

Analysis of Work Knowledge, Work Ability, and Leadership on Employee Performance at PT Belawan New Container Terminal

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Abstract

This research aimed to determine how job knowledge, work ability, and leadership improved employee performance at PT Belawan New Container Terminal. The research applied a quantitative approach with an associative research type, which was intended to examine causal relationships and the level of influence among the variables studied. The research population consisted of 210 employees, while the sample was determined using the Slovin formula with a purposive sampling technique, resulting in 68 respondents as the research sample. Primary data were collected through the distribution of structured questionnaires developed based on the indicators of each variable. The collected data were then processed and analyzed using SPSS version 24. The analytical technique employed was multiple linear regression. The results showed that job knowledge, work ability, and leadership had a positive and significant effect on employee performance. Job knowledge had a regression coefficient of 0.395 with a t-value of 4.140 and a significance level of 0.000. The work ability variable showed a regression coefficient of 0.405, a t-value of 4.944, and a significance level of 0.000. Leadership had a regression coefficient of 0.397 with a t-value of 4.027 and a significance level of 0.000. Simultaneously, the F-value was 259.710 with a significance value of 0.000. With a t-table value of 1.998 and an F-table value of 2.748, the results indicated that $t\text{-value} > t\text{-table}$ and $F\text{-value} > F\text{-table}$; therefore, hypotheses H1, H2, H3, and H4 were proven to be correct and acceptable. Work ability was identified as the most dominant variable influencing employee performance because it had the largest regression coefficient and t-value. Approximately 92.1% of employee performance could be explained by job knowledge, work ability, and leadership. The R value of 0.961 indicated a very strong relationship between job knowledge, work ability, leadership, and employee performance.

Keywords: Job Knowledge, Work Ability, Leadership, Employee Performance

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Introduction

PT Belawan New Container Terminal is a subsidiary of PT Pelabuhan Indonesia (Persero) operating within the Belawan Port area, Medan City, North Sumatra [1]. The company is engaged in port service activities, with its primary focus on container loading and unloading services, storage, and the distribution of export and import goods [2]. The presence of PT Belawan New Container Terminal plays a strategic role in supporting the smooth flow of national and international logistics, particularly in the western region of Indonesia [2].

The success of port service companies is largely determined by employee performance, as employees serve as the main executors of operational activities in the field [1]. Optimal employee performance has a direct impact on the efficiency of loading and unloading processes, service time effectiveness, and customer satisfaction levels. Employees who demonstrate high work quality, achieve quantitative targets, complete tasks within the specified timeframes, manage costs efficiently, and maintain harmonious cooperation contribute significantly to the sustainable achievement of organizational goals [3].

In practice, employee performance at PT Belawan New Container Terminal still encounters several challenges. Based on the results of a preliminary survey conducted among employees, it was found that some performance indicators have not yet reached optimal levels. Several employees have not been able to consistently maintain the quality of work outcomes in accordance with company standards. In addition, the achievement of work quantity targets and task completion timeliness still require improvement, particularly during periods of high operational activity. From the cost efficiency perspective, resource management needs to be further optimized to align with operational effectiveness demands. Although working relationships among employees are generally satisfactory, aspects related to supervision and work direction require strengthening to ensure that all activities are carried out in accordance with established procedures.

One factor presumed to influence employee performance is work knowledge [4]. Work knowledge includes employees' understanding of job duties and responsibilities, work procedures, service characteristics, and the use of tools and technologies that support operational activities [5]. The preliminary survey results indicate that some employees do not yet fully comprehend company work procedures and operational systems. This limited understanding may lead to inconsistencies in task execution, reduced work accuracy, and delays in job completion [6]. Furthermore, employees' understanding of company products and services, as well as their ability to operate work-related technologies, still needs improvement to enable more effective and efficient performance.

Work ability is also a crucial factor influencing employee performance [7]. Work ability encompasses technical skills, problem-solving skills, adaptability to change, as well as communication and coordination skills with colleagues [8]. The preliminary survey revealed that some employees still experience difficulties in operating work equipment and technologies according to established standards and face challenges in identifying solutions to operational problems. Adaptability to changes in work systems and the implementation of new technologies has not been evenly distributed among employees. These conditions may potentially disrupt workflow continuity and hinder the achievement of company operational targets [9].

Effective leadership is also capable of providing clear direction, fostering open communication, offering support to employees, and enhancing work motivation [10]. Based on the preliminary survey, it was found that the effectiveness of communication between leaders and employees still needs improvement to prevent differences in perception during task implementation. In addition, leadership roles in providing support, showing concern for working conditions, and motivating employees have not been equally perceived by all employees. Suboptimal leadership may negatively affect employee morale and engagement in achieving organizational objectives [11].

Issues related to work knowledge, work ability, and leadership, if not properly managed, may collectively affect overall employee performance [12]. Limitations in work knowledge and work ability can hinder task effectiveness, while inadequate leadership may reduce employee motivation and commitment [13]. Therefore, a comprehensive scientific study is necessary to analyze the influence of work knowledge, work ability, and leadership on employee performance as a basis for formulating sustainable performance improvement strategies.

Based on the above discussion, this study is relevant to be conducted in order to obtain empirical evidence regarding the influence of work knowledge, work ability, and leadership on employee performance at PT Belawan New Container Terminal. The findings of this study are expected to provide academic contributions and serve as practical considerations for the company in developing human resources and enhancing operational effectiveness.

Research Methodology

This study employs an associative-quantitative approach aimed at analyzing the influence of work knowledge, work ability, and leadership on employee performance, both partially and simultaneously. This approach was selected because it allows for objective testing of relationships among variables through numerical data and statistical analysis [14]. Data were collected through the distribution of structured questionnaires to respondents, enabling systematic measurement and generalization of the research findings. The associative-quantitative approach is considered relevant for explaining causal relationships among variables within an organizational context [15].

The research population consists of all permanent employees of PT Belawan New Container Terminal, totaling 210 individuals across various operational and administrative divisions. Sample determination was conducted using the Slovin formula with a 10 percent margin of error, resulting in a sample size of 68 respondents [16]. The sampling technique employed was purposive sampling, with criteria including permanent employee status, a minimum of one year of work experience, and non-managerial positions. This approach was chosen to ensure that respondents possess sufficient work experience relevant to the studied variables [17].

The primary data used in this study are primary data obtained directly from respondents through observation, structured interviews, and questionnaires based on a five-point Likert scale [18]. The Likert scale was used to measure respondents' perceptions of each research variable indicator, ranging from strongly disagree to strongly agree [19].

The research variables consist of independent variables and a dependent variable. Work Knowledge (X1) was measured using indicators including understanding of job duties and responsibilities, knowledge of work procedures and systems, insight into products or services, understanding of work tools and technologies, and the ability to apply knowledge in practice [20]. Work Ability (X2) was measured using indicators such as work knowledge, technical skills, problem-solving ability, adaptability, and communication skills [21]. Leadership (X3) was measured through indicators including clear and effective communication, the ability to provide direction and support, concern for employees, and the ability to inspire and motivate [22]. Employee Performance (Y) was measured based on indicators of quality, quantity, timeliness, cost efficiency, supervision, and interpersonal relationships among employees [3].

Data analysis was conducted using multiple linear regression after passing data quality tests (validity and reliability) and classical assumption tests, including normality, multicollinearity, and heteroscedasticity tests [23]. Hypothesis testing was carried out using t-tests (partial), F-tests (simultaneous), and the coefficient of determination (R^2) to determine the extent of the contribution of independent variables to employee performance [24].

The hypotheses proposed in this study examine whether work knowledge, work ability, and leadership, both partially and simultaneously, influence employee performance at PT Belawan New Container Terminal.

Results and Discussion

Data Quality Test (Validity and Reliability)

Table 1. Table 1. Results of Validity and Reliability Tests

Items	Work Knowledge (X1)		Work Ability (X2)		Leadership (X3)		Employee Performance (Y)		Conclusion
	r_{hitung}	Cronbach's Alpha	r_{hitung}	Cronbach's Alpha	r_{hitung}	Cronbach's Alpha	r_{hitung}	Cronbach's Alpha	
1	0,674	0,922	0,667	0,913	0,634	0,906	0,629	0,909	Valid & Reliable
2	0,712	0,920	0,559	0,920	0,579	0,911	0,577	0,911	Valid & Reliable
3	0,757	0,918	0,612	0,918	0,736	0,898	0,569	0,912	Valid & Reliable
4	0,656	0,923	0,739	0,909	0,846	0,888	0,573	0,912	Valid & Reliable
5	0,702	0,920	0,719	0,910	0,606	0,909	0,850	0,900	Valid & Reliable
6	0,841	0,913	0,838	0,904	0,622	0,907	0,569	0,912	Valid & Reliable
7	0,635	0,924	0,852	0,903	0,823	0,890	0,843	0,900	Valid & Reliable
8	0,823	0,914	0,504	0,921	0,863	0,887	0,671	0,907	Valid & Reliable
9	0,628	0,925	0,755	0,908	-	-	0,519	0,915	Valid & Reliable
10	0,768	0,917	0,791	0,906	-	-	0,677	0,907	Valid & Reliable
11	-	-	-	-	-	-	0,755	0,904	Valid & Reliable
12	-	-	-	-	-	-	0,687	0,907	Valid & Reliable

The obtained r values and Cronbach's Alpha coefficients indicate that the research data are both valid and reliable. This is evidenced by the r count values exceeding 0.30 and Cronbach's Alpha values greater than 0.70 for all questionnaire items [25]. Therefore, each statement item used in this study is considered appropriate and consistent for measuring the research variables.

Classical Assumption Tests (Normality, Multicollinearity, and Heteroscedasticity)

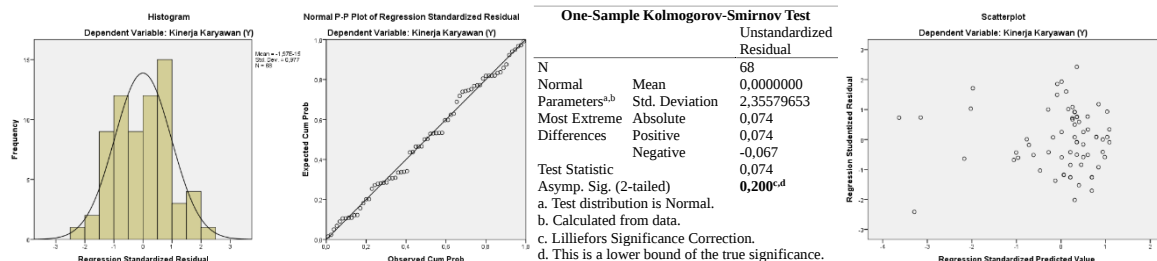


Figure 1. Histogram, P–P Plot, Kolmogorov–Smirnov, and Scatterplot

The normality test using the histogram shows that the residual distribution forms a bell-shaped curve, centered around zero, and appears symmetrical on both the left and right sides. This pattern indicates that the residuals are normally distributed; therefore, the normality assumption in regression analysis has been fulfilled, and the regression model is statistically feasible for further analysis [26].

Furthermore, the normality test using the Normal Probability Plot (P–P Plot) demonstrates that all 68 data points are distributed along and closely follow the diagonal line. Most of the points are located very near the line, indicating that the research data follow a normal distribution and satisfy one of the classical assumptions of multiple linear regression analysis [27].

These findings are further supported by the Kolmogorov–Smirnov test results, which show a significance value (Sig.) greater than 0.05. This result indicates that the data do not deviate from a normal distribution, confirming that the normality assumption has been met [26].

Meanwhile, based on the heteroscedasticity test using the scatterplot, the 68 data points are randomly distributed above and below the zero line and do not form any specific pattern, either clustered or showing a widening or narrowing pattern. Thus, it can be concluded that the regression model does not exhibit heteroscedasticity and instead demonstrates homoscedasticity, making it suitable for further analysis [28].

Table 2. Results of Multicollinearity and Glejser Tests

Coefficients ^a				
Model	Collinearity Statistics		Sig.	Conclusion
	Tolerance	VIF		
1 (Constant)			0,001	No multicollinearity issues and no heteroscedasticity symptoms were detected
Work Knowledge (X ₁)	0,165	6,048	0,525	
Work Ability (X ₂)	0,207	4,824	0,836	
Leadership (X ₃)	0,236	4,232	0,195	
a. Dependent Variable: Employee Performance (Y)			a. Dependent Variable: Absolute_Residual	

The multicollinearity test results indicate that all independent variables have tolerance values greater than 0.10 and Variance Inflation Factor (VIF) values less than 10. This suggests that there is no multicollinearity among the independent variables, meaning that each variable does not significantly interfere with the others [16].

In addition, the Glejser test results show that all independent variables have significance values greater than 0.05. Therefore, it can be concluded that the regression model used in this study does not contain heteroscedasticity symptoms [25].

Table 3. Multiple Linear Regression Analysis, Hypothesis Testing, and Determination

Model	Coefficients ^a		ANOVA ^a				Model Summary ^b	
	Unstandardized Coefficients	Standardized Coefficients	t _{hitung}	Sig.	Uji F		R	Adjusted R Square
	B	Beta			F _{hitung}	Sig.		
1 (Constant)	3,289		1,990	0,051				
Work Knowledge (X ₁)	0,395	0,351	4,140	0,000	259,710	0,000^b	0,961^a	0,921
Work Ability (X ₂)	0,405	0,374	4,944	0,000				
Leadership (X ₃)	0,397	0,285	4,027	0,000				
a. Dependent Variable: Employee Performance (Y)								
b. Predictors: (Constant), Leadership (X ₃), Work Ability (X ₂), Work Knowledge (X ₁)								

Based on the results of the multiple linear regression analysis, the following regression equation was obtained [12]:

$$Y = 3,289 + 0,395X_1 + 0,405X_2 + 0,397X_3 + e.$$

The equation indicates that when all independent variables are assumed to be zero, employee performance still has a constant value of 3.289 [13]. The regression coefficient for Work Knowledge (X₁) is 0.395, meaning that a one-unit increase in work knowledge will increase employee performance by 0.395 units, assuming other variables remain constant. This finding indicates that improvements in work knowledge contribute positively to employee performance [29].

Furthermore, the regression coefficient for Work Ability (X₂) is 0.405, indicating that a one-unit increase in work ability will increase employee performance by 0.405 units. This result suggests that work ability plays a crucial role in enhancing employee performance and has a positive effect [30]. Meanwhile, the regression coefficient for Leadership (X₃) is 0.397, indicating that a one-unit increase in leadership will increase employee performance by 0.397 units, which also reflects a positive influence [31].

Based on these regression coefficients, all independent variables have positive coefficients. Thus, it can be concluded that work knowledge, work ability, and leadership have a positive effect on employee performance. Among the three variables, work ability is the most dominant

factor influencing employee performance, as it has the highest regression coefficient and standardized beta value, at 0.405 and 0.374, respectively [25][27].

Partial hypothesis testing was conducted using the t-test with degrees of freedom calculated as $df = n - k = 68 - 4 = 64$, resulting in a ttable value of 1.998 [26]. The t-test results show that Work Knowledge (X_1) has a tcount value of 4.140, which is greater than the ttable value of 1.998, with a significance level of 0.000, which is less than 0.05. This indicates that work knowledge has a positive and significant effect on employee performance [32].

The Work Ability variable (X_2) also shows a positive and significant effect on employee performance, with a tcount value of 4.944, which exceeds the ttable value of 1.998, and a significance value of 0.000, which is less than 0.05. Therefore, it can be concluded that work ability has a positive and significant effect on employee performance [33].

Similarly, the Leadership variable (X_3) has a tcount value of 4.027, which is also greater than the ttable value of 1.998, with a significance level of 0.000, which is less than 0.05. These results indicate that leadership has a positive and significant effect on employee performance [34].

Based on the overall partial test results, it can be concluded that all independent variables individually have a significant effect on employee performance. Among the three variables, work ability again demonstrates the most dominant influence, as indicated by the highest tcount value of 4.944 [25].

Simultaneous hypothesis testing using the F-test shows a significance value of 0.000, which is less than 0.05, and an Fcount value of 259.710, which is greater than the Ftable value of 2.748 at degrees of freedom $df_1 = 3$ and $df_2 = 64$ [12]. Based on these results, the alternative hypothesis (H_a) is accepted and the null hypothesis (H_0) is rejected. Thus, it can be concluded that work knowledge, work ability, and leadership simultaneously have a positive and significant effect on employee performance at PT Belawan New Container Terminal [13].

Furthermore, the adjusted R-square value of 0.921 indicates that 92.1 percent of the variation in employee performance can be explained by the combined effects of work knowledge, work ability, and leadership in this research model [18]. The remaining 7.9 percent is influenced by other variables not included in the model. The correlation coefficient (R) value of 0.961 indicates a very strong relationship between all independent variables and employee performance, as it falls within the coefficient range of 0.80–0.99 [19].

4.1. The Effect of Work Knowledge on Employee Performance

Work knowledge has a positive and significant effect on employee performance at PT Belawan New Container Terminal, reflecting the characteristics of the port industry, which is highly dependent on individual competence. As a company operating in the container terminal sector, BNCT manages complex, structured, and high-risk operational activities, such as container loading and unloading, logistics flow management, and the operation of technology-based equipment. In this context, employees' work knowledge regarding standard operating procedures, workflow mechanisms, occupational safety, and the use of operational systems and equipment becomes a key factor in determining the effectiveness and accuracy of task execution. Employees with strong work knowledge tend to perform tasks more accurately, minimize operational errors, and maintain service quality for customers [5][6].

The influence of work knowledge on employee performance at PT Belawan New Container Terminal is also associated with the high demands for time efficiency and coordination in every operational activity. Container handling and terminal services require speed, accuracy, and synchronization among work units. Employees who clearly understand their duties and responsibilities, interdepartmental workflows, and the information systems used are better able to adapt to dynamic work conditions and operational pressures. Adequate work knowledge enables employees to make appropriate decisions in specific situations, reduces dependence on

direct supervision, and enhances confidence at work [29]. This condition directly contributes to improvements in productivity, timeliness, and the quality of employees' work outcomes.

In practice, PT Belawan New Container Terminal has demonstrated efforts to enhance employees' work knowledge through various human resource development policies and programs. The company continuously provides technical training, socialization of work procedures, and updates related to operational systems and technologies in use. In addition, the implementation of clear and well-documented standard operating procedures (SOPs) helps employees understand workflows systematically. Management support in the form of coaching and supervision also plays an important role in ensuring that employees' knowledge can be optimally applied in daily work activities [33]. These efforts indicate that the company recognizes the importance of work knowledge as a fundamental element in improving employee performance and sustaining operational performance.

The results of multiple linear regression analysis and the t-test indicate that work knowledge partially has a positive and significant effect on employee performance at PT Belawan New Container Terminal. Therefore, the hypothesis proposed in this study is proven and accepted, as the findings are consistent with the research hypothesis. This study has also addressed the research problems and achieved the research objectives.

The findings support the opinion expressed by Kasmir, who stated that employee performance is influenced by various factors, one of which is work knowledge [3]. Furthermore, this study strengthens several previous studies that also found work knowledge to have a positive and significant effect on employee performance [4][5][6][29][32].

4.2. The Effect of Work Ability on Employee Performance

Work ability has a positive and significant effect on employee performance at PT Belawan New Container Terminal, highlighting the importance of practical competence in supporting port operations. As a modern container terminal operating at Belawan Port, BNCT manages loading and unloading activities, container stacking, and distribution processes that require technical skills, precision, and high levels of coordination. In such a work environment, employees' work ability—encompassing technical skills, equipment operation capabilities, problem-solving skills, and adaptability to work systems—becomes a critical factor in determining task performance success [35]. Employees with strong work ability tend to complete tasks efficiently, comply with safety standards, and ensure the smooth flow of the company's logistics operations.

The effect of work ability on employee performance at PT Belawan New Container Terminal can also be understood from the dynamic and technology-driven nature of operational demands. Container terminal activities rely not only on theoretical knowledge but also on practical skills in operating heavy equipment, terminal information systems, and adapting to changes in procedures and new technologies. Employees with high work ability are more capable of adjusting quickly to field conditions, making accurate operational decisions, and showing initiative in solving work-related problems [7]. This condition directly leads to increased productivity, reduced operational errors, and the achievement of company performance targets. Conversely, limited work ability may slow down operational processes and reduce team effectiveness [33].

To improve employees' work ability, PT Belawan New Container Terminal has implemented various human resource development initiatives. The company continuously organizes technical training, operational skill development programs, and training on the use of port technologies and equipment in accordance with applicable standards. Additionally, the implementation of procedure-based work systems and on-site supervision enables employees to enhance their skills through direct work experience [9]. The company also encourages employees to improve their adaptability to evolving systems and operational demands. These initiatives demonstrate BNCT's active efforts to strengthen employees' work ability as a key

strategy for improving individual performance while maintaining operational effectiveness and competitiveness.

The results of multiple linear regression analysis and the t-test indicate that work ability partially has a positive and significant effect on employee performance at PT Belawan New Container Terminal. Thus, the hypothesis in this study is proven and accepted, as the findings align with the proposed hypothesis. This research has also successfully addressed the research questions and fulfilled its objectives.

These findings support Kasmir's view that employee performance is influenced by various factors, including work ability [3]. Moreover, this study reinforces several previous studies that also concluded that work ability has a positive and significant effect on employee performance [7][8][9][30][35].

4.3. The Effect of Leadership on Employee Performance

Leadership has a positive and significant effect on employee performance at PT Belawan New Container Terminal, emphasizing the strategic role of leaders in managing human resources within the port industry. As a company operating in container terminal services, BNCT faces complex, high-risk operational demands that require strong cross-functional coordination. In this context, effective leadership is essential in directing employees to work in accordance with operational standards, maintain occupational safety, and achieve predetermined productivity targets. Leaders who provide clear direction, make appropriate decisions, and demonstrate discipline as role models encourage employees to work in a more structured and responsible manner [10].

The influence of leadership on employee performance at PT Belawan New Container Terminal is also evident through the quality of communication and support provided by leaders to subordinates. Container handling and terminal management activities require clear instructions, intensive coordination, and rapid responses to field dynamics. Leaders who are communicative and open can minimize work-related misunderstandings and create a conducive work environment. Moreover, leaders who are responsive to operational challenges and employee needs can enhance employees' sense of security and trust [31]. This condition motivates employees to work more focused, demonstrate initiative, and contribute optimally to task completion, ultimately improving both individual and team performance [36].

In practice, PT Belawan New Container Terminal has demonstrated its commitment to strengthening leadership through the implementation of structured management systems and reinforced supervisory functions. The company encourages unit leaders to perform continuous coaching, control, and performance evaluation. Additionally, the application of clear standard operating procedures (SOPs) assists leaders in directing and controlling work implementation in the field. The company's efforts to develop leadership that emphasizes communication, motivation, and role modeling reflect its awareness that leadership quality is a key factor in improving employee performance and ensuring the sustainability and effectiveness of PT Belawan New Container Terminal's operations [37].

The results of multiple linear regression analysis and the t-test indicate that leadership partially has a positive and significant effect on employee performance at PT Belawan New Container Terminal. Therefore, the hypothesis proposed in this study is proven and accepted, as the findings are consistent with the research hypothesis. This study has also addressed the research problems and achieved the research objectives.

These findings support Kasmir's opinion that employee performance is influenced by various factors, one of which is leadership. Furthermore, this study strengthens several previous studies that also found leadership to have a positive and significant effect on employee performance [11][31][34][36][37].

4.4. The Simultaneous Effect of Work Knowledge, Work Ability, and Leadership on Employee Performance

Work knowledge, work ability, and leadership simultaneously have a positive and significant effect on employee performance at PT Belawan New Container Terminal, illustrating the mutually reinforcing relationship among these variables in supporting work effectiveness. As a port service company managing container terminal operations, BNCT operates in a work environment that demands procedural accuracy, service speed, occupational safety, and cross-functional coordination. In this context, employee performance is not determined by a single factor but rather results from the integration of adequate work knowledge, strong technical and non-technical abilities, and leadership that is capable of directing and controlling operational activities effectively [12].

The simultaneous influence of these three variables occurs because work knowledge serves as the foundational basis for employees in understanding tasks, procedures, and operational standards applied within the terminal environment [33]. Adequate knowledge enables employees to understand what must be done and how tasks should be performed properly [32]. However, such knowledge can only produce optimal performance when supported by sufficient work ability [35]. Work ability plays a critical role in translating knowledge into concrete actions through technical skills, equipment operation proficiency, problem-solving capabilities, and adaptability to dynamic operational conditions in the field [9]. Without adequate work ability, the knowledge possessed by employees is difficult to apply effectively in complex and rapidly changing work situations [13].

On the other hand, leadership functions as a driving force that aligns employees' work knowledge and work ability with organizational objectives. Leaders at PT Belawan New Container Terminal play an essential role in providing direction, ensuring compliance with standard operating procedures (SOPs), and maintaining discipline and occupational safety. Communicative and responsive leadership helps employees understand work priorities, address operational constraints, and maintain coordination among departments [37]. With effective leadership, the potential of employees' knowledge and abilities can be optimally utilized, enabling container handling operations, container management, and service delivery to customers to be carried out more efficiently and under control.

In practice, PT Belawan New Container Terminal has undertaken various initiatives to strengthen these three aspects in an integrated manner. The company continuously organizes training and capacity-building programs to enhance employees' work knowledge and work ability, particularly related to the use of port technologies and equipment. In addition, the implementation of management systems, clearly defined SOPs, and strengthened supervisory functions demonstrates the company's commitment to developing effective leadership. This synergy between work knowledge, work ability, and leadership simultaneously drives improvements in employee performance and supports the sustainability of PT Belawan New Container Terminal's operational performance.

Work ability exerts the greatest influence on employee performance because the nature of work at PT Belawan New Container Terminal strongly emphasizes practical skills and field responsiveness. Container loading and unloading activities, heavy equipment operation, and terminal system management require technical expertise, precision in execution, and rapid problem-solving capabilities. In dynamic operational conditions, employees are not only expected to understand procedures but also to execute them effectively and safely. Employees with high work ability are more responsive to technical disruptions, better able to adapt to system changes, and demonstrate initiative in maintaining operational continuity [8]. Therefore, work ability becomes the factor that most directly affects productivity, work quality, and the achievement of the company's operational targets.

The results of multiple linear regression analysis and the t-test indicate that work knowledge, work ability, and leadership partially have a positive and significant effect on employee performance at PT Belawan New Container Terminal. Thus, the hypotheses proposed in this study are proven and accepted, as the findings are consistent with the research hypotheses. This study has also addressed the research problems and achieved the stated research objectives.

The findings support the view expressed by Kasmir, who stated that employee performance is influenced by 13 main factors, including ability and expertise, knowledge, job design, personality, work motivation, leadership, leadership style, organizational culture, job satisfaction, work environment, loyalty, commitment, and work discipline [3]. Furthermore, this study reinforces several previous studies that also found work knowledge, work ability, and leadership to simultaneously have a positive and significant effect on employee performance [12][13].

Conclusion

The results of this study indicate that work knowledge, work ability, and leadership have a positive and significant effect on employee performance at PT Belawan New Container Terminal, both partially and simultaneously. These findings suggest that improvements in employee performance result from the synergy between adequate work knowledge, strong work ability, and effective leadership. Among the three variables, work ability has the most dominant influence on employee performance, reflecting the high demands for practical skills and operational adaptability in port-related activities.

Based on the findings, PT Belawan New Container Terminal is advised to prioritize strengthening employees' work ability through continuous technical training, field-based work simulations, and enhanced skills in the use of terminal technologies and equipment. The company should also reinforce work knowledge development programs through regular updates of SOPs and systematic procedural socialization. In addition, improving leadership quality can be achieved through managerial training that emphasizes effective communication, coaching, and decision-making. The synergy of these three aspects is expected to sustainably enhance productivity, occupational safety, and service quality.

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