

Analysis of the Influence of Human Resource Development on Employee Performance with Job Satisfaction as an Intervening Variable at PT PLN (Persero) UP3 Sibolga

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Abstract

This study aimed to analyze the influence of human resource development on employee performance with job satisfaction as an intervening variable at PT PLN (Persero) UP3 Sibolga. This study used a quantitative associative approach. The population in this study consisted of all employees of PT PLN (Persero) UP3 Sibolga, totaling 85 people, and the entire population was used as the sample through saturated sampling. The research data were obtained through questionnaires, observation, and interviews. The research instrument was measured using a Likert scale and analyzed with SPSS through data quality testing, classical assumption testing, path analysis, and the coefficient of determination. The results showed that HR development had a positive and significant effect on job satisfaction, with a beta value of 0.890 and a significance value of 0.000. HR development also had a positive and significant effect on employee performance, with a beta value of 0.533 and a significance value of 0.000. Furthermore, job satisfaction had a positive and significant effect on employee performance, with a beta value of 0.456 and a significance value of 0.000. The indirect effect of HR development on employee performance through job satisfaction was 0.406, while the total effect was 0.939. These results indicated that HR development was the dominant factor in improving employee performance, while job satisfaction served as an intervening variable that strengthened the relationship.

Keywords: *HR Development, Job Satisfaction, Employee Performance, Path Analysis.*

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Introduction

PT PLN (Persero) Unit Pelaksana Pelayanan Pelanggan (UP3) Sibolga is one of the operational units that plays a strategic role in providing, distributing, and delivering electricity services to communities in Sibolga and its surrounding areas [1]. As part of the national electricity system, this unit is required to maintain service reliability, accuracy in handling disturbances, administrative quality, and customer satisfaction [2]. These achievements are closely related to the quality of human resources, because employees are the main implementers of operational activities, ranging from customer service, distribution network management, infrastructure maintenance, to the completion of technical work in the field [3].

Employee performance is an important aspect that determines the effectiveness of services at PT PLN (Persero) UP3 Sibolga [2]. Good performance is reflected in work quality, work quantity, time efficiency, and creativity in completing tasks [4]. Based on preliminary observations, several aspects still showed room for improvement. In terms of work quality, some work results were not yet fully consistent with the established quality standards and operational procedures. In terms of work quantity, task completion achievements among employees still varied. In terms of time efficiency, delays in completing work could occur because coordination was not yet fully optimal. Meanwhile, in the aspect of creativity, some employees had not shown much initiative in providing new ideas to support work effectiveness.

The results of the preliminary survey involving 20 employees strengthened this condition. A total of 60% of respondents disagreed that tasks were completed according to quality standards and deadlines, 65% disagreed that work was completed according to targets, 75% disagreed that working time was used effectively, and 70% disagreed that employees generated new ideas for improving the work system.

One factor that may be related to employee performance is human resource development [5]. HR development functions to improve employee competence, skills, motivation, and readiness in facing work demands [6]. At PT PLN (Persero) UP3 Sibolga, HR development has become an important part of efforts to improve work professionalism. However, preliminary observations showed that several aspects still required strengthening. Some employees assessed that training materials were not yet fully aligned with daily work needs, the performance appraisal system did not fully reflect actual contributions, recognition for work achievements was not yet felt evenly, and career paths still needed to be communicated more clearly.

Preliminary survey data showed that 65% of respondents disagreed that training materials were highly aligned with work needs, 60% disagreed that performance appraisal reflected actual contributions, 60% disagreed that rewards had been given for hard work, and 50% disagreed that the organizational career path was very clear.

In addition to HR development, job satisfaction is also an important variable that can influence employee performance [7]. Job satisfaction is related to employees' feelings toward their work, compensation, promotion opportunities, work relationships, and supervision [8]. In the preliminary condition, some employees still felt that their work did not always provide challenge and a sense of achievement, compensation was not yet fully perceived as proportional to workload, promotion opportunities were not yet felt to be evenly distributed, communication between departments still needed to be strengthened, and supervisors guidance could still be improved through more continuous coaching and feedback. The preliminary survey results showed that 70% of respondents disagreed that their work provided challenge and a sense of achievement, 55% disagreed that salary was appropriate to

the workload, 70% disagreed that promotion opportunities were provided fairly, 50% disagreed that coworker relationships were mutually supportive, and 60% disagreed that supervisors provided guidance that helped in carrying out work.

Based on this description, this study was directed at answering whether HR development influenced employee performance, both directly and indirectly through job satisfaction. This study aimed to analyze these direct and indirect effects at PT PLN (Persero) UP3 Sibolga.

Research Methodology

This study used a quantitative associative approach, namely a research approach that aimed to analyze causal relationships between the independent variable, the intervening variable, and the dependent variable based on numerical data [9]. This approach was used because the study was directed at determining the influence of human resource development on employee performance, both directly and indirectly through job satisfaction. The research was conducted at PT PLN (Persero) UP3 Sibolga, located at Jalan Fl Tobing 13, Sibolga City, North Sumatra.

The object of this study was the employees of PT PLN (Persero) UP3 Sibolga, while the variables analyzed consisted of human resource development as the independent variable, job satisfaction as the intervening variable, and employee performance as the dependent variable.

The population in this study consisted of all employees of PT PLN (Persero) UP3 Sibolga, totaling 85 people. Because the population was fewer than 100 people, the entire population was used as the research sample [10]. Thus, the sampling technique used was saturated sampling or census sampling, which is a sampling technique that uses all members of the population as respondents [11]. The sample size in this study was 85 employees. The type of data used was quantitative data, while the data source used was primary data obtained directly from respondents through questionnaire distribution.

The research instrument was prepared based on the indicators of each variable [12]. The human resource development variable was measured through indicators of satisfaction with training programs, perceptions of performance management, rewards and recognition, and career development [13]. The job satisfaction variable was measured through indicators of the work itself, salary or wages, promotion opportunities, relationships with coworkers, and supervision [8]. Meanwhile, the employee performance variable was measured through indicators of work quality, work quantity, time efficiency, and work creativity [4]. Each statement item was measured using a Likert scale with five alternative responses, namely strongly agree, agree, neutral, disagree, and strongly disagree, with scores from 5 to 1 [14]. Data were collected through questionnaires, observation, and interviews. Questionnaires were used to obtain the main data regarding respondents' perceptions of the research variables [15]. Observation was conducted to obtain an initial overview of the research object, while interviews were used as supporting data to clarify the phenomena found in the field [16]. The data obtained from questionnaire distribution were tested through validity and reliability tests. The validity test was used to determine the feasibility of each statement item, while the reliability test was used to examine the consistency of the research instrument by observing the Cronbach's alpha value [17].

The data analysis technique was carried out with the assistance of SPSS. The stages of analysis included data quality testing, classical assumption testing, path analysis, and the coefficient of determination. The classical assumption tests included normality, multicollinearity, and heteroscedasticity tests [18].

Path analysis was used to determine the direct effect of human resource development on job satisfaction, the direct effect of human resource development on employee performance, the direct effect of job satisfaction on employee performance, and the indirect effect of human resource development on employee performance through job satisfaction [19].

In this study, path analysis was carried out through two regression models. Model I was used to analyze the direct effect of HR Development on Job Satisfaction with the equation: $Z = \alpha + \beta X + e_1$ [20]. Model II was used to analyze the direct effect of HR Development and Job Satisfaction on Employee Performance with the equation: $Y = \alpha + \beta_1 X + \beta_2 Z + e_2$ [21].

Through these two models, this study could test the direct and indirect effects between variables. The direct effect was observed from the regression coefficient in each model, while the indirect effect of HR Development on Employee Performance through Job Satisfaction was calculated by multiplying the path coefficient of HR Development on Job Satisfaction in Model I by the path coefficient of Job Satisfaction on Employee Performance in Model II [22].

The coefficient of determination was used to determine the extent to which the independent variable and the intervening variable could explain variation in the dependent variable [23].

Results

2.1 Respondent Characteristics

The results of questionnaire distribution to 85 respondents showed that most respondents were male, totaling 60 people or 70.6%, while female respondents totaled 25 people or 29.4%. Based on age, the largest group of respondents was in the 41 to 45 year range, totaling 26 people or 30.6%, followed by the 36 to 40 year range, totaling 24 people or 28.2%. In terms of education, most respondents held a bachelor's degree, totaling 49 people or 57.6%. Based on length of service, the largest group of respondents had worked for 16 to 20 years, totaling 28 people or 32.9%. Meanwhile, most respondents were married, totaling 81 people or 95.3%. This condition indicates that the respondents were dominated by employees who were mature in age, had adequate educational backgrounds, and possessed relatively strong work experience.

2.2 Distribution of Respondents Answers on the HR Development Variable

The results of questionnaire distribution on the HR development variable showed that most respondents gave agree and strongly agree responses. For the indicator of satisfaction with training programs, the percentage of agree and strongly agree responses ranged from 80.0% to 81.2%. For the performance management indicator, respondents' support was also high, especially for performance appraisal feedback, which reached 84.7%. The rewards and recognition indicator received positive responses ranging from 81.2% to 82.4%, while career development received positive responses ranging from 78.9% to 80.0%. Based on these results, it can be concluded that HR development at PT PLN (Persero) UP3 Sibolga was perceived positively by employees, particularly in the aspects of performance feedback and contribution recognition, although long term career support still needs to be strengthened continuously.

2.3 Distribution of Respondents Answers on the Job Satisfaction Variable

The distribution of responses on the job satisfaction variable showed a positive tendency. For the indicator of the work itself, agree and strongly agree responses reached 78.8% to 84.7%, indicating that the work was considered able to provide challenge and a sense of achievement. For the salary or wage indicator, positive responses ranged from 80.0% to 82.4%. Promotion opportunities received positive responses of 81.2% to 83.6%.

Relationships with coworkers were also assessed positively, especially employee support, which reached 83.5%. Supervision received positive responses of 77.7% to 81.2%. Based on these results, it can be concluded that employee job satisfaction was in the good category, mainly because work provided meaning, promotion was perceived as fairly objective, and work relationships were supportive, although supervisor openness and fairness could still be improved.

2.4 Distribution of Respondents Answers on the Employee Performance Variable

The distribution of responses on the employee performance variable showed that most respondents gave agree and strongly agree responses. For the work quality indicator, positive responses reached 77.7% to 83.6%, indicating that employees tended to be able to work according to standards and produce accurate work. For the work quantity indicator, positive responses ranged from 70.6% to 81.1%. The time efficiency indicator received positive responses of 80.0% to 83.5%, while work creativity received positive responses of 77.7% to 81.1%. Based on these results, it can be concluded that employee performance at PT PLN (Persero) UP3 Sibolga was categorized as good, especially in terms of time efficiency, target achievement, and the ability to provide solutions, although completing all work without reducing quality remained an aspect that needed further attention.

2.5 Data Quality Test (Validity and Reliability)

Table 1. Results of Validity and Reliability Tests

Variable	Number of Items	r count Range	Cronbach's Alpha	Conclusion
HR Development (X)	8	0.691 to 0.889	0.934	Valid and Reliable
Job Satisfaction (Z)	10	0.638 to 0.864	0.937	Valid and Reliable
Employee Performance (Y)	8	0.562 to 0.873	0.898	Valid and Reliable

Based on the results of the validity and reliability tests, all statement items in the questionnaire were declared to have met the feasibility standards of the research instrument. This condition was reflected in the r count value of each item, which was above 0.30, and the Cronbach's Alpha value, which exceeded 0.70 [24]. Thus, all data obtained could be declared valid and reliable, making them suitable for use in the next stage of analysis.

2.6 Classical Assumption Tests (Normality, Multicollinearity, and Heteroscedasticity)

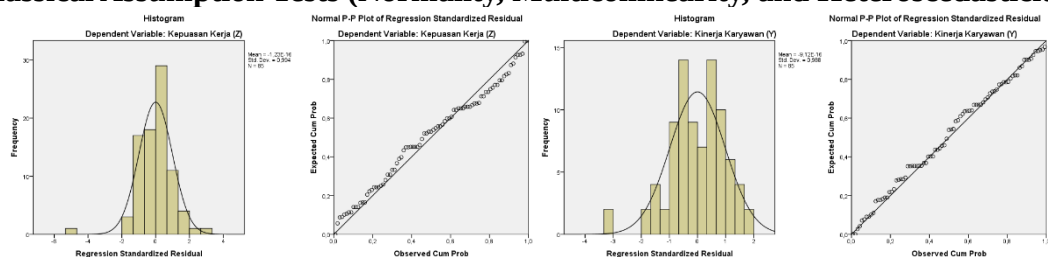


Figure 1. Histogram and Normal Probability Plot Graphs for Model I and Model II

In Model I and Model II, the results of the normality test through histogram graphs showed that the residual distribution formed a pattern approaching a normal curve. The data distribution appeared symmetrical, centered around the zero value, and did not show a tendency to skew to the left or right. This condition indicated that the residuals were normally distributed [18].

These results were also supported by the normal probability plot, in which the data points appeared to follow the diagonal line. Thus, the normality assumption in the regression model had been fulfilled in both Model I and Model II [10].

Table 2. Kolmogorov Smirnov Normality Test

One Sample Kolmogorov Smirnov Test		
	Unstandardized Residual	
	Model I	Model II
N	85	85
Test Statistic	0.085	0.067
Asymp. Sig. (two tailed)	0.189c	0.200c,d

The results of the Kolmogorov Smirnov test showed that the Asymp. Sig. value in Model I and Model II was 0.200. This value was greater than 0.05, indicating that the data in both models had a normal distribution [12].

Table 3. Multicollinearity Test and Glejser Test

Coefficients ^a						
Model	Collinearity Statistics		Glejser Test		Criterion	Conclusion
	Tolerance	VIF	Sig. Model I	Sig. Model II		
(Constant)			0.001	0.005		
1 HR Development (X)	0.207	4.826	0.157	0.901	Tolerance > 0.10	No Problems
Job Satisfaction (Z)	0.207	4.826	-	0.888	VIF < 10 Sig. > 0.05	
a. Dependent Variable: Employee Performance (Y)			a. Dependent Variable: ABSOLUTE_RESIDUAL			

The results of the multicollinearity test in Model II showed that all independent variables obtained tolerance values greater than 0.10 and VIF values lower than 10. This finding indicated that the independent variables did not have excessively strong correlations with each other. Thus, the regression model used was free from multicollinearity problems [14].

Based on the results of the Glejser test in Model I and Model II, all variables produced significance values above 0.05. This indicated that there was no indication of heteroscedasticity in the regression model, so the model could be declared to have met the homoscedasticity assumption [17].

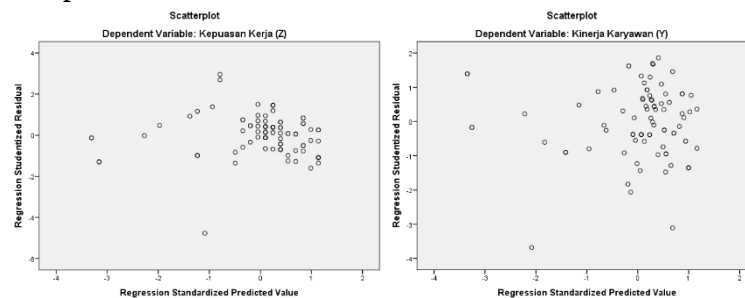


Figure 2. Scatterplot Graphs for Model I and Model II

Heteroscedasticity testing through scatterplot graphs showed that, in Model I and Model II, the residual points were randomly distributed around the zero line, both above and below it, and did not form any particular pattern. This distribution pattern showed that the residual variance was relatively constant, so the regression model did not experience symptoms of heteroscedasticity [11].

2.7 Path Analysis

Table 4. Summary of Path Analysis Results

Model	Relationship Between Variables	Beta Coefficient	Sig.	Description
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Model	Relationship Between Variables	Beta Coefficient	Sig.	Description
Model I (Direct Effect)	HR Development (X) on Job Satisfaction (Z)	0.890	0.000	Positive and Significant
Model II (Direct Effect)	HR Development (X) on Employee Performance (Y)	0.533	0.000	Positive and Significant
Model II (Direct Effect)	Job Satisfaction (Z) on Employee Performance (Y)	0.456	0.000	Positive and Significant
Indirect Effect	HR Development (X) on Employee Performance (Y) through Job Satisfaction (Z)	0.406	NA	Smaller than the Direct Effect
Total Effect	HR Development (X) on Employee Performance (Y)	0.939	NA	Very Strong Total Effect

Based on the results of path analysis in Model I, HR Development had a positive and significant effect on Job Satisfaction, with a beta value of 0.890 and a significance value of 0.000. The positive beta value showed that the better the HR development provided by the company, such as training, performance management, rewards, and career development, the higher the employee job satisfaction [25]. A significance value smaller than 0.05 indicated that this effect was statistically proven [26]. Thus, HR Development became an important factor in shaping job satisfaction among employees of PT PLN (Persero) UP3 Sibolga.

In Model II, HR Development had a positive and significant effect on Employee Performance, with a beta value of 0.533 and a significance value of 0.000. This means that improving the quality of HR development would encourage improvements in employee performance [27]. Employees who receive training aligned with their needs, clear performance appraisal, recognition for contributions, and better career opportunities tend to have more directed and productive work abilities and are able to complete tasks more effectively [28].

Job Satisfaction also had a positive and significant effect on Employee Performance, with a beta value of 0.456 and a significance value of 0.000 [29]. This showed that employees who were satisfied with their work, salary, promotion, work relationships, and supervision would be more encouraged to demonstrate good performance [30].

Viewed from the direct effect on Employee Performance, HR Development was the most dominant variable because it had a beta value of 0.533, which was higher than Job Satisfaction at 0.456. This means that employee performance was more strongly influenced directly by the quality of HR development than by job satisfaction. However, job satisfaction still had an important role because it served as an intermediary path that strengthened the relationship between HR Development and Employee Performance [31].

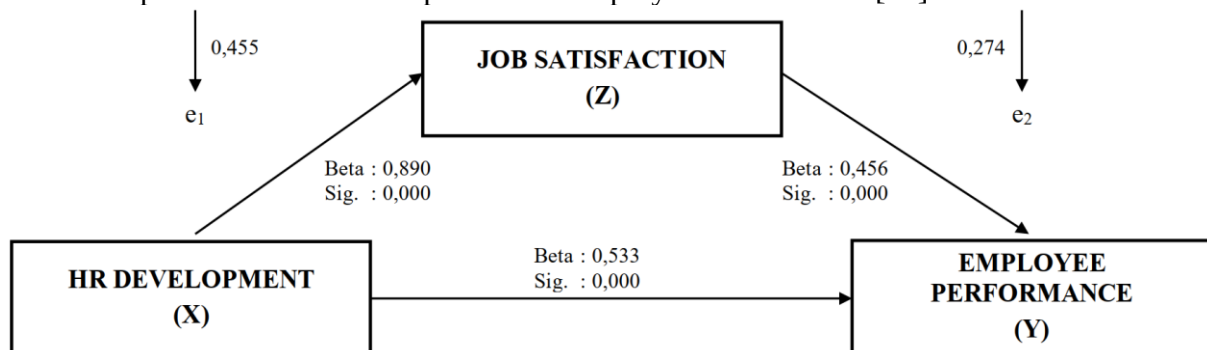


Figure 3. Path Analysis Results

The indirect effect of HR Development on Employee Performance through Job Satisfaction was obtained by multiplying the beta of X on Z by the beta of Z on Y, namely $0.890 \times 0.456 = 0.406$ [32]. This value showed that HR Development could also improve Employee Performance through increased Job Satisfaction. However, because the indirect effect of 0.406 was smaller than the direct effect of 0.533, Job Satisfaction served as an intervening variable that strengthened the relationship but was not more dominant than the direct effect of HR Development on Employee Performance [33].

The total effect of HR development on employee performance can be calculated using the following equation: [34]

Total X to Y = Direct effect + Indirect effect

Total X to Y = $0.533 + 0.406 = 0.939$

This result showed that the total effect of HR development on employee performance was 0.939, indicating a very large total effect with a positive direction [35].

Table 5. Determination Test in Model I and Model II

Model	R Square	Percentage of Influence	Error	Percentage of Other Factors
Model I	0.793	79.3%	0.455	20.7%
Model II	0.925	92.5%	0.274	7.5%

The R Square value in Model I was 0.793, indicating that HR Development was able to explain 79.3% of the variation in Job Satisfaction, while the remaining 20.7% was explained by other factors outside the research model [22]. The error value of Model I was 0.455, indicating that other variables still influenced Job Satisfaction [20].

The R Square value in Model II was 0.925, indicating that HR Development and Job Satisfaction were able to explain 92.5% of Employee Performance, while the remaining 7.5% was influenced by other factors [19]. The error value of Model II was 0.274, indicating that the second model had a low error level and a very strong explanatory ability for Employee Performance [21].

Discussion

3.1 The Effect of Compensation (X1) on Work Productivity (Y)

The results of the study showed that compensation had a positive and significant effect on employee work productivity at Pertamina EP Hulu Rokan. The regression coefficient value of 0.329, the tcount value of 2.860, and the significance value of 0.006 indicate that the better the compensation received by employees, the higher the work productivity produced [36].

This effect can occur because compensation is directly related to employees' perceptions of fairness, appreciation, and welfare [37]. In upstream oil and gas companies, work involves high technical burdens, responsibilities, and operational risks. If salaries, incentives, allowances, work facilities, and nonfinancial rewards are perceived as appropriate, employees will be encouraged to work more seriously.

The distribution of respondent answers showed that the indicators of work facilities and allowances were the strongest aspects. This indicates that the company has provided work support and welfare benefits that sufficiently assist employees in carrying out their duties. Adequate work facilities can facilitate work processes, reduce technical barriers, and improve work comfort.

However, the basic salary indicator was still the weakest aspect compared to other compensation indicators. This condition shows that some employees still perceived the need to strengthen the suitability between salary, position, responsibility, and work contribution.

This is important because perceptions of compensation fairness can influence work motivation.

Pertamina EP Hulu Rokan has attempted to support productivity through financial and nonfinancial compensation, including allowances, work facilities, and career development opportunities. These efforts play a role in creating a sense of security and increasing work commitment. If the compensation system becomes more transparent and proportional, employee productivity has the potential to increase more strongly [6].

This is in accordance with the theory proposed by Anoraga, who explained that employee work productivity is influenced by various factors, one of which is employees' income level or compensation [12]. This is also in line with the research results of Affia and Suprapti [6], Setiawan et al. [29], Hendi and Huda [33], Khasanah et al. [36], and Mursalim et al. [37], which proved that compensation partially has a positive and significant effect on work productivity.

3.2 The Effect of Work Discipline (X2) on Work Productivity (Y)

The results of the study showed that work discipline had a positive and significant effect on employee work productivity at Pertamina EP Hulu Rokan. This was proven by the regression coefficient value of 0.251, the tcount value of 2.726, and the significance value of 0.008, indicating that an increase in work discipline would significantly be followed by an increase in employee work productivity [38].

Work discipline is an important factor because upstream oil and gas activities greatly depend on compliance with time, operational standards, and safety procedures. Employees who arrive on time, obey rules, follow instructions, and complete tasks according to provisions will help the company maintain smooth operations [39].

The distribution of respondent answers showed that the indicator of compliance with regulations had the strongest value. This indicates that employees sufficiently understood the importance of work rules in task implementation. Compliance with procedures supports work quality and reduces the possibility of operational errors that can hinder productivity.

The work attendance indicator was the weakest aspect compared to other discipline indicators. This finding shows that attendance and schedule consistency still need attention. In a company with an interconnected work system, irregular attendance can affect coordination, task distribution, and target achievement.

Pertamina EP Hulu Rokan has implemented work rules, operational standards, supervisor monitoring, and reporting systems to maintain employee discipline. These policies play a role in directing work behavior to become more orderly and responsible. The more consistently discipline is applied, the greater the opportunity for the company to achieve stable productivity [8].

This is in accordance with the theory proposed by Anoraga, who explained that employee work productivity is influenced by various factors, one of which is employee work discipline [12]. This is also in line with the research results of Birowo and Ahsani [8], Irama [30], Aprilia et al. [34], Sulaeman et al. [38], and Wahyono and Suwarno [39], which proved that work discipline partially has a positive and significant effect on work productivity.

3.3 The Effect of Work Motivation (X3) on Work Productivity (Y)

The results of the study showed that work motivation had a positive and significant effect on employee work productivity at Pertamina EP Hulu Rokan. The regression coefficient value of 0.341, the tcount value of 3.178, and the significance value of 0.002 indicate that work motivation was an important factor in improving employee productivity [10].

Work motivation serves as an internal drive that encourages employees to achieve targets, take initiative, work creatively, and take responsibility for work results [11]. In an

upstream oil and gas company, motivation is highly needed because work requires accuracy, endurance, readiness to face pressure, and the ability to solve problems quickly.

The distribution of respondent answers showed that the indicator of ability to take initiative was the strongest aspect. This indicates that employees had a tendency to act independently, find more effective ways of working, and not fully depend on instructions from superiors. Such initiative strongly supports the smooth running of field and administrative work.

The enthusiasm at work indicator was the weakest aspect. This condition shows that daily work spirit still needs to be strengthened, especially when employees face work routines, target pressure, or heavy workloads. Declining enthusiasm can hinder work speed and reduce the drive to produce the best work results.

Pertamina EP Hulu Rokan has supported work motivation through work targets, performance assessment systems, development opportunities, and rewards for employee contributions. These efforts help build stronger work motivation. If motivation continues to be maintained through rewards, communication, and career development, work productivity can increase more optimally [31].

This is in accordance with the theory proposed by Anoraga, who explained that employee work productivity is influenced by various factors, one of which is employee work motivation [12]. This is also in line with the research results of Fajar and Maryam [10], Heldianto et al. [11], Ipijei and Tawenem [31], Nurhayanti et al. [32], and Nugraha et al. [35], which proved that work motivation partially has a positive and significant effect on work productivity.

Discussion

4.1 Direct Effect of HR Development (X) on Job Satisfaction (Z)

The results of path analysis showed that HR Development had a positive and significant effect on Job Satisfaction, with a beta value of 0.890 and a significance value of 0.000. This finding showed that the better the implementation of HR development, the higher the job satisfaction of employees at PT PLN (Persero) UP3 Sibolga [36]. This positive effect was logical because PLN is a state owned enterprise assigned to provide electricity for the public interest, making HR quality an important element in maintaining service quality.

HR development at PT PLN (Persero) UP3 Sibolga is closely related to technical, administrative, and public service work needs. Employees need relevant training, work direction, performance evaluation, and coaching to carry out their duties properly. When training materials are aligned with work needs and learning methods help employees understand their tasks, employees tend to feel more prepared, confident, and satisfied with their work [37].

This effect may also occur because PLN UP3 Sibolga service activities require accurate responses to customer needs. Reports on new connection and power capacity increase services show that PLN UP3 Sibolga strives to respond quickly to customer needs and support community economic activities. Such efforts require competent and well directed employees, so HR development plays a role in creating a sense of meaning at work [26].

In addition, activities to improve electricity reliability through network maintenance and repair show that employees' work is not merely routine, but also requires technical readiness, coordination, and responsibility. When the company provides support through competence strengthening and clear work direction, employees tend to feel cared for and have an important position in supporting reliable electricity services [25].

Based on these results, HR Development became a very strong factor in shaping Job Satisfaction among employees of PT PLN (Persero) UP3 Sibolga [37]. Relevant training, transparent performance appraisal, feedback, recognition for contributions, and career development opportunities can increase employees' sense of being valued, work comfort, and pride [36]. Thus, job satisfaction emerged because employees perceived organizational support for improving their abilities and career future [25].

The results of this study are consistent with the theory proposed by Afandi, which explains that several factors influence employee job satisfaction, one of which is career this study are also supported by studies conducted by Indah, Lima, Abidin et al., and Gita et al., which show that organizational commitment has a positive and significant effect on employee job satisfaction [25][26][36][37].

4.2 Direct Effect of HR Development (X) on Employee Performance (Y)

The results of path analysis showed that HR Development had a positive and significant effect on Employee Performance, with a beta value of 0.533 and a significance value of 0.000. This means that the better the HR development provided to employees, the higher the employee performance at PT PLN (Persero) UP3 Sibolga [5]. This effect occurred because work in the electricity sector requires technical competence, accuracy, discipline, and understanding of occupational safety procedures [6].

PT PLN (Persero) UP3 Sibolga has work characteristics that are directly related to customer service, network maintenance, disturbance handling, and improvement of electricity supply reliability. These activities require employees to have skills that match operational needs. When the company provides appropriate training, direction, performance evaluation, and coaching, employees are better able to complete work quickly, accurately, and according to service standards [27].

The company's efforts to improve performance can be seen in planned network maintenance activities. PLN UP3 Sibolga has carried out the insertion of medium voltage network poles, replacement of pin insulators, and improvement of low voltage network cables to improve electricity reliability in Sibolga City and Central Tapanuli Regency. This work involved technical personnel and occupational safety supervisors, showing that competence improvement and work safety are important parts of supporting employee work results.

HR development is also reflected in the company's orientation toward improving service quality for customers. PLN UP3 Sibolga has responded to customer needs for new connections and power capacity increases for industrial customers as a form of support for economic activities. Fast and accurate service of this type requires employees who understand procedures, are able to coordinate, and have technical readiness in carrying out their duties [28].

Based on this description, the direct effect of HR Development on Employee Performance occurred because competence improvement, work coaching, performance management, rewards, and career strengthening were able to encourage work quality, work quantity, time efficiency, and work creativity. Thus, HR Development became a strategic factor that supported the ability of PT PLN (Persero) UP3 Sibolga employees to carry out their duties professionally, safely, and with a service orientation.

The results of this study are consistent with the theory proposed by Prawirosentono and Primasari, which explains that employee performance is influenced by various interconnected factors, one of which is HR development [4]. The results of this study are also supported by studies conducted by Rozogitta and Karneli, Pasaribu et al., Nadapdap et al., and Fakhirah and Prayudi, which show that HR development has a positive and significant effect on employee performance [5][6][27][28].

4.3 Direct Effect of Job Satisfaction (Z) on Employee Performance (Y)

The results of path analysis showed that Job Satisfaction had a positive and significant effect on Employee Performance, with a beta value of 0.456 and a significance value of 0.000. This means that the higher the job satisfaction felt by employees, the better the performance shown in carrying out their duties [7]. At PT PLN (Persero) UP3 Sibolga, this relationship may occur because electricity work requires accuracy, technical readiness, time discipline, and responsibility in serving the public.

Employee job satisfaction can be formed through meaningful work, compensation perceived as appropriate, supportive work relationships, promotion opportunities, and clear supervisor direction [29]. When these aspects are fulfilled, employees tend to have greater motivation to work according to standards, maintain work quality, complete targets, and respond more quickly to customer needs [30].

At PT PLN (Persero) UP3 Sibolga, job satisfaction is also related to employees' pride in carrying out a public service function. PLN UP3 Sibolga is known to play a role in new connection and power capacity increase services for customers as part of its support for community economic activities. This type of service requires employees who have commitment, motivation, and good work readiness.

In addition to customer service, the company also carries out activities to improve electricity reliability through network maintenance. Activities such as pole replacement, network component repair, and preventive maintenance show that employee performance is not only measured by the amount of work completed, but also by the quality, safety, and accuracy of task implementation in the field.

Thus, the effect of Job Satisfaction on Employee Performance occurred because employees who feel comfortable, valued, guided, and supported by good work relationships are more encouraged to work productively [31]. Job satisfaction becomes psychological energy that strengthens responsibility, accuracy, time discipline, and initiative in supporting the reliability of PT PLN (Persero) UP3 Sibolga services.

The results of this study are consistent with the theory proposed by Kasmir, which explains that there are thirteen factors that influence employee performance, one of which is job satisfaction [38]. The results of this study are also supported by studies conducted by Ardilla et al., Marlius and Melaguci, Hudzaifah, and Rosnawati and Sartika, which show that job satisfaction partially has a positive and significant effect on employee performance [7][29][30][31].

4.4 Indirect Effect of HR Development (X) on Employee Performance (Y) through Job Satisfaction (Z)

The results of the analysis showed that the direct effect of HR Development on Employee Performance, which was 0.533, was stronger than the indirect effect through Job Satisfaction, which was 0.406. This condition indicated that HR development at PT PLN (Persero) UP3 Sibolga had a faster impact on performance when it was directly related to improving work ability, procedural understanding, technical skills, and employee readiness in completing operational tasks.

This may occur because the work characteristics at PT PLN (Persero) UP3 Sibolga strongly require direct competence. Customer service, network maintenance, disturbance handling, energy administration, and fieldwork require employees who understand work standards, safety, punctuality, and technical coordination. When the company provides training, coaching, performance evaluation, and competence development, the impact can be directly seen in work quality, work quantity, time efficiency, and the ability to solve problems.

The indirect effect through Job Satisfaction remains important, but its value was smaller because job satisfaction is more psychological in nature and requires an internal process before producing changes in performance [32]. Satisfied employees do tend to be more motivated, loyal, and enthusiastic at work [33]. However, satisfaction alone is not sufficient if it is not accompanied by technical ability, task understanding, and development support that enables employees to work more effectively [34].

The variable with the strongest effect on Employee Performance was HR Development, because its direct effect value was greater than that of Job Satisfaction [35]. This indicates that employee performance at PT PLN (Persero) UP3 Sibolga was more strongly determined by the abilities, training, performance management, rewards, and career development provided by the company. In electricity work, strong competence is the main foundation that enables employees to work accurately, safely, quickly, and according to service standards.

Based on these results, HR Development can be understood as a strategic factor that directly strengthens employee performance, while Job Satisfaction serves as a supporting factor that reinforces work motivation [33]. This means that improving employee performance will be more optimal if the company continues to strengthen HR development programs while also maintaining job satisfaction so that employees are not only able to work well, but also motivated to sustain that performance [32].

The results of this study differ from the findings of Amelia and Isra, which show that HR development indirectly has a positive and significant effect on employee performance through employee job satisfaction [34][35].

Conclusion

The results of the study showed that HR Development had a positive and significant effect on Job Satisfaction, HR Development had a positive and significant effect on Employee Performance, and Job Satisfaction had a positive and significant effect on Employee Performance at PT PLN (Persero) UP3 Sibolga. The direct effect of HR Development on Employee Performance was stronger than the indirect effect through Job Satisfaction. This showed that competence improvement, training, performance management, rewards, and career development were the main factors in encouraging improvements in work quality, work quantity, time efficiency, and employee work creativity. Job Satisfaction remained important as a supporting variable that strengthened performance.

PT PLN (Persero) UP3 Sibolga is advised to continue strengthening HR Development programs through training that is more aligned with technical, administrative, customer service, and occupational safety needs. The company also needs to improve a transparent performance evaluation system, accompanied by regular feedback so that employees understand their strengths and aspects that need improvement. Recognition of employee contributions should not only be given in formal annual forms, but also through regular appreciation for daily and team achievements. In addition, career paths need to be communicated more clearly so that employees have motivation to improve their competence. Job satisfaction also needs to be maintained through open supervisor communication, harmonious work relationships, and objective promotion opportunities.

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