



The Influence of Work Ability and Work Ethic on Employee Performance at the Regional Disaster Management Agency of Sibolga City

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ARTICLE INFO

Keywords:

Work Ability,
Work Ethic,
Employee Performance,
Multiple Linear Regression,
Human Resource
Management,
Public Organization.

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ABSTRACT

This study aims to analyze the influence of work ability and work ethic on employee performance at Badan Penanggulangan Bencana Daerah Kota Sibolga. The research employed a quantitative approach with data collected through questionnaires distributed to 53 respondents. Data analysis included validity and reliability tests, classical assumption tests, multiple linear regression, t-test, F-test, and coefficient of determination (R^2) using SPSS. The results indicate that partially, work ability and work ethic have a positive and significant effect on employee performance. Simultaneously, both variables significantly affect performance with an F-value of $16.29 > 3.18$. The coefficient of determination (R^2) of 0.399 shows that work ability and work ethic contribute 39.9% to employee performance, while the remaining percentage is influenced by other factors outside this study. Work ability is identified as the most dominant variable affecting employee performance.

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INTRODUCTION

Organizations, both in the public and private sectors, are required to manage human resources (HR) optimally in order to achieve established objectives. Human resources constitute a strategic asset that determines organizational success, as employee performance serves as a primary indicator in assessing the effectiveness of goal attainment. Performance fundamentally refers to the work outcomes achieved by individuals or groups in accordance with their assigned duties and responsibilities in pursuit of organizational objectives (Wirawan, 2015). Therefore, improving employee performance is closely related to how organizations manage the factors that influence it, particularly work ability and work ethic.

Work ability reflects an individual's capacity to perform tasks, encompassing knowledge, skills, and work attitudes. Employees with adequate competencies tend to complete tasks more effectively and adapt more efficiently to dynamic organizational demands. Previous studies have demonstrated that work ability positively influences employee performance (Rizky, 2017; Jayanthi & Suryani, 2018). However, other findings indicate that work ability does not significantly affect performance (Salju & Rahman, 2016). These inconsistent results highlight the need for further investigation across different organizational contexts and work environments.

In addition to work ability, work ethic represents a critical factor in determining employee performance. Work ethic embodies values such as discipline, responsibility, integrity, and dedication that function as internal drivers in task execution. Employees with a strong work ethic are more likely to demonstrate commitment, initiative, and consistency in achieving organizational targets. Wirawan (2015) emphasizes that work ethic is one of the behavioral factors influencing performance. This assertion is supported by empirical studies conducted by Yulianti (2016) and Hardiyansyah and Yanwar (2015), which found that work ethic has a positive and significant effect on employee performance.

Within the governmental context, performance demands placed upon public officials continue to increase, particularly in strategic agencies directly related to public safety. One such agency is the Badan Penanggulangan Bencana Daerah Kota Sibolga, which plays a crucial role in disaster mitigation, emergency response, and post-disaster rehabilitation. Sibolga is a coastal area exposed to potential natural hazards such as earthquakes and tidal flooding, thereby requiring BPBD personnel to perform their duties swiftly, responsively, and professionally.

Preliminary observations indicate several issues potentially affecting employee performance, including mismatches between workload and technical competence, low time discipline, lack of initiative, and insufficient responsibility toward assigned tasks. These conditions may contribute to delays in disaster

response and reduced quality of public services. Accordingly, an empirical evaluation is necessary to determine the extent to which work ability and work ethic influence employee performance at the BPBD of Sibolga City.

Based on the foregoing discussion, this study aims to analyze the effect of work ability and work ethic on employee performance, both partially and simultaneously, at the Regional Disaster Management Agency of Sibolga City. The findings are expected to provide theoretical contributions to the development of human resource management literature and to serve as practical considerations for local government in formulating policies to enhance the quality of personnel in the disaster management sector.

METHODS

This study employed a quantitative approach with a descriptive design. The quantitative approach was selected because the research aims to test hypotheses and analyze the relationships and effects among variables through numerical data processing and statistical techniques (Creswell, 2014). The descriptive design was utilized to provide an empirical overview of work ability, work ethic, and employee performance without manipulating the observed variables (Babbie, 2016). Thus, the study not only describes the conditions of the variables but also examines the partial and simultaneous effects of work ability and work ethic on employee performance.

The research was conducted at the Badan Penanggulangan Bencana Daerah Kota Sibolga, located at Jl. Com. Yos Sudarso No. 42, Kota Baringin, Sibolga Kota District, Sibolga, North Sumatra, Indonesia. The study was conducted over a four-month period, from May 2025 to August 2025.

The population consisted of all employees of BPBD Sibolga City, totaling 110 individuals, including 30 civil servants and 80 contract employees. The population is defined as a generalization area comprising objects or subjects with specific characteristics determined by the researcher for study and conclusion drawing (Sugiyono, 2014). Since the population exceeded 100 individuals, the sample size was determined using the Slovin formula with a 10% margin of error, resulting in 53 respondents. The sampling technique applied was simple random sampling, ensuring that each population member had an equal probability of being selected as a respondent.

The study utilized self-report data obtained directly from respondents through research instruments. Data sources included primary and secondary data. Primary data were collected through questionnaires distributed to BPBD Sibolga employees, while secondary data were obtained from official institutional documents, annual reports, organizational structures, and relevant academic literature and journals.

The primary data collection technique was a questionnaire employing a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Supporting techniques included documentation studies, structured observation, and interviews to enhance data validity.

The study comprised two independent variables—work ability (X1) and work ethic (X2)—and one dependent variable—employee performance (Y). Work ability was operationalized through indicators of technical competence, analytical skills, communication skills, and work experience. Work ethic was measured through discipline and responsibility, task commitment, honesty and integrity, and enthusiasm at work. Employee performance was measured using indicators of work quality, work quantity, timeliness, attendance, and discipline (Sugiyono, 2017).

Data analysis was conducted quantitatively using statistical software. The analytical procedures included validity testing using Pearson Product-Moment correlation and reliability testing using Cronbach's Alpha with a minimum threshold of 0.60. Descriptive analysis was subsequently performed to examine respondent data distribution. Prior to regression analysis, classical assumption tests were conducted, including normality testing (Kolmogorov–Smirnov), multicollinearity testing (Tolerance and VIF), and heteroscedasticity testing (Glejser test or scatterplot analysis).

Hypothesis testing was performed using multiple linear regression analysis with the following equation:

$$Y = a + b_1X_1 + b_2X_2 + e$$

The t-test was used to examine the partial effects of each independent variable on employee performance, while the F-test was employed to determine their simultaneous effect. Additionally, the coefficient of determination (R^2) was used to measure the extent to which work ability and work ethic explain variations in employee performance.

RESULTS AND DISCUSSION

Results

Respondent Characteristics

Respondent characteristics constitute an essential component of research analysis, as they provide a general overview of the background of individuals serving as data sources. This information assists the researcher in understanding the context of respondents' answers and ensures that the collected data reflect the diversity of employee characteristics at the Badan Penanggulangan Bencana Daerah Kota Sibolga. In this study, respondent characteristics were analyzed based on gender, age, and educational level.

Based on gender distribution, of the total 53 respondents, 28 individuals (52.8%) were male and 25 individuals (47.2%) were female. These data indicate that male respondents were slightly more dominant than female respondents. Nevertheless, the composition remains relatively balanced, thereby representing perspectives from both gender groups. This balance is particularly relevant given that disaster management responsibilities require active participation from both men and women.

In terms of age, respondents were distributed across several age groups. Respondents under 25 years old totaled 10 individuals (18.9%), those aged 26–35 years accounted for 15 individuals (28.3%), respondents aged 36–45 years numbered 12 individuals (22.6%), and those over 45 years old totaled 16 individuals (30.2%). This distribution indicates that the majority of respondents fall within the productive to mature age categories. The largest group comprises individuals over 45 years old, suggesting relatively extensive work experience. Meanwhile, the presence of younger respondents reflects a combination of energy, adaptability, and professional experience within the organizational environment.

Based on educational attainment, respondents with Diploma/Bachelor's degrees constituted the largest proportion, totaling 26 individuals (49.1%), followed by senior high school/vocational high school graduates with 22 individuals (41.5%), and postgraduate degree holders with 5 individuals (9.4%). These data indicate that most employees possess higher educational qualifications that support the implementation of both technical and administrative tasks in the field of disaster management. The diversity in educational backgrounds also provides varied perspectives in assessing work ability, work ethic, and employee performance.

Overall, the respondent characteristics in this study demonstrate a sufficiently diverse distribution in terms of gender, age, and educational level. This diversity is expected to provide a comprehensive representation of work ability, work ethic, and employee performance conditions at the Regional Disaster Management Agency of Sibolga City.

Descriptive Analysis

Descriptive analysis aims to describe the tendency of respondents' answers regarding the variables of work ability, work ethic, and employee performance at the Badan Penanggulangan Bencana Daerah Kota Sibolga. The analysis was conducted by calculating the mean, frequency, and percentage of each questionnaire item.

Measurement was carried out using a 1–5 Likert scale. The scale range was calculated using the following formula:

$$RS = (5 - 1) / 5 = 0.80$$

Based on this calculation, the interpretation categories for the mean scores are as follows: 1.00–1.80 (Very Low), 1.81–2.60 (Low), 2.61–3.40 (Moderate), 3.41–4.20 (High), and 4.21–5.00 (Very High). This classification was employed to facilitate the initial interpretation of respondents' perceptions prior to conducting further statistical analysis.

Data Analysis

The data analyzed in this study relate to the influence of work ability and work ethic on employee performance at the Badan Penanggulangan Bencana Daerah Kota Sibolga. Data were collected through observation, interviews, and questionnaires.

Observations were conducted to directly examine the physical conditions, facilities and infrastructure, and the operational work system of employees. The findings indicate that tasks have been carried out in accordance with organizational functions and are supported by adequate work facilities. The observational data were used as comparative evidence to validate the questionnaire and interview results.

Interviews were conducted with the Secretary, operational service administrators, and several employees. The information obtained included the organizational profile, history, vision and mission, organizational structure, as well as the implementation of duties and functions. The interview findings reinforced the role of work ability and work ethic in supporting employee performance.

Questionnaires were distributed to 53 respondents using a five-point Likert scale (1–5). Qualitative responses from participants were converted into quantitative data and tabulated in tables to facilitate statistical analysis.

Questionnaire Data Analysis

1. Variable X1 (Work Ability)

Based on the tabulation and distribution of responses, the overall mean score was **3.669**. Referring to the scale range classification (3.41–4.20), this value falls into the **High** category. This result indicates that employees’ work ability—measured through technical competence, analytical skills, communication skills, and work experience—is generally at a good level.

2. Variable X2 (Work Ethic)

The analysis of response distribution also produced an overall mean score of 3.669, which is categorized as High. This finding suggests that employees’ work ethic, including discipline, commitment, integrity, and enthusiasm, is well developed.

Overall, the descriptive analysis demonstrates that both work ability and work ethic are classified as high. This preliminary finding suggests that these variables potentially exert a positive influence on employee performance. Further analysis was conducted using regression testing to examine the research hypotheses.

Validity Test

The validity test was conducted using the Pearson Product–Moment correlation with the criterion that the calculated correlation coefficient (r-count) must be greater than or equal to the critical value (r-table). With a sample size of 53 respondents (df = 51), the r-table values were 0.2706 for variables X1 (Work Ability) and X2 (Work Ethic), and 0.304 for variable Y (Employee Performance).

The results indicate that all questionnaire items for Work Ability (0.460–0.867), Work Ethic (0.619–0.827), and Employee Performance (0.497–0.732) obtained r-count values greater than the respective r-table values. Therefore, all measurement instruments are declared valid and appropriate for use in this study conducted at the Badan Penanggulangan Bencana Daerah Kota Sibolga.

Reliability Test

Table 1. Reliability Test Results

No	Variable	Reliability Statics		
		Cronbach's Alpha	N Of Item	Description
1	Work Ability	0,867 >0,60	10	Reliable
2	Work Ethic	0,904 >0,60	10	Reliable
3	Employee Performance	0,821 >0,60	10	Reliable

The reliability test was conducted using the Cronbach’s Alpha method with a minimum acceptance criterion of ≥ 0.60 . The results indicate that the Cronbach’s Alpha values for Work Ability (X1), Work Ethic (X2), and Employee Performance (Y) were 0.867, 0.904, and 0.821, respectively. Since all values exceed the required threshold of 0.60, the research instruments are considered reliable and suitable for use in the study conducted at the Badan Penanggulangan Bencana Daerah Kota Sibolga.

Classical Assumption Tests

The normality test was conducted using the **Kolmogorov–Smirnov** test with the criterion that the significance value must be greater than 0.05 (Sig. > 0.05).

Table 2. Normality Test Results

One-Sample Kolmogorov-Smirnov Test	Unstandardized Residual
N	86
Mean	0
Std. Deviation	3.93951604
Most Extreme Differences Absolute	0.075
Most Extreme Differences Positive	0.067
Most Extreme Differences Negative	-0.075
Kolmogorov-Smirnov Z	0.653
Asymp. Sig. (2-tailed)	0.200

The results show an Asymp. Sig. (2-tailed) value of 0.200 > 0.05, indicating that the residuals are normally distributed.

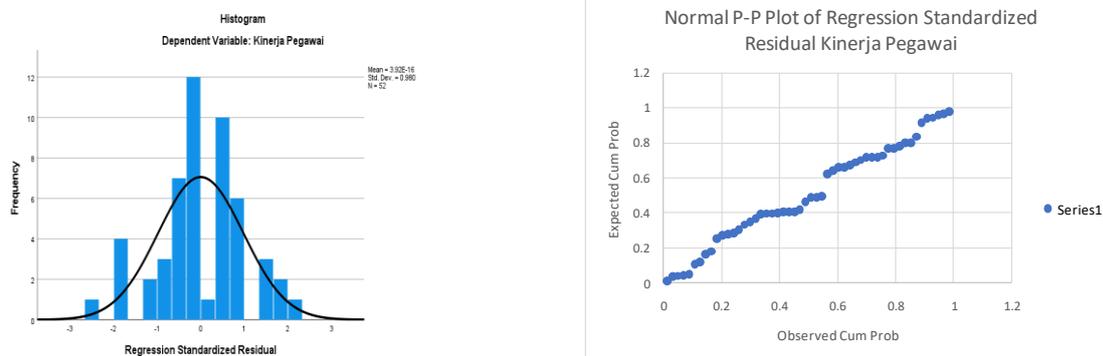


Figure 1. Histogram and P-P Plot Graphs

Furthermore, the histogram displays a bell-shaped curve, and the P-P Plot shows points closely following the diagonal line, confirming that the normality assumption is satisfied. Therefore, the regression model is appropriate for analyzing the effect of Work Ability (X1) and Work Ethic (X2) on Employee Performance (Y) at the Badan Penanggulangan Bencana Daerah Kota Sibolga.

Table 3. Multicollinearity Test Results

Model		Collinearity Statistics	
		Tolerance	VIF
	(Constant)		
1	Work Ability (X1)	0.820	1.266
	Work Ethic (X2)	0.820	1.266

a. Dependent Variable: Employee Performance (Y)

The multicollinearity test results indicate a Tolerance value of 0.820 > 0.10 and a Variance Inflation Factor (VIF) value of 1.266 < 10 for both independent variables. These findings confirm that there is no multicollinearity in the regression model.

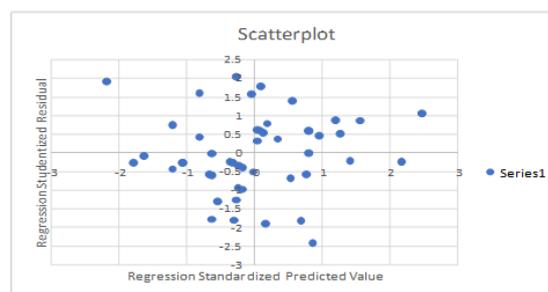


Figure 2. Heteroscedasticity Test Results

Based on the scatterplot analysis, the residual points are randomly distributed and do not form any specific pattern. This indicates that heteroscedasticity is not present, and the assumption of homoscedasticity is satisfied. Overall, the regression model fulfills all classical assumptions and is appropriate for proceeding to the hypothesis testing stage.

Multiple Linear Regression Test

The multiple linear regression analysis was conducted to examine the effect of Work Ability (X1) and Work Ethic (X2) on Employee Performance (Y) at the Badan Penanggulangan Bencana Daerah Kota Sibolga.

Table 4. Multiple Linear Regression Test Results

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	12.744	4.425		2.880	0.251
Work Ability (X1)	0.422	0.118	0.440	3.585	0.243
Work Ethic (X2)	0.250	0.102	0.302	2.466	0.301

a. Dependent Variable: Employee Performance (Y)

Based on the analysis results, the regression equation obtained is:

$$Y = 12.744 + 0.422X_1 + 0.250X_2$$

The constant value of 12.744 indicates that when Work Ability and Work Ethic are assumed to be zero, the Employee Performance score is 12.744. The regression coefficient of 0.422 for Work Ability (X1) and 0.250 for Work Ethic (X2) demonstrates that both independent variables have a positive effect on Employee Performance. This implies that an increase in Work Ability and Work Ethic will lead to an improvement in Employee Performance.

Hypothesis Testing

The t-test was conducted to determine the partial effect of each independent variable on Employee Performance at the Badan Penanggulangan Bencana Daerah Kota Sibolga.

The results indicate that Work Ability (X1) has a t-value of 3.585 and Work Ethic (X2) has a t-value of 2.466. Both variables demonstrate a positive effect on Employee Performance; therefore, the partial hypotheses are accepted.

Table 5. F-Test Results (Simultaneous Test)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	385.342	3	192.671	16.293	.000 ^b
	Residual	579.427	50	11.825		
	Total	964.769	53			

a. Dependent Variable: Y

b. Predictors: (Constant), X2, X1

The F-test results show an F-value of 16.293 with a significance level of 0.000 < 0.05. This finding indicates that Work Ability and Work Ethic simultaneously have a significant effect on Employee Performance. Accordingly, the simultaneous hypothesis is accepted.

Table 6. Coefficient of Determination Test Results (R Square)

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.632 ^a	0.399	0.375	3.43876	2.056

a. Predictors: (Constant), X2, X1

b. Dependent Variable: Y

The R Square value of 0.399 indicates that Work Ability and Work Ethic explain 39.9% of the variance in Employee Performance, while the remaining 60.1% is influenced by other variables not examined in this study.

Discussion

The Effect of Work Ability on Employee Performance

The partial test results indicate that Work Ability (X1) has a positive and significant effect on Employee Performance at the Badan Penanggulangan Bencana Daerah Kota Sibolga. This finding implies that higher levels of employee competence lead to improved performance outcomes.

Work ability encompasses knowledge, skills, and work attitudes in carrying out assigned duties. In the context of disaster management, employees with strong technical competence and procedural understanding are more responsive, accurate, and effective in handling emergency situations. Therefore, continuous

The Effect of Work Ethic on Employee Performance

The t-test results also demonstrate that Work Ethic (X2) has a positive and significant effect on Employee Performance. Work ethic reflects discipline, responsibility, commitment, and dedication in carrying out job responsibilities.

In a work environment that demands high preparedness, such as BPBD, employees with a strong work ethic tend to perform more diligently, responsively, and with a strong public service orientation. The higher the employees' work ethic, the better their performance. The R Square value of 0.399 indicates that work ability and work ethic together explain 39.9% of the variance in employee performance, while the remaining 60.1% is influenced by other factors such as leadership, motivation, and work environment.

The Simultaneous Effect of Work Ability and Work Ethic on Employee Performance

The F-test results confirm that Work Ability and Work Ethic simultaneously have a significant effect on Employee Performance. This finding underscores that optimal performance is determined not only by technical competence but also by professional attitudes and commitment.

At the Regional Disaster Management Agency of Sibolga City, both factors must operate in balance. High ability without a strong work ethic may reduce performance consistency, whereas a strong work ethic without adequate technical competence may limit task effectiveness. Consequently, efforts to enhance employee performance should focus on strengthening both professional competencies and organizational work values.

CONCLUSION

Based on the research findings at the Badan Penanggulangan Bencana Daerah Kota Sibolga, it can be concluded that work ability and work ethic have a positive and statistically significant effect on employee performance, both partially and simultaneously, with a contribution of 39.9% ($R^2 = 0.399$). Partially, work ability is the most dominant variable influencing performance ($t = 3.585$), compared to work ethic ($t = 2.466$). Simultaneously, both variables are significant ($F_{count} = 16.29 > F_{table} = 3.18$). The multiple linear regression equation, $Y = 12.744 + 0.422X1 + 0.250X2$, indicates a positive direction of influence. Therefore, efforts to enhance employee performance should prioritize strengthening competencies through continuous training and the development of work ethic. Future research is recommended to incorporate additional variables, such as organizational culture, or to apply a mixed-method approach to obtain more comprehensive findings.

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