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The Effect of Human Resource Information Systems (HRIS) and Artificial Intelligence on Defense Industry Performance

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Abstract

The purpose of this research is to analyze the effect of the Human Resource Information System (HRIS) on the performance of the defence industry and the influence of artificial intelligence on the performance of the defence industry during the disruption era. This study uses a quantitative research approach. The samples processed were 160 defence industry employees. The primary data collection technique is done by distributing questionnaires to respondents. The questionnaire uses a Likert scale as a measure of data. Data analysis was carried out through structural equation modelling with SmartPLS 3.0 software. The dependent variable is the employee performance variable, and the independent variable is the HRIS and job satisfaction variables. The results of data analysis in this study and the significance value obtained prove that HRIS is significantly related to employee performance. The more accurate, precise and complete the HRIS application, the higher the employee's performance in completing their work assignments and improving the process of the defence industry in making human resource decisions through systematic HRIS procedures, which include data collection, data storage, data maintenance, data retrieval, and data validation. Its strategic plan influences the progress of the defence industry in utilizing human resources quantitatively, and understanding environmental conditions can provide an overview of the future of the defence industry. Artificial Intelligence (AI) is significantly related to employee performance.

Keywords: Digital Age, Defense Industry Performance, Artificial Intelligence, Disruption Era, Human Resource Information System (HRIS)

1. Introduction

Artificial intelligence, with various increasingly sophisticated and creative innovations, significantly impacts every line of human life. Artificial intelligence can answer today's needs, but on the other hand, artificial intelligence is also a threat to humans [1]. Resources because

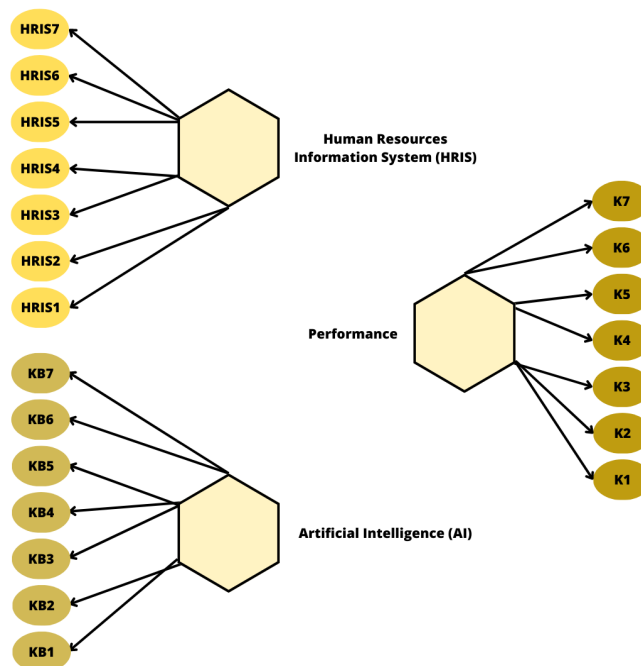


humans usually do many jobs, but with various sophistication in the field of artificial intelligence, human work is slowly being replaced [2]. Marketers use AI to identify and predict consumer behaviour, and through that information, marketers can apply stronger keywords and personalize consumer interactions to build each consumer a unique experience [3]. The rapid development of information and communication technology offers solutions for effective and efficient organizational management. The application of information technology in organizations, both the defence industry and universities, is an important aspect of competition in the digital era [4].

Artificial intelligence is artificial intelligence that behaves like humans. In the sense that artificial intelligence can imitate human intelligence in completing various tasks or jobs, even artificial intelligence can replace humans in certain jobs. The development of artificial intelligence can provide very innovative breakthroughs following current conditions [5]. Google search is the most widely used artificial intelligence today, including virtual assistants that can provide two-way communication and deep face on smartphones and social media. Facebook is used to identify facial images uploaded on social media. Intelligence in a car without a steering wheel. Artificial intelligence is also used in various sectors of life, including business, economics and health, which can answer current needs. Artificial intelligence is used to detect the Corona Covid 19 Virus, measure people's body temperatures, detect crowds and safe distances, detect masks and coughing, and people tracking and tracing [6].

2. Research Method

This study uses a quantitative research approach. The samples processed were 160 defence industry employees. The primary data collection technique is done by distributing questionnaires to respondents. The questionnaire uses a Likert scale as a measure of data. Data analysis was carried out through structural equation modelling with SmartPLS 3.0 software. The dependent variable is the employee performance variable, and the independent variable is the HRIS variable and the job satisfaction variable. The question indicators used on employee performance variables are quality, quantity, timeliness, effectiveness, independence and commitment. The HRIS variables use the dimensions of input questions in human resource information systems, HRIS databases, and outputs from human resource information systems. Indicators to measure the usefulness of HRIS applications are; delivery of accurate, timely and complete information from each division, complete and concise reports from human resources, accurate and complete data from external parties for human resources, HRIS database, which includes the personnel system database, financial system database, marketing system database; the human resource information system includes the human resources planning sub-system, and the human resource information system includes the compensation sub-system.



Picture 1. Research Model

2.1 Literature Review

2.1.1 Artificial Intelligence (AI)

Artificial Intelligence (AI) is the embodiment of machines that exhibit aspects of human intelligence, are continuously used in services, and are a source of innovation today [7][8]. AI has applications in various business processes in various functional areas and business functions. One of them is marketing which is considered the core of business activities. AI is changing the scope of marketing and will completely change it. Marketing is the main application of AI today, so it is being adopted to create value[9]. In digital and marketing, AI helps businesses deliver value through multiple customer relationship channels while making informed and relevant decisions [10]. AI is changing and becoming essential for integration in business practices, especially in digital marketing, because of the importance of big data and increased computing power. It allows organizations to understand their customers better and effectively target them with personalized digital messages [11]. Marketing is also significantly affected by introducing of new technologies, and this effect will continue to grow in the future. The purpose of this research is to analyze the effect of the Human Resource Information System (HRIS) on the performance of the defence industry and the influence of artificial intelligence on the performance of the defence industry during the disruption era [12].

2.1.2 Human Resources Information System (HRIS)

HRMIS or HRIS is important for strategic decision-making and supports the planning and administration of day-to-day operations. HRMIS or HRIS is intended for human resource practitioners and systems managers and addresses significant risks and controls relevant to effectively managing the HRMI or HRIS function. There is an emphasis on implementing controls to maintain the privacy and integrity of information. Human resource management is a process that deals with problems within the scope of employees, clerks, workers, managers and other workers to support organizational activities to achieve predetermined goals [13]. The human resource information system is a form of a meeting between human resource management and information technology[14]. A human resource information system is an integrated component for collecting, processing, storing, and disseminating information to support decision-making, coordination, control, analysis, and visualization of an organization's human resource management activities [15].

2.1.3 Performance

Work is the willingness of a person or group to carry out an activity and perfect it by their responsibilities with the expected results. Suppose it is associated with performance as a noun where one of the inputs results from something done (thing done). In that case, performance results from work that a person or group can achieve in an organization. By their respective authorities and responsibilities to achieve organizational goals legally, does not violate the law and does not conflict with morals or ethics [16].

2.2 Hypotheses

Performance has a positive and significant effect on the success of HRIS because the use of HRIS is very influential in improving the performance of employees in the defence industry. With the HRIS for compiling curriculum vitae, academic level, employee support activities, payroll and applying for leave and overtime, HRIS can increase the productivity of the defence industry's performance. HRIS has a significant influence on performance. Evaluation model of electronic system success, service quality, usage, user satisfaction, and perceived net benefits. From several phenomena, HRIS Success becomes several dimensions that show a separate HRIS success model. The results of this study contradict previous studies.

In digital and marketing, AI helps businesses deliver value through multiple customer relationship channels while making informed and relevant decisions[17]. AI is changing and becoming essential for integration in business practices[18], especially in digital marketing, because of the importance of big data and increased computing power. It allows organizations to understand their customers better and effectively target them with personalized digital messages. Marketing is also significantly affected by the introduction of new technologies, and this effect will continue to grow.

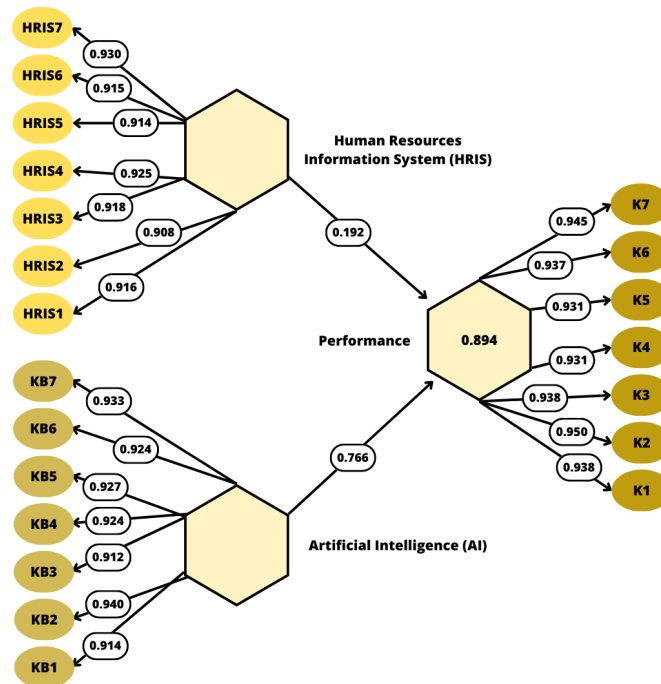
H₁: HRIS has a significant positive effect on performance

H₂: Artificial Intelligence (AI) has a significant positive effect on performance

3. Findings

3.1 Model Validity Test

In this section, before entering the Research implementation section, you can write down the problems that you find during conducting research. and how you can solve the problem.



Picture 2. Test Validity After Selection

Based on Figure 2, all indicators are valid because they have a loading factor greater than 0.70.

Table 1. Test of Reliability

| | Average Extracted Variance (AVE) | Composite Reliability | Alpha Cronbach | rho_A |
|---|----------------------------------|-----------------------|----------------|-------|
| Performance | 0.878 | 0.811 | 0.767 | 0.767 |
| Artificial Intelligence (AI) | 0.767 | 0.910 | 0.818 | 0.978 |
| Human Resources Information System (HRIS) | 0.878 | 0.914 | 0.736 | 0.767 |

Based on the standards set out in table 1, it is known that the AVE value is greater than 0.5 and the Composite Reliability value is greater than 0.7, so all variables meet the reliability requirements.

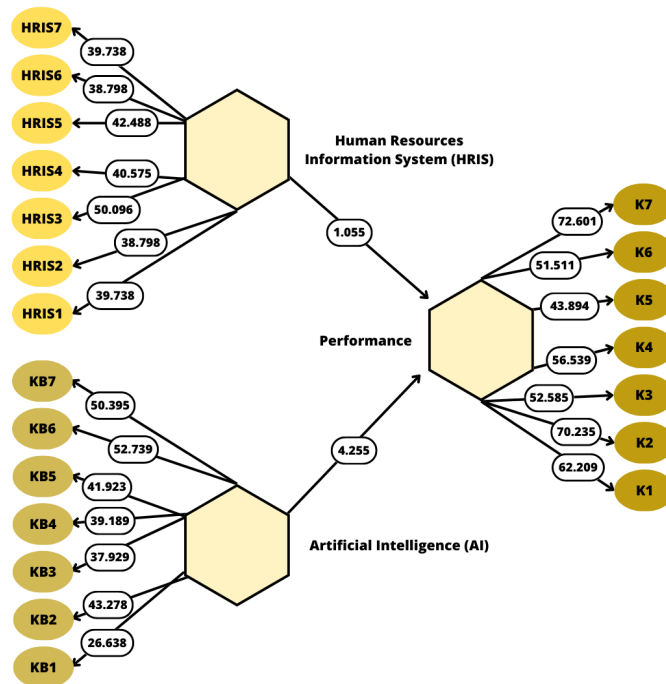
3.2 Evaluation of Structural Model (Inner Model)

R-Square is used to evaluate the structural model for the independent variables/inner model. The following are the results of the inner model test.

Table 2. Test of Reliability

| | R Square Customized | R Square |
|-------------|---------------------|----------|
| Performance | 0.810 | 0.810 |

Based on table 2 the defense industry performance variable can be explained by 81% in this model,



Picture 2. Bootstrap PLS

The following table is presented to clarify the description of the hypothesis test above.

Table 3. Hypothesis testing

| | Standard Deviation (STDEV) | Original Sample (O) | Sample Average (M) | P value | T statistic |
|--------------------|----------------------------|---------------------|--------------------|---------|-------------|
| Performance ≤ AI | 0.343 | 0.344 | 0.566 | 0.003 | 2.014 |
| Performance ≤ HRIS | 0.433 | 0.433 | 0.545 | 0.003 | 3.214 |

H₁: HRIS has a significant positive effect on performance

The results of data analysis in this study and the significance value obtained prove that the first hypothesis (H1) is accepted. This means that HRIS is proven to have a significant relationship with employee performance. The more accurate, precise and complete the HRIS application, the higher the employee's performance in completing their work assignments. The ease of using the HRIS application can reduce employee attendance errors, apply for employee leave and overtime can improve employee performance. They are improving the process of the defence industry in making human resource decisions through systematic HRIS procedures, which include data collection, data storage, data maintenance, data retrieval, and data validation. Its strategic plan influences the progress of the defence industry in utilizing human resources quantitatively, and understanding environmental conditions can provide an overview of the future of the defence industry.

H₂: Artificial Intelligence (AI) has a significant positive effect on performance

The results of data analysis in this study and the significance value obtained prove that the second hypothesis (H2) is accepted. Artificial Intelligence (AI) is proven to have a significant relationship with employee performance. The more accurate, precise and complete

the application of Artificial Intelligence (AI), the higher the performance of employees in completing their work assignments. Artificial Intelligence (AI) is the embodiment of machines that exhibit aspects of human intelligence, are continuously used in services, and are a source of innovation today. AI is a collection of technological components that collect, process and act on data in a way that simulates human intelligence. Like humans, AI can enforce rules, learn over time by acquiring new data and information, and adapt to changes in the AI environment. AI has applications in various business processes in various functional areas and business functions. One of them is marketing which is considered the core of business activities. AI is changing the scope of marketing and will completely change it. Marketing is the main application of AI today, so it is being adopted to create value. AI helps businesses deliver value through multiple customer relationship channels while making informed and relevant decisions. AI is changing and becoming essential for integration in business practices, especially in digital marketing, because of the importance of big data and increased computing power. It allows organizations to understand their customers better and effectively target them with personalized digital messages. Marketing is also significantly affected by introduction of new technologies, and this effect will continue to grow in the future. In business and economy, artificial intelligence is implemented in E-Commerce[19][20] through chatbot features, recommendation engines and smart logistics. With the application of artificial intelligence, it will be easier for e-commerce customers to get products according to their wishes and needs. On the other hand, the e-commerce defence industry can improve services that can increase customer service satisfaction[21].

4. Conclusion

The results of data analysis in this study, and the significance value obtained, prove that HRIS is significantly related to employee performance. The more accurate, precise and complete the HRIS application, the higher the employee's performance in completing their work assignments and improving the process of the defence industry in making human resource decisions through systematic HRIS procedures, which include data collection, data storage, data maintenance, data retrieval, and data validation. Its strategic plans influence the progress of the defence industry in utilizing human resources quantitatively and understanding environmental conditions. Provides an overview of the future of the defence industry. Artificial Intelligence (AI) is significantly related to employee performance. The more accurate, precise and complete the application of Artificial Intelligence (AI), the higher the performance of employees in completing their work assignments. Artificial Intelligence (AI) is the embodiment of machines that exhibit aspects of human intelligence, are continuously used in services, and are a source of innovation today. AI is a collection of technological components that collect, process and act on data in a way that simulates human intelligence. Like humans, AI can enforce rules, learn over time by acquiring new data and information, and adapt to changes in the AI environment. AI has applications in various business processes in various functional areas and business functions. One of them is marketing which is considered the core of business activities. AI is changing the scope of marketing and will completely change it. Marketing is the main application of AI today, so it is being adopted to create value. AI helps businesses deliver value through multiple customer relationship channels while making informed and relevant decisions. AI is changing and becoming essential for integration in business practices, especially in digital marketing, because of the importance of big data and increased computing power. It allows organizations to understand their customers better and effectively target them with personalized digital messages. Marketing is also significantly affected by introduction of new technologies, and this effect will continue to grow in the future.

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