

The Effect of Work Motivation, Work Responsibility, and Work Discipline on Employee Work Productivity at PT Belawan New Container Terminal

Sangara Junaedi Porganda Sitorus, Husni Muharram Ritonga, Daud Arifin

Abstract

This study aimed to analyze the effect of work motivation, work responsibility, and work discipline on employee work productivity at PT Belawan New Container Terminal. This study used a quantitative approach with an associative research design. The research population consisted of 210 permanent employees, while the sample comprised 68 respondents determined using the Slovin formula at a 10 percent margin of error and selected through purposive sampling. Primary data were obtained through a Likert scale questionnaire and analyzed using SPSS version 24. The results of the data quality test showed that all statement items were valid, with Corrected Item-Total Correlation values above 0.30, and reliable, with Cronbach's Alpha values of 0.943 for work motivation, 0.882 for work responsibility, 0.888 for work discipline, and 0.879 for work productivity. The normality test showed an Asymp. Sig. value of 0.200, while the multicollinearity and heteroscedasticity tests indicated that the regression model was feasible for use. The regression equation obtained was $Y = 4.434 + 0.292X_1 + 0.245X_2 + 0.367X_3$. Partially, work motivation, work responsibility, and work discipline had a positive and significant effect on work productivity, with significance values of 0.001, 0.036, and 0.001, respectively. Simultaneously, the three variables had a significant effect, with an F value of 89.966 and a significance value of 0.000. The R Square value of 0.808 indicated that 80.8 percent of the variation in work productivity could be explained by the three independent variables. Work discipline was the most dominant variable because it had the highest regression coefficient and standardized beta value.

Keywords: Work Motivation, Work Responsibility, Work Discipline, Work Productivity.

Sangara Junaedi Porganda Sitorus¹

¹ Master of Management, Universitas Pembangunan Panca Budi, Indonesia
e-mail: sangarajps@gmail.com¹

Husni Muharram Ritonga², Daud Arifin³

^{2,3} Master of Management, Universitas Pembangunan Panca Budi, Indonesia
e-mail: husnimuharram@dosen.pancabudi.ac.id², daud_arifin@pancabudi.ac.id³

3rd International Conference on the Epicentrum of Economic Global Framework (ICEEGLOF)

Theme: Navigating The Future: Business and Social Paradigms in a Transformative Era.

<https://proceeding.pancabudi.ac.id/index.php/ICEEGLOF>

Introduction

PT Belawan New Container Terminal is an international container terminal operating at Belawan Port, North Sumatra. The development of BNCT is carried out within the framework of strategic cooperation among Pelindo, Indonesia Investment Authority, and DP World to strengthen Belawan's role as a logistics gateway in western Indonesia [1]. DP World also explained that this cooperation was directed at increasing BNCT's capacity to 1.4 million TEUs, strengthening direct call services, and connecting North Sumatra with international trade routes in the Malacca Strait [2][3]. This condition requires the company to have productive, disciplined, responsible human resources who are capable of supporting the operational standards of a modern terminal [3].

Employee work productivity is one of the important aspects in supporting organizational success, particularly in companies engaged in port and logistics services [2]. In container terminal operations, productivity is not only related to the amount of work completed, but also includes the quality of work results, timeliness, work enthusiasm, and compliance with operational procedures [1].

PT Belawan New Container Terminal has a strategic role in supporting container loading and unloading activities at Belawan Port, North Sumatra. The terminal's position, which is connected to the international shipping route of the Malacca Strait, makes the company one of the important logistics nodes in supporting the smooth flow of export and import goods in western Indonesia [3].

In the working environment of a container terminal, employee productivity is directly related to service speed, the accuracy of loading and unloading processes, facility utilization, and operational reliability. Employees who are able to work according to quality standards, complete tasks on time, and comply with work procedures help the company maintain service efficiency. Conversely, when work productivity is unstable, operational processes may face obstacles, such as delays in task completion, the need for repeated corrections, or ineffective work coordination [4]. This condition shows that work productivity needs to be examined through internal employee factors that influence daily work behavior.

The preliminary survey involving 20 employees of PT Belawan New Container Terminal showed that work productivity still required attention. In the work productivity variable, 70 percent of respondents stated that work results had not fully met company quality standards. In addition, 60 percent of respondents stated that work volume had not always been achieved according to target, 65 percent stated that task completion had not consistently met the predetermined time, 60 percent stated that work enthusiasm was not yet optimal, and 55 percent stated that compliance with working hours and operational rules was not fully consistent. These findings indicate that work productivity still faces challenges in the aspects of quality, quantity, time, work enthusiasm, and work discipline.

One factor that can influence work productivity is work motivation [5]. Motivation serves as a driving force that directs employees to strive to achieve targets and complete work more effectively [6]. Anoraga explained that work productivity is influenced by various factors, including work motivation, discipline, skills, responsibility, work environment, and opportunities for achievement [7].

The preliminary survey showed that employee work motivation was still uneven. A total of 70 percent of respondents stated that the drive to achieve targets and work enthusiasm was not yet optimal. In addition, 55 percent of respondents assessed that work initiative still needed improvement, 60 percent stated that creativity in generating new ideas was not yet optimal, and 55 percent stated that accountability for work results was not yet fully strong.

This condition indicates that work motivation needs to be examined because it can influence employees' seriousness, energy, and involvement in completing their work.

Another factor related to productivity is work responsibility [8]. Work responsibility reflects employees' willingness to complete tasks according to schedule, comply with procedures, produce accurate work, and be willing to correct mistakes [9]. The preliminary survey showed that 65 percent of respondents stated that task completion according to schedule and compliance with work procedures had not been consistently implemented. A total of 60 percent of respondents assessed that the accuracy of work results still needed to be strengthened, while 70 percent stated that initiative and willingness to acknowledge and correct mistakes were not yet optimal. In container terminal operations that require accuracy and reliability, work responsibility becomes an important factor because it can influence work quality, coordination smoothness, and timely task completion.

Work discipline is also a factor that plays a role in improving productivity [10]. Discipline is reflected in compliance with rules, attendance, punctuality, seriousness in carrying out tasks, and readiness to follow the instructions of superiors [9]. The preliminary survey showed that 65 percent of respondents stated that there were still employees who had not consistently maintained their presence in the work area and had not always arrived on time. A total of 55 percent of respondents stated that compliance with work rules and procedures was not yet optimal, while 60 percent assessed that serious task implementation and compliance with superior instructions still needed improvement. These findings show that work discipline has an important relationship with productivity because noncompliance with time and procedures can hinder workflow and reduce operational effectiveness.

Based on the explanation above, the research problem in this study is whether work motivation, work responsibility, and work discipline have a partial and simultaneous effect on employee work productivity at PT Belawan New Container Terminal. This study aims to analyze the effect of work motivation, work responsibility, and work discipline on employee work productivity, both partially and simultaneously, so that the research results can provide empirical insight into the factors related to work productivity in the operational environment of a container terminal.

Research Methodology

This study used a quantitative approach with an associative research design. The quantitative approach was selected because this study examined the relationship and influence among variables using numerical data analyzed through statistical techniques [11]. The associative research design was used to determine the effect of work motivation, work responsibility, and work discipline on employee work productivity, both partially and simultaneously. This study was conducted at PT Belawan New Container Terminal, located on Jalan Raya Pelabuhan Gabion, Medan City, North Sumatra.

The population in this study consisted of all permanent employees of PT Belawan New Container Terminal, totaling 210 people. The sample size was determined using Slovin's formula with a margin of error of 10 percent, resulting in a sample of 68 respondents [2].

$$n = \frac{N}{1 + N e^2} = \frac{210}{1 + 210(0,10^2)} = \frac{210}{1 + 210(0,01)} = \frac{210}{3,10} = 67,74 = 68 \text{ (pembulatan)}$$

The sampling technique used was purposive sampling, namely the selection of respondents based on certain criteria that were relevant to the needs of the study [1]. The respondent criteria in this study included permanent employees, employees who had worked for at least one year at PT Belawan New Container Terminal, and employees who did not hold managerial positions. These criteria were used so that the selected respondents had

sufficient work experience to understand the conditions of motivation, responsibility, discipline, and work productivity within the company [1][2].

The type of data used in this study was primary data obtained directly from respondents through the distribution of closed questionnaires [12]. The research instrument was developed based on the indicators of each variable and measured using a Likert scale with five response options, namely strongly agree, agree, neutral, disagree, and strongly disagree [13].

The independent variables in this study consisted of work motivation, work responsibility, and work discipline, while the dependent variable was work productivity. Work motivation was measured through indicators of the drive to achieve goals, enthusiasm, initiative, creativity, and sense of responsibility [9]. Work responsibility was measured through indicators of punctuality, compliance with procedures, quality of work results, initiative, and willingness to bear consequences [9]. Work discipline was measured through indicators of attendance, compliance with regulations, punctuality, responsibility for tasks, and obedience to superiors [9]. Work productivity was measured through indicators of work quality, work quantity, task completion time, work enthusiasm, and work discipline [7].

The data analysis technique was carried out with the assistance of statistical software through several testing stages. The initial stage involved data quality testing, which included validity and reliability tests to ensure that the research instrument was appropriate for use [14]. Next, classical assumption tests were conducted, consisting of normality, multicollinearity, and heteroscedasticity tests [15]. After the model met the classical assumptions, the analysis was continued using multiple linear regression with the equation $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + e$ [16].

Hypothesis testing was conducted through the t test to determine the partial effect of each independent variable on work productivity, the F test to determine the simultaneous effect, and the coefficient of determination to measure the ability of the independent variables to explain variations in work productivity [17].

Results

3.1 Respondent Characteristics

Table 1. Respondent Characteristics

Characteristic	Category	Frequency	Percentage
Gender	Male	41	60.3
	Female	27	39.7
Age	Under 26 Years	4	5.9
	26 to 30 Years	4	5.9
	31 to 35 Years	11	16.2
	36 to 40 Years	12	17.6
	41 to 45 Years	17	25.0
	46 to 50 Years	11	16.2
	51 to 55 Years	6	8.8
	Above 55 Years	3	4.4
Education	Senior High School or Vocational School	6	8.8
	Diploma 3	4	5.9
	Bachelor Degree	36	52.9
	Master Degree	18	26.5
	Doctoral Degree	4	5.9
Length of Service	Less than 6 Years	8	11.8
	6 to 10 Years	14	20.6
	11 to 15 Years	15	22.1
	16 to 20 Years	12	17.6
	21 to 25 Years	12	17.6
	More than 25 Years	7	10.3

Characteristic	Category	Frequency	Percentage
Marital Status	Unmarried	9	13.2
	Married	59	86.8

Based on the respondent frequency results, male respondents were more dominant, totaling 41 people or 60.3 percent, while female respondents totaled 27 people or 39.7 percent. The largest age group was within the range of 41 to 45 years, totaling 17 people or 25.0 percent. The most common educational background was Bachelor Degree, with 36 respondents or 52.9 percent. The largest length of service group was 11 to 15 years, with 15 respondents or 22.1 percent. Based on marital status, the majority of respondents were married, totaling 59 people or 86.8 percent.

Data Quality Test (Validity and Reliability)

Table 2. Results of Validity and Reliability Tests

Item X1	r	Alpha	Item X2	r	Alpha	Item X3	r	Alpha	Item Y	r	Alpha
X1,1	0,785	0,943	X2,1	0,666	0,882	X3,1	0,627	0,888	Y,1	0,434	0,879
X1,2	0,444	0,943	X2,2	0,448	0,882	X3,2	0,451	0,888	Y,2	0,527	0,879
X1,3	0,842	0,943	X2,3	0,636	0,882	X3,3	0,327	0,888	Y,3	0,542	0,879
X1,4	0,705	0,943	X2,4	0,685	0,882	X3,4	0,827	0,888	Y,4	0,647	0,879
X1,5	0,673	0,943	X2,5	0,720	0,882	X3,5	0,603	0,888	Y,5	0,623	0,879
X1,6	0,891	0,943	X2,6	0,382	0,882	X3,6	0,708	0,888	Y,6	0,608	0,879
X1,7	0,918	0,943	X2,7	0,702	0,882	X3,7	0,754	0,888	Y,7	0,773	0,879
X1,8	0,671	0,943	X2,8	0,614	0,882	X3,8	0,511	0,888	Y,8	0,544	0,879
X1,9	0,873	0,943	X2,9	0,610	0,882	X3,9	0,787	0,888	Y,9	0,590	0,879
X1,10	0,903	0,943	X2,10	0,662	0,882	X3,10	0,654	0,888	Y,10	0,770	0,879

Hasil pengujian validitas menunjukkan bahwa seluruh item pada variabel motivasi kerja, The validity test results showed that all items in the variables of work motivation, work responsibility, work discipline, and work productivity had Corrected Item Total Correlation values above 0.30. Thus, all statement items were declared valid [18].

The reliability results showed Cronbach's Alpha values of 0.943 for work motivation, 0.882 for work responsibility, 0.888 for work discipline, and 0.879 for work productivity. All these values indicate that the research instruments were reliable and consistent for measuring the research variables [19].

3.2 Classical Assumption Test (Normality, Multicollinearity, and Heteroscedasticity)

Table 3. Kolmogorov Smirnov Normality Test Results

Komponen	Nilai
N	68
Mean	0,0000000
Std. Deviation	2,87036134
Absolute	0,071
Positive	0,071
Negative	-0,063
Test Statistic	0,071
Asymp. Sig. (2-tailed)	0,200

The Kolmogorov Smirnov test results showed an Asymp. Sig. value of 0.200. This value was greater than 0.05, indicating that the residuals in the regression model were normally distributed [20].

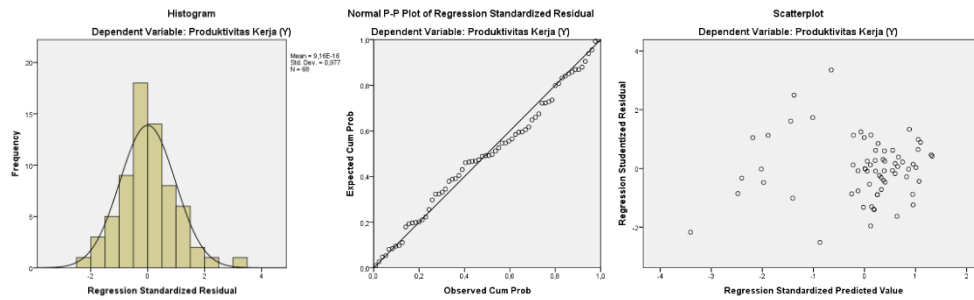


Figure 1. Histogram, P P Plot, and Scatterplot Graphs

The histogram graph showed a residual pattern that approached a normal curve, while the Normal P P Plot showed that the residual points spread around the diagonal line [21]. The scatterplot also showed a distribution of points that did not form a particular pattern, indicating that the regression model visually did not show normality and heteroscedasticity problems [22].

Table 4. Multicollinearity Test and Glejser Test Results

Variable	Tolerance	VIF	Sig. Glejser	Conclusion
Work Motivation (X1)	0,290	3,449	0,607	No multicollinearity and heteroscedasticity occurred
Work Responsibility (X2)	0,245	4,077	0,971	No multicollinearity and heteroscedasticity occurred
Work Disciplin (X3)	0,227	4,408	0,359	No multicollinearity and heteroscedasticity occurred

The multicollinearity test showed that all independent variables had tolerance values greater than 0.10 and VIF values below 10. Thus, the regression model did not experience multicollinearity problems [23].

The Glejser test showed significance values of 0.607 for work motivation, 0.971 for work responsibility, and 0.359 for work discipline. All significance values were above 0.05, indicating that the regression model did not experience symptoms of heteroscedasticity [18].

3.3 Multiple Linear Regression Analysis and t Test

Table 5. Results of Multiple Linear Regression Analysis and t Test

Model	B	Std. Error	Beta	t hitung	Sig.
Konstanta	4,434	2,326		1,906	0,061
Work Motivation (X1)	0,292	0,087	0,342	3,166	0,001
Work Responsibility (X2)	0,245	0,114	0,237	2,144	0,036
Work Disciplin (X3)	0,367	0,112	0,377	3,284	0,000

The results of multiple linear regression produced the following regression equation [1]:

$$Y = 4.434 + 0.292X_1 + 0.245X_2 + 0.367X_3 + e.$$

The constant value of 4.434 indicates that when work motivation, work responsibility, and work discipline are zero, work productivity has a base value of 4.434 [2].

The work motivation coefficient of 0.292 indicates that an increase in work motivation is followed by an increase in work productivity [24]. The work responsibility coefficient of 0.245 indicates that an increase in work responsibility is followed by an increase in work productivity [25]. The work discipline coefficient of 0.367 indicates that an increase in work discipline is followed by an increase in work productivity [26].

With n of 68, df = n minus k = 68 minus 4 = 64, so the t table value was 1.998 [18]. The t test results showed that work motivation had a positive and significant effect on work productivity, with a t count value of 3.166 greater than the t table 1.998 and a significance

value of 0.001 less than 0.05 [27]. Work responsibility also had a positive and significant effect, with a t count value of 2.144 greater than the t table 1.998 and a significance value of 0.036 less than 0.05 [28]. Work discipline had a positive and significant effect, with a t count value of 3.284 greater than the t table 1.998 and a significance value of 0.000 less than 0.05 [29].

Based on the B coefficient and standardized Beta value, work discipline was the most dominant variable because it had a B value of 0.367 and a Beta value of 0.377, which were higher than those of the other variables [30].

3.4 F Test and Coefficient of Determination

Table 6. Results of F Test and Coefficient of Determination

Test	Value
R	0,899
R Square	0,808
Adjusted R Square	0,799
Std. Error of the Estimate	2,93687
Regression Sum of Squares	2327,930
Residual Sum of Squares	552,011
Total Sum of Squares	2879,941
df Regression	3
df Residual	64
Mean Square Regression	775,977
Mean Square Residual	8,625
F	89,966
Sig.	0,000

With n of 68, $df_1 = k \text{ minus } 1 = 4 \text{ minus } 1 = 3$ and $df_2 = 64$, the resulting F table value was 2.748 [19]. The F test results showed an F count value of 89.966 greater than the F table 2.748, with a significance value of 0.000, which was smaller than 0.05. This means that work motivation, work responsibility, and work discipline simultaneously had a significant effect on employee work productivity at PT Belawan New Container Terminal.

The R value of 0.899 indicates a very strong relationship between the independent variables and work productivity [20]. The R Square value of 0.808 indicates that 80.8 percent of the variation in work productivity could be explained by work motivation, work responsibility, and work discipline, while the remaining percentage was influenced by other factors outside the research model [31]. The Adjusted R Square value of 0.799 further confirms that the model had a high explanatory ability for work productivity [12][13].

Discussion

4.1 The Effect of Work Motivation on Work Productivity

The test results showed that work motivation had a positive and significant effect on employee work productivity at PT Belawan New Container Terminal. This effect is logical because BNCT operates in container terminal services that require accuracy, speed, safety, and high operational coordination [1]. The company was developed through cooperation among Pelindo, INA, and DP World to operate and develop the Belawan container terminal as a strategic logistics node in Sumatra [2].

Work motivation encourages employees to work in a more focused manner in achieving loading and unloading targets, completing administrative tasks, managing yard operations, and serving service users. Employees with high work motivation tend to be more enthusiastic, respond quickly to instructions, take initiative in solving technical obstacles, and maintain work accuracy [4]. Its impact can be seen in improved quality, quantity, and timeliness of task completion [5].

This effect also occurs because container terminal operations are interdependent. Delays in one section can disrupt the workflow of other sections. When motivation increases, employees are more encouraged to maintain personal responsibility and teamwork, so operational processes become smoother. Motivation not only shapes work enthusiasm but also strengthens employees' awareness of the importance of productivity for terminal service effectiveness [27].

The company's efforts to improve productivity can be seen in the direction of BNCT's transformation into a more modern, integrated, and internationally standardized terminal. DP World stated that BNCT development is directed through investment in sustainable technology, world class training, and high standards of occupational health and safety to reduce inefficiencies and facilitate trade flows [3].

In addition, company values that emphasize professionalism, integrity, competence, adaptability, and collaboration serve as the foundation for forming productive work behavior. The value of competence encourages learning and capability development, while the value of adaptability emphasizes innovation and enthusiasm in facing change. Through the strengthening of these values and work systems, employee motivation can develop into more optimal work productivity.

This is consistent with the theory proposed by Anoraga, which explains that employee work productivity is influenced by various factors, one of which is employee work motivation [7]. This is also in line with previous research findings proving that work motivation partially has a positive and significant effect on work productivity [4][5][6][24][27].

4.2 The Effect of Work Responsibility on Work Productivity

The results of the test showed that work responsibility had a positive and significant effect on employee work productivity at PT Belawan New Container Terminal. This effect can be understood because BNCT is a container terminal located on the strategic route of the Malacca Strait and serves as an important logistics node for the northern part of Sumatra [3]. Terminal activities such as loading and unloading, container arrangement, document administration, and service to users require accuracy, procedural compliance, and timely task completion [2].

Work responsibility encourages employees not only to complete their work, but also to ensure that the work is carried out in accordance with the company's operational standards [32]. In a container terminal, even a minor mistake can lead to vessel delays, disruption in container flow, or a decline in service quality. Responsible employees tend to be more careful, maintain accuracy, complete tasks according to targets, and be willing to correct work errors [33].

This positive effect also occurs because BNCT operations are integrated across divisions. The productivity of one unit greatly depends on the discipline and responsibility of other units. When employees have awareness to complete tasks properly, comply with procedures, and avoid delaying work, the workflow becomes more stable and operational efficiency increases [28].

The company has made efforts to improve productivity through the transformation of BNCT into a modern terminal with international standards. The cooperation among Pelindo, INA, and DP World is directed toward strengthening port infrastructure, improving terminal operations, reducing logistics costs, and enhancing the competitiveness of national port services [3].

These efforts are also strengthened through investment in sustainable technology, world class training, and the implementation of high standards of occupational health and safety.

This program is directly related to work responsibility because employees are directed to work more professionally, comply with standards, and maintain the quality of their work results. With stronger responsibility, employee productivity can increase in a more measurable manner [8].

This finding is consistent with the theory proposed by Anoraga, which explains that employee work productivity is influenced by several factors, one of which is employees' sense of work responsibility [9]. This finding is also in line with previous studies proving that work responsibility partially has a positive and significant effect on work productivity [8][25][28][32][33].

4.3 The Effect of Work Discipline on Work Productivity

The results of the partial test showed that work discipline had a positive and significant effect on employee work productivity at PT Belawan New Container Terminal. This effect is highly relevant because BNCT operates as a container terminal that is directed to become a strategic logistics gateway on the Malacca Strait route through the partnership of Pelindo, INA, and DP World [2].

Work discipline encourages employees to be present on time, comply with operational procedures, maintain accuracy, and complete work according to schedule [10]. In container terminal activities, even a small delay can disrupt the flow of loading and unloading, container arrangement, document administration, and vessel services. The higher the level of employee discipline, the more stable the quality, quantity, and timeliness of work produced [26].

This effect occurs because BNCT operations are integrated across functions. The work of operators, planners, field officers, administrative staff, and supervisors is interdependent within one service chain. Disciplined employees consistently carry out work standards, reduce technical errors, and minimize the need for repeated supervision [30]. This condition makes the work process more efficient and increases productivity.

The company has made efforts to improve productivity through infrastructure modernization and terminal development. DP World explained that BNCT management cooperation is directed toward increasing terminal capacity from 600,000 TEUs to 1.4 million TEUs, attracting more direct calls, and strengthening BNCT's role as a trade and logistics gateway in the Malacca Strait [3].

These efforts are closely related to work discipline because terminal modernization requires employees who comply with systems, safety standards, and service procedures. DP World also emphasizes investment in sustainable technology, world class training, and high standards of occupational health and safety. Company values such as trustworthiness, competence, adaptability, and collaboration also strengthen disciplined work behavior that supports employee productivity.

This finding is consistent with the theory proposed by Anoraga, which explains that employee work productivity is influenced by several factors, one of which is employee work discipline [7]. This finding is also in line with previous studies proving that work discipline partially has a positive and significant effect on work productivity [10][26][29][30][31].

4.4 The Simultaneous Effect of Work Motivation, Work Responsibility, and Work Discipline on Work Productivity

The results of the F test showed that work motivation, work responsibility, and work discipline jointly had a positive and significant effect on employee work productivity at PT Belawan New Container Terminal. This effect is reasonable because BNCT is a strategic container terminal in Belawan that was developed through the partnership of Pelindo, INA, and DP World to strengthen Indonesia's logistics connectivity with the Malacca Strait route.

The working conditions at BNCT require employees to work quickly, accurately, and in a coordinated manner. Loading and unloading activities, berth planning, container arrangement, document administration, and services to users are closely interrelated. If one unit is slow or lacks discipline, the flow of vessel and container services can be disrupted. In this situation, productivity is not only determined by technical ability, but also by work behavior.

Work motivation serves as a psychological drive that makes employees more enthusiastic in achieving targets [5]. Work responsibility ensures that employees complete tasks according to standards, do not ignore mistakes, and maintain the quality of work results [28]. Work discipline maintains order through compliance with working hours, operational procedures, safety standards, and timely task completion [29].

The simultaneous effect of these three variables occurs because they complement one another. Motivation without discipline can produce enthusiasm that is not properly directed. Responsibility without motivation may cause employees to work only as a matter of obligation. Discipline without responsibility may make compliance merely formal. When these three aspects function together, productivity increases through work quality, work volume, timeliness, enthusiasm, and procedural compliance.

The company has taken steps to improve productivity through terminal modernization and expansion. DP World stated that BNCT's capacity is targeted to increase from 600,000 TEUs to 1.4 million TEUs, along with an increase in direct calls, strengthened connectivity with smaller ports in Sumatra, and reduced logistics costs in North Sumatra [3].

In addition to physical modernization, the company also emphasizes sustainable technology, world class training, and high standards of occupational health and safety to reduce inefficiencies. Company values such as trustworthiness, competence, adaptability, and collaboration also support the formation of productive work behavior through learning, innovation, integrity, and teamwork.

Work discipline can become the most dominant variable because container terminal operations greatly depend on timeliness, procedural compliance, and work safety. Disciplined employees are able to maintain the rhythm of loading and unloading, reduce technical errors, and accelerate coordination across divisions. Compared with motivation and work responsibility, discipline is more directly reflected in attendance, compliance with standard operating procedures, equipment use, and task completion according to schedule.

This finding is consistent with the theory proposed by Anoraga, which explains that employee work productivity is influenced by several factors, including employee work motivation, education, work discipline, skills, ethical attitudes and sense of responsibility, teamwork ability, nutrition and health, income level, work environment, work climate, the sophistication of technology used, adequate production factors, social security, leadership management, and opportunities for achievement [7].

Conclusion

Based on the results of the analysis, it can be concluded that work motivation, work responsibility, and work discipline have a positive and significant effect on employee work productivity at PT Belawan New Container Terminal, both partially and simultaneously. Work motivation has a regression coefficient of 0.292, with a t value of 3.166 and a significance value of 0.001. Work responsibility has a regression coefficient of 0.245, with a t value of 2.144 and a significance value of 0.036. Work discipline has a regression coefficient

of 0.367, with a t value of 3.284 and a significance value of 0.001. The simultaneous test results show an F value of 89.966 with a significance value of 0.000. The R Square value of 0.808 indicates that 80.8 percent of the variation in work productivity can be explained by work motivation, work responsibility, and work discipline.

Based on these findings, the company is advised to strengthen work discipline through consistent supervision, enforcement of operational procedures, and objective work evaluation. Management also needs to improve work motivation through rewards, clear communication of targets, opportunities for self development, and encouragement of creativity. In addition, work responsibility can be strengthened through clear task distribution, emphasis on work quality, and a work culture that encourages employees to correct mistakes independently. These efforts are expected to improve employee work productivity and support the sustainable operational performance of PT Belawan New Container Terminal.

References

- [1] D. Prabowo, D. Arifin, and O. Amelia, "Analysis of Human Resource Development, Leadership, and Bonuses on Employee Performance at PT Belawan New Container Terminal," in *Proceedings of International Conference on Islamic Community Studies*, Oct. 2025, pp. 8392–8405.
- [2] J. E. Susilo, D. Arifin, and H. M. Ritonga, "Analysis of Organizational Culture, Supervision, and Leadership Role Modeling on Employee Work Discipline at PT Belawan New Container Terminal," in *Proceedings of International Conference on Islamic Community Studies*, Oct. 2025, pp. 8378–8391.
- [3] D. Nasution, W. Suryani, and M. Y. Siregar, "Analysis of the Implementation of TOS Upgrade and the Use of VMT on Operational Performance with the Accuracy of Container Data as an Intervening Variable at Terminal B of PT Belawan New Container Terminal," *Journal of Applied Business Administration*, vol. 10, no. 1, pp. 160–172, 2026.
- [4] T. Wahyono and S. Suwarno, "Analysis of Education, Work Motivation, Work Discipline on Employee Productivity of Panca Budi Development University Medan," *Prosiding Universitas Dharmawangsa*, vol. 3, no. 1, pp. 865–875, 2023.
- [5] S. Fajar, "Analisis Pengaruh Lingkungan Kerja, Jaminan Kesehatan, Insentif dan Motivasi terhadap Produktivitas Pegawai Bank BNI Kantor Cabang Pembantu Sumbawa Barat Nusa Tenggara Barat," *KNOWLEDGE: Jurnal Inovasi Hasil Penelitian dan Pengembangan*, vol. 5, no. 2, pp. 312–320, 2025.
- [6] S. T. Heldianto, E. Septyarini, and T. R. Purnamarini, "Pengaruh Lingkungan Kerja, Motivasi Kerja, dan Kompensasi Kerja terhadap Produktivitas Kerja Karyawan PT Madu Baru Bantul," *Ekonomis: Journal of Economics and Business*, vol. 9, no. 1, pp. 82–85, 2025.
- [7] P. Anoraga, *Manajemen Bisnis*, Rev. ed. Jakarta, Indonesia: Rineka Cipta, 2023.
- [8] R. Faizin and A. A. Tarigan, "Tanggung Jawab dan Komitmen Pegawai terhadap Produktivitas Kerja di Biro Pemerintahan Umum Gubernur Sumatera Utara," *MONETER: Jurnal Ekonomi dan Keuangan*, vol. 1, no. 4, pp. 117–123, 2023.
- [9] M. S. P. Hasibuan, *Manajemen Sumber Daya Manusia*, Rev. ed. Jakarta, Indonesia: Bumi Aksara, 2022.
- [10] A. M. Birowo and R. F. Ahsani, "Pengaruh Motivasi Kerja, Lingkungan Kerja dan Disiplin Kerja terhadap Produktivitas Kerja Karyawan di Pabrik Tahu Sari Klaten," *PENG: Jurnal Ekonomi dan Manajemen*, vol. 2, no. 1, pp. 460–471, 2025.

- [11] H. M. Ritonga, M. I. Indrawan, and D. S. Sari, "A SEM Analysis of Visitors' Interest in Pari City Village Tourism, Pantai Cermin District, Serdang Bedagai Region," *Journal of Community Research and Service*, vol. 6, no. 2, p. 126, 2022.
- [12] H. M. Ritonga and H. Lubis, "The Influence of Product Quality, Price and Service Quality on Consumer Satisfaction: Coffeetree Case Study in Medan," *International Journal of Economic, Technology and Social Sciences (Injects)*, vol. 3, no. 2, pp. 199–204, 2022.
- [13] H. M. Ritonga, D. N. Pane, and C. A. A. Rahmah, "Pengaruh Kualitas Pelayanan dan Emosional terhadap Kepuasan Pelanggan pada Honda IDK 2 Medan," *Jumant*, vol. 12, no. 2, pp. 30–44, 2020.
- [14] D. Arifin, "The Influence of Workload and Organizational Climate on Turnover Intention through Job Stress as an Intervening Variable in Sales Employees of Auto 2000 Medan-Binjai," *International Journal of Economics and Management Research*, vol. 2, no. 3, pp. 259–272, 2023.
- [15] D. Arifin, N. Ardian, and H. Triana, "Analysis of the Improvement of Reward and Punishment Policies on Employee Work Discipline at the State Civil Service Agency in Medan," *Multifinance*, vol. 2, no. 1, pp. 18–25, 2024.
- [16] D. Arifin, N. Ardian, and H. Triana, "Analysis of Rewards and Punishments for Improvement Public Sector Employment Ethics Policy in Medan," *Journal of Management, Economic, and Accounting*, vol. 3, no. 2, pp. 523–528, 2024.
- [17] F. Firmansyah, K. F. Ferine, and N. Nizamuddin, "Determinants of Performance of Development Universitas Pembangunan Panca Budi Medan," in *International Conference on Health Science, Green Economics, Educational Review and Technology*, vol. 5, no. 1, 2023, pp. 357–372.
- [18] N. Aulia, N. Ardian, L. A. Azahara, A. M. Putri, N. Wahyuni, E. N. B. Bukit, and L. Eryanti, "Produktivitas Kerja Karyawan J&T Express Cabang Medan Berdasarkan Pengaruh Beban, Hubungan dan Fasilitas Pekerjaan," *Economics and Digital Business Review*, vol. 6, no. 2.1, pp. 169–182, 2025.
- [19] R. Risnaini and E. Wakhyuni, "The Effect of Workload, Work Relationships, and Work Facilities on Employee Productivity at PT JNE Medan Main Branch," *Journal of Research in Social Science and Humanities*, vol. 5, no. 2, 2025.
- [20] R. Herliyana and K. Kholik, "Analisis Pengetahuan Kerja, Kemampuan Kerja, dan Kepemimpinan terhadap Kinerja Karyawan JNE Cabang Utama Medan," *Jurnal SOMASI (Sosial Humaniora Komunikasi)*, vol. 6, no. 1, pp. 155–172, 2025.
- [21] F. Firmansyah, S. S. Batubara, and R. Andika, "The Impact of Work Climate and Burnout on Employee Performance with Job Satisfaction as a Mediating Variable: Evidence from North Medan Samsat," *International Journal of Economic, Technology and Social Sciences (Injects)*, vol. 6, no. 1, pp. 222–232, 2025.
- [22] F. Firmansyah, K. F. Ferine, and N. Nizamuddin, "Analysis of the Use of Information Technology and Organizational Culture on Employee Performance with Competence as an Intervening Variable at the Panca Budi Development University, Medan," *International Journal of Social Science, Education, Communication and Economics (SINOMICS JOURNAL)*, vol. 2, no. 5, pp. 1435–1450, 2023.
- [23] Firmansyah and R. Andika, "Determination of Motivation, Work Discipline, and Work Environment in Improving Employee Performance," in *Proceedings of International Conference on Islamic Community Studies*, Oct. 2025, pp. 555–570.

- [24] I. Ipijei and Y. R. Tawenem, "Pengaruh Lingkungan Kerja Fisik dan Motivasi Kerja terhadap Produktivitas Pegawai pada Dinas Kesehatan Kabupaten Merauke," *Papsel Economic Journal*, vol. 2, no. 3, pp. 1–8, 2025.
- [25] J. Kopter, A. P. Nasution, and M. A. Al Ihsan, "Pengaruh Tanggung Jawab Kerja, Lingkungan Kerja Non Fisik dan Kepuasan Kerja terhadap Produktivitas Kerja Pegawai di Satuan Polisi Pamong Praja Kabupaten Labuhanbatu," *JOEL: Journal of Educational and Language Research*, vol. 1, no. 11, pp. 1583–1596, 2022.
- [26] D. Irama, "Pengaruh Disiplin Kerja dan Motivasi Kerja terhadap Produktivitas Kerja Karyawan pada PT Mensa Binasukses," *Jurnal Penelitian Ekonomi Manajemen dan Bisnis*, vol. 4, no. 3, pp. 117–121, 2025.
- [27] S. Nurhayanti, A. D. Nugroho, and N. K. Kusmayati, "Dampak Motivasi Kerja dan Keselamatan terhadap Produktivitas Kerja Karyawan PT Ometraco Arya Samanta," *RIGGS: Journal of Artificial Intelligence and Digital Business*, vol. 4, no. 2, pp. 1610–1617, 2025.
- [28] D. S. Fatimah, Y. Zebua, and P. Pitriyani, "The Influence of Work Responsibility, Work Discipline, and Work Environment on the Work Productivity of Employees in the Department of Youth and Sports, Culture and Tourism of Labuhanbatu Regency," *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, vol. 5, no. 2, 2022.
- [29] A. Aprilia, "Pengaruh Keselamatan dan Kesehatan Kerja (K3), Motivasi Kerja, dan Disiplin Kerja terhadap Produktivitas Kerja Karyawan pada PT Wanasari Nusantara Kabupaten Kuantan Singingi," *Jurnal Ilmiah Mahasiswa Merdeka EMBA*, vol. 5, no. 2, pp. 640–652, 2025.
- [30] A. Sulaeman, Y. D. Rahayu, R. K. Hadi, and K. Komarudin, "Pengaruh Disiplin Kerja, Keselamatan dan Kesehatan Kerja terhadap Produktivitas Karyawan PT Santoso Teknindo di Tangerang," *Scientific Journal of Reflection: Economic, Accounting, Management and Business*, vol. 8, no. 2, pp. 437–443, 2025.
- [31] A. K. Lutfi, R. Recky, A. M. Siddiq, and R. F. Akbar, "Pengaruh Kompensasi, Motivasi dan Disiplin Kerja terhadap Produktivitas Kerja Karyawan Pabrik Teh di Jawa Barat," *Jurnal Economica: Media Komunikasi ISEI Riau*, vol. 13, no. 1, pp. 105–114, 2025.
- [32] D. Gunawan, "Analisis Tanggung Jawab dan Komitmen Pegawai terhadap Produktivitas Kerja di BPJS Ketenagakerjaan," *Menara Ilmu: Jurnal Penelitian dan Kajian Ilmiah*, vol. 15, no. 2, 2021.
- [33] A. Ilyas, "Pengaruh Supervisi dan Tanggung Jawab terhadap Produktivitas Guru SMA Swasta di Wilayah Jakarta Selatan," *Jurnal Manajemen Pendidikan*, vol. 9, no. 1, pp. 31–40, 2018.