THE INFLUENCE OF ARTIFICIAL INTELLIGENCE AND WORK TRAINING ON HUMAN RESOURCE PERFORMANCE

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ABSTRACT

This study investigates the influence of artificial intelligence (AI) and job training on the performance of human resources (HR) at PT Satria Bahana Sarana (SBS). A quantitative research approach was employed, with data gathered through questionnaires distributed to 165 office employees. The data analysis was conducted using Partial Least Squares-Structural Equation Modeling (PLS-SEM). The results reveal that AI significantly and positively affects HR performance by improving efficiency and productivity in the workplace. Additionally, job training also contributes positively, as well-structured training programs enhance employee competencies and facilitate the achievement of organizational objectives. The R-square value of 0.622 suggests that AI and job training together account for 62.2% of the variance in HR performance, while the remaining portion is influenced by other variables. This study highlights the crucial role of AI integration and comprehensive job training programs as key strategies for optimizing employee performance in the era of digital transformation.

KEYWORDS	*Artificial Intelligence, Job Training, Human Resource Performance, PLS-SEM*

INTRODUCTION

Technological advancements, especially in the field of artificial intelligence (AI), have become one of the main drivers in the digital transformation process across various sectors, including human resource management. Artificial Intelligence (AI) serves as the main driver in the Fourth Industrial Revolution, providing various conveniences for the government and the industrial sector. One of the most important aspects is the use of AI in Human Resource Management (Purwaamijaya et al., 2024).

One of the most impactful innovations is artificial intelligence, which is beginning to change the way organizations operate and interact with their employees. Digitalization, which means converting information and business

processes into digital formats, has now become a necessity for organizations to remain competitive in an increasingly complex and dynamic market. This transformation process is becoming increasingly crucial to enhance the efficiency, productivity, and quality of the services provided (Sakinah & Kuswinarno, 2024).

Artificial Intelligence (AI) plays a key role in driving the Fourth Industrial Revolution, offering various conveniences for the government and industrial sectors. One of the most significant aspects is the application of artificial intelligence in human resource management (Purwaamijaya & Prasetyo, 2022).

Although artificial intelligence (AI) brings many benefits in improving work efficiency, there are several limitations that can negatively impact human resource performance. One of the main concerns is the potential replacement of human labor by machines, which can lead to resistance and job instability. As stated by research from UGM, "This condition certainly raises concerns about work processes that are starting to be replaced by machines and robots." (UGM, 2024). Moreover, ethical aspects also pose a challenge, as AI can overlook human values in decision-making. Good News From Indonesia states that "HR must address new challenges in integrating technology into the workplace, and ensure that human values and ethics are maintained in the application of artificial intelligence." (GNFI, 2024).

Humans set innovation goals and strive to achieve them within the context of an organization. To achieve those goals, adequate skills and knowledge are required. Therefore, the development of human resources becomes a very important aspect, both in the short term and the long term, in every activity carried out. Human resource competencies play a vital role in determining the achievement of organizational goals as well as in driving innovation within the company. Thus, it is important to utilize human resources optimally to improve employee performance. The improvement in employee performance will impact their income, which in turn contributes to the well-being of the employees themselves (Agustin & Safaria, 2021). Based on previous research, it is stated that the perception and prospective analysis in Indonesia are good, but there are indeed limitations in human resource capabilities and the need for collaboration among various stakeholders in its implementation (Mariska et al., 2021).

The implementation of training programs in companies is very important because it can enhance employees' abilities and skills in performing their tasks. Through training, employees' work skills will improve, which in turn can enhance individual performance and the smooth operation of the company. The training program should be designed to enhance employees' technical, theoretical, conceptual, and ethical abilities, so that they can achieve good and optimal work results. Companies that value human resources and see employees as work partners should implement employee development as one of the strategies to achieve competitive advantage, which is an important element in improving the company's efficiency. (Hariawati, 2011, cited in Fitri et al., 2023).

On the other hand, poorly targeted job training can also hinder employee performance improvement. According to Dibimbing.id, "Failure to identify specific needs can lead to training programs that are irrelevant or less effective." (Dibimbing.id, 2024). Even when the training has been conducted, the results are not always as expected. GreatDayHR highlights that "Training programs may seem

to be running well, but when viewed from the perspective of performance and productivity improvement, the results are often unsatisfactory." (GreatDayHR, 2024).

Artificial intelligence, commonly known as AI, is a computer system designed to recognize and model human thinking, as well as create machines that can mimic human behavior. With the advancement of technology and the continuous emergence of innovations, AI is expected to bring significant changes to the business world through process efficiency improvements.

According to (Akbar et al., 2022) Artificial Intelligence (AI) is a vast field with various dimensions and indicators that can be used to assess and develop AI technology. Here are some of the main dimensions and indicators commonly used in the context of AI:

1. Introduction and Understanding of Language (Natural Language Processing - NLP): Indicator: The ability to process text, recognize speech, and generate natural language. Example indicators include entity recognition, sentiment analysis, and language generation.
2. Image Recognition and Computer Vision: Indicator: The ability to analyze and understand images and videos. This indicator includes object detection, facial recognition, and visual classification.
3. Complex Problem Solving: Indicator: The ability to solve complex problems using adaptive algorithms and programming. Indicators may include optimization solutions, modeling, and mathematical modeling.
4. Learning and Adaptation (Machine Learning): Indicator: The ability to learn from data, identify patterns, and make decisions or predictions. These indicators include classification, regression, and clustering.
5. Decision Making: Indicator: The ability to make decisions based on data analysis and existing conditions. Indicators may include automatic and semi-automatic decision-making.
6. Interaction and Human-Machine Interface (Human-Machine Interface - HMI): Indicator: The ability to interact with human users through an intuitive interface. This indicator includes chatbots, virtual assistants, and recommendation systems.
7. Autonomy and Independence (Autonomy): Indicator: The ability to operate independently with minimal human intervention. Indicators can include automatic navigation, control systems, and process optimization.

Job training is training that provides employees with opportunities to improve their skills and abilities in their work, so that the knowledge they possess can help them understand the tasks they need to perform and the reasons behind them. In addition, training also opens up opportunities to expand knowledge and skills. Each individual has different potential, but the skills they possess do not always align with the specific needs of the company. However, it is very important for the company to implement training programs so that employees can understand what needs to be done and how to do it. Training is a process to maintain or improve employee skills in order to achieve more efficient work results. (Harahap, 2022).

According to (Mangkuneigara, 2013), There are several important indicators in the training, including:

1. Training Objectives: The objectives of the training must be explicitly defined and quantifiable. The training program is designed to enhance participants' job-related skills, enabling them to achieve optimal performance while adhering to essential workplace ethics.
2. Training Materials: The content covered in the training includes various key areas such as management, document handling, workplace psychology, communication, work discipline, professional ethics, leadership, and reporting.
3. Training Methods: The training employs interactive and participatory approaches, including group discussions, conferences, simulations, role-playing activities, field exercises, assessments, teamwork, and study visits.
4. Participant Qualifications: Eligible training participants include company employees who meet specific criteria, such as being permanent staff or individuals recommended by their supervisors.
5. Trainer Qualifications (Instructor): Trainers or instructors responsible for delivering the training must fulfill specific requirements, such as possessing relevant expertise in the subject matter, demonstrating the ability to inspire participants, and effectively utilizing participatory teaching techniques.
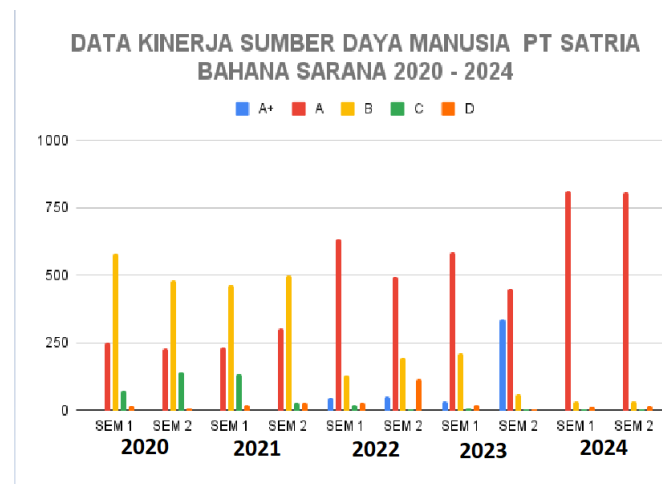
The performance of Human Resources (HR), which is also referred to as employee performance in the context of a company, refers to the quality of work results or activities carried out in specific jobs over a certain period of time. The quality of this work is influenced by the abilities, skills, and motivation possessed by the employees. With high performance, employees can complete the tasks assigned to them more effectively and efficiently. The outstanding performance of employees also contributes to the increase in the profitability of the business organization. In general, good employee performance will align with the organization's success in achieving its goals according to (Lubis, 2023).

According to (Mathis dan Jackson, 2013), There are four important performance indicators to pay attention to:
1. Work quality: Providing high-quality products and services is a necessity for companies to survive in various forms of competition. Optimal work results reflect the management's ability to manage products and services within the organization.
2. Quantity of work: A company that is able to achieve the targets that have been set demonstrates efficiency in managing the resources it has to achieve the desired goals.
3. Work time: The organization's ability to determine the most efficient and effective work time at all levels of management is very important. Working hours serve as a reference for employees in completing tasks or services that are their responsibility.
4. Collaboration and teamwork: Good teamwork is a key factor in the success of a company in achieving its set goals. With effective collaboration, the company can build trust among various stakeholders, both directly and indirectly.

The effectiveness of human resources (HR) plays a crucial role in determining a company's success and competitiveness. In today's digital era, integrating

technology such as artificial intelligence and strengthening employee competencies through job training have become essential strategies for enhancing workforce quality and productivity. PT Satria Bahana Sarana (PT SBS), a company in the mining industry, has shown significant progress in HR performance over the past five years. This improvement highlights the positive impact of various factors contributing to workforce development. The following graph illustrates the trends in human resource performance at PT Satria Bahana Sarana.
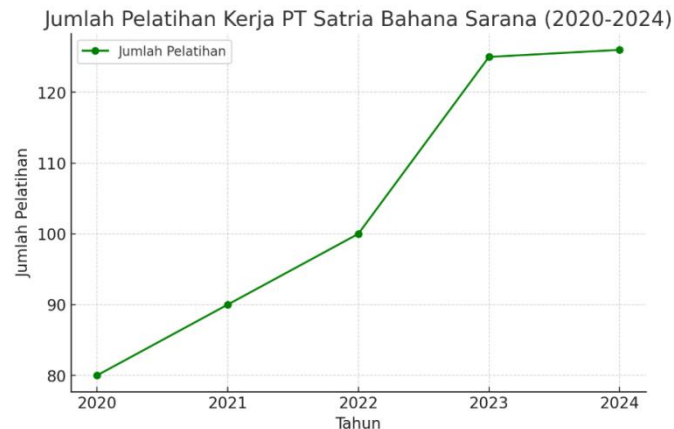

Source: Processed data (2025)
Figure 1. PT SBS HR Performance Graph 2020-2024

Based on Figure 1, the performance graph of human resources (HR) at PT Satria Bahana Sarana (SBS) during the 2020-2024 period, there is a variation in employee performance achievements categorized into several levels, namely A+, A, B, C, and D. In general, the trend shows that the number of employees in the A+ and A categories is relatively smaller compared to other categories, while the C and D categories tend to dominate in several periods.

From 2020 to 2022, there was a gradual increase in the number of employees in categories B and C, indicating that the HR performance was at a moderate level, but had not yet reached the best category. However, in 2023 and 2024, there was a significant increase in the number of employees in categories C and D, while the number of high-performing employees (categories A+ and A) still remained low. This trend indicates that the effectiveness of HR performance is facing challenges, where the number of employees with poor performance is increasing. This phenomenon may indicate the presence of factors affecting HR performance at PT SBS.

Source: Processed data (2025)
Figure 2. Graph of the Number of PT SBS Work Training 2020-2024

In an effort to improve the quality of human resources, PT Satria Bahana Sarana consistently organizes work training programs from 2020 to 2024. Based on the data obtained from Figure 2, the number of work training sessions has increased each year. In 2020, the number of training sessions held was 80 sessions, then increased to 90 sessions in 2021, and continued to rise until it reached 100 sessions in 2022. A significant increase occurred in 2023, where the number of training sessions reached 125 sessions, and slightly increased to 126 sessions in 2024.

This trend shows the company's commitment to balancing employee competencies through increasingly intensive training. The significant increase in the number of training sessions in 2023 may indicate a greater need for improving the skills of the workforce, whether due to technological changes, increased industry demands, or the company's efforts to enhance productivity. Although the increase in 2024 is not as significant as the previous year, the stable training numbers indicate the continuity of the HR balance program that the company has designed.

Although there has been an increase in the number of training sessions, their effectiveness on HR performance remains a major question. Based on the previously analyzed HR performance data, there is still a significant number of employees in categories C and D, which reflect performance below the optimal standard. This may indicate that the increase in the number of trainings has not yet significantly impacted the improvement of HR performance.

In recent years, PT SBS has implemented artificial intelligence to expedite the decision-making process, improve operational efficiency, and support innovation in managerial and operational strategies. AI is considered one of the solutions to optimize data usage in improving analytical capabilities, which in turn supports the enhancement of employee performance. In addition, structured and continuous work training programs also play an important role in improving the technical and non-technical skills of the workforce, so that they can be better prepared to face the challenges in an increasingly competitive work environment. This phenomenon raises the suspicion that, in addition to job training factors, the

adoption of technology and artificial intelligence (AI) in supporting work processes can also play a significant role in improving employee productivity.

At PT Satria Bahana Sarana, the implementation of work is carried out in two different locations, namely the office and the field. In terms of the implementation of artificial intelligence, the company has made efforts to ensure that this technology is used evenly, even though there are differences in the types of tools used in each area. Office employees utilize software-based artificial intelligence, such as Chat GPT, Gemini, and other applications, which are designed to enhance efficiency and effectiveness in completing their tasks. On the other hand, field employees use tools such as anti-sleep devices, which function to enhance alertness and maintain productivity during working hours. This research will focus on the use of artificial intelligence by office employees, with the aim of evaluating the impact of this technology on human resource performance and how it can contribute to the achievement of the company's goals.

Looking at previous research, it has been found that artificial intelligence variables and work training variables have a positive impact on human resource performance. However, there has not yet been any research that discusses the impact of artificial intelligence and work training on human resource performance. Therefore, there is a gap in this research.

Although many companies have implemented artificial intelligence and work training, there is still little research specifically examining the impact of artificial intelligence and work training on HR performance in certain industries. Therefore, this research aims to delve deeper into how artificial intelligence and work training programs can collaborate to improve HR performance at PT SBS. Through this research, it is hoped to provide deeper insights into the effectiveness of training programs and the role of technology in improving the quality of the workforce in the company. And also provide a positive contribution to the overall balance of the company.

RESEARCH METHODS

Types and Design of Research

This research employs quantitative methods, which involve data collection in the form of numbers and statistical analysis. The purpose of this research is to utilize the collected data and balance the hypotheses related to the observed events or phenomena. Therefore, hypothesis testing requires an explanation of the relationship between one variable and another (Sugiyono, 2019). In line with this research, the objective is to conduct hypothesis testing to determine the impact of artificial intelligence and work training on the performance of human resources at PT Satria Bahana Sarana (SBS).

Population and Distribution of Sample

Population is a collection of elements that are generally characterized, formed based on objects or subjects with certain characteristics determined by the researcher. The purpose of determining this population is to conduct a study, so that ultimately a relevant conclusion can be obtained. (Sugiyono, 2013). At PT Satria Bahana Sarana, there are a total of 866 employees. In the implementation of

their work, there are two locations: the office and the field. The number of employees working in the office is around 280, and the rest work in the field. The data collection technique used Non-Probability Sampling with the emphasis on Purposive Sampling, which is the sampling method employed in this research. This technique can be explained as the process of selecting samples based on certain criteria or considerations that have been established (Indriantoro & Supomo, 2014).

Sugiyono (2017) defines a sample as a subset that reflects the quantity and characteristics of a given population. Similarly, Arikunto (2019) states that "a sample is a portion or representative of the population being studied." This research focuses on examining the utilization of artificial intelligence among office employees, aiming to assess its impact on human resource performance and its contribution to achieving the company's objectives.

Population and Sampling Techniques

The population in this study consists of 280 employees at PT SBS who are distributed to work both in the office. Thus, it can be drawn up to the following conclusion using the Slovin formula as follows:

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{280}{1 + 280 \cdot (0.05)^2}$$

$$n = \frac{280}{1 + 280 \cdot 0.0025}$$

$$n = \frac{280}{1 + 0.7}$$

$$n = \frac{280}{1.7}$$

$$n \approx 164.7$$

So, the sample size calculated using the Slovin's formula is 164.5, which is rounded to 165.

Keiteirangan:

n = sample size/number of respondents

N = population size

e = percentage of the looseness of the accuracy of the selection that is still can be tolerated

Research paradigm

In Quantitative Research, which is based on the assumption that a phenomenon is causal (cause and effect), the research is conducted by focusing on only a few variables. The pattern of the relationship between the variables to be studied will later be referred to as the research paradigm (Sugiyono, 2018). The following is the research paradigm depicted in Figure 1 below:
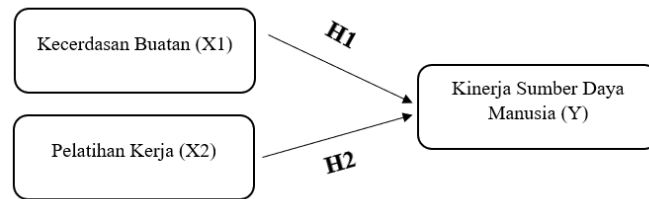
Figure 3. Research Paradigm

Hypothesis Peineilitian

The research hypothesis is a temporary answer to the problem formulation, with existing theories serving as the basis for the provided answer (Sugiyono, 2014). Therefore, the following hypothesis is formulated in the table:

Table 1. Hypothesis

H1	The artificial intelligence variable has a significant and positive impact on the human resource performance variable.
H2	The work training variable has a significant and positive effect on the human resource performance variable.
H3	The artificial intelligence variable does not have a significant and positive effect on the human resource performance variable.
H4	The work training variable does not have a significant and positive effect on the human resource performance variable.

This research was conducted on employees at PT Satria Bahana Sarana (SBS). This research uses artificial intelligence variables (X1), work training (X2) as independent variables, and human resource performance (Y) as the dependent variable.

The data collection was conducted using a physical questionnaire distributed to respondents as part of the information gathering process for this research. The measurement of the level is conducted using an interval scale, and the responses are measured using a Likert scale because the evaluation uses weight and length.

RESULTS AND DISCUSSION

Respondent Profile

As many as 165 respondents were asked to fill out the provided questionnaire, and the results of the questionnaire filling can be seen in the following table:
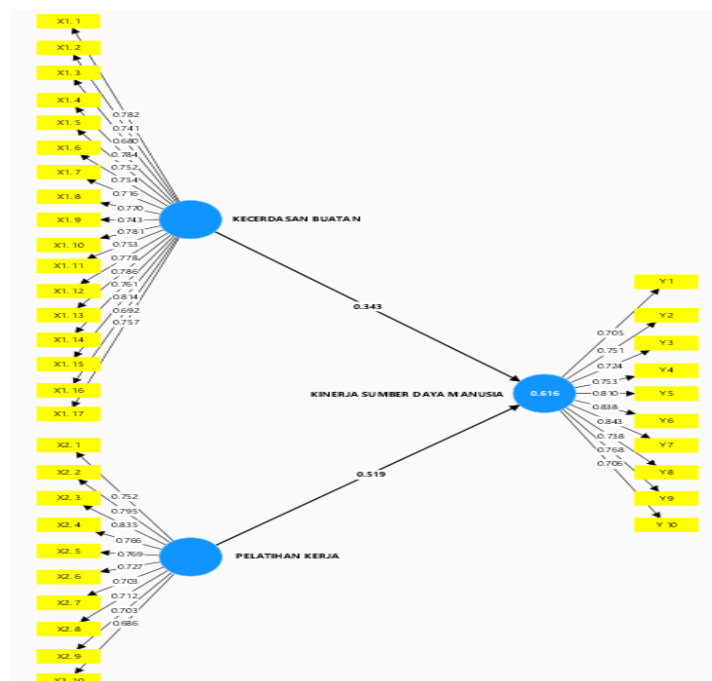
Table 2. Respondent Profile

No	Explanation	Number of Respondents	Percentage
1.	**Gender**		
	Man	138	83,6%
	Women	27	16,4%

	Amount	175	100%
2.	**Age**		
	20-25 Years	2	1,2 %
	26-30 Years	45	27,3 %
	31-35 Years	35	21,2 %
	36-40 Years	35	21,2 %
	41-45 Years	24	14,5%
	46-50 Years	20	12,1 %
	51-55 Years	4	2,4 %
	Amount	175	100%
3.	**Last Education**		
	High School/Equivalent	80	48,5%
	D3	28	17%
	S1	55	33,3%
	S2	2	1,2%
	Amount	175	100%
4.	**Long Working Hours**		
	1-5 Years	31	18,8%
	6-10 Years	134	81,2%
	Amount	175	100%

Source: Processed data (2025)
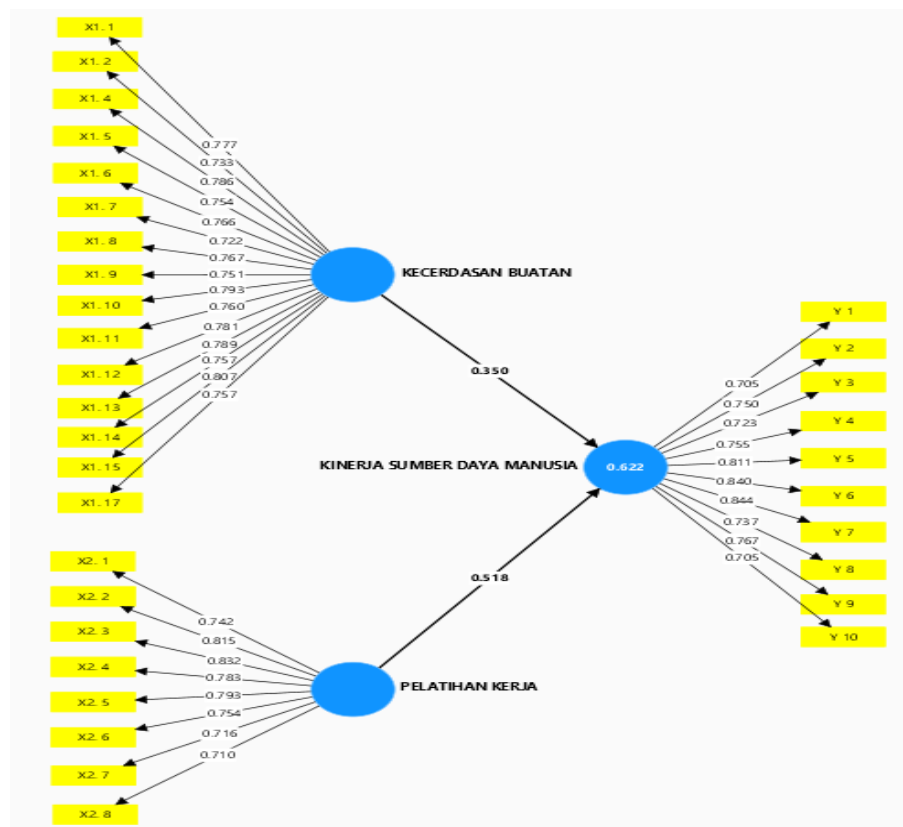
Results and Evaluation of the Outeir Model Test

Source: Processed data (2025)
Figure 4. Outer Model Results

Based on Figure 4, it can be seen that the item variable X1. It is seen that the items of the variable with codes X1.3, X1.16, and X2.10 are invalid because they

have a factor loading value below 0.7, which is the minimum requirement for validity testing (Hair, 2010). Therefore, the items with codes X1.3, X1.16, and X2.10 were removed and retested. After re-testing, it was observed that all variable items could not yet be considered fully valid because there was one item with code X2.9 that had a value of 0.666. Based on the image 4 above, an evaluation is needed for retesting by removing items with code X2.9. After conducting the second evaluation for retesting, it was observed that all variable items were valid, but 4 instruments were excluded. However, all the valid questionnaire items represent all dimensions of each variable, as can be seen in the following Figure 5.

Source: Processed data (2025)
Figure 5. Evaluation 2 of the Outlier Model Results

Table 3. AVE Value

Variabel	AVE	Explanation
Artificial Intelligence	0.588	Valid
Work Training	0.586	Valid
Human Resource Performance	0.592	Valid

Source: Processed data (2025)

In Table 3, it can be seen that the Average Variance Extracted (AVE) values exceed 0.5, indicating that the square root of the AVE for each variable is higher

than the correlation values between the variables. This indicates that the instruments in this study are effective in measuring the intended variables and do not measure other variables, thus it can be said that the instruments for these variables are valid (Hair, 2010).

Table 4. Forneill-Larckell Test Results

	Artificial Intelligence	Work Training	Human Resource Performance
Artificial Intelligence	0.767		
Work Training	0.680	0.765	
Human Resource Performance	0.636	0.741	0.769

Source: Processed data (2025)

In Table 4, it shows that the square root of the AVE values for each variable is greater than the correlation values between the variables, indicating that the instruments in this research model are proven to measure the targeted variables and not measure other variables.

Table 5. Reliability Test Results

Variabel	Composite Reliability	Explanation
Artificial Intelligence	0.955	Reliabel
Work Training	0.934	Reliabel
Human Resource Performance	0.920	Reliabel

Source: Processed data (2025)

Composite reliability aims to measure the true value of the reliability of a construct and is better at estimating the internal consistency of a construct. The results of the composite reliability analysis can be seen in Table 5.

Based on the results of the reliability test shown in Table 5, it can be seen that the variables Artificial Intelligence (X1), Work Training (X2), and Human Resource Performance (Y) are reliable because they have composite reliability values above 0.7 (Hair et al., 2014).

Table 6. VIF Value Results

	Artificial Intelligence	Work Training	Human Resource Performance
Artificial Intelligence		1.679	
Work Training			
Human Resource Performance		1.679	

Source: Processed data (2025)

Based on the analysis results using the Variance Inflation Factor (VIF) in Figure 6, it is shown that the VIF values for the Human Resource Performance and Job Training variables against their respective dependent variables are 1.679. According to (Shmueli et al., 2019), the VIF value is used to identify the presence

of multicollinearity issues, in a regression model VIF < 3.3 indicates that there are no serious multicollinearity problems. Because the VIF value in this analysis is around 1.679, it can be concluded that there is no significant multicollinearity problem in the tested model.

Inner Model Test

Table 7. R Square Value

	R-Square	R-Square adjusted
Human Resource Performance	0.622	0.617

Source: Processed data (2025)

Based on the R-squared (R^2) analysis results in this model, which can be seen in Table 7, an R^2 value of 0.622 was obtained for the Human Resource Performance variable. In addition, the adjusted R-squared value obtained is 0.617.

According to (Hair, 2019), the R-square value indicates how much the independent variables in the model can explain the dependent variable. Interpretation of the R^2 value. $R^2 \geq 0.75$ = Strong, $0.50 \leq R^2 < 0.75$ = Moderate, $0.25 \leq R^2 < 0.50$ = Weak. Thus, an R^2 value of 0.622 indicates that the independent variables in this model can explain 62.2% of the variability in Human Resource Performance, and it can also be interpreted that simultaneously, the influence of artificial intelligence and job training variables on human resource performance is 62.2%, while the remaining 37.8% is influenced by other factors outside the model. Because this value falls into the moderate category, it can be concluded that the model has a fairly good predictive ability

Meanwhile, the adjusted R-squared value of 0.617 indicates the fit of the model to the number of independent variables. This value is usually more reliable than R^2 because it accounts for the complexity of the model, but it still indicates that the model has a relatively stable level of explanation.

Table 8. SRMR Value

	Saturated Model	Estimated Model
SRMR	0.072	0.072

Source: Processed data (2025)

Based on the analysis of Model Fit using the Standardized Root Mean Square Residual (SRMR) shown in Table 8, an SRMR value of 0.072 was obtained for the tested model.

According to Hair (2019), SRMR is one of the indicators used to assess the goodness of fit of the model in PLS-SEM analysis. A smaller SRMR value indicates that the difference between the observed covariance matrix and the one predicted by the model is smaller, which means the model has a better fit. Hair et al. provide the following interpretation guidelines: SRMR ≤ 0.08 = The model has a good fit, SRMR > 0.08 = The model has a poor fit.

However, because the SRMR value in this model is 0.072, which is below the threshold of 0.08, it can be concluded that the model has a good fit. This means that the difference between the actual data and the predicted model is quite small, so the model used can be relied upon to represent the relationship between variables.

Hypothesis Testing

The hypothesis test in this study was conducted by examining the significance value indicated by the T-Statistics value and the P-Value, while the magnitude of the influence between variables is shown through the value in the Original Sample column. Here are the results of the hypothesis testing in this study, which can be found in Table 6. Based on the hypothesis testing results, it can be seen that all hypotheses in this study are accepted because the p-values are below 0.05.

Table 8. Hypothesis Testing Results

Hypothesis	Influence Path	T Statistics	Original Sample	P Value	Explanation
H1	Artificial Intelligence -> Human Resource Performance	4.572	0.350	0.000	Accepted
H2	Work Training -> Human Resource Performance	7.470	0.518	0.000	Accepted

Source: Processed data (2025)

Based on the hypothesis test results that can be seen in table 8, it means that: the relationship between Artificial Intelligence and Human Resource Performance. Path coefficient (Original Sample O): 0.350, T-statistic: 4.527, P-value: 0.000. Because the T-statistic value > 1.96 and P-value < 0.05, the relationship between Artificial Intelligence and Human Resource Performance is significant. This indicates that the increase in the application of artificial intelligence contributes positively to the improvement of human resource performance.

Meanwhile, the relationship between Work Training and Human Resource Performance Path coefficient (Original Sample): 0.518, T-statistic: 7.470, P-value: 0.000. Similar to the previous relationship, because the T-statistic value > 1.96 and P-value < 0.05, the relationship between Job Training and Human Resource Performance is significant. In other words, the more effective the job training program provided, the more the performance of human resources will improve.

According to (Hair Jr et al., 2021), hypothesis testing in PLS-SEM uses T-statistic and P-value, with the following criteria:

T-statistic > 1.96 for a 5% significance level (α = 0.05), P-value < 0.05 indicates a significant relationship. From these results, it can be concluded that both Artificial Intelligence and Job Training have a partial influence on Human Resource Performance, with Job Training having a greater impact (0.518) compared to Artificial Intelligence (0.350).

The Influence of Artificial Intelligence on Human Resource Performance

According to this research, artificial intelligence has a very positive impact on improving human resource performance at PT Satria Bahana Sarana. It can be seen from the hypothesis results that the Original sample value is 0.350, the T Statistic is 4.572, and the P Value is 0.000. This significance value indicates that the implementation of artificial intelligence in the company can improve employee performance through work efficiency, more accurate decision-making, and the automation of repetitive tasks. With the presence of artificial intelligence technology, employees can focus more on tasks that require creativity and analytical skills, thereby increasing work productivity.

This is in line with the research (Parkes & Wellman, 2015, cited in Olan et al., 2022) indicate that performance is increasingly shaped by innovations in products and services, which rely on cross-departmental collaboration, teamwork, and advancements in knowledge sharing to drive organizational growth. Additionally, many organizations are integrating AI into their business processes and innovation strategies to enhance competitiveness. Previous research on AI's impact on human performance suggests that AI plays a crucial role in digital transformation and productivity across various industries. It not only enhances operational efficiency and decision-making but also improves the employee experience through automation and rapid, accurate data analysis (Sakinah, 2024). Moreover, Manunggal (2022) states that the more precise, accurate, and comprehensive AI implementation is, the better employees perform their tasks. This is because AI has revolutionized work processes, making them faster, more efficient, precise, and innovative. Consequently, these technological advancements contribute to improved work quality and productivity (Prasetio, 2024). Further supporting this, research has shown that AI enhances how companies generate recommendations based on data, predict employee needs, and improve efficiency and accuracy in human resource management (Pratama et al., 2023). However, a key challenge remains—AI has yet to fully address employees' needs for security and social interaction, which continue to influence human resource performance (Susilo et al., 2022).

Another finding from previous research is that artificial intelligence is an advanced technology that continues to evolve, but it cannot fully replace the role of humans in the industry. Therefore, in order for human resources to remain competitive amidst the advancement of AI, competency development is necessary, especially in enhancing soft skills. In addition, digital transformation has become very important in this era to adapt and transition from conventional systems to fully digital environments (Devianto & Dwiasnati, 2020). This is reinforced in the research (Murugesan et al., 2023) which states that the application of AI in HR management brings many benefits to companies and employees, but also poses data security risks and legal issues. The more employee data is collected, the greater the threat to network security. Therefore, before adopting AI, organizations must ensure the protection of employee data. In addition, there needs to be an information-based security system to reduce the risk of cyber attacks. And

according to (Huang et al., 2023), the success of tailored human resource management depends on the organization's ability to collect relevant data in a timely manner and utilize HR analysis and artificial intelligence to improve performance. And this is also reinforced by research (Purwaamijaya, 2022) which shows that AI influences HCM.

Findings from previous studies indicate that artificial intelligence has a significant impact on human performance, which aligns with the Theory of Technology and Innovation (Rogers, 1962). This theory suggests that the adoption of new technologies, including AI, by individuals or organizations plays a crucial role in understanding how human resources accept and utilize AI in their work. Furthermore, the Task-Technology Fit (TTF) theory by Goodhue & Thompson (1995) states that technology delivers optimal benefits and enhances individual or organizational performance when it aligns with the tasks being carried out. In the context of AI, this theory underscores that its implementation in the workplace will be effective only if it truly supports the specific needs and requirements of human resource tasks.

The influence of work training on human resource performance

According to this research, work training has a very positive impact on improving human resource performance at PT Satria Bahana Sarana. It can be seen from the hypothesis results that the Original sample value is 0.518, the T Statistic is 7.470, and the P Value is 0.000. These results affirm that the better the quality of training provided, the more significant the improvement in employees' skills and competencies in performing their tasks. Effective job training not only enhances technical understanding but also strengthens the ability to adapt to technological changes and industry dynamics.

This is in line with the research (Putra & Adriansyah, 2022) shows that job training has a positive effect on employee performance. This means that the better the work training provided to employees, the better their performance will be, and conversely, the worse the work training provided, the worse their performance will be. Additionally, according to (Agustin & Safaria, 2021), job training has a significant impact on employee performance by providing materials that are in line with their needs and employing effective training methods for evaluation. The results of this research are also supported by the study (Tarigan et al., 2021) which states that work training impacts employee performance, along with (Fitri et al., 2023) which proves that work training provides a positive and significant impact on human resource performance. And these results are also in line with the research (Suryanti, 2021) that effective work training can improve employee performance.

Another finding from previous research is that the Company should conduct continuous job training for all employees, both new hires and long-term employees. Training for new employees aims to help them adapt to their tasks and work environment, while for long-term employees, training is necessary to maintain optimal performance quality. To be more effective, the implementation of training must be tailored to the needs of employees and scheduled at the right time (Putri &

Astuti, 2022). This is in line with research (Suciati & Deswarta, 2024) which states that job training for employees plays a crucial role in enhancing digital skills, deepening understanding of the business world, and meeting the need for continuous learning. Most importantly, this training opens up career opportunities and encourages innovation in their work environment. However, there is a differing opinion from the research (Sularmi & Stifanny, 2021) which states that the ineffectiveness of job training is often caused by various factors, such as the limited time and opportunities that companies have to train their employees. Additionally, companies tend to focus more on achieving sales targets and increasing profits, so the training aspect receives less attention. Changes in the work environment, business strategies, and the ever-evolving job demands also contribute to the minimal implementation of employee training.

The results of previous research regarding the impact of job training on human resource performance have a significant influence, supported by the Human Capital Theory (Becker, 1964), which states that human resources (HR) are a very valuable asset for an organization. Investment in education, training, and skill enhancement will contribute to the improvement of productivity and performance. Moreover, according to the Theory of Behavioral Learning (Skinner, 1950) in the context of job training, the presence of positive reinforcement, such as rewards, praise, or incentives, can enhance employees' motivation to learn and acquire new skills during the training. When employees feel that their efforts in understanding new technologies, such as artificial intelligence (AI), are recognized and rewarded, they are more likely to adopt these technologies effectively in their work. Conversely, if the training does not provide clear feedback or employees feel undervalued, it can reduce their motivation.

As a reinforcement of previous theories, the Resource-Based View (RBV) theory, balanced by Jay Barney (1991), states that a company's competitive advantage comes from internal resources that possess high value, rarity, are difficult to imitate, and cannot be substituted. One of the important resources that can provide a competitive advantage is human resources (HR) that are trained and possess high technological skills, including the use of artificial intelligence (AI). Companies that invest in training to enhance employees' competencies in new technologies will have a workforce that is more innovative, productive, and capable of adapting to changes in the industry. When human resources possess unique skills that are difficult for competitors to imitate, the company can achieve sustainable competitive advantage.

CONCLUSION

The findings of this research lead to the following conclusions: The artificial intelligence variable significantly and positively influences human resource performance at PT Satria Bahana Sarana (SBS), confirming the acceptance of hypothesis 1. Similarly, the work training variable also has a significant and positive effect on human resource performance, supporting the acceptance of hypothesis 2. On the other hand, hypothesis 3, which suggests that artificial intelligence does not have a significant and positive effect on human resource performance, is rejected. Likewise, hypothesis 4, which states that work training

does not significantly and positively impact human resource performance, is also rejected. The combined influence of artificial intelligence and work training on human resource performance yields an impact value of 0.622, meaning that 62.2% of the variation in HR performance can be explained by these independent variables, while the remaining 37.8% is attributed to other factors beyond the model.

This research has limitations such as the research object only focusing on employees who work in the office with the aim of evaluating the impact of this technology on human resource performance and how this can contribute to the achievement of the company's goals. Based on the results of the research that have been analyzed, there are several things that can be suggested and input that may help decision-makers in the company, especially at PT Satria Bahana Sarana (SBS).

Here are some suggestions that can be given: The company should be able to enhance the use of artificial intelligence with the aim of improving the performance of human resources within the company and continuously conduct work training periodically at certain intervals. Further research can be conducted on other employees and not just focused on those working in the office, so that comparisons can be made if there are differences between each employee that may be caused by variations in the organization's work culture. Additionally, further research can include several other supporting variables.

REFERENSI

Agustin, S. M., & Safaria, S. (2021). Pengaruh pelatihan Kerja, Pengembangan Sumber Daya Manusia Dan Budaya Organisasi Dalam Meningkatkan Kinerja Karyawan Pada PT Wijaya Karya (Persero) Tbk. *Prosiding Seminar Nasional*, *1*, 230–255.

Akbar, M., Suhrah, S., Wahid, A., & Afnir, N. (2022). Islamic Boarding School as a Role Model for Character Education. *KnE Social Sciences*, 623–632.

Arikunto, S. (2019). *Prosedur Penelitian Suatu Pendekatan Praktek*. Rineka Cipta.

Devianto, Y., & Dwiasnati, S. (2020). Kerangka kerja sistem kecerdasan buatan dalam meningkatkan kompetensi sumber daya manusia Indonesia. *InComTech: Jurnal Telekomunikasi Dan Komputer*, *10*(1), 19–24.

Fitri, M. A., Herwan, M. D. K., & Putri, I. D. (2023). Pengaruh pelatihan kerja dan kompensasi terhadap kinerja pegawai Dinas Pemadam Kebakaran dan Penyelamatan Kota Bengkulu. *Ekombis Review: Jurnal Ilmiah Ekonomi Dan Bisnis*, *11*(1), 329–342.

Hair, J. F., M. Hult, G. T., M. Ringle, C., & Sarstedt, M. (2014). A Primer on Partial Least Squares Structural Equation Modeling. In *Sage* (Vol. 46, Issues 1–2). https://doi.org/10.1016/j.lrp.2013.01.002

Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook*. Springer Nature.

Huang, X., Yang, F., Zheng, J., Feng, C., & Zhang, L. (2023). Personalized human resource management via HR analytics and artificial intelligence: Theory and implications. *Asia Pacific Management Review*, *28*(4), 598–610.

Indriantoro, N., & Supomo, B. (2014). Metodologi Pneleitian Bisnis Untuk

Akuntansi dan Manajemen Edisi Pertama Cetakan Keenam. *BPFE. Yogyakarta*.

Lubis, A. S. (2023). *Monografi Kompetensi Sumber Daya Manusia 5.0 Berbasis Spiritualitas dalam Meningkatkan Kinerja Karyawan*. umsu press.

Manunggal, N., Santoso, I. T., & Wicaksana, S. (2022). Pengaruh Sistem Informasi Sumber Daya Manusia (HRIS) dan Kecerdasan Buatan Terhadap Kinerja Industri Pertahanan. *Journal of Industrial Engineering & Management Research*, *3*(6), 111–120.

Mariska, B. P., Prasetyo, Y., & Fadhilah, F. (2021). Perception and prospective analysis of artificial intelligence on human capital and its impact on human resources in the industrial revolution era 4.0. *Enrichment: Journal of Management*, *12*(1), 146–151.

Murugesan, U., Subramanian, P., Srivastava, S., & Dwivedi, A. (2023). A study of artificial intelligence impacts on human resource digitalization in industry 4.0. *Decision Analytics Journal*, *7*, 100249.

Olan, F., Arakpogun, E. O., Suklan, J., Nakpodia, F., Damij, N., & Jayawickrama, U. (2022). Artificial intelligence and knowledge sharing: Contributing factors to organizational performance. *Journal of Business Research*, *145*, 605–615.

Prasetio, T. (2024). Pengaruh Artificial Intelligence dan Literasi Digital Terhadap Kinerja Karyawan di Bidang Ekonomi. *Jurnal Ecodemica: Jurnal Ekonomi Manajemen Dan Bisnis*, *8*(2), 66–73.

Pratama, A. S., Sari, S. M., Hj, M. F., Badwi, M., & Anshori, M. I. (2023). Pengaruh Artificial Intelligence, Big data dan otomatisasi terhadap kinerja SDM di Era digital. *Jurnal Publikasi Ilmu Manajemen*, *2*(4), 108–123.

Purwaamijaya, B. M., & Prasetyo, Y. (2022). The effect of artificial Intelligence (AI) on human capital management in Indonesia. *Jurnal Manajemen Dan Kewirausahaan*, *10*(2), 168–174.

Purwaamijaya, B. M., SH, M. M., Guntara, R. G., Kom, S., Kom, M., & Junaini, S. N. (2024). *Menggali Potensi Kecerdasan Buatan Dalam Pengelolaan Sumber Daya Manusia*. Deepublish.

Putra, D. A., & Adriansyah, A. (2022). Pengaruh Pelatihan Kerja, Motivasi Kerja, dan Employee Engagement Terhadap Kinerja Tenaga Ahli Fraksi X DPR RI. *Jurnal Ekonomi, Manajemen Dan Perbankan (Journal of Economics, Management and Banking)*, *8*(3), 124. https://doi.org/10.35384/jemp.v8i3.344

Putri, R. W., & Astuti, P. (2022). Pengaruh Pelatihan Dan Motivasi Kerja Terhadap Kinerja Karyawan. *Jurnal Fokus Manajemen Bisnis*, *12*(1), 1–15.

Sakinah, R., & Kuswinarno, M. (2024). Dampak kecerdasan buatan terhadap digitalisasi dan kinerja sumber daya manusia: Peluang dan tantangannya. *Jurnal Media Akademik (JMA)*, *2*(9).

Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J. H., Ting, H., Vaithilingam, S., & Ringle, C. M. (2019). Predictive model assessment in PLS-SEM: guidelines for using PLSpredict. *European Journal of Marketing*, *53*(11), 2322–2347. https://doi.org/10.1108/EJM-02-2019-0189

Suciati, T. A., & Deswarta, D. (2024). Pengaruh Pelatihan Kerja, Tingkat Pendidikan, dan Pengalaman Kerja terhadap Kinerja Karyawan Generasi Z di Selat Panjang. *Al Qalam: Jurnal Ilmiah Keagamaan Dan Kemasyarakatan*,

18(1), 58–79.

Sugiyono. (2017). *METODE PENELITIAN KUANTITATIF, KUALITATIF, DAN R&D*. ALFABETA.

Sugiyono. (2018). *Metode Penelitian Kuantitatif*. Alfabeta.

Sugiyono. (2019). *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D*. CV Alfabeta.

Sugiyono, D. (2013). *Metode penelitian pendidikan pendekatan kuantitatif, kualitatif dan R&D*.

Sularmi, L., & Stifanny, C. (2021). Increasing the Role of Work Discipline and Job Trainings on Employee Performance. *Mbia*, *20*(1), 79–90.

Suryanti, R. (2021). Pengaruh Pelatihan Kerja, Motivasi Kerja, Dan Displin Kerja Terhadap Kinerja Karyawan. *Jurnal Dimensi*, *10*(1), 14–30.

Susilo, B. W., Wardi, A., & Prasastono, S. H. (2022). Pengaruh Kecerdasan Buatan (AI) Dan Big Data Terhadap Kinerja Karyawan. *Profit: Jurnal Manajemen, Bisnis Dan Akuntansi*, *1*(3), 113–121.

Tarigan, N. L. L., Radito, T. A., & Purnamawati, A. (2021). Pengaruh pelatihan kerja dan kompetensi terhadap kinerja karyawan. *Jurnal Optimal*, *18*(2), 94–104.