Assessing Employee Performance Based on Human Resource Quality and Technology Utilization

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Abstract

The purpose of this study is to test and analyze the influence of human resource quality and information technology on employee performance. This study uses a quantitative approach with a sample of 44 people from Curahdami District employees, Bondowoso Regency, East Java. The results of the study indicate that the quality of human resources has a significant effect on employee performance, the use of technology also has a significant effect on employee performance. The implications of this study indicate that improving the quality of human resources can directly improve employee performance, so organizations need to focus on training and developing employee competencies. In addition, effective use of information technology also plays an important role in increasing productivity, so investment in technology infrastructure is very important. Thus, public organizations at the sub-district level must consider the integration between human resource development and the application of information technology to achieve optimal performance.

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1. Introduction

Law Number 23 of 2014 concerning Regional Government, especially Article 1, states that Regional Autonomy is the obligation, right and authority of a region as an effort to regulate and manage government affairs and fulfill the needs of the community in the region (autonomous) but remains within the system of the Unitary State of the Republic of Indonesia. The law mandates the Regional Government to have adequate resources, both natural resources, financial resources and adequate human resources and according to the needs of each Regional Government. Human resources in this case are all employees who are required to have good performance to support the performance targets set by each Regional Government.

According to Mahapatro (2021), human resource management is the science, art and way of regulating relationships and the role of the workforce to effectively and efficiently realize the goals of the company, employees and the community. The most important thing in human resource management in an organization, especially a government organization, is how to assess the performance of each existing employee (Knies et al., 2024). Assessing performance is a way for an organization to measure the success of an employee or worker in carrying out a job (Bohorquez et al., 2021). Al-Jedaia and Mehrez (2020) argues that assessing performance is an activity to measure the results of a worker's work in carrying out the main tasks and functions in their respective fields of work. Performance assessment is very important because with performance assessment it can be seen how an employee carries out the main tasks and functions he/she is entrusted with, whether it is right according to the target or not (Sulistyan et al., 2020). This will greatly affect the performance of the Regional Government organization as a whole. Performance is a work result achieved by a worker or employee both in terms of quality and quantity (Bahri et al., 2021). According to Inayat and Jahanzeb Khan (2021) performance is a work result that in terms of quantity and quality has been achieved by a worker or employee in carrying out tasks or work in accordance with the responsibilities and authorities they have. The quantity in question

is the amount of work that has been successfully completed, while the quality in question is how well the employee carries out his/her duties. According to Rizki and Sulistyan (2022) performance is an achievement achieved by someone in carrying out the tasks and work given to him/her. Many factors influence the performance of an employee, including the quality of the human resources concerned, motivation, work culture, application of technology and so on. The quality of a worker or employee's human resources is related to the level of education, ability, skills and knowledge of a person in the field of his/her duties.

One way to improve employee skills and performance is to utilize Information Technology which is currently an important part of every activity. Information technology is a technology that is used to process data, process data, obtain data, compile and store data and manipulate data in various ways in order to obtain quality information, namely accurate, relevant and timely information and strategic information in decision making (Sulistyan et al., 2022). Collection or set of tools used to help work with information and related to information processing. Berdik et al. (2021) IT is a technology that connects computers with high-speed communication lines that carry voice, video or data. Based on the theory that states several factors are assumed to be important and have an impact on improving performance and based on previous research, there is a research gap that is a reference as a comparison for research. Research conducted by Paais and Pattiruhu (2020), the results of the study showed that leadership variables had a significant effect on performance, human resource quality variables had a significant effect on performance and organizational culture variables had a significant effect on performance. In a study conducted by Sabuhari et al. (2020) which analyzed the effect of human resource quality on performance and found that human resource quality had no effect on performance, this is a research gap that can be further studied on the effect of human resource quality on employee performance, then based on the theory of improving performance and supported by the results of similar previous studies, the object of research determined is Employees or employees in Curahdami District, Bondowoso Regency.

As one of the Regional Apparatus in Bondowoso Regency, Curahdami District has an obligation to organize government affairs and services to the community in accordance with the main tasks, functions and authorities in accordance with Government Regulation Number 17 of 2018, the main tasks and functions of the District which mandate that the District has the obligation and authority to organize general government affairs at the District level in accordance with the provisions of the Laws and Regulations governing the implementation of general government affairs, community empowerment activities, the implementation of public order and security, the implementation and enforcement of Regional Regulations and Regional Head Regulations, the implementation of government activities at the District level, carrying out government affairs that are the authority of the district/city region that are not carried out by the district/city regional apparatus work units in the District, carrying out part of the government affairs that are the authority of the region/delegation of part of the regent's authority to the subdistrict head; carrying out assistance tasks and carrying out other tasks in accordance with the provisions of applicable laws and regulations. From the results of initial observations in Curahdami District, Bondowoso Regency, there is an interesting phenomenon to study, namely that not all employees have performance in accordance with organizational expectations, both in terms of quality and quantity and timeliness in completing performance targets. This can be seen from the gap or difference between the performance target at the beginning of the year and the realization of performance at the end of the year. In the sense that employee performance in carrying out their main tasks and functions is still less effective and efficient. There are still many tasks that are completed not according to the targeted time, the quality of work is still not optimal and the level of satisfaction of direct superiors with the results of the work is still lacking. So that the achievement of the organization's vision and mission as stated in the Renstra and Renja Organization is not achieved optimally.

Table 1. Employee Performance Indicators in 2023

| No | Employee Performance Assessment Curahadami District | Target Realization (%) | Realization of Implementation (%) | |
|----|---|------------------------|---|--|
| 1 | Renstra | 100 | 85 | |

| 2 | Renja | 100 | 85 |
|---|---------------------------------------|-----|----|
| 3 | IKU/IKI / Performance Agreement | 100 | 80 |
| 4 | LKIP | 100 | 83 |
| 5 | Results of internal evaluation report | 100 | 80 |

Source: Curahdami District (2023)

From the table above, it is known that the performance achievement in Curahdami District, Bondowoso Regency is still an average of 82.6%, not 100% or at least 90% which is a very good performance achievement figure based on Government Regulation Number 10 of 2023 from each indicator measured in the measurement of Performance Indicators for each Regional Apparatus in Bondowoso Regency, where the results are in the sufficient category so that there is still a need for improvement in each indicator that is assessed.

The main cause of the problem of not achieving maximum performance targets in Curahdami District, Bondowoso Regency is the less than optimal performance of each employee in Curahdami District which is caused by the quality of Human Resources still being stagnant, mastery of main tasks and functions is less than optimal (knowledge, abilities and skills of each individual are not evenly distributed) and the still minimal application of information technology in carrying out the main tasks and functions of each employee, where some employees tend to still do their jobs manually so that the accuracy and speed of achieving performance targets are slower.

The purpose of this study is to analyze the influence of human resource quality and technology utilization on employee performance in Curahdami District, Bondowoso Regency, East Java. This study has practical benefits for the Curahdami District Government, Bondowoso Regency, where the results of the study can provide input to improve employee performance and be used as material in formulating policies to improve services to the community. In addition, this study is useful for stakeholders as an illustration of the factors that influence employee performance. From an academic perspective, this study contributes to universities in developing theories related to public services, especially in Human Resource Management Science, and can be an empirical basis for further research with the potential for developing different variables.

Hypothesis Development

The quality of human resources is the quality of work (performance) which refers to the quality of human resources such as knowledge, skills and abilities possessed by an employee (Matutia; 2001). Meanwhile, according to Ndraha as quoted by Rachmawati (2008), high-quality human resources are human resources that can create not only comparative value but also competitive and innovative value by utilizing energy such as creativity, intelligence and imagination. Previous studies have also empirically shown that the quality of human resources affects employee performance conducted by Darmawan et al. (2020) and Nur et al. (2020) then the hypothesis in this study:

H1: The quality of human resources influences employee performance.

In an organization, information technology is the main choice for creating a robust information system and can create competitive advantages in today's tight competition (Teubner and Stockhinger, 2020). According to Sulistyan et al. (2022) Information technology for employees who understand and can use it will provide added value for them and can also help complete work in a shorter time and the quality of work results will also increase. Tampi et al. (2022) said that the use of information technology can be said to be successful if it can improve employee performance which ultimately has an impact on the performance of an organization. Previous studies have also shown empirically that the use of information technology affects employee performance carried out by Chege et al. (2020) then the hypothesis in this study: H2: Utilization of information technology affects employee performance

2. Methods

This study uses a quantitative approach. The study was conducted at the Curahdami District Office, Bondowoso Regency, East Java. The sample was taken using saturated sampling totaling 44 employees. Data were taken using a questionnaire distributed directly to respondents. The independent variables in this study are the quality of human resources and the use of technology, while the dependent variable is employee performance. Indicators of human resource quality are knowledge, skills, and abilities (Darmawan et al, 2020). Indicators of technology use are intensity of use, frequency of use, and software (Romero-Tena et al, 2020). Indicators of employee performance are quality, quantity, and punctuality (Sulistyan et al., 2020). Indicators are developed into statement items and tested for validity and reliability. Data analysis uses classical assumption tests, multiple linear regression analysis, coefficient of determination, model tests, and hypothesis tests. The classical assumption test uses data normality testing using the Kolmogorov-Smirnov Normality Test, multicollinearity testing by looking at tolerance values of more than 0.1 and VIF less than 10, and heteroscedasticity testing using the sig. (2-tailed) value on Spearman's Rank, with the provision that the Sig. value is greater than probability 0.05. Model testing uses the F Test and hypothesis testing uses the t test.

3. Results and Discussion

3.1. Results

Respondent Characteristics

Respondents in this study were divided based on gender, employment status, age, and education level. The characteristics of the respondents are as follows:

Table 2. Respondent Characteristics

| | Frekuensi | Persentase (%) |
|--------------------|-----------|----------------|
| Gender | | |
| Male | 35 | 79,54 |
| Female | 9 | 20,46 |
| Employee Status | | |
| ASN | 28 | 63,63 |
| PTT | 16 | 36,37 |
| Level | | |
| IV | 1 | 2,27 |
| III | 11 | 25,00 |
| II | 16 | 36,36 |
| I | 0 | 0,00 |
| PTT | 16 | 36,36 |
| Age | | |
| 20 – 25 Years | 3 | 6,82 |
| 26 – 30 Years | 5 | 11,36 |
| 31 – 35 Years | 9 | 20,45 |
| 36 - 40 Years | 8 | 18,18 |
| 41 – 45 Years | 7 | 15,91 |
| ≥ 46 Years | 12 | 27,27 |
| Level of Education | | |
| Elementary School | 0 | 0,00 |
| Junior High School | 1 | 2,27 |
| Senior High School | 31 | 70,45 |
| D1/D2/D3 | 0 | 0,00 |
| S1 / D4 | 11 | 25,00 |
| S2 | 1 | 2,27 |
| S3 | 0 | 0,00 |

Source: Data Processed (2024)

The table shows that the majority of respondents are male, which is 79.54% (35 respondents), while the rest are female 20.46% (9 respondents). In fact, the majority of employees in Curahdami District are male. The respondents of the study were dominated by ASN Group II of 36.36% (16 respondents) and Non-Permanent Employees (PTT) of 36.36% (16 respondents), ASN Group III of 25.00% (11 respondents) and the least ASN Group IV, which is 2.27% (1 respondent). The ranks of the respondents are quite varied from ASN Group IV, ASN Group III, ASN Group II and Non-Permanent Employees (PTT)/Honorary Workers. The table shows that the majority of respondents are aged ≥ 46 years, which is 27.27% (12 respondents), the least respondents are aged between 20 - 25 years, which is 6.82% (3 respondents). Age range 26-30 years 11.36% (5 respondents), age 31-35 years 20.45% (9 respondents), age 36-40 years 18.18% (8 respondents) and age range 41-45 years 15.91% (7 respondents). The data shows that the age range of respondents is quite varied. The table also shows that the majority of respondents have a high school education/equivalent, namely 70.45% (31 respondents), followed by respondents with a bachelor's degree/D4 education of 25.00% (11 respondents). Respondents with a junior high school education/equivalent and a master's degree each amount to 2.27% (1 respondent).

The results of the instrument testing in the form of validity and reliability are described as follows:

Table 3. Instrument Test Results

| Variable and Indicators | r test | Cronbach's Alpha | Information |
|---------------------------|--------|------------------|-------------|
| Human Resources Quality | | 0,787 | Reliable |
| Knowledge | 0,609 | | Valid |
| Skills | 0,750 | | Valid |
| Ability | 0,641 | | Valid |
| Utilization of technology | | 0,792 | Reliable |
| Intensity of use | 0,758 | | Valid |
| Frequency of use | 0,721 | | Valid |
| Applications used | 0,614 | | Valid |
| Employee Performance | | 0,759 | Reliable |
| Quantity | 0,756 | | Valid |
| Quality | 0,631 | | Valid |
| Timeliness | 0,547 | | Valid |

Source: Data Processed (2024)

The table shows the correlation value (r-count) of all indicators is more than the r table value (0.297), so it can be concluded that all indicators are declared valid. The table also shows that the test results of each variable have a Cronbach's Alpha value greater than 0.60. So based on the basis of decision making in the data reliability test, it can be concluded that the research items or instruments of each variable are consistent or reliable.

Classical Assumption Test Results Data Normality Test

Table 4. Results of the Kolmogorov-Smirnov (KS) non-parametric statistical test

| | | Unstandardized Residuals |
|--------------------------|----------------|---------------------------------|
| N | | 44 |
| Normal Parameters a, b | Mean | ,0000000 |
| | Std. Deviation | ,85462847 |
| Most Extreme Differences | Absolute | ,070 |
| | Positive | ,053 |
| | Negative | -,070 |
| Statistical Tests | | ,070 |
| Asymp. Sig. (2-tailed) | | ,200 |

Source: Data Processed (2024)

Based on the SPSS output (One-Sample Kolmogorov Test table), the significance value of Asym.Sig (2-tailed) is 0.200. Because 0.200 > 0.05, then according to the basis for making

decisions on the Kolmogorov-Smirnov normality test, it can be concluded that the data has a normal distribution.

To find out whether multicollinearity occurs or not, this is done by looking at the Variance Inflation Factor (VIF) value of each variable from the analysis results using SPSS. If the VIF is smaller than 10, it can be concluded that the data is free from symptoms of multicollinearity (Ghozali, 2016). The results of data processing using the SPSS program obtained VIF values as can be seen in the following table:

Table 5. Multicollinearity Test Results

| | | ndardized fficients | Standardized Coefficients | | | Collinearity Statistics | |
|------------------------------|------|------------------------|------------------------------|-------|------|-------------------------|-------|
| Model | В | Std. Error | Beta | t | Sig. | Tolerance | VIF |
| Human Resource Quality | ,084 | ,117 | ,099 | ,723 | ,474 | ,732 | 1,366 |
| Utilization of Technology | ,161 | ,105 | ,187 | 1,526 | ,135 | ,732 | 1,366 |

Source: Data Processed (2024)

Based on the output table of the Coefficiens table in the Collinearity Statistics section, it is known that the tolerance value of the Human Resource Quality and Information Technology Utilization variables is 0.732, because 0.732 is greater than 0.10, then according to the basis for decision making in the multicollinearity assumption test, it can be concluded that there are no symptoms of multicollinearity in the regression model. The VIF value of Human Resource Quality and IT Utilization is 1.366, because the VIF value of all variables is less than 10.00, then according to the basis for decision making in the multicollinearity assumption test, it can be concluded that there are no symptoms of multicollinearity in the regression model.

Table 6. Heteroskedasticity Test

| Tubic of freceroble dubicity feet | | | | | |
|-----------------------------------|-----------------|------------------|--|--|--|
| Item | Sig. (2-Tailes) | Cut Off | Information | | |
| Human Resourc | e 0.993 | Nilai sig > 0,05 | Tidak terjadi gejala heteroskedastisitas | | |
| Quality | | | | | |
| Utilization | of 0.815 | Nilai sig > 0,05 | Tidak terjadi gejala heteroskedastisitas | | |
| Technology | | | | | |

Source: Data Processed (2024)

Based on the table of data processing results of heteroscedasticity assumption, it is known that the significant value (2-tailed) of all variables is greater than 0.05, so it can be said that there is no symptom of heteroscedasticity in the regression model. From the results of the classical assumption test carried out where the results show that the residual value of the regression model used is normally distributed, there are no symptoms of multicollinearity and symptoms of heteroscedasticity, so it is concluded that the regression model is suitable for use in this study.

Linier Regression Analysis

Table 7. Linier Regression Analysis

| Variable | Koefisien | | t | |
|----------------------------------|------------------|--------------------|-------------------|-------|
| variable | Regresi | hitung | tabel | Sig |
| Constant | 2,180 | 1,942 | 2,203 | 0,032 |
| HR Quality (x1) | 0,184 | 2,982 | (Df = a/2; n-k-1) | 0,003 |
| IT Utilization (x2) | 0,161 | 3,526 | = 0,05/2;44-4-1 | 0,004 |
| | | | = 0,025; 39 | |
| Fhitung | = 25,868 | | | |
| F _{tabel} (5% dan 4;40) | = 2.610 | (Ftabel = k; n-k = | 4;44-4=4;40) | |
| Signifikansi | = 0,000 | | | |
| R^2 | = 0,877 atau 87, | 70% | | |

Source: Data Processed (2024)

According to the results of the multiple linear regression analysis, the regression equation obtained is:

$$Y = 2.180 + 0.184x_1 + 0.161x_2$$

From the table which is the result of SPSS output, it is obtained that the value of R Square (R2) or Determination Coefficient is 0.877 (result of 0.9362) or 87.70%, meaning that the variable Quality of human resources (x1) and Utilization of information technology (x2) have an influence contribution of 87.70% to the Performance variable (y) while the remaining 12.30% is influenced by other factors outside the variables used in this study. The t-count value of the human resource quality variable is 2.982 with a t-table value of 2.023. Because 2.982> 2.023. Significance value (sig.) 0.003 <0.05, it can be concluded that hypothesis 1 is accepted, meaning that the quality of human resources partially has a significant effect on performance. The t-count value of the human resource quality variable is 3.526 with a t-table value of 2.023. Because 3.526 > 2.023 Significance value (sig.) 0.004 < 0.05 then it can be concluded that hypothesis 2 is accepted, meaning that the partial utilization of information technology has a significant effect on performance. Based on the results of the F test by comparing the significance value with the probability of 0.05 and comparing the F-count value with the F-table, it can be concluded that this model is appropriate for testing together.

3.2. Discussion

The Influence of Human Resource Quality on Employee Performance

The test results concluded that the first hypothesis (H1) was accepted, meaning that the quality of human resources has a significant effect on employee performance in Curahdami District, Bondowoso Regency. The majority of respondents agreed with the statement items on the human resource quality variable which received an average score of 3.87 which is categorized as high, with the skill indicator getting the highest score (3.91) followed by ability (3.89) and knowledge with the lowest score (3.82). This means that respondents agreed that the quality of human resources has a significant effect on employee performance in Curahdami District. Facts in the field show that in Curahdami District, Bondowoso Regency, employees who have stagnant or undeveloped human resource quality and are not in accordance with their duties and functions tend to have performance that is not in accordance with expectations. This is evident from the slow completion of a job, the quality and quantity of work do not match the targets set, on the other hand employees with good human resource quality, willing to develop according to job demands and according to organizational needs will have good performance, quality and timeliness in completing a job according to the targets set. The quality of an employee's human resources greatly determines the results of his/her work.

Employees who have knowledge of the main tasks and functions, regulations and technical instructions that are used as references in carrying out their duties tend to have good performance, they are easier, faster and the quality of their work is better than those who have less knowledge.

Basic and technical skills about a job that an employee has, for example, data processing skills, analyzing, in providing services to the community, making work plans, operating computers and other tools, organizing, speaking, negotiating, leading and other skills are very helpful in completing the work. Every employee who has good basic and technical skills will tend to be easier to complete the work with better work results and always on time in completing the tasks that are his/her responsibility.

A person's ability to complete work is the main requirement for achieving an employee's performance, this ability includes the ability to complete work, the ability to analyze existing problems, the ability to find solutions to problems and the ability to find the best, most effective and efficient way to complete a job.

Employees with good quality human resources and in accordance with the needs in the field always have ways and innovations in solving every problem that exists in the work. They try to find ways to simplify a difficult job so that it can be carried out as well as possible, trying to find ways to overcome problems that arise by combining the knowledge they have, skills and abilities

that are adjusted to the rules that are the basis for carrying out tasks and existing field conditions. This fact proves that the better the knowledge, skills and abilities of an employee in Curahdami District, the performance of the person concerned will also increase. This is in accordance with research from Darmawan et al. (2020) which examines the effect of human resource quality on performance, where all variables have an influence on employee performance.

The Influence of Information Technology Utilization on Employee Performance

The results of the research test concluded that the second hypothesis (H2) was accepted, meaning that the use of information technology in carrying out tasks or work has a significant effect on the performance of an employee in Curahdami District. This can be seen from the majority of respondents' answers stating that they agree with the statement items from the information technology utilization variable.

The average score of the information technology utilization variable is high (3.83) with the indicator that gets the highest value being the Application used (4.02) then the frequency of use indicator (3.77) and the intensity of use being the indicator with the lowest average (3.70) Respondents are of the opinion that the application of information technology in completing a job will cause the work to be better, more accurate and faster, thus increasing effectiveness and efficiency.

The conditions in Curahdami District where the use of information technology in efforts to improve and accelerate the completion of work is still not optimal, there are still some employees who have not been able to apply the use of information technology in every job they do. This of course results in work results in terms of quantity, quality and timeliness not being on target.

Employees who are able to apply the use of information technology in every job that is their responsibility have good performance, this can be seen from the quantity, quality and timeliness in completing work which is mostly according to the expected target. The work done becomes faster, more accurate, more effective and more efficient so that it boosts the performance of Curahdami District as an organization as a whole. The application used greatly influences the performance of an employee because with the right application it will help employees in completing all their work. Applications that are often used to help complete work in Curahdami District include measuring employee performance using the "SIPIJAR" application, attendance using a faceprint machine and attendance with a smartphone, using email facilities to receive and send documents to other parties, compiling workload analysis and workload analysis using "SIAB.BAGOR" (Organizational Section Workload Analysis Information System), utilizing the SISKUDES (Village Financial System) application in supervising village financial management, using the SiPeDe (Regional Government System) application for budgeting, management and accountability of the APBD, using the Sirup Application (General Procurement Plan Information System) to manage the procurement of goods and services, SAKIP (Government Internet Performance Accountability System) in measuring the results of the realization of annual performance that is implemented, and utilizing social media as a means of communication and delivery of information effectively and efficiently. The frequency and intensity of IT utilization in completing work will improve an employee's performance, the more often employees in Curahdami District use applications in completing work, the quantity, quality and timeliness of a job will increase. The intensity of IT utilization, frequency of utilization and type of application or software used have a broad impact on the results of existing work, the more appropriate the application, the better the impact. This is in accordance with the opinions of Sulistyan et al. (2022) whose research states that the use or utilization of information technology has a major influence on employee performance, where one of the research variables also uses the IT utilization variable, his research also shows that the use of information technology has an effect on employee performance.

4. Conclusion

Based on the results of the analysis, it is concluded that the quality of human resources and the use of information technology have a significant effect on employee performance in

Curahdami District, Bondowoso Regency. The quality of human resources, as measured by indicators of knowledge, skills, and abilities, is directly proportional to the increase in employee performance in carrying out tasks. The use of information technology, as measured by the intensity, frequency, and applications used, also has a positive effect, where the more appropriate the use of technology, the more effective and efficient the employee's work. Simultaneously, both variables contribute significantly to employee performance, with an influence of 87.70%, while 12.30% is influenced by other variables not studied. This study has several limitations that need to be considered. First, the number of samples consisting of only 44 employees in Curahdami District, Bondowoso Regency, may not be enough to comprehensively describe the condition of employee performance in a wider area. Second, this study only examines two variables, namely the quality of human resources and the use of information technology, while it is possible that other factors, such as motivation, work environment, or management policies, also play a role in influencing employee performance but are not included in the analysis. Third, employee performance measurement uses indicators that may still be limited to existing dimensions, so they do not cover deeper or contextual aspects of performance. Suggestions for further research, it is recommended that the number of samples be expanded so that the research results can better describe the condition of employee performance in a wider area and can be generalized. Research should also consider additional variables, such as work motivation, leadership, organizational culture, and management policies, which may also affect employee performance. In addition, the development of more comprehensive and in-depth employee performance measurement tools will provide more accurate and relevant results to increasingly dynamic work conditions and environments.

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