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EFFECT OF TECHNOLOGY, EMPLOYEE COMPETENCY AND LEADERSHIP ON OPERATIONAL PERFORMANCE AT MALEO PRODUCER PLATFORM-MADURA OFFSHORE PT. RADIANT UTAMA INTERINSCO

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Abstract: Knowledge of technology, employee competence, and leadership is important for the company, so that its use needs to be managed properly in the context of improving the company's operational performance. The research aims to determine the effect of technology, employee competence and leadership on operational performance at Madura Offshore gas production facility PT. Radiant Utama Interinsco, Tbk. The research is quantitative research method with analysis techniques for hypothesis testing using Smart PLS version 3.3.7. Population used 100 person who all of responden are employees at Madura Offshore gas production facility PT. Radiant Utama Interinsco, Tbk. The research results show that technology, employee competence and leadership have effect on operational performance. It reflects that the better technology, employee competence and leadership will make better operational performance to achieve company goals.

Keywords: Technology, organization, employee competence, operational performance

INTRODUCTION

State Revenue and Expenditure Budget Plan (RAPBN) 2019 state that government targets oil lifting of 800 thousand barrels per day (bpd). It lowet than 2018 target (815 bpd) and 2017 target (820 bpd). The medium-term target of oil lifting only reach 651-802 bpd in 2021. Meanwhile, gas lifting in 2019 is set at 1.2 barrels of oil equivalent per year, increase from the previous year of 1.15 boepd. The domestic gas lifting target has also decreased since 2018. That was challenging condition, especially for companies which engaged in the upstream oil and gas sector. Referring to businesses such as performance, as stated at the Work Program and Budget (WP&B) which proposed by a number of Contractor Cooperation Contract (KKS), the level of production capability in 2019 was lower than the oil target (808 thousand bpd and gas 1.15 million boepd).

The high level of oil and gas achievement above the average capacity level of KKS is a light task for all elements that play a role in the upstream oil and gas industry.

The above decreasing was due to the existing wells were old, the technology used was outdated and the investment climate in the oil and gas mining sector was not conducive so that not many foreign and national companies want to invest at oil and gas sector. On the consumption side, consumption of oil/fuel products continues to increase in line with population growth and economic growth in Indonesia. Since 2004, if the results of Indonesia's oil and gas production at all refineries are calculated, the results still cannot meet domestic needs. Since 2004, Indonesia has experienced a deficit of 49.3 thousand barrels/day. The Maleo Block in Madura Offshore which is managed by a local private company in Indonesia, namely PT. Radiant Utama Interinsco is a mature field that was specially developed, because this block has reservoir characteristics that are different from most of the fields in the waters of the Madura strait.

Appropriate technology must continue to be developed by seeking and studying various things and innovating for production reliability. Technology, competence and solid team coordination as well as leadership attitudes are part of the answer to help maintain and increase oil and gas production in the Maleo Block. Another challenge in today's digital era, we have to accept the fact that the conditions around us are increasingly uncertain. One of the challenges that must be faced in the business world is VUCA. VUCA which stands for Volatility, Uncertainty, Complexity and Ambiguity is a picture of the current situation in the business world. Volatility is the dynamics of very fast change, Uncertainty is defined as the lack of predictability of problems and events that occur, complexity is the disturbance and chaos that pervades every organization. Improving the quality of Human Resources in the Company's Environment PT. Radiant Utama Interinsco is not only carried out on employees itself, but also to Contracting Companies (Service Companies) employees who works at PT. Radiant Utama Interinsco conforms to the standards set by the company. Contracting companies (service companies) are at the forefront of carrying out work, especially for under wells service.

In the long term, reducing carbon emissions is another key factor driving the need for significant operational improvements. Investors pay more attention to environmental issues, renewable energy prices are falling, and more and more countries are imposing carbon taxes on businesses. Industrial operations include direct emissions from owned or controlled sources and also include human-generated indirect emissions.

Exploitation of oil and gas reserves is not always without ecological side effects. Oil spills, land damage, accidents and fires, as well as incidents of air and water pollution, are all recorded at various times and places.

Awareness of the importance of environmental issues has become increasingly important in the gas industry as well as regulators that regulate every process in it in the last few decades, the integration of development and the environment, approached in partnership between stakeholders are intertwined with each other.

In this case, the researcher observed the potential environmental problems in the offshore gas industry caused by the decline in operational performance at the Maleo Producer Platform gas production facility. This condition is reinforced by the emergence of a pressure drop phenomenon in gas wells in the Maleo field followed by changes in the gas profile in it, researchers capture this challenge and need to do an analysis related to what are the possibilities that can cause a decrease

in operational performance in the field to the impact of the current phenomenon. Appears on the Maleo Block field. Gas well management companies must help meet the challenge of fully integrating environmental protection into the regulatory and business processes that control gas exploration and production. The gas well management company can serve as the basis for preparing or improving regulations, policies and work programs to minimize the environmental impact of declining operational performance on gas production activities.

Natural gas production activities at Madura Strait produce solid, liquid, and gaseous wastes, with a composition of 80% which is liquid waste, even in the aging oil field reaching a value of 95%. Produced water is the largest liquid waste generated by these activities. Produced water will continue to be produced as long as the produced gas well field is in production because of its nature, it has the potential to create a sustainable and profitable management of produced water both economically and environmentally (Igunnu & George, 2012).

From the analysis and opinions of experts regarding the impacts and those generated from the production gas process, it will be a turning point for the facility manager to be able to really pay attention to the environmental impacts that will arise as a result of the gas production process. Moreover, due to the decrease in gas pressure in the reservoir which causes the water produced to also increase, if it is not immediately synergized from the equipment that supports the gas production process, the operational performance of the gas production facility will certainly decrease and waste will not be avoided because most of the water involved produced will be returned to the sea.

The continuous evolution of life in the affected environment must also be taken into account. The gas well management company, in this case the Maleo Producer Platform, places great emphasis on establishing an effective management system and has made great efforts to ensure that environmental issues are a key component of corporate culture, with issues related to health, safety, maintenance of company assets and environment can be considered together.

Health, Safety and Environment Management System (HSE-MS) at PT. Radiant Utama Interinsco as the owner of the gas well management fund in the Maleo field was mutually agreed and known to both the gas well owner and to the government, as one of the guidelines in the gas well management process in terms of safety for humans and equipment. Although there are some important differences in addressing health, safety and environmental issues, PT. Radiant Utama Interinsco is registered and certified and incorporates the ISO 9000 and 14000 series system models.

LITERATURE REVIEW

The definition of operational performance according to Daft (2010), is a field of management that specializes in the production of goods and services, and uses special tools and techniques to solve production problems. Meanwhile, according to Handoko (2010), operational performance is the implementation of managerial activities carried out in the selection, design, renewal, operation and supervision of production systems. In other words, operational performance is a measurement of the company's performance against standards or indicators of effectiveness, efficiency and social responsibility such as: productivity, cycles and compliance with regulations.

Technology is a company's source of strength to increase productivity, support performance in achieving and maintaining competitive advantage (Ellitan, 2003). With the application or use of

technology in the company's operational activities, it is expected to have a significant impact on the company to increase the productivity achieved by the company. Technology as an action taken by an individual to an object, with or without the help of mechanical tools or equipment, to make certain changes to the object.

Competence is the ability to carry out work or tasks based on skills and knowledge and supported by work attitudes determined by the job. Competence shows certain knowledge, skills and attitudes of a profession in the characteristics of certain skills, which are the characteristics of a professional (Wibowo, 2015). Competency model of employee performance appraisal preparation in the company construction (Rony, 2020).

Leadership style is a way used by leaders in interacting with their subordinates (Tjiptono, 2006). Leader becomes one of the important element in influencing a group to achieve a vision or set goals. The leadership has environmental sensitivity accompanied by difference in generation, (Rony, 2019).

Based on the theoretical explanation related to above theory, the following hypothesis can be drawn:

H1: It is suspected that there is a direct effect of technology factor on the entire process of managing production gas facilities at PT. Radiant Utama Interinsco in improving operational performance.

H2: It is suspected that there is a direct effect of the competence factor on the quality of operational performance at PT. Radiant Utama Interinsco both in the Office and Offshore.

H3: It is suspected that there is a direct effect of leadership factors on maintaining credibility, quality of policies and work programs on operational performance at PT. Radiant Utama Interinsco both in the Office and Offshore

RESEARCH METHODS

The type of research used is quantitative research. The data presented in this research was obtained through a direct questionnaire and interview from 100 respondents whom as a employee at PT. Radiant Utama Interinsco. Research design used is hypothesis testing using the structural equation model (SEM) – Smart PLS version 3.3.7.

FINDINGS AND DISCUSSION

The variables used in this research: technology (X1), employee competence (X2), leadership (X3), and operational performance (Y) with five questions for each indicator. After validity and reliability test, any question is delete to comply with validity and reliability. Research model can be seen at figure 1.

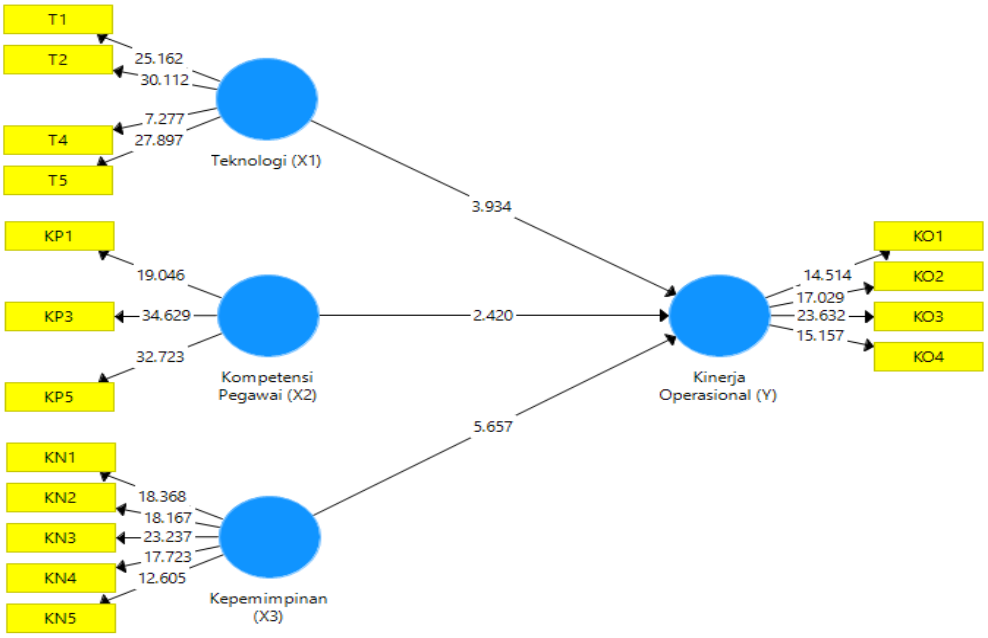

Figure 1. Research model
(Source: Smart PLS 3.3.7)

Validity and Reliability Test

Validity test on the Smart PLS 3.3.7 application is described by the outer loading value. The variable is belong to be valid if the outer loading value is > 0.7 (Hair et al, 2014). The reliability is indicated by the composite reliability value. The variable is belong to reliable if composite reliability value > 0.7 (Hair et al, 2014).

Analysis result of model at figure 1 has any some question that no valid and reliable, some question will delete to process the data valid and reliable only. The question indicators omitted in the Smart PLS 3.3.7 calculation are as follows: T3, KP2, KP4, and KO5. After deleting some of the question indicators above, the results of the validity and reliability met the criteria. Validity and reliability test result can be seen at figure 2.

Total Effects

Mean, STDEV, T-Values, P-Val... | Confidence Intervals | Confidence Intervals Bias Cor... | Samples | Copy to Clipboard: | Excel Format

	Original Sample (O)	Sample Mean (...	Standard Devia...	T Statistics (|O...	P Values
Kepemimpinan (X3) -> Kinerja Operasional (Y)	0.666	0.665	0.124	5.386	0.000
Kompetensi Pegawai (X2) -> Kinerja Operasional (Y)	-0.248	-0.252	0.115	2.146	0.032
Teknologi (X1) -> Kinerja Operasional (Y)	0.308	0.315	0.077	3.990	0.000

Figure 2. Validity and Reliability Test Result
(Source: Smart PLS 3.3.7)

Outer Model

Outer model test describes the relationship between each indicator and its latent variables. Structural model for outer model to predict the feasibility of the indicators.Outer model test consist of discriminant validity test, average variance extracted, and cronbach's alpha.

1) Discriminant validity
   Discriminant validity aims to describe an indicator that is not represented by other indicators. It is measured by cross loading value. The variable is belong to be valid if the cross loading value > 0.7 and the cross loading value must be greater than other variables (Hair et al, 2016). Discriminant validity test result can be seen at figure 2, it show that all variable is valid.
2) Average Variance Extracted
   Average Variance Extracted aims to evaluate discriminant validity for each construct and latent variable. The variable is belong meet the requirements if the AVE value > 0.5 (Hair et al, 2016). Discriminant validity test result can be seen at figure 2, it show that all variable is valid.
3) Cronbach's Aplha
   Cronbach's Aplha aims to strengthen the results of the composite reliability of a variable. The variable is belong to be eligible if cronbach's alpha value > 0.7 (Hair et al, 2016). Cronbach's Aplha test result can be seen at figure 2, it show that all variable is reliable.

Inner Model

Discrimination Coefficient (R^2)

Discrimination coefficient aims to assess the level of predictions accuracy for endogenous constructs. The value of R^2 can be declared as strong if the value is more than 0.7, as moderate if the value is > 0.5, as weak if the value is > 0.25 (Hair et al, 2016). Discrimination coefficient test result can be seen at table 1, it show that operational perfomance has weak prediction accuracy for endogenous constructs.

Table 1. Discriminant Coefficient
(Source: Smart PLS 3.3.7)

Variable	R^2
Operational Performance (Y)	0.47

Effect Size Criteria (f^2)

Effect size criteria aims to measure the relative impact of an independent variable that affects to dependent variable. The value of f^2 can be declared as strong if the value is more than 0.35, as moderate if the value is > 0.15, as weak if the value is > 0.02 (Hair et al, 2016). Effect size criteria test result can be seen at figure 3, it show that (a). technology and employee competence has a strong affect to customer satisfaction, meanwhile quality service has a weak affect to operational perfomance, (b). leadership has a strong affect to operational performance.

f Square

Matrix | f Square

	Kepemimpinan (X3)	Kinerja Operasional (Y)
Kepemimpinan (X3)		0.303
Kinerja Operasional (Y)		
Kompetensi Pegawai (X2)		0.038
Teknologi (X1)		0.102

Figure 3. Effect Size Criteria Test Result
(Source: Smart PLS 3.3.7)

Hypothesis Testing Result

Hypothesis testing is done by analyzing the bootstrapping on the Smart PLS 3.3.7 program. To assess the relationship between variables can be defined by Tstatistic or p-Value. The variable can be declared to have a significant effect on other variables if it has a T-statistic greater than T-table or p-Value is lower than 0.5 (Manurung and Budiastuti, 2019). T-tabel for this research is 1.663 (research model: one tailed, 100 sample, and 4 variabel). Research result can be seen at figure 4. It can be conclude that technology, employee competence and leadership has effect on operational performance.

Total Effects

Mean, STDEV, T-Values, P-Val... | Confidence Intervals | Confidence Intervals Bias Cor... | Samples | Copy to Clipboard: | Excel Forma

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Teknologi (X1) -> Kinerja Operasional (Y)	0.308	0.315	0.077	3.990	0.000

Figure 4. Direct Effect Result
(Source: Smart PLS 3.3.7)

CONCLUSION AND RECOMMENDATION

From the research that has been done, can be conclude as follows:

a) There is a significant direct effect of technology on operational performance.
b) There is a significant direct effect of employee competence on operational performance.
c) There is a significant direct effect of leadership on operational performance.

Based on the results of the research conducted, several things that can be suggested are as follows: (a). Researcher suggest to PT. Radiant Utama Interinsco to pays attention to on the technology variable, employee competence and leadership, (b). For further research to find other variables and indicators that can improve the relationship between technology, employee competence and leadership, to the company's operational performance with emerging problems.

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