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The Effectiveness of Computer-Based Monitoring and Evaluating Vessel Inventory List for Human Resource Performance

Abstract: The urgency of this research is how a company is able to obtain better of HR performance, develop knowledge, improve service quality and can create competitiveness for the company. This study objective is to describe whether quality knowledge can encourage technical superintendent motivation so that it can improve technical superintendent work performance during monitoring and evaluation of inventory on board using computer-based applications and knowing quality knowledge can improve technical superintendent work performance so as to realize the performance of monitoring and evaluation of inventory list on board effectively. The method used in this study is the explanatory method. Data collection was carried out online from the distributed instruments. The target population in this study were employees in the fleet division at 7 (seven) shipping companies which were used as research objects with a total number of employees of 160 employees. The data obtained is then tabulated, then data reduction is carried out and after obtaining proper data, calculations are carried out using the SPSS application by carrying out validity tests, variable reliability tests, normality tests and homogeneity tests. According to the results, it is known that there is a strength relationship between the knowledge quality and human resources performance.

Keywords: computer based application, vessel, human resources

INTRODUCTION

Employees are the most important asset in running a company. It is needed in a company management to carry out all activities carried out in every line in a company organization. The influence of employees is very large on the goals of a company to achieve success. It can be said that the company will be able to survive even without the support of sophisticated machines, but the company's survival will not work at all if it does not have employees (Sutono, 2016). In an effort to achieve company goals, sensitivity to change is one of the important things. Companies must be able to integrate, build and reconfigure their human resource competencies both internally and externally to cope with rapid environmental changes (Teece et al., 1997). Companies that have employees who have high expertise and high motivation to keep going are an advantage for companies or organizations (Riyoko et al., 2022).

In practice, a shipping company needs someone who has responsibility for managing all technical aspects on board in this case including maintenance and repair of ships, ship docking activities and carrying out inspections on owned ships that are operated according to International Marine Contractors Association (IMCA) standards. In fact, the number of

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superintendent technical personnel in shipping companies is still at a sufficient level, because in fact the number of ship superintendent technical personnel is still less than the number of ships and the ship's operational area (Nurdin, 2018). Technical superintendent is a valuable company resource. Resources that are rare and valuable and difficult to imitate with the aim of being able to create a competitive advantage for the company and become a determinant of the company's success (J. Barney, 1991). Intellectual capital is an intangible company resource owned by the company (Kakamua, 2013). The ability to operate a computer is an intellectual capital that must be owned by a technical superintendent in carrying out his work in terms of monitoring inventory on board.

Transformation inventory system on board which originally used a manual system that changed by utilizing computer sophistication requires reliable capabilities from the personnel who operate it. The dimensions of human capital are knowledge, experience, cognitive ability and professional proficiency (Felicio et al., 2012). Professional competence itself has indicators such as professional technical, organizational management, broad knowledge and communication skills. In this research, the researcher highlights the technical professionalism and broad skills that must be possessed by a superintendent at a shipping company who is able to operate computer-based applications in monitoring and inventorying equipment on board which is one of his main tasks.

Phenomenon on this field is that is existence of a very large number of spare parts on board must be ascertained, where when each uses a manual system, a technical superintendent will come to the ship, check reports from the crew regarding the status of the spare parts that are on board, starting from the quantity, size, brand, manufacturer, good condition being used or operated and stored must be properly identified. For handling a ship, a technical superintendent can spend 5 days for one monitoring period, whereas in reality, a technical superintendent can manage 4 or even 5 units of ships that are his responsibility. Besides other tasks that also have heavy responsibilities, monitoring and evaluation activities that are carried out manually are very time-consuming, labor-intensive and operational costs. Currently, many shipping companies are already using applications based on computer that are connected between the office and the ship related to spare part inventory management on board. A company must have human resources with good capabilities and experience. The ability to operate a computer, which is currently a requirement for every human resource, is still a problem faced by several companies. To be able to qualify as an outstanding technical superintendent, quality knowledge and motivation from both oneself and from outsiders is one of the main keys so that work performance increases and monitoring and evaluation performance on board can be carried out effectively and efficiently.

The purpose of this research is for Knowing quality knowledge can encourage superintendent technical motivation so that it can improve superintendent technical work performance when monitoring and evaluating inventory on board using computer-based applications and knowing the quality knowlede can improve the performance of the superintendent's technical work so that it can realize the performance of monitoring and evaluating inventory on board effectively.

METHODS

Literature Review used in this study uses the design model of the Resource Based Theory (RBT) theory of resources. From the dimensions contained in the strategic and substantive theoretical models used, a new concept is formed in a proposition. From this proposition the relationship between external and internal variables will form a grand theory model. There are 4 sources of theory from the Resource Based View theory (RBV) that have been developed and researched before, where the 4 sources of theory are ricardian economics, the traditional study of distinctive competencies, penrosian economics, and the anti-trust implications of economics (J. Barney, 1991). These theories

serve as a starting point for how an organization is able to achieve superior performance compared to other companies (Massaro et al., 2018).

Ricardian economics theory suggests that a company or organization will get good HR performance if it has a broad business scope (Wright et al., 2010). Penrosian economics argues that resources have different or very heterogeneous characteristics, only productive resources will bring companies to achieve high organizational performance (Kor & Mahoney, 2004; Rugman & Verbeke, 2004). Other opinion from (J. Barney, 1991) states that if a company is able to meet consumer needs then the company is already able to achieve good organizational performance. The dimension of RBT is strategic asset (Wernerfelt, 1984). Strategic assets are the integration of special capabilities and resources that are difficult to imitate by competitors, are not easily traded, and are rare in nature that have the potential to boost a company's competitive advantage (Amit & Scoemaker, 1993). Dynamic capability on a company or organization is a company's ability to integrate, build, and reconfigure internal and external competencies to cope with a rapidly changing environment (Teece et al., 1997).

Resources are inputs for the production process in organizations or companies such as factory equipment, finance, trademarks and manager managers. The scope of resources includes individual and social organizations (J. B. Barney, 1995). Resources are all factors, both tangible resources and intangible resources. Tangible assets are assets that can be physically seen and measured (Amit & Scoemaker, 1993) while according (J. Barney, 1991) includes organizational, financial, physical and technological. The next type of resource is intangible resources (intangible assets) are assets that are rooted in the history of the company and have accumulated throughout the organization's operations (Hoskinson, 2001). Intangible resources (intangible assets) are resources that are superior to a company that cannot be imitated or duplicated by competitors (Sukma, 2018).

Knowledge is defined as something that is natural, that is difficult to understand without conclusive results, and that is universally accepted (Neta & Pitchard, 2009). Knowledge is the main resource as well as the main source of value in an organization or company. The quality of knowledge possessed by organizational human resources can help companies do better jobs, can develop more useful production, reduce costs and increase sales volume (Yoo et al., 2011). Quality of knowledge is measured by accuracy, fulfillment of needs and accuracy (Durcikva & Gray, 2009). Knowledge has 4 (four) dimensions namely conceptual, factual, metacognitive and procedural (Pratiwi, 2021). The factual dimension includes knowledge of terminology, namely definitions or definitions, knowledge of specific elements and details, for example locations, events, people, dates, and other information based on facts (Pratiwi, 2021).

Organizational learning can be interpreted as an assumption that knowledge is not static, the true value of organizational learning is in having the next generation continuously apply knowledge and apply new ideas to create value (Gansiniec, 2019) where learning involves acquiring, refining, creating, and sharing new knowledge or ideas. In order to be able to achieve organizational goals effectively and efficiently and be able to survive in intense competition, grow and develop, compete and collaborate in facing very fast environmental changes, organizations need to learn continuously (Marquardt, 1996).

Every company must be sensitive to changes that are increasingly complex and dynamic at this time, therefore companies are required to always be sensitive to changes that occur outside or in the environment outside the organization with the aim of the company being able to survive the changes that occur (Sulastri, 2019). Organizational learning has two dimensions, namely generative learning and participative learning. In this study, it will only examine the dimensions of knowledge quality performance on HR performance in shipping companies, so that the dimensions of organizational learning which are the antisendent in this study are not tested.

Performance can be interpreted as a degree of accomplishment (attainment of results) (Longshore, 1987). Performance is the result of organizational or group

performance (Ahbabi et al., 2019). Performance can also be interpreted as the result of a process (Suryadi, 2010) or a level of success of members of the organization or the whole within a specified period in its implementation (Rivai et al., 2005) both qualitatively and quantitatively (Mangkunegara, 2001). Performance parameters will be seen from the aspect of achieving results, not the efforts made by members of the organization in fulfilling the targets and job demands set by the organization (Hosmani & Shambhushankar, 2014). Achieving good performance is influenced by several factors including employee training, compensation, work culture, work environment, motivation, leadership, discipline and job satisfaction (Siagian, 2017). Performance shown by a technical superintendent is being able to properly run the monitoring and evaluation system for the inventory list on board so that it can maximize time and energy in monitoring and evaluation activities.

The method on this research is "explanatory research", namely this research is to provide an explanation and aims to analyze, as well as clarify and to find answers about why and how a causal relationship can occur in a phenomenon between one variable and another (Hair et al., 2010). The explanatory research model can be interpreted that this research explains why and how a relationship in a variable can affect other variables by testing a theory or hypothesis that has been formulated based on the study of the theory being studied as the basis for criteria in the process of seeking answers to strengthen or will even reject a hypothesis or theory from previous research (Hair et al., 2010). Grand theoretical model on this research as in the following Figure 1.

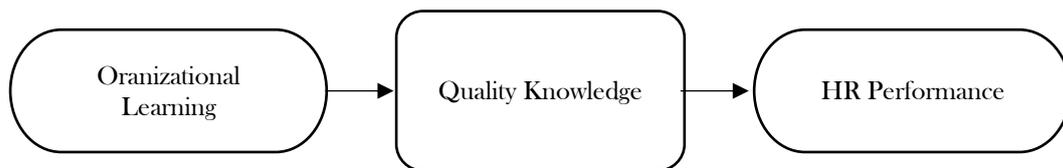


Figure 1. Grand Theoretical Model

Basic theoretical model suggests that increased organizational learning is driven by the quality of knowledge and has the potential to translate into human resource performance. Data collection was carried out online from the distributed instruments. The target population in this study were employees in the fleet division at 7 (seven) shipping companies which were used as research objects with a total number of employees of 160 employees. Population includes the technical superintendent of Bourbon Offshore Asia P.Te., Ltd (7 respondents), Miclyn Express Offshore, Pte, Ltd (7 respondents), PT.Pertamina Shipping (respondents), PT. Scorpa Pranedya (5 respondents), PT. Samudera Shipping Line (5 respondents), Pacific Radiance, Pte.Ltd (5 respondents), PT.Pelayaran Humpus Intermoda Trassport (sample of 4 respondents) with a total sample of 40 respondents

RESULT AND DISCUSSION

In this study, the description of the respondents consisted of technical superintendents at 7 (seven) shipping companies that had used computer-based applications for monitoring activities and inventory lists onboard ships in terms of education level, work experience and age, as described in the following Table 1.

Table 1. Education background of respondents

Grade	Vol	Percentage
D III	10	25%
D/4 or S1	22	55%
S2	8	20%
Amount	40	100%

From table 1 information was obtained that the majority of respondents had D4 or S1 education with a total of 22 people with a percentage of 55%. Description of the data in this research is organizational learning data, quality knowledge and HR performance at shipping companies which are used as objects in this research so that 40 respondents are obtained. The data that has been collected is then compiled and tabulated with data on respondents' answers to organizational learning research questions (X_1), knowledge quality (X_2) and HR performance (Y). The normality test and homogeneity test were carried out as a method for testing the hypotheses in this study.

Normality Test

Normality test is used to determine whether the population distribution is tested at a normal level or not. Normality testing for each research variable was carried out using the One Sample Kolmogorov-Smirnov test using a significance level of 0.05. The data is said to be normally distributed if the significance is greater than 5% or 0.05. The calculation of the research data normality test was carried out on X_1 , X_2 , and Y . The test results are presented in Table 2.

Table 2. Normality Test X_1 , X_2 , and Y
One-Sample Kolmogorov-Smirnov Test

		P.O	Q.K	HR. Perf
N		40	40	40
Normal Parameters ^{a,b}	Mean	80.53	78.40	67.50
	Std. Deviation	5.625	6.197	6.485
Most Extreme Differences	Absolute	.178	.106	.116
	Positive	.100	.106	.058
	Negative	-.178	-.077	-.116
Kolmogorov-Smirnov Z		1.128	.668	.737
Asymp. Sig. (2-tailed)		.157	.763	.650

a. Test distribution is Normal.
b. Calculated from data.

X_1 : Organizational Learning
 X_2 : Quality Knowledge
 Y : Human Resource Performance

Homogeneity Test

Based on the calculation of the X_1 normality test, the significance level of Organizational Learning (X_1) is 1.128 with $n = 40$ meaning that $1.128 > 0.05$. So that it can be concluded that the Organizational Learning data population (X_1) is normally distributed. Homogeneity test of the variance of the research variables was carried out using one way ANOVA. The data population is declared to have homogeneous variance if the calculated significance (p) is greater than the alpha price ($\alpha = 0.05$). The calculation of the research data homogeneity test was carried out on X_1 , X_2 . The test results are presented in table 3.

Table 3. Homogeneity X_1 and X_2 Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Organnizational Learning	1.608	9	17	.191
Quality Knowledge	.779	9	17	.639

X1 = Organizational Learning
 X2 = Quality Knowledge
 df1 = Amount
 df 2= jAmount data - Amount Group
 Sig = Signifikansi
 Levene Statistic : Smaller value is the more homogeneous

Based on the results of the homogeneity calculation of X1 and X2 above, a significance level is greater than alpha ($\alpha = 0.05$), namely $\rho_{X1} = 0.191$ and $\rho_{X2} = 0.639$. So it can be concluded that the variable data population has a homogeneous variance.

Hypothesis Test

First hypothesis put forward is "there is a positive and significant relationship between Organizational Learning (X1) and HR Performance (Y)". Based on simple regression analysis calculations using SPSS data processing program, the results are obtained as in Table 4 as follows:

Table 4. Model Summary 1

Model	R	R Square	Adjusted R Square	Std Error of Estimate
1	.483a	.233	.213	5.754

- a. Predictors (Constant), Organizational Learning
- b. Dependent Variable, Human Resource Performance

Table 4 shows the value of the correlation coefficient (R) = 0.483 which indicates that the relationship between Organizational Learning and HR Performance is quite strong and positive. This also means that if Organizational Learning increases, HR Performance will also increase, and vice versa (there is a straight line relationship between Organizational Learning and HR Performance. Second hypothesis put forward is "there is a positive and significant relationship between the quality of knowledge (X2) and human resource performance (Y)". Based on simple regression analysis calculations using the SPSS data processing program, the results are obtained as shown in table 5 as follows:

Table 5. Model Summary 2

Model	R	R Square	Adjusted R Square	Std Error of Estimate
1	.374a	.140	.117	6.093

- a. Predictors (Constant) , Motivation
- b. Dependent Variable, Human Resource Performance

Table 5 shows the value of the correlation coefficient (R) = 0.374, this shows that the relationship between knowledge quality (X2) and HR performance (Y) is quite strong and positive. This also means that if the quality of knowledge increases, HR performance will also increase, and vice versa (there is a straight line relationship between the quality of knowledge and HR performance.

Research results is organizational learning is proven to have a positive relationship with HR performance. The correlation coefficient between HR Performance and Organizational Learning is 0.483 (tcount = 3.396 > ttable = 2.021) with a regression equation $Y = 22.701 + 0.556X1$. Based on the relationship of the regression equation, it can be seen that the better the Organizational Learning, the higher the HR Performance level. Where an increase of one value in Organizational Learning will lead to an increase of 0.556 value in HR Performance at a constant of 22.701. With good Organizational Learning, it means that the HR performance of a technical superintendent will be high.

Second results on this paper is quality knowledge is proven to have a positive relationship with HR performance. The correlation coefficient between HR performance

and quality of knowledge is 0.374, a significance of 0.017 with the regression equation $Y = 38.823 + 0.391X_2$. Based on the relationship of regression equation, it can be seen that the better the quality of knowledge, the higher the level of HR performance. Where an increase in one value in the quality of knowledge will lead to an increase of 0.391 value in HR Performance at a constant of 36.823. With good quality knowledge, it means that the performance of human resources owned by a technical superintendent will be high.

CONCLUSION

Organizational Learning has a relationship with HR Performance with constants $a = 22.701$ and $b = 0.556$. Based on the calculation results it is known that the regression equation is $Y = 22.701 + 0.556X_1$. From this equation it can be said that a 1% increase or decrease in Organizational Learning will be followed by an increase or decrease of 0.556% HR Performance at a constant of 22.701. Knowledge Quality has a relationship with HR Performance. The calculation results show that the regression equation $Y = 36.823 + 0.391X_2$. From this equation it can be said that an increase or decrease in Knowledge Quality will be followed by an increase or decrease of 0.391 in the HR Performance value at a constant of 36.823. According to the calculation results, it is known that the strength of the relationship between the coefficient of determination (r^2) Knowledge Quality and HR Performance is 0.140.

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