Therefore, in the context of using blockchain technology, these values may not play the same role as in a conventional work environment. Blockchain Technology Adoption makes it possible to provide significant changes in the way employees interact with company values, as well as how these values are reflected in their job satisfaction. Thus, these findings illustrate the complexity of the relationship between Work Culture and Job Satisfaction when the Blockchain Technology

Adoption factor is taken into account. The practical implications highlight the need for a deeper understanding of the role of blockchain technology in shaping work culture dynamics and its impact on employee job satisfaction. These results provide theoretical and practical contributions to the human resource management literature and provide a foundation for further research in this area.

Work Motivation in Blockchain Adoption

The influence of work motivation on employee performance has long been recognized as an important factor in achieving organizational success(Graves, 2023). Previous studies show that work motivation can be reflected through indicators such as training, career development, and measurable work results(Riyanto & Anto, 2022). Job training, as an indicator of work motivation, is believed to improve the quality and ability of employees' work, which in turn has a positive impact on their performance. Even during COVID-19, mastery of technology can increase employee work motivation(Dávila Morán, 2023). Thus, in view of this research, work motivation is not only a determining factor in employee performance, but is also the main catalyst for individual development and organizational success. Training and mastery of technology as part of work motivation is an important basis for understanding the dynamic relationship between motivational factors and achieving optimal performance.

However, this research integrates the Blockchain Technology Adoption variable to understand how blockchain technology adoption affects the relationship between work motivation and employee performance. The research results show that when considering the adoption of blockchain technology, work motivation no longer has a significant influence on employee performance. This phenomenon may be influenced by certain factors related to the provision of training and career development opportunities, both of which may depend on corporate governance policies and decisions in providing them to employees.

Blockchain Technology Adoption can be seen as a mediator variable that modifies the relationship between work motivation and employee performance. The adoption of blockchain technology may provide an alternative or replacement to traditional factors that typically influence employee motivation and performance. Decisions regarding training and career development, which may initially be considered as drivers of work motivation and performance, may be influenced by the integration of blockchain technology in human resource management(Beck et al., 2018). Thus, this research provides new insights into the complexity of the relationship between work motivation and employee performance in the era of blockchain technology adoption. These findings create space for further reflection regarding human resource management strategies in facing technological developments, especially the adoption of blockchain technology, to achieve optimal employee performance in an ever-changing work environment.

CONCLUSIONS AND IMPLICATIONS

Conclusion

With the advancement of internet technology today, human resource management (HR) requires a human resource management system (HRIS) that is effective in overcoming issues of efficiency and data security through the adoption of technology. One technology that can help organizations store and manage data is blockchain. This research comprehensively explores how Blockchain Technology Adoption influences key human resource management factors, especially Job Satisfaction, Transparency, Work Culture, and Work Motivation. The analysis results show that the adoption of blockchain technology has a central role in modifying the relationship between these variables and employee performance. On the other hand, this is due to other factors such as good corporate governance, work culture that is embedded in the organization, and even the internal workings of individual employees themselves which cannot be covered by technology.

This research has limitations in methodological, contextual and conceptual aspects. Methodologically, this research is limited to a statistical analysis approach to survey data, and the results may not fully reflect overall organizational dynamics. Contextually, the generalizability of the findings may be limited to the work environments explored, and thus may not be directly applicable to different organizational contexts. Conceptually, this research focuses on specific variables, such as job satisfaction, transparency, work culture, and work motivation, without accommodating additional factors that might influence the relationship between blockchain technology adoption and employee performance. Therefore, interpretation and application of the findings need to consider these limitations to ensure the relevance and generalizability of the results of this study.

Implications

Some of the findings in this research that can be useful for readers and what their implications are. First, the findings confirm that in the context of blockchain technology adoption, Job Satisfaction no longer has a significant influence on employee performance. The implication is that organizations need to understand that the factors that usually influence job satisfaction can experience dynamic changes in a work environment that continues to develop. Second, this study highlights significant changes in the relationship between Transparency and employee performance when BTA is included. Transparency no longer has a significant impact on employee performance in organizations that implement blockchain technology. This provides insight into the importance of good corporate governance in determining the influence of technology on these factors. Third, the findings reveal that in a Blockchain-Based Work Culture, the impact on job satisfaction becomes insignificant. Abstract factors in work culture may not have the same impact on employee job satisfaction when blockchain technology is involved. Organizations need to understand the complex dynamics between work culture and technology to optimize employee performance.

Fourth, work motivation no longer has a significant influence on employee performance when considering blockchain technology adoption. The implication is that corporate governance policies and decisions in providing training and career development can be influenced by blockchain technology, which requires adaptive human resource management strategies. Overall, the practical implications of this research include the need to adapt human resource management strategies in the face of technological developments, as well as changes that may occur in the modern work environment. This research not only provides in-depth insights to the academic world, but also provides practical guidance for organizations in optimizing their human resource management in an era of growing adoption of blockchain technology.

ACKNOWLEDGEMENTS

Thanks to the Department of Communication Sciences Universitas Airlangga and Department of Management Universitas Dian Nuswantoro for all the support in the implementation of this research. We would also like to express our gratitude to the committee of Dinus International Youth Conference for providing a platform for young researchers in this conference.

REFERENCES

Abdelwahed, N. A. A., Soomro, B. A., & Shah, N. (2023). Predicting employee performance through transactional leadership and entrepreneur's passion among the employees of Pakistan. *Asia Pacific Management Review*, *28*(1), 60–68. https://doi.org/10.1016/j.apmrv.2022.03.001

Abidin, Z. (2016). *Hubungan Keamanan Kerja Dan Kepuasan Kerja Terhadap Keinginan Keluar Pada Karyawan PT. Tirta Raya Abadi Medan*. *5*(2).

Agrawal, A., Chopra, R., Sharma, G. D., Rao, A., Vasa, L., & Budhwar, P. (2023). Work from home practices as corporate strategy- an integrative review. *Heliyon*, *9*(9), e19894. https://doi.org/10.1016/j.heliyon.2023.e19894

AlShalaan, M. R., & Fati, S. M. (2023). Enhancing Organizational Data Security on Employee-Connected Devices Using BYOD Policy. *Information*, *14*(5), 275. https://doi.org/10.3390/info14050275

Anwar, S., & Abrar, U. (2023). The Influence of Compensation and Work Motivation on Employee Performance through Employee Discipline. *International Journal of Multidisciplinary Approach Research and Science*, *1*(02), 133–138. https://doi.org/10.59653/ijmars.v1i02.66

Arvidsson, S., Eierle, B., & Hartlieb, S. (2022). Job satisfaction and investment efficiency – Evidence from crowdsourced employer reviews. *European Management Journal*, S0263237322001463. https://doi.org/10.1016/j.emj.2022.10.007

Aung, Z. M., Santoso, D. S., & Dodanwala, T. C. (2023). Effects of demotivational managerial practices on job satisfaction and job performance: Empirical evidence from Myanmar's construction industry. *Journal of Engineering and Technology Management*, *67*, 101730. https://doi.org/10.1016/j.jengtecman.2022.101730

Banning, E. B. (2023). Sampling Methods and Theory. In *Reference Module in Social Sciences* (p. B9780323907996000379). Elsevier. https://doi.org/10.1016/B978-0-323-90799-6.00037-9

Basir, Z. (2023). Efek Transparansi Keuangan, Gaya Kepemimpinn, Lingkungan Kerja, Dan Insentif Terhadap Kepuasan Kerja Di Alfamidi Malengkeri. *Publik: Jurnal Manajemen Sumber Daya Manusia, Administrasi Dan Pelayanan Publik*, *10*(1), 92–103. https://doi.org/10.37606/publik.v10i1.472

Beck, R., Müller-Bloch, C., IT University of Copenhagen, King, J. L., & University of Michigan. (2018). Governance in the Blockchain Economy: A Framework and Research Agenda. *Journal of the Association for Information Systems*, 1020–1034. https://doi.org/10.17705/1jais.00518

Bhave, D. P., Teo, L. H., & Dalal, R. S. (2020). Privacy at Work: A Review and a Research Agenda for a Contested Terrain. *Journal of Management*, *46*(1), 127–164. https://doi.org/10.1177/0149206319878254

Brandes, L., & Darai, D. (2017). The value and motivating mechanism of transparency in organizations. *European Economic Review*, *98*, 189–198. https://doi.org/10.1016/j.euroecorev.2017.06.014

Bratton, J., & Gold, J. (2012). *Human resource management: Theory & practice* (5th ed). Palgrave Macmillan.

Budnick, C. J., Rogers, A. P., & Barber, L. K. (2020). The fear of missing out at work: Examining costs and benefits to employee health and motivation. *Computers in Human Behavior*, *104*, 106161. https://doi.org/10.1016/j.chb.2019.106161

Dagnew Gebrehiwot, G., & Elantheraiyan, P. (2023). A study on the effect of training on employee performance in the case of Mekelle City, Tigray, Ethiopia. *Social Sciences & Humanities Open*, *8*(1), 100567. https://doi.org/10.1016/j.ssaho.2023.100567

Dávila Morán, R. C. (2023). Influence of Remote Work on the Work Stress of Workers in the Context of the COVID-19 Pandemic: A Systematic Review. *Sustainability*, *15*(16),

12489. https://doi.org/10.3390/su151612489

Effendi, M. A. (2009). *The power of good corporate governance: Teori dan implementasi*. Salemba Empat.

Einola, K., & Alvesson, M. (2021). Behind the Numbers: Questioning Questionnaires. *Journal of Management Inquiry*, *30*(1), 102–114. https://doi.org/10.1177/1056492620938139

Fachrunnisa, O., & Hussain, F. K. (2020). Blockchain-based human resource management practices for mitigating skills and competencies gap in workforce. *International Journal of Engineering Business Management*, *12*, 184797902096640. https://doi.org/10.1177/1847979020966400

Godavarthi, B., Dhar, M., Devi, S. A., Raju, S. S., Balaram, A., & Srilakshmi, G. (2023). Blockchain integration with the internet of things for the employee performance management. *The Journal of High Technology Management Research*, *34*(2), 100468. https://doi.org/10.1016/j.hitech.2023.100468

González-González, T., & García-Almeida, D. J. (2021). Frontline employee-driven innovation through suggestions in hospitality firms: The role of the employee's creativity, knowledge, and motivation. *International Journal of Hospitality Management*, *94*, 102877. https://doi.org/10.1016/j.ijhm.2021.102877

Gopalan, N., Beutell, N. J., & Alstete, J. W. (2023). Can trust in management help? Job satisfaction, healthy lifestyle, and turnover intentions. *International Journal of Organization Theory & Behavior*, *26*(3), 185–202. https://doi.org/10.1108/IJOTB-09-2022-0180

Graves, B. C. (2023). Specifications grading to promote student engagement, motivation and learning: Possibilities and cautions. *Assessing Writing*, *57*, 100754. https://doi.org/10.1016/j.asw.2023.100754

Gupta, R. K. (2022). Adoption of mobile wallet services: An empirical analysis. *International Journal of Intellectual Property Management*, *12*(3), 341. https://doi.org/10.1504/IJIPM.2022.124634

Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, *1*(3), 100027. https://doi.org/10.1016/j.rmal.2022.100027

Hakim, A. R., & Muhdi, M. (2020). Motivasi Kerja Dan Kompensasi Terhadap Kepuasan Kerja Guru SMK Swasta Di Wilayah Timur Kabupaten Pemalang. *Jurnal Pendidikan Ilmu Sosial*, *29*(2), 105–115. https://doi.org/10.23917/jpis.v29i2.9354

Han, Y., & Hong, S. (2019). The Impact of Accountability on Organizational Performance in the U.S. Federal Government: The Moderating Role of Autonomy. *Review of Public Personnel Administration*, *39*(1), 3–23. https://doi.org/10.1177/0734371X16682816

Haryani, H., Wahid, S. M., Fitriani, A., & Ariq, M. F. (2023). Analisa Peluang Penerapan Teknologi Blockchain dan Gamifikasi pada Pendidikan. *Jurnal MENTARI: Manajemen, Pendidikan Dan Teknologi Informasi*, *1*(2), 163–174. https://doi.org/10.33050/mentari.v1i2.250

Hofmann, Y. E., & Strobel, M. (2020). Transparency goes a long way: Information transparency and its effect on job satisfaction and turnover intentions of the professoriate. *Journal of Business Economics*, *90*(5–6), 713–732. https://doi.org/10.1007/s11573-020-

00984-0

Huang, Y.-C., Chen, C.-C., Lin, S. C., Tang, H.-F., & Cheng, J.-S. (2023). Psychological capital as a source of career adaptability, job satisfaction, and life satisfaction among tour operators and guides during a global crisis. *Tourism Management Perspectives*, *49*, 101188. https://doi.org/10.1016/j.tmp.2023.101188

Huo, M.-L., & Jiang, Z. (2023). Work–life conflict and job performance: The mediating role of employee wellbeing and the moderating role of trait extraversion. *Personality and Individual Differences*, *205*, 112109. https://doi.org/10.1016/j.paid.2023.112109

Jimada-Ojuolape, B., & Teh, J. (2022). Composite Reliability Impacts of Synchrophasor-Based DTR and SIPS Cyber–Physical Systems. *IEEE Systems Journal*, *16*(3), 3927–3938. https://doi.org/10.1109/JSYST.2021.3132657

Joseph, J., Firmin, S., Oseni, T., & Stranieri, A. (2023). Decoding Employee ambidexterity: Understanding drivers, constraints, and performance implications for thriving in the evolving work landscapes - A scoping review. *Heliyon*, *9*(12), e22493. https://doi.org/10.1016/j.heliyon.2023.e22493

Kanat-Maymon, Y., Elimelech, M., & Roth, G. (2020). Work motivations as antecedents and outcomes of leadership: Integrating self-determination theory and the full range leadership theory. *European Management Journal*, *38*(4), 555–564. https://doi.org/10.1016/j.emj.2020.01.003

Maas, V. S., & Yin, H. (2022). Finding partners in crime? How transparency about managers' behavior affects employee collusion. *Accounting, Organizations and Society*, *96*, 101293. https://doi.org/10.1016/j.aos.2021.101293

Magno, F., Cassia, F., & Ringle, C. M. (2022). A brief review of partial least squares structural equation modeling (PLS-SEM) use in quality management studies. *The TQM Journal*. https://doi.org/10.1108/TQM-06-2022-0197

Malinauskaite, J., & Jouhara, H. (2024). Corporate Social Responsibility (CSR) and Environmental, Social and Governance (ESG). Introduction to sustainable business models. In *Sustainable Energy Technology, Business Models, and Policies* (pp. 41–66). Elsevier. https://doi.org/10.1016/B978-0-443-18454-3.00010-2

Maria, Ahmadi, L. P., K, R. A. S., Tabun, M. A., Syakbani, B., Sudarni, A. A. C., Hariyanti, Nuryati, Suhadarliyah, Sijabat, F. N., Amelia, D., Wati, K. M., Abadi, S. H. K., & Akib, S. (2022). *Perilaku dan Budaya Organisasi* [Preprint]. Thesis Commons. https://doi.org/10.31237/osf.io/pesw5

Mishra, H., & Venkatesan, M. (2021). Blockchain in human resource management of organizations: An empirical assessment to gauge HR and non-HR perspective. *Journal of Organizational Change Management*, *34*(2), 525–542. https://doi.org/10.1108/JOCM-08-2020-0261

Nowiński, W., & Kozma, M. (2017). How Can Blockchain Technology Disrupt the Existing Business Models? *Entrepreneurial Business and Economics Review*, *5*(3), 173–188. https://doi.org/10.15678/EBER.2017.050309

Paparang, N. C. P., Areros, W. A., & Tatimu, V. (2021). *Pengaruh Kepuasan Kerja Terhadap Kinerja Pegawai Kantor PT. Post Indonesia di Manado*. *2*(2).

Parker, S. L., Dawson, N., Van Den Broeck, A., Sonnentag, S., & Neal, A. (2021). Employee motivation profiles, energy levels, and approaches to sustaining energy: A two-wave

latent-profile analysis. *Journal of Vocational Behavior*, *131*, 103659. https://doi.org/10.1016/j.jvb.2021.103659

Ramachandran, R., Babu, V., & Murugesan, V. P. (2023). The role of blockchain technology in the process of decision-making in human resource management: A review and future research agenda. *Business Process Management Journal*, *29*(1), 116–139. https://doi.org/10.1108/BPMJ-07-2022-0351

Richards, A., Convery, S., O'Mahony, M., & Caulfield, B. (2024). Pre and post Covid preferences for working from home. *Travel Behaviour and Society*, *34*, 100679. https://doi.org/10.1016/j.tbs.2023.100679

Riyanto, S., & Anto, D. C. (2022). Pengaruh Kompetensi, Semangat Kerja dan Tim Kerja Terhadap Motivasi Kerja dan Kinerja Pegawai. *Jurnal Wira Ekonomi Mikroskil*, *12*(2), 81–90. https://doi.org/10.55601/jwem.v12i2.895

Sabrina, N. N. (2021). Penerapan prinsip Good Corporate Governance pada perusahaan. *Jurnal Ekonomi Bisnis, Manajemen Dan Akuntansi (JEBMA)*, *1*(2), 90–96. https://doi.org/10.47709/jebma.v1i2.982

Srimulyani, V. A., Rustiyaningsih, S., Farida, F. A., & Hermanto, Y. B. (2023). Mediation of "AKHLAK" corporate culture and affective commitment on the effect of inclusive leadership on employee performance. *Sustainable Futures*, *6*, 100138. https://doi.org/10.1016/j.sftr.2023.100138

Stoll, C., Klaaßen, L., & Gallersdörfer, U. (2019). The Carbon Footprint of Bitcoin. *Joule*, *3*(7), 1647–1661. https://doi.org/10.1016/j.joule.2019.05.012

Stone, D. L., & Dulebohn, J. H. (Eds.). (2016). *Human resource management theory and research on new employment relationships*. Information Age Publishing, Inc.

Suryawijaya, T. W. E. (2023). Memperkuat Keamanan Data melalui Teknologi Blockchain: Mengeksplorasi Implementasi Sukses dalam Transformasi Digital di Indonesia. *Jurnal Studi Kebijakan Publik*, *2*(1), 55–68. https://doi.org/10.21787/jskp.2.2023.55-68

Waltl, B., Sillaber, C., Gallersdörfer, U., & Matthes, F. (2019). Blockchains and Smart Contracts: A Threat for the Legal Industry? In H. Treiblmaier & R. Beck (Eds.), *Business Transformation through Blockchain* (pp. 287–315). Springer International Publishing. https://doi.org/10.1007/978-3-319-99058-3_11

Wibowo, Fx. P. (2018). Pengaruh Kompensasi Dan Motivasi Terhadap Kinerja Karyawan (Studi Kasus PT Indoraya Internasional di Yogyakarta). *Sains: Jurnal Manajemen Dan Bisnis*, *10*(2). https://doi.org/10.35448/jmb.v10i2.4176

Xu, X., Pautasso, C., Zhu, L., Gramoli, V., Ponomarev, A., Tran, A. B., & Chen, S. (2016). The Blockchain as a Software Connector. *2016 13th Working IEEE/IFIP Conference on Software Architecture (WICSA)*, 182–191. https://doi.org/10.1109/WICSA.2016.21

Zhang, J., Huang, R., Chen, Q., & Zhao, G. (2023). The relationships between supervisor-subordinate guanxi, perceived supervisor autonomy support, autonomous motivation, and employee job satisfaction: Evidence from international hotel chains in China. *International Journal of Hospitality Management*, *108*, 103354. https://doi.org/10.1016/j.ijhm.2022.103354