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Empirical Study of Work Efficiency in Upstream Oil and Gas Industry of State Company

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ABSTRACT

The upstream oil and gas industry in its operations requires the work efficiency of each individual worker, in order to achieve the company's goals. Many things can affect every worker to work efficiently, in this study raised the factor of work professionalism, work motivation, and innovative behavior as well as individual dynamic capabilities. This study will focus to determine the extent of the influence of work professionalism, work motivation, innovative behavior on work efficiency through individual dynamic capabilities. The aim of this study is to improve work efficiency of each individual worker in upstream oil and gas industry in state-owned enterprises, in order to achieve the company's goals.

Key words: Work Professionalism, Work Motivation, Innovative Behavior, Individual Dynamic Capabilities, and Work Efficiency.

1. INTRODUCTION

Upstream oil and gas industry is operating in areas that are remote, difficult, and have a high risk of failure and loss in the exploration and exploitation processes, so that requiring every worker to work efficiently. Each worker in his position and according to their respective roles and functions, is the company's human resources that operate the company based on the chosen strategy. In order to work efficiently every worker must have professional work supported by knowledge and skills related to his work, and must have high work motivation to always be enthusiastic during work to achieve work goals and achieve various work achievements.In addition, a worker is currently required to have innovative behavior that is conducive to being able to adapt to changes in the environment. Every worker as part of the company's assets is required to also think and act how to work more efficiently, in order to increase work productivity. Efficiency is one that remains relevant, in the midst of an increasingly striving world to accommodate a fast-growing population, and manage the distribution of natural resources to meet a wide range needs [1]. In a company's operations the efficiency of work done to the maximum of all workers will improve company performance[2]. For that every worker must work professionally according to the competence possessed, motivated by high work motivation to be able to overcome difficulties encountered, and required to have innovative behavior to be able to adapt to changes in the environment. Worker and his or her behavior is tangible resource as well as intangible, is at once a dynamic capability of the corporate. The dynamic capabilities is the capacity of an organization to purposefully create, extend, or modify its resource base [3]. More specifically convey that organizational dynamic capabilities is a positive function of individual and collective dynamic capabilities in organizations[4].Focuses on internal competence in upstream petroleum industries companies, this paper wants to know how far the influence of work professionalism, work motivation, and innovative behavior toward individual dynamic capabilities in improving work efficiency. Organizational competencies denoted managerial and organizational processes or patterns of current practice and learning, through which firm-specific assets are assembled in integrated clusters spanning individuals and groups[5].

This paper aims at examining the mediating effect of individual dynamic capabilities in the effect of work professionalism, work motivation, and innovative behavior to work efficiency. For this purpose, an empirical study was conducted in state-owned enterprises Oil and Gas Company. It is expected that this study could benefit relevant stakeholders in the upstream oil and gas industry, with particular reference to increase work efficiency.

2. RELEVANT LITERATURE REVIEW

2.1 Theoretical Concepts of Work Efficiency

Work Efficiency is the achievement of maximum work results with infrastructure, as well as specified time standards, so that workers feel satisfied with the results of their work, and feel sufficient for the compensation received from the done. Efficiency define as the measure of effectiveness that produces the minimum waste of time, effort, and skill [1]. In addition, efficiency is an effort to

produce as much output as possible with available inputs[6]. Its means that with less time, effort and with the existing skill of work implemented effectively reach the target of the output. To improve efficiency a company must empower its resources more effectively, as well as implement appropriate strategies, in order to encourage growth and win competition [7]. Makadok, Burton, & Barney [8] assert that included company resources are all assets, organizational processes, abilities, special characteristics, knowledge, information owned, and all things controlled by the company, so that it becomes a means and infrastructure to achieve goals. In a company, the individual worker is an element of a system consisting of various parts, which act and function according to their respective competencies to produce a specified product.

2.2 Individual Dynamic Capabilities

Individual Dynamic Capability is the ability of individual workers to sensing changes that occur both inside and outside the work environment, capture the opportunities of these changes, and be able to transform in new ways accordingly, has an impact on Organizational Dynamic Capabilities both directly and through the Team Dynamic Capabilities[4].Dynamic capabilities is a variety of capabilities to sensing, seizing opportunities, and transforming to build new business models in the face of environmental changes, so that company performance improves[9].Sprafke, Externbrink, & Wilkens[4] more specifically convey that organizational dynamic capabilities is a positive function of individual and collective dynamic capabilities in organizations. Individuals are micro-foundations aspects of dynamic capabilities, as actors who have a decisive role through their activities and organizational internal interactions that impact on the ability to continue various updates. Individuals have a very important role in the organization, thus sustaining the company's dynamic capabilities in innovating [10].The manager's dynamic capabilities as individual contributes to increased corporate performance [3].Wilhelm, Schlömer, & Maurer [11]suggests that dynamic capabilities has bearing on the effectiveness and efficiency of high-intensity companies, in their daily routines as essential to improve its performance and competitiveness. Each employee who engage in regular work empower a maximum professional sense of work, driven by the motivation oh their work, as a potential individual dynamic capabilities in improving work efficiency to achieve corporate success[12].

Hypothesis 1:Individual Dynamic Capabilities has an effect on Work Efficiency.

2.3 Work Professionalism

Professionalism is a form of profession that reflects attitudes and behaviors that are carried out conceptually, consistently, according to organizational goals, based on applicable codes of ethics, to fulfill work responsibilities or customers desires [13].In addition, professionalism also attributed to the ethics that represent both human values and technological advances like a computer [33]. Work Professionalism is the attitude and behavior towards work competently, reflecting an understanding of the procedures and work processes that apply, and carry out according to the expertise and skills possessed, so as to achieve maximum work efficiency in achieving the specified work result [13].Thus professionalism contains three main components namely attitude, behavior, and intellectual as well as skills. Attitude is a tendency, feelings, emotions, and also thoughts that can realize the ideas of the profession and service as the basis for professional behavior. Professional behavior is related to physical activities and interactions in the workplace, according to the procedures and competences. Evetts [14],concluded that work professionalism can be used to differentiate works tasks, from one type of work to another. ork professionalism can also be used to control the quality of work, both technically and its work performance. Work professionalism becomes an instrument of job change, social control in the macro, medium, or micro strata, a very different range of jobs, related to individual and organizations. Rulandari [15], concluded that job supervision and personality would enhance employee performance. Professionalism will affect the company capabilities, including the efficiency to enhancing performance and competitiveness [16].

Hypothesis 2: *Work Professionalism has an effect on Work Efficiency through Individual Dynamic Capabilities.*

2.4 Work Motivation

Individual workers are encouraged to work passionately because of the long-term goals and strategies of the organization. Company goals and strategies becomes the direction and work guidelines for workers to achieve performance, so that they work efficiently. Uteubayev & Kurmanov [17] conveyed that work motivation was formed and influenced by all socio-economic factors, in which there are subsystems that are independent of various problems. Socio-economic is one of the factors that influence work motivation of workers in oil and gas companies in Kazakhstan, especially remuneration. Increasing work motivation and providing appropriate compensation can maintain worker retention, so that it can remain in the company [18].In addition, work motivation is believed can tackle the problem of relationship with employee [32]. Work motivation also is described as something that encourages people's morale to motivate him or her in the working place. The encouragement is the driving force which enables people to enhance the performance and the quality of behavior. In addition, motivation has three crucial elements, namely; (a) *direction of behavior* which emphasize the worker's behavior in the working place; (b) *level of effort* which underline the worker's effort in order to achieve the target; and (c) *level of persistence* which see how the worker when handling the challenges in the working place [19].Boye Kuranchie-Mensah & Amponsah-Tawiah [20], concluded that employee motivation has an impact on company performance, including the work efficiency that drives such increased performance.

Hypothesis 3: *Work Motivation has an effect on Work Efficiency through Individual Dynamic Capabilities.*

2.5 Innovative Behavior

Innovation plays an important role in the transformation of companies and markets, that is requires critical behaviors towards the environment, skills for observing, building networks, and conducting experiments, and thinking in associational cognitive skills to synthesize novelty inputs[21]. Innovation in the broadest sense includes new processes, new improvements, new products, in various forms of the company's efficiency tendency to expand the market [22].Scott [23]concluded that leadership, innovation support, management experiments, career paths, and problem solving style greatly influence individual behavior in innovation. Perrons [24], concluded that innovation will increase efficiency and enhance the performance of the company.

Hypothesis 4: Innovative Behavior has an effect on Work Efficiency through Individual Dynamic Capabilities.

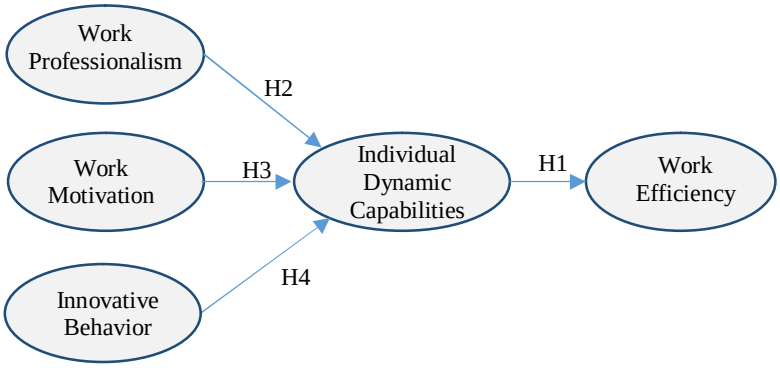

Figure 1: Work efficiency in oil industry companies affected by work professionalism, work motivation, and innovative behavior as the independent variable of dynamic capabilities

3. RESEARCH METHODS

3.1 Research Approach

The study was conducted using quantitative methods, through spread of questionnaire by giving value to each of the respondents answer.

3.2 Population and Sampling Technique

The research population are workers in upstream oil and gas industry Pertamina, which has people. Sample selection techniques using proportional stratified random sampling, so the sample proportionally can represent a dispersed population and consists of several strata from structure[25].In addition, stratified sampling was chosen because in the oil and gas companies there are many variations and differences in their organizations. Proportional random to all strata generated sample of 107 people.

3.3 Data Collection Technique

Data was collected using questionnaires and online techniques, and 98 respondents collected answering statements, consist of: both men and women equal 50%. The ranging age from 25-30 years old: 29,29%; from 30-40: 43,91%; from 40-50:17,59%; from 50-60: 9,19%. Background of education bachelor level 72,45%; and master level 27,55%. They have experience working at the company now, ranging from < 0-5 21,25%, 5-10 years 47,45%, 10-15 years 16,15%, and >15 years 15,15%. And they have experience in today's position, ranging from

4. FINDINGS AND DISCUSSION

The collected data was analyzed and calculated using Partial Least Square-Structural Equational Modeling (PLS-SEM), so that it can show the relationship and influence between variables in accordance with the research model[26], besides this research is directed to make prediction and build theories [27], emphasis on predicting the effect of work professionalism, work motivation, and innovative behavior variables on work efficiency through individual dynamic capabilities.

According to PLS SEM procedure, after the construct reliability score is more than 0.70, and after passing tests of convergent and discriminant validity, so that validity meets requirements, then bootstrapping is performed. Bootstrapping results are as follows:

Table 1: Total Effects Table

	Original S.	Sample Mean	Standard D.	T-statistic	P-values
IB→IDC	0.374	0.378	0.081	4.599	0.021
IB →WE	0.178	0.184	0.049	3.657	0.030
IDC→WE	0.476	0.485	0.064	7.453	0.000
WM→IDC	0.155	0.156	0.098	1.587	0.113
WM→WE	0.074	0.075	0.047	1.557	0.119
WP→IDC	0.436	0.434	0.107	4.058	0.000
WP→WE	0.207	0.211	0.061	3.397	0.001

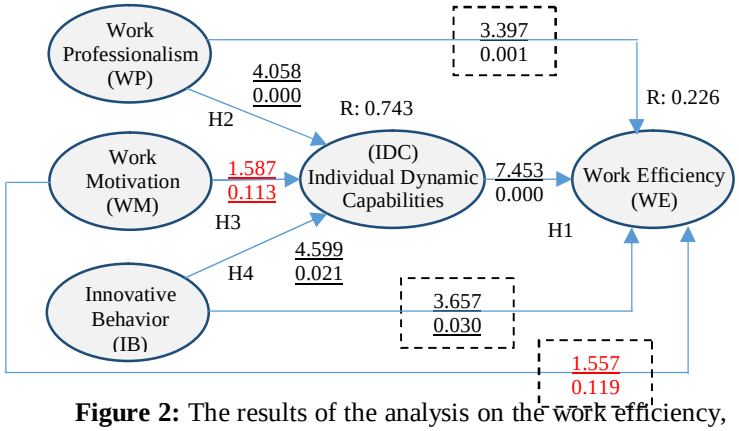

Figure 2: The results of the analysis on the work efficiency, individual dynamic capability, work professionalism, work motivation, and innovative behavior

Verification of hypothesis one (H1). The probability effect of IDC on WE equal to 0.000 (P-value < 0.050), so that there is a significance probability effect IDC on WE. The T-value of IDC on WE equal to 7.453 (T-value > 1.793), it means that there is significance effect IB on WE. Thus fourth hypothesis (H4) is proven, that Individual Dynamic Capabilities has an influence on Work Efficiency significantly. It is evident that the Individual Dynamic Capabilities of workers can drive improvements in Work Efficiency and ultimately improve company efficiency. The totality of two variables that is Work Professionalism and Innovative Behavior of workers which has a significant influence on Individual Dynamic Capabilities, sufficient to guarantee to significantly improve Work Efficiency. Related to Work Motivation because of the insignificant effect on Individual Dynamic Capabilities, then only a very small effect in improving Work Efficiency. Those hypothesis one (H1) is proven, that Individual Dynamic Capabilities has an effect on Work Efficiency.

This conclusion is in line with the result of research of Sprafke, Externbrink, & Wilkens [4], Wieczorek & Mitrega, [12], and Fallon-byrne & Harney[10] those that the role of individuals ang group/teams is critical to organizations, because individuals are actors of the organization's dynamic capability. This study found that Individual Dynamic Capabilities has prominent role in improving Work Efficiency.

Verification of hypothesis two (H2). The result of calculation shows that probability the effect of WP on WE equal to 0.001 (P-value < 0.05), so that there is a probability effect WP on WE. The significance level of the probability the effect of WP on WE can be seen from the statistical T-value that is 3.397 (T-value > 1.793), so that there is a significance effect WP on WE. While P-value of WP on IDC is 0.000 (P-value < 0.05), and the statistical T-value is 4.058 (T-value > 1.793), so that there is a significance effect WP on IDC. Thus hypothesis two (H2) is proven, that Work Professionalism has an influence on Work Efficiency directly, and through Individual Dynamic Capabilities.

This is in accordance with the background of the workers who are mostly educated with a degree and have quite a long experience, namely 0 to 5 years' experiences 21.25%, five to 10 years 47.45%, and above ten years 31.30%. With this capital in addition to filling the individual dynamic capabilities load, it also guarantees that its work professionals are high enough to increase work efficiency. This is in line with Evans & Homer [13],Balthazard, Katarzyna, , Konstantinou [28-30], and Schutte et al [13] whose concluded that the attitude of understanding work assignments, work processes, and work behavior according to their knowledge, expertise and skills, is indicators of professional workers and are the potential dynamic capabilities of individuals who will encourage work efficiency.

Verification of hypothesis three (H3). The probability effect of WM on WE equal to 0.119(P-value > 0.05), so that there is no significance probability effect WP on WE. The T-value of WM on WE equal to 1.557 (T-value < 1.793), it means that there is no significance effect WM on WE. While P-value of WM on IDC is 0.113, and the statistical T-value is 1.587 (T-value < 1.793), so that there is no significance effect WM on IDC. Thus the third hypothesis (H3) is not proven, that Work Motivation has not an influence on Work Efficiency both directly, and through Individual Dynamic Capabilities. The results of this study differ from Kristina [31], which found that motivation, performance, and work efficiency are closely connected and interrelated.

This result proves that Work Motivation of workers in the state oil and gas company, has no significance effect to Work Efficiency and Individual Dynamic Capability. This might be due to the lack of challenges for workers to improve the efficiency of their work, or maybe they are already satisfied with the current conditions, both in terms of income and work careers at their current company.

Verification of hypothesis four (H4). The probability effect of IB on WE equal to 0.030 (P-value < 0.05), so that there is a significance probability effect IB on WE. The T-value of IB on WE equal to 3.657 (T-value > 1.793), it means that there is significance effect IB on WE. While P-value of IB on IDC is 0.021 (P-value < 0.05), and the statistical T-value is 4.599 (T-value > 1.793), so that there is significance effect IB on IDC. Thus third hypothesis (H4) is proven, that Innovative Behavior has an influence on Work Efficiency both directly, and through Individual Dynamic Capabilities. The result of this study supplement to finding of Perrons [24], with a focus on each worker's individual innovation behavior.

It is evident that Innovative Behavior of worker affects Work Efficiency and Individual Dynamic Capabilities. Individual employees in their inner attitudes accept new ideas, application of new technologies, system, and new methods from endogenous or exogenous innovation. This is possible by the process of personnel recruitment, work experiences, and educational background which in general have passed undergraduate level. The result of this study are consistent with Scott [23] conclusion, which is that innovative behavior is driven by critical attitude to environmental dynamics, a prompting to move forward, to try new things, to innovate, to identify and analyze risk possibilities, and to find solution to.

5. CONCLUSION

This study proves that Work Professionalism and Innovative Behavior influence efforts to increase Work Efficiency, both directly and indirectly through Individual Dynamic Capabilities. Individual Dynamic Capabilities itself has significant effect in increasing Work Efficiency, while Work Motivation does not significantly affect Work Efficiency and Individual Dynamic Capabilities. According to the results of this research suggests management to: the first to preserve the existing labor composition, to make them more professional and innovative, in addition to increasing the motivation for their work.

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