
Maturity Analysis Of Knowledge Management Implementation On Organizational Performance (Survey On State-Owned Enterprises In Indonesia)

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Abstract: Knowledge Management (KM) implementation has taken place several decades ago in many companies in the world, including companies in Indonesia. The purpose of this study was to measure how the maturity level of KM implementation and organizational performance, also how the influence of achieving the maturity level of KM implementation on organizational performance. Research method used is explanatory research, the sampling technique used is the method Proportional Stratified Random Sampling. The unit of observation was 283 respondents, consisting of 47 middle managers, 81 lower managers, and 155 employees. The results showed that the maturity level of KM implementation using 7 dimensions, namely knowledge creation, knowledge retention, knowledge transfer and knowledge utilization, management and leadership support, corporate entrepreneurship and application technology are at a superior level or a level of good achievement.

Keywords: Knowledge management; Organizational performance; Level of maturity; State-owned enterprise; Indonesia

INTRODUCTION

In the last few decades, the application of Knowledge Management (KM) has been widely adopted by many companies in the world. KM is a process of transferring knowledge within an organization to facilitate workers with relevant knowledge to support organizational goals. Many researchers define KM as a strategy to facilitate knowledge transfer to workers which is carried out systematically to build, update, and apply to achieve organizational effectiveness (Abell & Oxbrow, 200; Allee, 2007, Davenport, 2008, Alavi & Leidner, 2010). However, in the process of implementing it, organizations need to ensure that the systems used have been well applied. Evaluation of KM implementation is useful for ensuring the system has worked optimally in supporting the organization and also assesses the extent to which employees' explicit and implicit knowledge improves organizational performance (Alavi and Leidner, 2001). Therefore, an appropriate evaluation tool to determine the maturity and effectiveness of KM implementation is needed (Kulkarni & Loise: 2003).

There are many methods to measure the maturity of KM implementation, including using the key maturity index (Kuriakose, 2011), the key result area (Infosys, 2000), and the Key performance area (Pee, 2009). In this study, the measurement of the maturity level of KM implementation by using key performance in the main activity to support the success of KM implementation. The results of this measurement can be seen from the achievement scores of each main activity into 6 maturity levels, namely primeval, initial, in development, competitive, superior and word class (Ahmad Guntur, at all, 2020). Based on the maturity level achieved, various strengths and weaknesses can be identified (Neda Khatibian, 2020) of each measure in the KM activity dimension and various strategies and recommendations need to be proposed for the successful implementation of KM in the future.

The main activities in implementing KM include knowledge creation, knowledge retention, knowledge transfer, and knowledge utilization (Newman & Conrad, 2000), management and leadership support (Nonaka, 2002) application of technology (Nonaka, 2002; Alavi & Leidner: 2010), and (7) Corporate Entrepreneurship (Jones, 2002; Malhotra, 2008; and Scarborough & Carter, 2002). Of the seven main activities, each level of achievement will be measured with various indicators for each of these activities.

Measuring the maturity of KM implementation is very important to determine the company's position in managing knowledge (Mochamad Agung Wibowo & Rudi Waluyo, 2015 and its impact on company performance (Allee, 2007, Davenport, 2008, Alavi & Leidner, 2010). In addition, measuring the maturity level of implementation KM can see which areas are satisfactory in driving organizational success (Neda Khatibian, at al, 2010). Ignorance of the factors that determine the success of KM implementation is a futile activity (Wong, 2005). (Alavi and Leidner, 2010), found that the implementation of KM has an effect on company performance in terms of the creation of new product innovations.

The creation of new product innovations can improve organizational performance. Organizational performance is a complete display of the state of the company during a certain period of time, is the result or achievements that are influenced by the company's operational activities in managing use the resources owned (Veithzal Rivai, 2009: 604). Organizational performance can be measured through 4 perspectives, namely finance, marketing,

internal processes, and learning and growth (Kaplan & Norton 2001: 17), Atkinson: 2008, Pearson & Robinson: 2007: 254).

There are many studies that measure the maturity level of implementing KM independently without being associated with organizational performance, such as research conducted by: (Luciano Batista, et al, 2019; Alexander Serenko, et al, 2017; Michel Grundstein, 2008; Cyndy Hubert & Darcy Lemons, 2010). However, there are not many studies measuring the influence of the maturity level of KM implementation. The maturity model of KM implementation promises to maximize innovation and competitive advantage for organizations (Rony Dayan Stephen Evans, 2006). The analysis of KM maturity growth is related to the size of the organization, the result is that there are differences between small, medium, large and extra large organizations (Kruger, 2010).

Therefore, this research is very important to do to measure the effect of the maturity level of KM implementation on Organization Performance. According to researchers, the higher the level of achievement of KM implementation, the higher the organizational performance. This is based on the premise that when the critical aspects of successful KM implementation have achieved high performance, it will be able to improve efficient internal business quality, customer and employee satisfaction and company financial performance.

REVIEW OF LITERATURE

Knowledge Management (KM)

KM is a process for creating, documenting, sharing, and updating knowledge in an organization which is supported by the main pillars of the company which include leadership and technology, so that it becomes a culture knowledge sharing in the company (Nonaka: 2002; Alavi & Leidner: 2010, Newman & Conrad: 2000). Meanwhile, according to (Jones, 2002) there are five strategies for implementing KM, namely: (i) managerial; (ii) leadership; (iii) corporate entrepreneurship; (iv) organizational structure; (v) KM sharing and retention. (Newman & Conrad, 2000) describes the process model for implementing KM in four main activities, namely: (1) knowledge creation; (2) knowledge retention; (3) knowledge transfer; and (4) knowledge utilization. Based on studies from (Chong, 2005, Wong, 2005, and Albers, 2009), there are eight factors seen as the key to successful KM implementation, namely: (i) structured processes; (ii) there are experts; (iii) the culture is "champion"; (iv) top management support; (v) Organizational culture; (vi) information technology support; (vii) There is a special unit knowledge management; (viii) Clear measures of success.

From the various theories and research above, the dimensions to be measured in the level of maturity of KM include 7 aspects that are considered important as the key to success in implementing KM which includes aspects. First, Knowledge Creation, which is an activity related to the entry of new knowledge into an organization which includes knowledge development, knowledge discovery, and knowledge absorption (Newman & Conrad, 2010). Second, Knowledge retention, which is an activity related to the process of maintaining knowledge and storing knowledge including activities to keep knowledge in the organizational environment, which includes providing a conducive environment for sharing knowledge, documenting knowledge, and routine knowledge sharing (Schultze & Leidner, 2009). Third, Knowledge transfer, which is an activity related to the process of knowledge flow from one party to another, which includes the willingness to share knowledge, use of forums, communication and knowledge conversion (Davenport, 2008; Alavi & Leidner, 2010). Fourth, Knowledge Utilization, which is an activity related to the application of knowledge into organizational business processes, which includes developing products and solutions, increasing human value, and the ability to create value for stakeholders. (Newman & Conrad, 2000). Fifth, Management and Leadership Support, which is support from the leadership and concrete steps to realize the implementation of knowledge management in every business activity, which includes upper-level management support in implementation, a special unit, and supported by a culture of knowledge sharing (Chong, 2005; Wong, 2005; and Albers, 2009). Sixth, Corporate Entrepreneurship, namely the extent to which entrepreneurial culture appears in the organization in order to create new services. This condition is reflected in the support of knowledge workers, support for a learning culture as an innovation process, and supported by employee expertise (Jones, 2002; Malhotra, 2008; and Scarborough & Carter, 2002). Seventh, Application of Technology, namely the extent to which technology plays a role in the process of implementing knowledge transfer which is not limited by distance and time. For example, internet technology support, access levels, and updating of content as a source of information (Davenport, 2008; Bassi, 2007).

Measuring the Maturity Level of KM Application

Measurement of the application of KM is very important to be carried out by organizations in order to assist the organization in identifying precisely the level of capabilities the organization has obtained through the knowledge transformation system (Neda Khatibian, 2010). In addition, it can also be used to determine all targeted maturity levels of each factor to support the successful implementation of KM in the organization.

KM implementation is a process for creating, documenting, sharing, and updating knowledge within the organization which is supported by the main pillars of the company which include leadership and technology, so that it becomes a culture knowledge sharing in the company (Nonaka, 2002; Alavi & Leidner, 2001, Newman & Conrad, 2000).

Maturity level of KM implementation according to Kulkarni (2005) is an organizational level in managing assets and utilizing knowledge effectively. Meanwhile, Pee and Kankanhalli (2009) define the maturity level of KM as the level that is expected to be achieved by organizations in developing KM. Kuriakose (2010) explains that the KM maturity model is a structural approach as a guide for the application of KM with systematic, scientific, and measurable methods to build, implement, improve and maintain maturity levels. Robbins (2006) states that the KM implementation maturity model will help organizations compile, implement, and compare the success of KM implementation. From these various theories and opinions, it can be concluded that the KM maturity model is a structural approach that is scientific and measurable in applying KM. Based on the maturity measurement, it can be determined the maturity level of an organization in implementing KM, with the categories of level attainment: (0) primeval; (1) Initial; (2) In Development; (3) competitive; (4) Superior; (5) world class (Akhmad Guntar, at al, 2020).

Organizational Performance

In line with the increasingly fierce level of competition and various kinds of business demands, both internal and external, the company has begun to restructure its business strategy (Arash Rezazadeh & Ana Carvalho, 2020) by comparing the company's performance with the performance of other companies that have the best performance. The concept of performance management can contribute to achieving optimal results to be achieved by an organization. Because organizational performance is a collectivity of existing components in the organization (Manfredi Latilla, at al, 2018), performance appraisal must reflect the effectiveness of corporations, teams, individuals and include continuous efforts to develop knowledge, skills and competencies. Performance management is an ongoing responsibility for managers and leaders and is used as a strategy to achieve goals. In addition, performance management has several specific parameters that can be used to compare current performance against targets to be achieved. Then based on these results it will be known how to improve performance or to what extent the performance is progressing.

According to Veithzal Rivai 2009: 604 that performance is a complete display of the state of the company during a certain period of time, is a result or achievement that is influenced by the company's operational activities in utilizing its resources. Kaplan & Norton 2010: 17) defines the balance scorecard as a framework for integrating various measures derived from corporate strategy, namely measures of past financial performance and introducing drivers of future financial performance, which include customer perspectives, internal business processes, and learning and growth, derived from the explicit and rigorous process of translating corporate strategy into concrete objectives and measures.

Based on the theory and results of research on organizational performance appraisal, the researcher uses organizational performance measurement with the approach Balance Scorecard which refers to Kaplan & Noorton, 1996), which includes four perspectives, namely:

1. Financial Perspective, namely the level of stakeholder expectations and can reflects the assessment of the company's operational activities in financial performance which includes: the level of net profit, the rate of return to shareholders, the rate of return on investment, the level of cost efficiency, the level of inventory turnover, and the level of current ratios.
2. Customer Perspective (customer perspective), namely the extent to which the company's ability to provide satisfaction to consumers and stakeholders both in products and services, as well as services in accordance with the expectations of these parties. This perspective is measured by the level of availability of customer complaint handling systems, the level of quality assurance of products and services delivered to customers, the level of company image and reputation, products and services in the eyes of consumers and the wider community, and the level of profitability per customer.
3. Internal Business Process Perspective (internal business process perspective), which is the level of the company's efforts to build organizational excellence through continuous improvement of the organization's internal business processes. This perspective is measured through: the level of service processes, the level of service cycle improvement, the increase in company infrastructure capacity, the level of technology updating in customer service processes, the improvement of employee skills, the improvement in the quality of products and services produced, the level of quality of information systems running in the company, and the level of efficiency. per company activity
4. Learning perspective and innovation (learning and innovation perspective), that is, this learning process rests heavily on aspects of human resources, organizational systems and procedures that are used as standards for implementing organizational activities. This perspective is measured by the level of employee satisfaction, the level of employee loyalty to the job and the company, the level of knowledge attainment of employees in their fields of expertise, the level of employee motivation at work, the level of employee participation in increasing the efficiency of company operations, and employee satisfaction with the compensation system in fulfilling employee welfare.

Research methodology

The object of this research is the maturity level of KM implementation and organizational performance. To examine this object, the study was conducted on BUMNs spread across 42 regional offices in 5 BUMNs in Indonesia. The selection of the BUMN sector in this research is because these companies have implemented KM for an average of 10 years from the initiation process until this research was carried out and this BUMN

company has strategic importance for the economy in Indonesia. Research method used in this research is explanatory research, which is a study that explains the causal relationship between the variables of the maturity level of KM implementation and organizational performance. The sampling technique used is the method Proportional Stratified Random Sampling. To maintain the habit of responses to question items on each dimension in the research variables, each observation unit is represented by middle managers, supervisors and employees at least 1 respondent each.

The observation unit or respondents in this study involved 283 respondents, consisting of 47 middle managers, 81 lower managers, and 155 employees, of these 283 respondents 30, 04 percent were women, and 69, 96 percent were men.

The research instrument test was carried out by distributing questionnaires to 30 respondents as a process try out for the questionnaire before it was carried out to measure the real research variables. This process is carried out on research measuring instruments to prove whether the measuring instrument has validity and reliability. The result is the instrument for the variable level of KM implementation maturity and organizational performance is valid with a validity index greater than the critical value above 0. 30. While for the reliability test can be seen in the following table:

Table 1.
Reliability Test

| Variable | Value of Coefficient Reliability | Value r Critical | Information |
|---|----------------------------------|------------------|-------------|
| Level of Maturity KM Implementation (X) | 0.832 | 0, 700 | Reliable |
| Organization Performance (Y) | 0.844 | 0, 700 | Reliable |

Reliability test results show that the questionnaire on the two variables used for research is reliable (reliable), so that it can be continued in the next analysis. The analysis method used in this study is divided into two parts, namely: (1) Descriptive Analysis and (2) Inferential Analysis. The research hypothesis was used to determine the maturity level of KM implementation and organizational performance according to the respondents' assessment and to determine the magnitude of the influence of achieving the maturity level of KM implementation on organizational performance.

In this study the minimum level of maturity for KM implementation is determined and organizational performance is said to be good if the proportion is greater than ($\mu > 6$). To measure the maturity level of KM implementation in this study is to use a questionnaire on the 7 dimensions above with a Likert scale of 1 to 10, then the average of each indicator is calculated in each dimension, and then the maturity level will be determined as follows:

Table 2.
Level Score KM Implementation Maturity

| Level | Score | Level of Maturity |
|-------|-------|-------------------|
| 0 | 0-1 | Primeval |
| 1 | 1-3 | Initial |
| 2 | 3-5 | In Development |
| 3 | 5-7 | Competitive |
| 4 | 7-9 | Superior |
| 5 | 9-10 | World Class |

Whereas to measure organizational performance in this study set limits at least the achievement of organizational performance is said to be good if the proportion is greater than ($\mu > 6$). To test the meaning of the descriptive hypothesis, the null hypothesis is rejected and the alternative hypothesis is accepted if $Z > 1, 645$. This means that the research variables are well achieved.

In accordance with problem formulation, research objectives, hypothesis formulation and number The data to be collected is the data analysis method used in this study is to use *partial least square* (PLS). In this study, the measurement model (*outer model*) for the latent variables of KM implementation maturity level (X) and Organizational Performance (Y) and the influence path diagram between these variables will be measured.

Results

Table 3 is the measurement result of the maturity level of KM implementation.

Table 3
Level of maturity KM Implementation

| Dimension | Total Score | Category |
|--|-------------|----------------|
| <i>Knowledge Creation</i> | 6, 94 | Competitive Up |
| <i>Knowledge Retention</i> | 6, 91 | Competitive |
| <i>Knowledge Transfer</i> | 6, 92 | Sufficient |
| <i>Knowledge Utilization</i> | 6, 92 | Competitive |
| <i>Management and Leadership Support</i> | | Superior |
| <i>Corporate Entrepreneurship</i> | 7, 18 | Superior |
| <i>Application Technology</i> | 7, 18 | Superior |
| | Sum | Rat e |
| Sample Size | 283 | Superior |
| Item | 22 | / Good |
| Actual Value | 43,7 83 | 7, 04 |

The results of measuring the maturity level of KM implementation are measured by 7 dimensions, namely knowledge creation, knowledge retention, knowledge transfer and knowledge utilization at the competitive level, while the dimensions of management and leadership support, corporate entrepreneurship and application technology are at a superior level. The actual value on all dimensions to measure the maturity level of KM implementation is 7, 04 with a superior level of achievement or a level of **good** achievement.

Testing the descriptive hypothesis for knowledge management, the minimum limit for implementing the research variable is said to be good if the proportion is greater than 6 or ($\mu > 6$).

Table 4
Proportion Test of Knowledge Management

| Variable | Average Ideal | Actual Average | STD | Z | Conclusion |
|----------|------------------|-------------------|--------|--------|-------------|
| KM | 6 | 7, 04 | 1, 159 | 4, 480 | Significant |

Significant at the real level 0, 05 ($Z_{table} = 1, 1645$)

From table 4 it can be explained that based on the right-side average test for the variable KM implementation maturity level, the result is significant at the 5% real level and so the null hypothesis statistic is rejected. This means that the maturity level of KM implementation has been achieved well. Of the seven dimensions, if assessed based on their categories, then there are 4 dimensions that are categorized as competitive (level 3), which include the dimensions of *knowledge creation*, *knowledge retention*, *knowledge transfer*, and *knowledge utilization*. This means that the achievement of KM implementation performance is considered sufficient or not optimal when viewed from the following aspects: (i) the level of entry of new knowledge into the organization; (ii) maintenance activities, storage and how to maintain organizational knowledge; (iii) level of willingness sharing of knowledge, usefulness of forums, and frequency of knowledge translation; (iv) application of knowledge to business processes.

Meanwhile, the dimensions that are categorized are *management and leadership support*, *corporate entrepreneurship*, and *application of technology*. This means that the achievement of KM implementation performance is good from the following aspects: (i) the level of leadership support in knowledge management; (ii) the level of entrepreneurial cultural climate as a result of knowledge management; (iii) the role of technology in the process *knowledge transfer*.

Table 5 is the result of measuring organizational performance using a *balance scorecard* which includes 4 dimensions including: *financial perspective*, *internal business process perspective*, *customer & stakeholder*, and *perspective learning and growth perspective*. The results of the assessment of the organizational performance dimensions have been achieved well, with an actual value of 7, 20 classified as high.

Table 5.
Organizational Performance

| Dimensions | Total Score | Category |
|-----------------------|-------------|----------|
| Financial perspective | 6, 83 | Enough |

| | | |
|---------------------------------------|--------|-------------|
| Internal business process perspective | 7, 55 | High |
| Customer and Stakeholder Perspective | 7, 48 | High |
| Learning and Growth Perspective | 7, 57 | High |
| | Number | Average |
| Sample size | 283 | High |
| Item | 27 | |
| Value Actual | 55.079 | |

Descriptive Hypothesis Testing for the measurement of organizational performance, the minimum limit for implementing research variables is determined to be good if the proportion is greater than 6 or ($\mu > 6$).

Table 6.

| Variable | Average Ideal | Average Actual | ST D | Z | Conclusion |
|------------------------------|---------------|----------------|-------|-------|-------------|
| Performance Organization (Y) | 6 | 7 36 | 1 230 | 4 875 | Significant |

Significant at real level of 0, 05 ($Z_{\text{tables}} = 1, 1645$)

Table 6 shows that the right-side average test for organizational performance variables, the results are significant at the 5% real level and statistically the null hypothesis is rejected. This means that organizational performance **has been achieved well**. This is supported by a recapitulation of organizational performance as measured by the *balance scorecard* in 4 perspective with an actual value of 7, 36 is classified as **high**. This means that organizational performance has achieved high performance from the perspective of *learning and growth, customer and stakeholder, perspective internal business process*, but from *perspective financial perspective it is still considered sufficient*.

The measurement model (*Outer model*) for variables latent level of KM implementation maturity that is predicted by the dimensions of *knowledge creation, knowledge retention, knowledge tran spheres, knowledge utilization, management and leadership support, corporate entrepreneurship, and application of technology* can be described as follows:

Tabel 7
Outer Model PLS KM

| Latent variable | Manifest variables | Original Sample | | Standard Deviation (STDEV) | Standard Error (STERR) | T Statistics ((O/STERR)) |
|-----------------|--------------------|-----------------|-------------------|----------------------------|------------------------|--------------------------|
| | | Outer loadings | Outer weights (O) | | | |
| KM (X) | X1 | 0,949819 | 0,149512 | 0,003531 | 0,003531 | 42,344302** |
| | X2 | 0,950752 | 0,147342 | 0,002202 | 0,002202 | 66,910874** |
| | X3 | 0,956343 | 0,147963 | 0,002565 | 0,002565 | 57,687943** |
| | X4 | 0,964352 | 0,153974 | 0,004520 | 0,004520 | 34,065606** |
| | X5 | 0,941931 | 0,147656 | 0,002372 | 0,002372 | 62,261023** |
| | X6 | 0,960475 | 0,152228 | 0,004224 | 0,004224 | 36,035142** |
| | X7 | 0,941373 | 0,151505 | 0,003799 | 0,003799 | 39,883689** |

** signifikan pada taraf nyata 0,05, $Z_{\text{tabel}} = 1,96$
 Sumber : Hasil Analisis Data SmartPLS, 2020

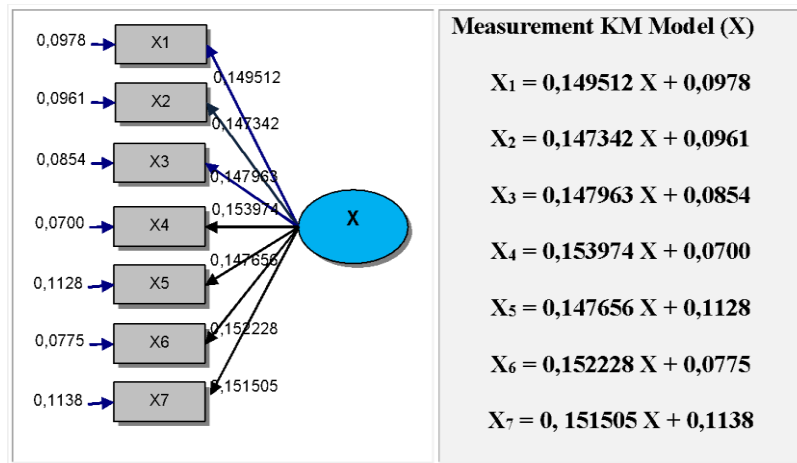


Figure 1.Measurement Model Maturity Level KM

Figure 1 describes the measurement model for the maturity level of KM implementation, the dimension that has the *outer weight* largest is *knowledge utilization* of 0,154, while the weight of the smallest dimension of owned *knowledge retention* by 0,147. Meanwhile, the value of the raw payload (*outerloading*), the largest dimension of is owned *knowledge utilization* by 0,964, communalities of 0,930. thus the dimension of *knowledge utilization* is able to predict knowledge management of 93,00% and errors of 7,00%. This means that the better the application of knowledge in business processes, such as for product development, increasing the competence of employees and *stakeholders*, will increase the level of knowledge management performance achievement.

The smallest raw load value belongs to the dimension *application of technology* of 0.941, the communalities of 0.8862. The test results *outer model* in Table 7 show that all dimensions of measurement of the maturity level of KM implementation are significant at the 5% real level ($T > 1.96$). The measurement model (*Outer model*) for the latent variables of organizational performance as predicted by the dimensions of *a financial perspective, Internal business process, perspective customer and stakeholder, and perspective learning and growth perspective* can be described as follows:

Tabel 8
Outer Model PLS Organisation Performance

| Latent variable | Manifest variables | Original Sample | | Standard Deviation (STDEV) | Standard Error (STERR) | T Statistics (O /STERR) |
|-----------------|--------------------|-----------------|-------------------|----------------------------|------------------------|--------------------------|
| | | Outer loadings | Outer weights (O) | | | |
| PO (Y) | Y1 | 0,910494 | 0,151377 | 0,003859 | 0,003859 | 39,228220** |
| | Y2 | 0,961945 | 0,241430 | 0,005643 | 0,005643 | 42,785965** |
| | Y3 | 0,965198 | 0,276143 | 0,008010 | 0,008010 | 34,476020** |
| | Y4 | 0,953594 | 0,275021 | 0,007383 | 0,007383 | 37,252272** |

** signifikan 0,05, $Z_{tabel} = 1,96$

Source : Data Analysis SmartPLS, 2020

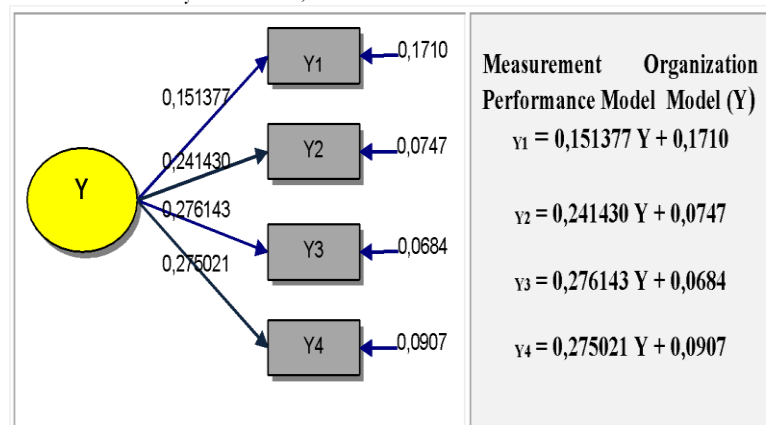


Figure: 2 Measurement Model Variable Y

In the organizational performance measurement model, Figure 2. The dimension with the *outer weight* largest is the *customer and stakeholder perspective* of 0.273 while the smallest weight belongs to the dimension *perspective financial value* is 0, 151. Meanwhile, the *outer loading value* is largest owned by the dimension *customer and stakeholder perspective* of 0, 965, the communalities of 0.932. In this model it can be seen that the *customer and stakeholder perspective* is able to predict organizational performance by 93, 16. % and the error is only 6, 84%. This means that if the organization increases its attention to aspects of the customer and stakeholder perspective which includes service quality, customer satisfaction, customer information systems, customer complaint systems, quality assurance and others, the organization's performance will increase.

The smallest standard charge value belongs to the dimension *perspective financial* (Y₁) is 0.910, the communalities is 0.8290. The test results 1.96 *outer model* in Table 4:41 show that all dimensions of organizational performance are significant at 5% real level (T>). Furthermore, the variable that is tested for its relationship is the variable level of KM implementation maturity (X) on Organizational Performance (Y). Based on the results of data processing using SmartPLS, the structural model can be described as follows:

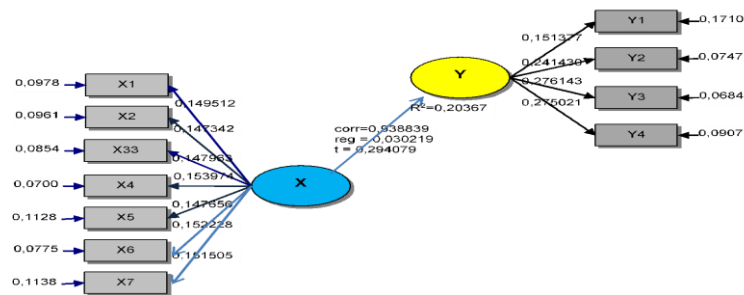


Figure 3. Organizational Performance Structure Model
 Source: SmartPLS Data Analysis Results, 2020

Table 9 is a test of the influence of the maturity level of the implementation of KM (X) on organizational performance (Y).

Table 9
Test of the influence of X on Y

| Endogenous Latent Variable | To | Exogenous Latent Variable | Path Coef. | Standard error | t |
|----------------------------|----|---------------------------|------------|----------------|----------|
| Y | ← | X | 0,030219 | 0,102760 | 0,294079 |

Source: SmartPLS Data Analysis Results, 2014

Test statistics:

$$t = \frac{\gamma_{22}}{se(\gamma_{22})} = \frac{0,030219}{0,102760} = 0,294079$$

For two-party test, at the 95% confidence level the critical value of the standard normal distribution is $z_{(0,975)} = 1.96$. If we compare the value of t count with the critical value of the table, then $t = 0,294 < z_{table} = 1.96$ so that the null hypothesis is **accepted**. This means that the maturity level of KM implementation has affect **very small positive (3,02%)** on organizational performance, and the magnitude of this influence is not significant. This means that the maturity level of good KM implementation has a very small effect on the achievement of organizational performance (it can be ignored because it is not significant), and at 96, 98% of organizational performance is influenced by other variables. In this case, knowledge management in BUMN in Indonesia has not contributed to improving organizational performance.

Discussion and conclusion

Achievement of KM implementation is considered not optimal and needs attention in terms of: the level of entry of new knowledge into the organization; maintenance activities, storage, and how to maintain organizational knowledge; the level of willingness to share knowledge in forums; and the application of knowledge to business processes. The success of KM implementation is closely related to how employees have a culture knowledge sharing and how they appreciate the knowledge creation process in the organization. Thus, the implementation of knowledge management in order to reach a high level of maturity requires a conducive organizational culture climate, especially for a culture of knowledge sharing and knowledge transfer through various offline activities in the form of discussion forums, problem solving and others, as well as online such as knowledge portals.

Knowledge management activities will create knowledgeable employees. Knowledgeable employees will apply ideas / knowledge in work and this process will take place continuously so that it becomes a culture. Thus, according to researchers that strong cultural support to support the implementation of KM in an organization is

very important, because without culture, any system that will be implemented in an organization will not be successful (Sri Suwarsi, 2014). The results of this study are in line with studies conducted by Chong (2005), Wong (2005), Albers (2009), that the key to the successful implementation of knowledge management is one of the cultural aspects. While Strohmaier (2003) proposes the concept of knowledge infrastructure as an effective means of developing knowledge management, namely structural technology and culture, this is in line with research by Annysa Sutaki (2007). In research Zulkarnaen (2006) concluded that organizational culture is a factor that dominates the effectiveness factor in implementing knowledge management. Choi (2002), Orr & Persson (2003), Schein (1996) suggest that the importance of an organizational culture that is conducive and comfortable for knowledge sharing knowledge, creation, and organizational development. Tare (2003) states that the problem that often occurs in organizational culture in inhibiting the success of knowledge management is the behavior of hoarding knowledge or otherwise unwilling to accept knowledge from others, this is in line with the opinion of Davenport & Prusak (2008). Finally, Wolff & Frank's (2005) research states that 80% of the failures in implementing knowledge management in companies are caused by organizational culture.

Rachman (2004) states that knowledge management is a set of interventions for people, processes, and tools to support the decision-making process, renewal, dissemination and application of knowledge, so that knowledge management must be carried out continuously so that the process will become a culture, so that it will form a knowledge-based organization. In line with this opinion is Jones (2002), that what is related to the implementation of knowledge management is how employees have a culture of sharing knowledge and their appreciation of the creation and sharing knowledge.

There needs to be an increase in activities related to the entry of new knowledge into the organization (knowledge creation) which includes knowledge development, knowledge discovery and knowledge absorption, the researchers' suggestions are: (a) through a process of broad knowledge and experience transfer into the organization by forming knowledge sharing forums and experience; (b) encourage individuals to always write down their knowledge or experiences into company information media such as company magazines, intranets or company-owned blogs; (c) conducting employee coaching through direct practice commanded by senior and experienced employees; (d) give appreciation to employees who have been able to put new knowledge into their work, for example in the form of rewards in the form of financial or non-financial. In addition, it creates a conducive climate for the process of maintaining knowledge (knowledge retention), either directly or indirectly. Directly through meeting forums, innovation forums, discussions, problem solving. Indirectly through the library, E-library, knowledge center, internet media, and email. It is necessary to increase the frequency of access to applications that have been built by the company by employees as a medium for sharing knowledge (knowledge transfer). Considering that most BUMN in Indonesia have branches or extensive regional offices that are spread throughout Indonesia, along with technological developments, the use of this media can increase efficiency and optimization without being constrained by distance and time. Because the assessment for this dimension of knowledge utilization is the lowest among the other dimensions, this aspect deserves more attention. Namely by increasing the frequency of development of knowledge-based products / solutions with a competitive system; increase human and stakeholder value by managing knowledge effectively; and routinely implement knowledge applications in a structured work process.

The maturity level of KM implementation has very small positive effect on organizational performance, but in this research the effect is not significant. This means that the implementation of MP has not yet contributed to improving organizational performance in BUMN in Indonesia. This means that the level of achievement of KM implementation performance at level 3, namely superior, has not been able to encourage organizational performance. This stage is the knowledge innovation stage, which is the stage where the organization accommodates new ideas and knowledge, the assimilation of existing knowledge in the organization to help the organization create product and service innovations. At this stage the organization has not been able to measure the contribution metrically (Minonne & Turner (2009), the magnitude of the influence of KM implementation on organizational performance. In this case it is evident that the achievement of organizational performance from the financial aspect is still not optimal and the lowest compared to other measures. The supporter of successful KM implementation is knowledge utilization, which means that the higher employees use knowledge in the work process to create innovations, the higher the maturity level of KM implementation in the organization.

Successful implementation of KM requires changes in the behavior of people in the organization to be willing to do it. the process of transferring knowledge and sharing knowledge continuously, so as to be able to create knowledge workers who play a role in innovating. Thus, MP cannot directly affect organizational performance without going through human change in this case is culture knowledge sharing knowledge and transfer that takes place continuously.

The results of this study reinforce the opinion of Cong & Pandaya: 2003 and Hall: 2005, that the implementation of knowledge management can support organizational growth, but to be able to increase organizational growth requires innovation, and innovation is highly dependent on the abilities of the people in the organization. Thus, knowledge management will not be able to directly affect organizational performance, without going through changes in the people in the organization.

Knowledge management can increase organizational growth, but to be able to increase organizational growth requires innovation. And innovation is very dependent on the capabilities of the people in the organization. Because the successful implementation of knowledge management requires changes in the behavior of organizational members to be willing to carry out the process of transferring knowledge and sharing knowledge continuously, so as to be able to create knowledge workers who play a role in innovation.

The results of this study reinforce the opinion of Cong & Pandaya: 2003 and Hall: 2005, that the implementation of knowledge management can support organizational growth, but to be able to increase organizational growth requires innovation. Meanwhile, innovation is very dependent on the abilities of the people in the organization. Thus, knowledge management will not be able to directly affect organizational performance, without going through changes in the people in the organization.

Measuring the maturity level of KM implementation using 7 dimensions, namely knowledge creation, knowledge retention, knowledge transfer and knowledge utilization, management and leadership support, corporate entrepreneurship and application technology are at a superior level or good level of achievement. Measurement of organizational performance with using the balance scorecard in 4 perspectives, namely learning and growth, customer and stakeholder, internal business process, and financial has achieved good performance.

Implications, limitations, and suggestions for future research

The maturity level of KM implementation has very small positive effect on organizational performance, but in this research the effect is not significant. This means that the maturity level of KM implementation has not yet contributed to improving organizational performance in BUMN in Indonesia. This means that the level of achievement of KM implementation performance at level 3, which is superior based on the results of this research, has not been able to encourage organizational performance. So based on the results of the discussion above, it is necessary to increase the maturity level of KM implementation to a higher level and be supported by a cultural system so that people in the organization are able to innovate so that the results of innovation can be used by organizations to improve their financial performance.

References:

- [1]. Abell, A, and Oxbrow,N. (2001). "People Who make Knowledge Management Work: Knowledge Management Handbook," Liebowitz, J, ed.Boca Raton, FL, CRCPress.
- [2]. Akhmad Guntar, Imam Baihaqi, Naning Aranti Wessiani. (2020). "Knowledge Management Capability Maturity Model yang Terselaraskan dengan Balance Scorecard",Teknik Industri, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia.
- [3]. Alavi & Leidner. (2010). Review: Knowledge Management, Knowledge Management System, Research Issues in Knowledge. *Mis Quarterly*, V.25. No.1 p.36-107.
- [4]. Albers, James A.(2009), "A Practical Approach to Implementing Knowledge Management", *Journal of Knowledge Management Practice*.
- [5]. Alexander Serenco, Raymond A.K. (2011). "The superstar phenomenon in the knowledge management and intellectual capital academic discipline", *Journal of Informetrics*,Vol.5,Issue,3 p.333-345.
- [6]. Bassi, Laurie, Paul Harrison, Jens Ludwig, and Daniel McMurrer.(2004). "The Impact of U.S. Firms' Investments in Human Capital on Stock Prices."
- [7]. Annysa Sutaki, Patdono, Udisubakti. (2007). "Pemilihan Alternatif Strategi Implementasi Knowledge Management", (Studi Kasus Perum Bulog Divre Sumatera Utara).
- [8]. Chong, Siong Choy and Choi Young Suk. (2005)." Critical Factor in Successfull Implementation of Knowledge Management", *Journal of Knowledge Management Practices*.
- [9]. Cong & Pandaya. (2003). "Issues of Knowledge Management in the Public Sector", *Electronic Journal of Knowledge Management*, p.25-33.
- [10]. Davenport, Thomas H., and Laurence Prusak.(2008)," *Working Knowledge: How Organizations Manage What They Know*", Harvard Business School Press.
- [11]. Davenport, Thomas H., and Laurence Prusak.(2008)," *Working Knowledge: How Organizations Manage What They Know*", Harvard Business School Press.
- [12]. Hall,R.(2007)," *Complex Systems, Complex Learning and Competence Building*. In R. Sanchez and A.Heene. *Strategic Learning & Knowledge Management*",Chichester: John Wiley, 39-64.
- [13]. Jones.(2002),"*Organizational Behaviour*", 3 rd ed. Prentice Hall.USA.
- [14]. Kruger,C.J.(2007),"*Knowledge Management Maturity from A Strategic/Managerial Perspective*", Faculty of Engineering, The Built Environment and Technology-University of Pretoria.
- [15]. Kruger,J.C and Johnson,RD. (2010), "Information management as an enabler of knowledge management maturity: a South African perspective," *International Journal of Information Management*, Vol.30 No.1,pp.57-67.h
- [16]. Kulkarni,U&Freeze,R.(2005),"Knowledge Management Capability Assessment: Validating a Knowledge

- Assets Measurement Instrument”, *Proceeding of the 38th Hawaaii International Conference on System Sciences*.
- [17]. Kuriakose, KK.(2010),”Knowledge management Maturity Models-A Morphological Analysis”,*Journal of Knowledge Management Practice*,Vol.11.
- [18]. Kaplan, R.S., dan Norton, David P. (2002),”*The Balance Scorecard Measures That Drive Performance*”, Harvard Business Review,January-February 1992, pp. 71-79.
- [19]. Kaplan & Noorton.(2010),”*The Strategy Focused Organization*”, Harvard Business School.
- [20]. Kaplan, Robert S Noorton, David P.(2010),”*The Strategy Focused Organization, How Balanced Scorecard Company Thrive in the New Business Environment*”, Harvard Business Press Boston.
- [21]. Malhotra Yogesh,(2008), “ Integrating Knowledge Management Technologies in Organizational Business Process : getting real time enterprises to deliver real business performance”, *Journal of Knowledge Management* Vol. 9 No. 1, 2008 pp.7-28, Emerald Group Publishing Limited ISSN 1376-3270.
- [22]. Malhotra Yogesh, (2008), “*Knowledge Management & New Organization Forms : A Framework for business Model Innovation*, Houston TX: American.
- [23]. Malhotra Yogesh,(2008), “ Integrating Knowledge Management Technologies in Organizational Business Process : getting real time enterprises to deliver real business performance”, *Journal of Knowledge Management* Vol. 9 No. 1, 2008 pp.7-28, Emerald Group Publishing Limited ISSN 1376-3270.
- [24]. Mochamad Agung Wibowoa &Rudi Waluyo .(2015),”Knowledge management maturity in construction companies”, *The 5th International Conference of Euro Asia Civil Engineering Forum (EACEF-5)*
- [25]. Minonne,C and Turner G. (2009), “ Evaluating Knowledge Management. *Electronic Journal of Knowledge Management*”, German.
- [26]. Nonaka, Ikujiro; von Krogh, Georg .(2009),”*Tacit Knowledge and Knowledge Conversion: Controversy and Advancement in Organizational Knowledge Creation Theory*”.
- [27]. Neda Khatibian,Thammoores Hasan and Hasan Abedi Jafari.(2010),”Measurement of Knowledge Management Maturity Level Within Organizations”, *Business Strategy Series*,Vol.11.No.1,pp.54-70.
- [28]. Newman,B., & Conrad,K.W.(2000),” *A Frame Work for Characterizing Knowledge Management Methods, Practices, and Technologies*”, The Knowledge Management Theory Papers.
- [29]. Nonaka, Ikujiro; von Krogh, Georg.(2009),”*Tacit Knowledge and Knowledge Conversion: Controversy and Advancement in Organizational Knowledge Creation Theory*”
- [30]. Orr & Pearsons.(2003),”*Performance indicators for Measuring Performance of Activities in Knowledge Management Projects*”, Tesis Program Magister, Department of Informatics, University Gothenburg.
- [31]. Pearson & Robbins.(2006), “*Management*”, 9 Edition Pearson Education. New Jersey, Seijts, Gerard H & Dan Crim.
- [32]. Pee,L.G & Kankanhalli,A.(2009),”*A model of Organizational Knowledge Management Maturity based on People, Process, and Technology*”, Forthcoming Journal of Information and Knowledge Management.
- [33]. Rachman.Mohammad.Haitan.(2004),”Pemodelan Pengaruh Knowledge Management untuk Pengembangan Sumber Daya Manusia”, *Prosiding Semilika Teknologi dan Kompetensi serta Aplikasi*.
- [34]. Rony Dayan Stephen Evans.(2006),”KM your way to CMMI”, *Journal of Knowledge Management*,Vol.10 Iss1 pp.69-80.
- [35]. Schlüssel.(2009), “*How do You Measure the Knowledge Management (KM) Maturity of Your Organization? Matrics that Assets on Organization’s*. KM State USAWC.
- [36]. Shein.(1996),”*Organizational Culture and Leadership*”, Josey Bass. San Francisco.
- [37]. Sri Suwarsi.(2014),” Implementation of Competency Based Human Resource and KM to Organizational Culture and Implication to Organizational Performance”,*International Journal of Human Resource Studies*,Vol.4,No.3.
- [38]. Tare,M.(2003), “*A Future for Human Resource : A Specialized Role in Knowledge Management*”, Desertasi Program Doktor, Swinburne University of Technology, Melbourne, Australia.
- [39]. Wong, K.Y.(2005),”Critical Success Factors for Implementating Knowledge Management in Small and Medium Enterprises”,*Industrial Management & Data Systems*, Vol.105,No.3 : 261-279.
- [40]. Wong, K.Y., & Aspinwall, E.(2003),” Is Knowledge Management Equivalent to Information Technology ?”, *Proceedings of the Fourt European Conference on Knowledge Management, 18-19 September 2003*, Oxford University, Oxford, 989-997.
- [41]. Wong.KY.,(2005),” Critical success factors for implementing knowledge management in small and medium enterprises”,*Industrial Management 7 Data Systems*,Vol.105 No.3,pp.61-79.
- [42]. Veithzal Rivai & Ella Jauvani Sagala.(2009),” *Manajemen Sumber Daya Manusia untuk Perusahaan, dari Teori ke Praktek*”, edisi ke-2, Rajawali Pers.
- [43]. Vethzal Rivai MBA.(2004),”*Manajemen Sumber Daya Manusia Untuk Perusahaan dari teori ke praktek*”, Grafindo Persada.
- [44]. Zulkarnaen Sadikin.(2006),”*Kajian Empiris Penerapan Knowledge Management di Bidang Pembangunan Tenaga Listrik PLN*”, Proceedings.ISBN : 978-15120-0-0, 1- 11.