

The Mediating Role of Job Satisfaction in the Relationship between Human Resource Information Systems and Employee Performance at The Project Deployment Center Division of PT Len Industri (Persero)

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ABSTRACT

Purpose – This study aimed to determine the mediating role of job satisfaction in the relationship between human resource information systems and employee performance in the Project Deployment Center Division of PT Len Industri (Persero).

Design/methods/approach – This research uses a quantitative method with a descriptive approach. Data were collected through questionnaires distributed to 75 employees in the PDC division. The sampling technique used a simple random sampling technique and the data was analyzed using the Structural Equation Modeling-Partial Least Squares (SEM-PLS) technique with SmartPLS software.

Findings – The findings indicate that HRIS has a positive impact on job satisfaction, which in turn improves employee performance. This study shows that job satisfaction is a significant mediator in the relationship between HRIS and employee performance, suggesting that HRIS implementation can lead to better performance outcomes through improved job satisfaction.

Research implications/limitations – The research implications suggest that organizations should invest in HRIS to improve job satisfaction and employee performance. However, the study is limited to a single division within a specific company, which may affect the generalizability of the findings. Future research could expand the scope to include multiple divisions or different organizations to validate the results.

Originality/value – This study contributes to the existing literature by highlighting the importance of job satisfaction as a mediator in the relationship between HRIS and employee performance. It provides valuable insights for organizations seeking to enhance employee performance through technological advancements in human resource management

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Introduction

In an organization, adopting a human resource information system (HRIS) has become a trend in various industries. Due to the increasing tendency of organizations to rely largely on information and communication technology (Bondarouk and Brewster, 2016), most companies have explored the use of HRIS to manage, support, and integrate their human resources to improve human resource performance (Shahreki et al., 2019; Maier et al., 2013). HRIS is considered an important tool to manage human resources more effectively and efficiently. This system can increase operational efficiency, facilitate decision-making, and increase employee job satisfaction (Shahreki et al., 2019; Udekwe et al., 2024). According to Parry & Tyson, 2011; Armstrong, 2014), the use of HRIS can reduce the time and cost required for HR administration processes, as well as improve the accuracy of employee data. However, most existing research focuses on the impact of HRIS in the private sector or high-tech industries, while research exploring the impact of HRIS in the manufacturing industry and public sector is still limited.

PT Len Industri (Persero), a State-Owned Enterprise (SOE) company established in 1965, is one of the major players in the high-tech industry in Indonesia, particularly in the fields of electronics, telecommunications, and defense. The company has a Project Deployment Center (PDC) division that is responsible for managing cost efficiency, project progress, and general project operations. The PDC division is also responsible for recording transactions and preparing project performance reports so that projects run well by company targets. This division has approximately 214 employees.

PT Len Industri realizes that human resources are their greatest asset, so the success of the company depends heavily on the quality of employee performance. Employee performance does not appear by itself, companies must play an active role in managing and improving employee performance (Pallawagau, 2020). According to Robbins (2016), employee performance is the result of work achieved by an employee in carrying out his duties based on applicable criteria. Dessler (2017) states that employee performance is work performance, which is a comparison between the results that can be seen in real terms with the work standards set by the company. According to Mathis and Jackson (2017: 382), employee performance affects how much employees benefit the organization. As a result, performance is defined as the completion of work by individuals or groups and its comparison with work standards or predetermined goals, which are evaluated based on quality and quantity to achieve organizational goals. The performance of an employee is very important in determining the success of the company because achieving goals optimally and ensuring the sustainability of the company in the future depends on good performance. However, in practice, there are still organizational performance constraints that have an impact on the performance of employees of the PDC division of PT Len Industri (Persero).

Based on existing data, there was a decrease in the performance value of the employees of the PDC division of PT Len Industri (Persero) from June 2021 to December 2023. In June 2021, the average performance score was 58.33%, then decreased to 57.95% in December 2021. Then, there was a significant increase with the average performance score peaking at 61.05% in June 2022. However, the decline occurred again, with the performance score decreasing to 59.58% in December 2022, 57.95% in June 2023, and finally reaching its lowest point in December 2023 with a value of 56.37%. This downward trend indicates that there are obstacles to organizational performance that have an impact on the performance of PDC division employees. Employee performance is influenced by several factors, including motivation, discipline, job satisfaction, technology, turnover, retaining employees, recruitment, commitment, employee engagement, loyalty, and retention drivers that can

support employees in achieving high performance (Mathis & Jackson, 2017). To overcome this, PT Len Industri (Persero) has implemented HRIS to help manage and optimize human resources.

This is in line with the Resource Based View (RBV) theory developed by Barney, J. (1991) which states that company resources, including HRIS, can be a source of competitive advantage by increasing the efficiency and effectiveness of human resources which in turn can improve employee performance. HRIS is a system designed to integrate various aspects of human resource management, such as payroll, training, career development, performance management, and others, into one efficient platform, which can provide accurate and timely information to management in making decisions related to human resources (Kavanagh et al., 2015; Buzkan, 2016; Shahreki et al., 2023; Zhou et al., 2022). According to Veithzal Rivai (2009: 1021), HRIS has nine main benefits including assessing the ability of employees to fill vacancies, identifying positions to be promoted, retired, or dismissed, analyzing jobs with high-performance problems, ensuring compliance with age and gender regulations, anticipating recruitment, selection, and training needs, planning turnover and promotions, compiling compensation reports, conducting research related to employee turnover and absenteeism, and assessing training needs to improve individual performance. The application of HRIS systems and software is recognized to help Human Resource Development (HRD) in companies to manage human resources in the company so that their performance is more effective (Fahmi and Sari, 2018). In addition, HRIS plays an important role in improving job satisfaction and employee performance. By providing accurate and timely data, HRIS assists in performance appraisals, identifying training needs, and tracking employee progress, thus directly contributing to increased job satisfaction and employee performance (Shahreki et al., 2023; Zhou et al., 2022).

Job satisfaction contributes to improved performance, so employees who are satisfied with their jobs will be more productive (Affandi, 2016, p. 33; Afifah et al.). This is in line with Herzberg's two-factor motivation theory, which states that job satisfaction is an important motivational factor that improves performance. According to Robbins and Judge (2018), job satisfaction is a positive feeling about one's job that is the result of an evaluation of its characteristics. Job satisfaction is influenced by several factors, including salary, type of work, promotion opportunities, working conditions, relationships with coworkers, and a sense of security at work (Edison et al., 2016). Employees who feel satisfied with these elements tend to show higher commitment, increased productivity, and better performance, indicating that creating a work environment that supports and meets employee needs is key to improving overall organizational performance. Job satisfaction can also be understood as a mental state determined by the extent to which individuals feel their work-related needs are met (Toropova et al., 2020). When people talk about employees' work attitudes, they refer to their job satisfaction, which is a stepping stone to engagement (Kong H et al., 2018). Therefore, organizations need to match job goals with employees' individual goals so that they feel comfortable with their work (Chandani et al., 2018).

Many studies have shown that the implementation of a human resource information system (HRIS) can improve employee performance by reducing errors in administrative processes such as attendance, leave requests, and overtime (Hartini, 2020), and that job satisfaction is also an important factor that can improve employee performance through the provision of appropriate salaries and harmonious working relationships (Citrawati and Khuzaini, 2021), there are still limitations in understanding how he can directly or indirectly affect employee performance through the mediation of job satisfaction. Especially in a specific context such as the Project Deployment Center (PDC) division of PT Len Industri (Persero), previous research has not sufficiently explored the interaction between HRIS implementation,

job satisfaction, and employee performance comprehensively. Therefore, this study seeks to fill the gap by examining more deeply the relationship between HRIS, job satisfaction, and employee performance, as well as the mediating role of job satisfaction in this context. Thus, this study can provide new insights into ways to optimize HRIS to improve employee performance through increased job satisfaction in the manufacturing industry.

Based on the background and phenomena stated above, a research paradigm is developed as follows:

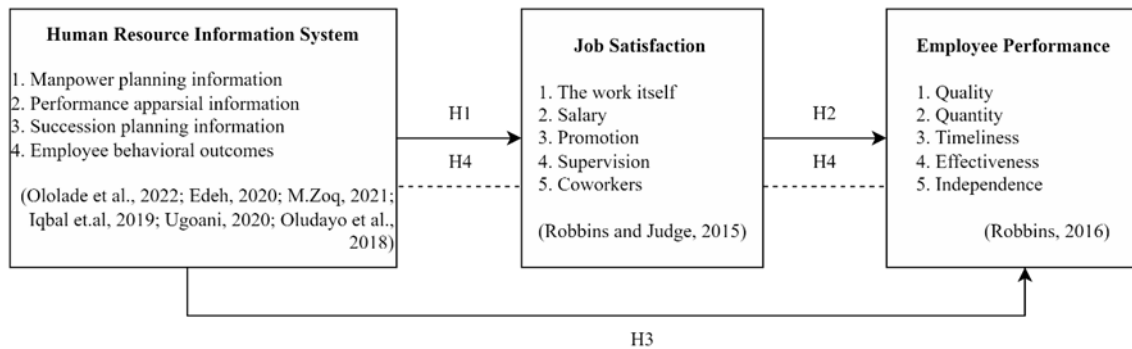


Figure 1. Research Paradigm

Based on the research paradigm, the following hypothesis is proposed:

H1: human resource information system (HRIS) has a positive effect on employee performance.

H2: human resource information system (HRIS) has a positive effect on job satisfaction.

H3: Job satisfaction has a positive effect on employee performance.

H4: human resource information system (HRIS) has a positive effect on employee performance through job satisfaction as an intervening variable.

Methods

Data

This study aims to measure the level of effectiveness of the use of Human Resources Information Systems on employee performance with job satisfaction as an intervening variable. The research analysis unit is the Project Deployment Center division of PT Len Industri (Persero), located at Jl. Soekarno Hatta No.442, Pasirluyu, Kec. Regol, Bandung City, West Java 40254. The sampling technique used simple random sampling and the sample size was determined based on the Slovin formula with a confidence level of 95% so that 75 respondents were selected.

Questionnaire Data

Data collection using a survey with a questionnaire instrument a Likert scale with five levels. In this study, there are human resource information system variables as independent variables which have 4 dimensions, namely: manpower planning information, performance appraisal information, succession planning information, and employee behavioral outcomes (Ololade et al., 2022; Edeh, 2020; M.Zoq, 2021; Iqbal et.al, 2019; Ugoani, 2020; Oludayo et al., 2018). Furthermore, there is employee performance as a dependent variable with the following dimensions: quality, quantity, timeliness, effectiveness, and independence (Robbins, 2016). Job satisfaction variables as intervening variables with the following dimensions: job itself, salary, promotion, supervision, and coworkers (Robbins and Judge, 2015).

Data Analysis Technique

This study uses partial least squares (PLS) to estimate the measurement model and structural model. This technique provides advantages over covariance-based models (structural equation modeling (SEM) models) (Sarstedt, 2019; Shmueli, 2019): (1) greater convergence due to its simplicity; (2) predictive applications; (3) more suitable for larger convergence sample studies due to its simplicity; (4) more suitable for formative construct analysis; (5) more flexible as it allows integration of small samples; and (6) recommended when the number of indicators per latent variable is high. Various studies have used this technique to estimate formative and reflective first- and second-order models (Cepeda-Carrion, 2019; Sarstedt, 2020). The program used to model PLS is SmartPLS. The technique used for significance testing is bootstrapping, which involves creating several samples of the same size as the original sample using surrogate values, to obtain a distribution of standard error values to test the proposed hypotheses.

Table 1. Loading Factor for Each Measurement Variable

Latent Variable	Indicator	Loading Factors	t-Statistic	P Values	Result
Human Resource Information System	HRIS 1	0,775	9,828	0,000	Valid
	HRIS 2	0,770	9,587	0,000	Valid
	HRIS 3	0,752	10,495	0,000	Valid
	HRIS 4	0,860	16,579	0,000	Valid
	HRIS 5	0,745	15,638	0,000	Valid
	HRIS 6	0,791	12,929	0,000	Valid
	HRIS 7	0,744	7,532	0,000	Valid
	HRIS 8	0,720	8,921	0,000	Valid
Job Satisfaction	JB 1	0,785	9,172	0,000	Valid
	JB 2	0,837	14,553	0,000	Valid
	JB 3	0,792	11,069	0,000	Valid
	JB 4	0,823	9,555	0,000	Valid
	JB 5	0,762	7,283	0,000	Valid
	JB 6	0,813	8,015	0,000	Valid
	JB 7	0,807	8,440	0,000	Valid
	JB 8	0,807	9,151	0,000	Valid
	JB 9	0,754	6,027	0,000	Valid
	JB 10	0,759	8,054	0,000	Valid
Employee Performance	EP 1	0,706	4,841	0,000	Valid
	EP 2	0,821	8,411	0,000	Valid
	EP 3	0,754	10,066	0,000	Valid
	EP 4	0,775	8,375	0,000	Valid
	EP 5	0,759	12,713	0,000	Valid
	EP 6	0,774	8,183	0,000	Valid
	EP 7	0,781	6,700	0,000	Valid
	EP 8	0,786	10,102	0,000	Valid
	EP 9	0,781	13,206	0,000	Valid
	EP 10	0,745	10,969	0,000	Valid

Source: Data Processing Results (2024)

To achieve the research objectives, this study used a sampling unit in the form of employees of the PDC division of PT Len Industri (Persero). Table 1 presents the estimated loading factor for each indicator on each latent variable, with all indicator variables having an estimated loading factor of more than 0.5. Each indicator also has a significant effect on each variable based on the t-test (t value > 1.96, significance level = 5%), which indicates good item quality according to Hair (2019).

Table 2. Reliability Test Results

Construct	Cronbach's Alpha	Composite Reliability	Decision
HRIS	0,902	0,921	Reliable
Job Satisfaction	0,935	0,945	Reliable
Employee Performance	0,923	0,935	Reliable

Source: Data Processing Results (2024)

Based on Table 2, the Composite Reliability test for all constructs is above 0.7, and the Cronbach's Alpha test results also show values above 0.7 for all constructs. With results above 0.7, it can be concluded that the constructs have good and consistent reliability (Chin and Dibbern, 2010).

Result

Table 3 illustrates the employee profile of the PDC division of PT Len Industri (Persero). Based on the data, the majority of respondents are male, as many as 73%, while 27% are female. In terms of education, most respondents have a Diploma (39%) and Bachelor (33%) education levels, while the other 28% only have a high school education or equivalent. In terms of age, around 56% of respondents are within the age range of 26 to 30 years, indicating that the division is dominated by a young workforce. This profile provides a clear picture of PDC's employee demographics, which largely consist of relatively young individuals with a fairly high level of education.

Table 3. Respondent Profile

Variable	Frequency	Per cent
Gender		
Male	55	73%
Female	20	27%
Age		
18-25	13	17%
26-30	42	56%
31-40	11	15%
>40	9	12%
Education		
High School	21	28%
Diploma	29	39%
S1/S2	25	33%

Source: Data Processing Results (2024)

Table 4 shows that the model for the job satisfaction variable has a strong level of explanation with a value close to 1. However, the employee performance variable has a moderate level of explanation.

Table 4. R-Square Test Results

Construct	R Square	Adjusted R Square	Decision
Employee Performance	0,866	0,862	moderate
Job Satisfaction	0,73	0,726	strong

Source: Data Processing Results (2024)

Furthermore, the Goodness of FIT (GoF) test to test the fit of the model between the observed value and the expected value in the study.

Table 5. Goodness of Fit Test Result

Variable	AVE Average	R-Square Average
Human Resource Information System (X)	0,594	
Employee Performance (Y)	0,591	0,866
Job Satisfaction (Z)	0,631	0,73
Average	0,605	0,798
GoF		0,694

Source: Data Processing Results (2024)

The GoF test results in Table 5 are obtained from the results of multiplying the average AVE value by the average r square value, which then the results are rooted. With this data, the GoF result on the research model is 0.694. This figure shows that the model is in the high category. It is said to be a high category because it has a range of 0.38-1.00 (Tenenhau, 2004).

Table 6. Result of Hypotheses Testing

Relationship	Original Sample (O)	Standard Deviation (STDEV)	T Statistic (O/STDEV)	P Values	Decision
HRIS -> Employee Performance	0,530	0,104	5,079	0,000	Significance
HRIS -> Job Satisfaction	0,854	0,048	17,659	0,000	Significance
Job Satisfaction -> Employee Performance	0,436	0,126	3,469	0,000	Significance
HRIS -> Job Satisfaction -> Employee Performance	0,372	0,118	3,158	0,001	Significance

Source: Data Processing Results (2024)

Based on the test results in Table 6, it is found that the human resource information system (HRIS) has a positive and significant influence on job satisfaction with a T-statistic value of 19.033 and a P-value of 0.000. This indicates that effective use of HRIS increases employee job satisfaction. Furthermore, job satisfaction is also proven to have a positive and significant effect on employee performance, with a T-statistic value of 4.061 and a P-value of 0.000. This indicates that employees who are satisfied with their jobs tend to have better performance. In addition, HRIS also has a significant direct effect on employee performance, with a T-statistic value of 4,127 and a P-value of 0.000. Not only that, there is also a mediating effect of job satisfaction in the relationship between HRIS and employee performance, with a T-statistic value of 4.104 and a P-value of 0.000. This suggests that part of the impact of HRIS on

employee performance is channeled through increased job satisfaction. Thus, this study confirms that HRIS not only has a direct impact on employee performance but also increases job satisfaction, which in turn contributes to improved employee performance.

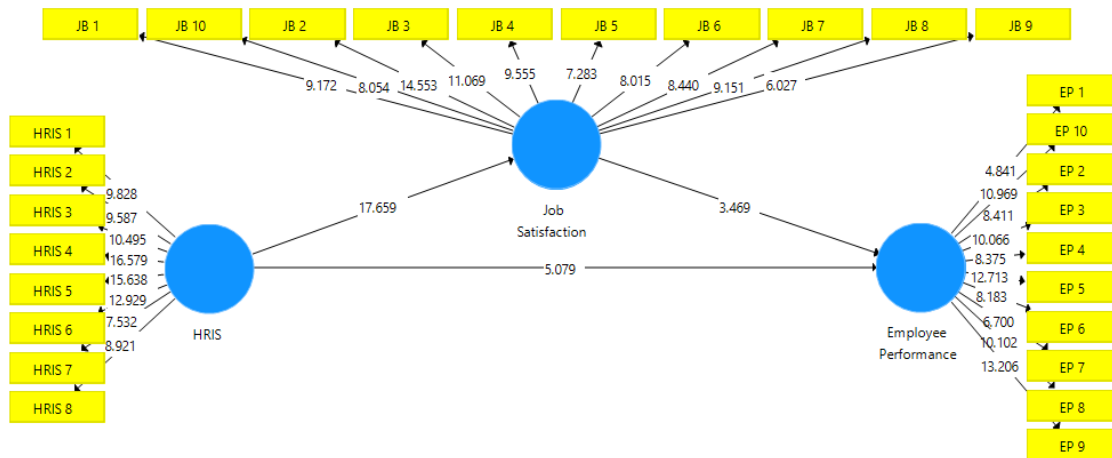


Figure 2. Full Model Analysis Results

Source: Data Processing Results (2024)

Figure 2 illustrates the full model analysis results showing the relationship between human resource information system (HRIS), job satisfaction, and employee performance. HRIS has a significant path to job satisfaction with a path coefficient of 17.659, indicating that effective use of HRIS has a positive and strong influence on employee job satisfaction. In addition, job satisfaction has a significant direct influence on employee performance with a path coefficient of 3.469, meaning that employees who are satisfied with their jobs tend to perform better. HRIS also has a direct influence on employee performance with a path coefficient of 5.079, indicating that HRIS not only affects job satisfaction but also has a direct impact on improving employee performance. Each construct is measured by several indicators that make a significant contribution to the measured construct, such as HRIS measured by indicators HRIS 1 to HRIS 8, job satisfaction measured by indicators JB 1 to JB 10, and employee performance measured by indicators EP 1 to EP 10. The high path coefficient value of each indicator indicates that each indicator effectively measures the corresponding construct. Overall, this figure illustrates that HRIS has a positive and significant effect on job satisfaction, and both job satisfaction and HRIS directly improve employee performance. The mediating effect of job satisfaction suggests that some of the impact of HRIS on employee performance is channeled through increased job satisfaction.

Discussion

Based on the research results, the human resource information system (HRIS) has a positive effect on employee performance, which means that the more effective the use of HRIS, the higher the performance of employees in the Project Deployment Center (PDC) Division of PT Len Industri (Persero). This finding is in line with previous research, such as at PT Pisma Putra Textile (Mujibul Hakim, et al., 2022), which shows that HRIS variables have a significant effect on employee performance, the more accurate, precise, and complete the application of HRIS, the higher the performance of employees in completing tasks. Shahreki et al.'s study (2019) also found that HRIS increases employee efficiency, productivity, and job satisfaction, which indirectly contributes to improved performance. These findings support

the Resource Based View (RBV) theory developed by Barney (1991), which states that corporate resources, including HRIS, can be a source of competitive advantage by increasing the efficiency and effectiveness of human resources. Research by Jadesola et al., (2019) revealed that workforce planning information, performance appraisal information, and succession planning information are predictors of employee behavior outcomes. Research by Marler and Parry (2016) confirms that HRIS plays an important role in developing a more effective HR strategy, which leads to improved individual and organizational performance. This is also the case at PT Len Industri (Persero), where an effective HRIS is proven to contribute to improved employee performance through increased job satisfaction and reduced time for administrative tasks.

Based on the research, it is proven that the human resources information system (HRIS) has a positive effect on job satisfaction, which means that the more effective the use of HRIS, the easier it is for employees to access data and facilitate their work so that employee job satisfaction will increase. This finding is in line with previous research conducted at PT Reckitt Indonesia which found that the use of HRIS affects job satisfaction (Anjesya Melias and Zumrotul Fitriyah, 2023). Another study by Kavanagh et al., (2015) also found that a well-implemented HRIS can reduce administrative burdens so that employees can focus more on strategic tasks and self-development, which ultimately increases job satisfaction. These findings support the theory of Strategic Human Resource Management proposed by Dessler (2016), which states that HRIS can help companies align HR strategy with overall business strategy. Research by Che Md Nor et al. (2021) shows that HRIS training has a positive influence on job satisfaction. Overall, this study confirms that HRIS is a strategic tool that can increase employee job satisfaction, supports existing theories, and expands understanding of the role of HRIS in improving employee performance and satisfaction in various organizational contexts.

Based on research it is proven that job satisfaction has a positive effect on employee performance, meaning that employees who are satisfied with their jobs tend to have better performance. This finding is supported by research by Nurrohmat & Rini (2021) at PT Kahatex Bandung Regency which states that job satisfaction has a significant effect on employee performance. Research by Soomro and Shah (2019) also shows a positive and significant effect of satisfaction on employee performance. In addition, research conducted by Al Mehrzi (2016) states that satisfied employees will have good performance. Employees who feel satisfied with their organization, especially from the aspect of constant supervision and guidance, can contribute to employee motivation and performance. This is in line with Herzberg's two-factor motivation theory which states that job satisfaction is an important motivational factor that improves performance. This theory is supported by various studies, such as a study conducted by Siengthai et al., (2016) the interaction effect between job redesign and job satisfaction was found to be positively and significantly related to employee performance. In addition, research by Rodrigo et al. (2022) also showed that job satisfaction directly affects employee performance, especially through salary, benefits, and the nature of the job which has a positive and significant impact. Overall, these studies confirm the importance of job satisfaction in improving employee performance and overall organizational success.

In this study, it was found that job satisfaction can moderately mediate human resource information systems on employee performance, this is because effective use of HRIS increases employee job satisfaction which in turn increases employee performance. Although HRIS also has a direct influence on employee performance, the mediation path through job satisfaction indicates that part of the impact of HRIS on employee performance is channeled through increased job satisfaction. This positive mediating effect is in line with research conducted by Inez Gracia Haspari, et al., (2023) on "The Effect of Human Resource Information System

Strategy on Employee Performance Through Job Satisfaction as an Intervening Variable in the HRD & GA Division of PT Sumi Rubber Indonesia". The results of this study explain that HRIS has no significant effect on employee performance, job satisfaction has a positive and significant effect on employee performance, and HRIS affects employee performance through job satisfaction. This research is supported by Hidayati and Abadiyah (2020) who found that human resource information systems and competencies have a significant effect on employee performance with job satisfaction as a moderating variable.

Conclusion

Based on the research, there is a significant positive relationship between the human resource information system and employee performance, which means H1 is accepted. In addition, there is a significant positive relationship between the human resource information system on job satisfaction which means H2 is accepted. A significant positive relationship was also found between job satisfaction and employee performance which means H3 is accepted. This study also shows that job satisfaction can moderate the effect of HRIS on employee performance. These results make an important contribution to the practical and theoretical understanding of human resource management, especially in the context of state-owned companies and the manufacturing industry. Good HRIS implementation can be an effective strategy to increase employee productivity and job satisfaction. To increase the effectiveness of HRIS, PT Len Industri (Persero) needs to optimize its use by improving data accessibility and accuracy and providing regular training to employees. In addition, it is important to pay attention to factors that affect job satisfaction, such as work environment, work-life balance, and career development, as job satisfaction mediates the relationship between HRIS and employee performance. These steps are expected to increase employee productivity and job satisfaction, which in turn will have a positive impact on company performance.

Declarations

Author contribution statement

The lead author participated in the conceptualization and design of the study, analysis, interpretation of data, and initial drafting of the paper. Each author contributed to the critical revision of the content for intellectual rigor and provided final approval for the published version. All authors are responsible for every aspect of the work.

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Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request. Due to privacy and ethical considerations, the data are not publicly accessible.

Declaration of Interests Statement

The author states that there is no potential conflict of interest during the preparation of this research article. This research was conducted without funding or grant support from any individual, organization, or institution. The author would like to thank all respondents who have participated in the study.

Additional Information

Ethical approval for this research was obtained from the Ministry of Education, Culture, Research and Technology of Universitas Pendidikan Indonesia with license number B-10282/UN40.A7/PT.01.04/2023. The authors declare no conflict of interest related to this study. Data collection and analysis have been conducted by relevant guidelines and regulations.

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