

# Knowledge Management Readiness in Local Government of Archipelago: A Case of South Halmahera, Eastern Indonesia

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**Abstract**—Modern organizational resources are no longer based on economic capital, natural resources, or labor, but on knowledge as a major asset. Therefore, for an organization to have competitive advantages it is necessary to apply the concept of Knowledge Management (KM). By implementing KM in local government institutions, especially rural and island areas, it can successfully produce regional excellence by capturing, organizing, sharing and creating a new knowledge. The local governments are required to implement KM since the bureaucracy reform program was rolled out through Presidential Decree No. 81, 2010 concerning the Grand Design of Bureaucratic Reform and Ministerial Regulation on PAN and RB in 2011 concerning the application of KM in Government Organizations. In this study, the level of readiness of KM in the local government of South Halmahera is carried out using a qualitative approach. Direct interviews at the structural leadership level at the Department of Communication and Information in the District Government of South Halmahera, North Maluku were conducted, and validation tests were conducted through expert judgments (local academics) who interacted directly with a relevant government institution. The analysis results show that the level of readiness of the KM process in the Local Government of South Halmahera is 1.75 still in not ready level. The presentation of KM readiness is only 34% of the KMCSF factors from the assessment carried out, meaning that it still requires careful planning and a better strategy in the future.

**Keywords**— Local Government, KM Readiness, KMCSF, South Halmahera.

## I. INTRODUCTION

Modern organizational resources are no longer based on economic capital, natural resources, or labor, but on knowledge as a major asset [1],[2]. Therefore, for an organization to have competitive advantages it is necessary to apply the concept of Knowledge Management. By implementing KM in local government institutions, especially rural and island areas, it can successfully produce regional excellence by capturing, organizing, sharing and creating new knowledge process. The local governments are required to implement KM since the bureaucracy reform program was rolled out through Presidential Decree No. 81, 2010 concerning the Grand Design of Bureaucratic Reform and Ministerial Regulation on PAN & RB in 2011 concerning the Application of KM in Government Organizations[3].

Besides the lack of human resources and experts in local government institutions in Southern Halmahera, North Maluku, Eastern Indonesia also lacks the adequate and standardized infrastructures to simply apply the concept of electronic government (e-government). So, from the problem of lack of competent human resources and experts are required to implement a knowledge management (KM) implementation so that they get a healthy cycle of knowledge and information and can be reused of knowledge for the need to run the government task and improve the quality of services.

South Halmahera is one of the districts in the province of North Maluku, Indonesia. The capital of this district is located in Labuha City. This regency has an area of 8,892 km<sup>2</sup> and a population of 147,919 people. South Halmahera Regency at the beginning of its formation had nine sub-districts, but now it is 30 sub-districts. South Halmahera Regency was formed on February 25, 2003, based on Law No. 1 of 2003. In 2007 with the issuance of regulation No. 8 of 2007 the parent districts were divided into 30 sub-districts. The number of villages in South Halmahera is 250 definitive island villages and there are six Transmigration Settlement Units (UPT)[4]. Because it is classified as a new district and with a location in eastern Indonesia, the development of city and island infrastructure is still slack. Besides, the development of the village's economy and the potential of its natural local resources are abundant in this rural area.

This study aims to measure the readiness level of the local government in implementing the knowledge management process. Qualitative methods are used in preparing questionnaires and direct interviews with top managers in related units. The results of data analysis are then presented to get the expert judgment and agreement on the assessment data. As for the systematic writing of this paper that is, a chapter I we explained the background of the problem, why it is necessary to measure readiness in local government of the archipelago, chapter II conducted a literature review to obtain a theory of judgment, chapter III explained the stages and methodology used, chapter IV explain the results of the measurement and discussion for future recommendations and the chapter V contain conclusions and suggestions..

## II. LITERATURE REVIEW

### A. Knowledge Management

Knowledge management may simply be defined as doing what is needed to get the most out of knowledge resources. Although KM can be applied to individuals, it has recently attracted the attention of organizations. KM is set activities of discovering, capturing, sharing and applying knowledge for so as to enhance, in a cost-effective fashion, the impact of knowledge on the unit's goal achievement[5]–[7]. Knowledge as assets has crucial to managed in the government institution, according to this activity was very dependent on people work in, they work need knowledge where reside in every government employees. In addition, any government activity undertaken will be able to generate new knowledge and innovation[5], [7], [8]. These conditions require a knowledge management approach to be able to manage and maintain the knowledge that becomes a critical point in improving public services results. especially maintaining government task activities sustainability [9].

The knowledge management system is knowledge management mechanisms are organizational or structural means used to promote knowledge management. The use of leading-edge information technologies (e.g., web-based conferencing) to support KM mechanisms enables dramatic improvement in KM. knowledge management systems (KMS) is the synergy between the latest technologies and social/structural mechanisms[3].KM systems classification based on observations on the KM systems implementations are Knowledge Discovery Systems, Knowledge Capture Systems, Knowledge Sharing Systems and Knowledge Application Systems [2], [5].

The management process undertaken after creating Information systems is focused on the main business process. This study will be proposed KMS features that focus on the process of knowledge management that is critical for the organization. So that the required process KM process identification in the form of knowledge discovery, knowledge capture, knowledge sharing, and knowledge application[2]. Based on these aspects KM processes must be supported by KM System's proposed feature, KMS is supported by KM Mechanisms and Technologies supported by KM Infrastructure. These four KM processes are supported by KM systems and seven important types of KM sub-processes (e.g., exchange). KM processes are described and illustrated in fig. 1 below.

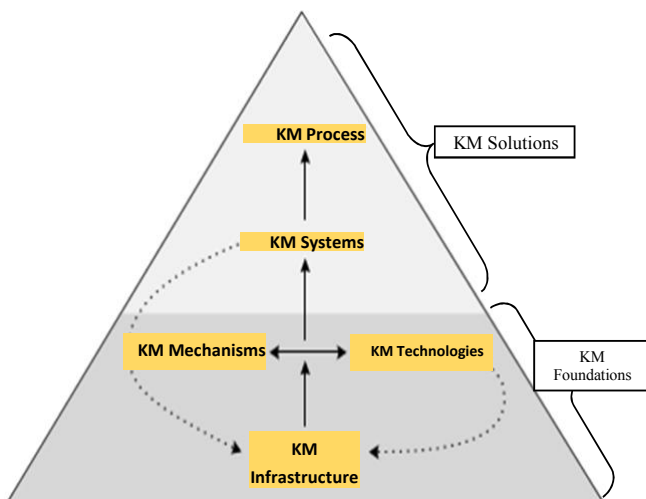


Fig. 1. KM Solutions dan Foundations Model[2].

### B. Knowledge Management Readiness

Generally, readiness is preconditions required by a person or organization to succeed in making organizational changes[10]. Pertaining to KM, Mohammadi, Khanlari, and Sohrabi in [11]defines KM readiness as the ability of organizations, departments or workgroups in order to successfully use and gain the benefits of KM [12]. KM readiness as a receptive attitude or receive from members of the organization to be involved in the process of KM through sources available (KM enablers). This is in line with the statement Holt, Bartzak, Clark, and Trent in that the presence of enablers KM implies KM readiness[11].

Theoretically, considering what the key factors to success in the implementation of KM in organizations, in [13], [14] stated that the Knowledge Management Critical Success Factors (KMCSFs) are factors or activities that are needed to support the implementation of KM in organizations. The ability to understand and define the critical success factors is quite difficult. However, identifying KMCSF is important to understand how the system should be designed and implemented.

In [15] his book entitled "Knowledge Management Tools and Techniques" classifying the level of readiness of knowledge management into five levels, namely:

1. Not ready,
2. Preliminary (exploring knowledge management),
3. Ready (accepted),
4. Receptive (advocacy and measurement), and
5. Optimal (institutionalized knowledge management)

in[13] explained that the determination of KM Readiness level was seen from the average percentage of readiness of an organization in implementing knowledge management. The presentation of readiness of KM Readiness is calculated from the number or score of each indicator Knowledge Management Critical Success Factor (KMCSF) divided by the total overall maximum weight. Determination of these levels was analyzed using descriptive quantitative with the formula:

$$P = \frac{Sn}{Sm} \times 100\% \quad (1)$$

Description:

$P$  : is a percentage of level

$Sn$  : is the number of scores times weight obtained.

$Sm$  : is the total score times the maximum weight.

The KM Readiness level can be shown in Fig. 2 below.



Fig. 2. KM Readiness Level.

The explanation from Fig.2 shows the characteristics of the KM readiness level as follows: level 1 (not ready) with 0-20% readiness, indicating that there is no understanding of the definition and benefits of KM, level 2 (preliminary) with readiness of 21-40% shows that there are individuals in the organization in carrying out KM processes, level 3 (ready) with 41-60% readiness, showing individuals in the organization have carried out activities that support KM regularly. Level 4 (receptive) with 61-80% readiness, shows that the KM process has provided benefits to the organization, level 5 (optimal) 81-100% readiness shows that the organization is well established in implementing KM in accordance with existing procedures.

### III. RESEARCH METHODS

This chapter discusses the methodology used in conducting research. The stages described are about research methodology and data collection techniques. The research carried out describes the measurement of the level of readiness of government agencies in implementing Knowledge Management. The study was conducted with a case study at the local government of South Halmahera, a qualitative approach with direct interviews with top managers in related departments (ICT department) and validated with 3 expert judgment. Stages in this research as shown in Fig.3 below.

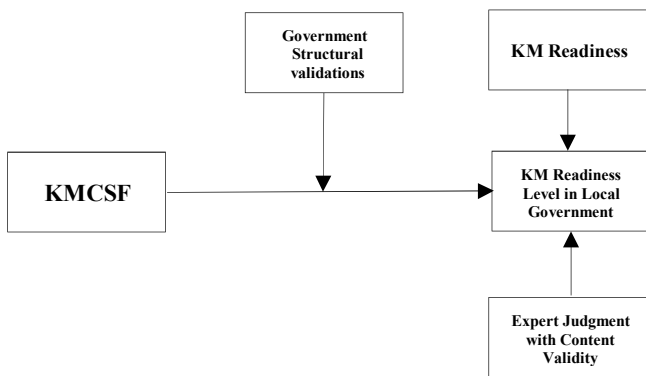


Fig. 3. Research Stages Methods

As the level of KM readiness in local government of the archipelago in South Halmahera will be measured based on KMCSF [13], [14], [16]. In addition, this KMCSF furthermore validated by direct interview of two top management in the structural department of ICT. Then these ratings will be weighted by a tree expert's judgment using the content validity index. To determine the readiness level, the authors use the KM Readiness. After the KM readiness level is ready, we showed a graph of the readiness level for improvements data to further assessment. Thus, the following theoretical framework of KMCSF used in this study can be shown in Table I. below.

TABLE I. MAPPING INSTRUMENT OF KMCSF ASPECT

Aspect	KMCSF		KMCSF after Validations
	From Becerra-Fernandez[2]	From Mamaghani, et al,[17]	
Abstract	KM Understanding	KM Definition and Benefits	KM Understanding
	KM Initiative	KM Initiative	KM Initiative

Soft	Knowledge Strategy	Knowledge Strategy	Knowledge Strategy
	Management Support	Management Support	Management Support
	Performance Measurement	Performance Measurement	Performance Measurement
	Organizational Structure	Organizational Structure	Organizational Structure
	Organizational Learning	Organizational Learning	Organizational Learning
Aspect	KMCSF		KMCSF after Validations
	From Becerra-Fernandez [1]	From Mamaghani, et al [17]	
Soft	-	Financial Support	Financial Support
	Organizational Culture	Organizational Culture	Organizational Culture
	Motivational Encouragement	Motivational Encouragement	Motivational Encouragement
	Communication & Group Working	Communication & Group Working	Communication & Group Working
	-	Leadership	Leadership
Hard	Technology Infrastructure	Technical Infrastructure	Technical Infrastructure
	Physical Environment	Physical Environment	Physical Environment
	Knowledge Hub and Centers	-	Knowledge Hub and Centers

Based on expert judgment with a comment or rating quantitatively, the statistical approach used to measure the extent of items validity. In this research, we calculated the index following Aiken validity [18] that widely used in validating items rating of the KM Readiness level.

The agreement between experts indicated the significance of items, and it was calculated symbolized by V coefficient. V coefficient based on Aiken was formulated [18]–[20]:

$$V_j = \sum S_j / [n(c-1)] \quad (2)$$

Descriptions:

- $V_j$  : Validity Index
- $S_j$  : r-Lo (rating minus a low validity rating)
- $n$  : number of expertise
- $c$  : highest validity rating

The respondents profile interviewed directly both in the local government structure and academic expertise as shown in Fig.4. below. There were five respondents who had S1 educations 1 person (20%), S2 had 3 people (60%) and S3 had 1 person (20%), Which two respondents are the Head of ICT Department and Head of Employment Department in Local Government of South Halmahera. While three others are expert from local academics.

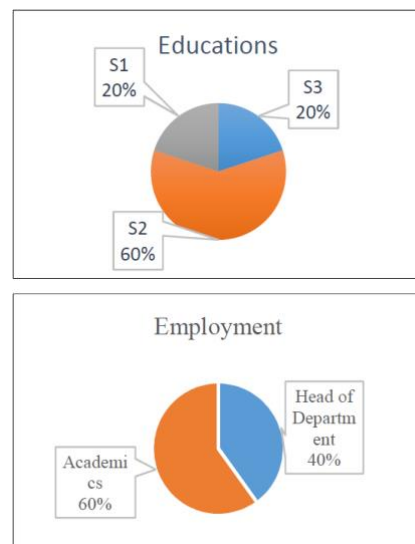


Fig. 4. Respondents profiles.

#### IV. RESULT AND DISCUSSIONS

After submitting a questionnaire with direct interviews with the heads of relevant local agencies in the Department of ICT (Dishubkominfo) and the Local Civil Service Agency (BKD) to get valid's KMCSF that has been confirmed directly by the local government structure. For the KM readiness level, we use the 3 academic lecturers, to get Expert Judgment on the results of the assessment conducted[21]. The validity results are shown by the value of the Validity Index > 0.7. the results are as shown in Table II. below.

TABLE II. THE VALIDITY RESULTS OF KMCSF ASPECT

Aspect	KMCSF	Validity Index
Abstract	KM Understanding	0.70
	KM Initiative	0.70
Soft	Knowledge Strategy	0.75
	Management Support	0.95
	Performance Measurement	0.70
	Organizational Structure	0.70
	Organizational Learning	0.70
	Leadership	0.90
	Organizational Culture	0.70
	Motivational Encouragement	0.75
	Communication & Group Working	0.95
	Hard	Technology Infrastructure
Physical Environment		0.70
Knowledge Hub and Centers		0.70

There is 14 critical success factor of Knowledge Management readiness to use in assessment in local government of South Halmahera. The result is shown in Table II, about validity index over 0.70 that using the formula (2)[21], [22]. The result of KM readiness level in local government in South Halmahera showed in Fig. 5 below.

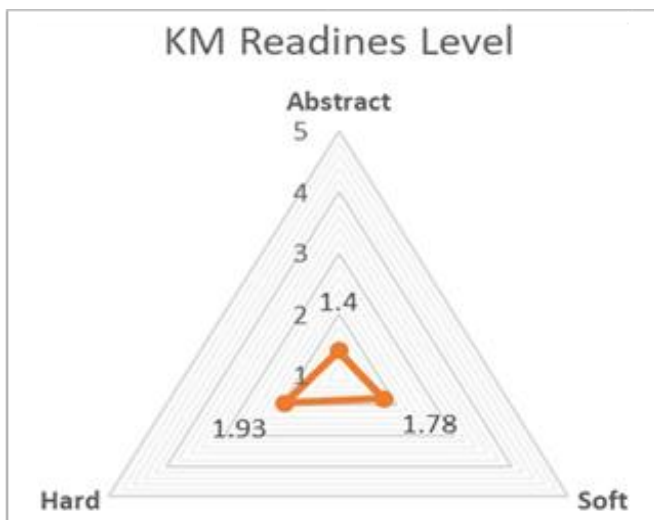


Fig. 5. The result of KM Readiness Level.

After validating the factors from KMCSF, both by the local government and expert judgment, we then used the KMCSF instrument to obtain the KM Readiness level in the local government by using a direct check of the interview results and requesting relevant evidence in the official location. The results of the readiness level KM measurement as shown in Fig. 5.

The study result of the measurement of KM Readiness level on local government in South Halmahera from the three aspects as shown in Fig. 5 shows the average readiness in the large group of Abstract aspects with a score of 1.4 or the percentage of KM Readiness is 28% meaning that it is still in level not ready, whereas in the aspect Soft is 1.78 which in percentage is 36% (that is not ready), while the last is in the Hard aspect with a score of 2.07 which is the percentage of around 41% is the highest, its meaning in level 2 (preliminary), so the total KM readiness level in the local government of the archipelago in South Halmahera is 1.75 or in the percentage of KM readiness for implementation in the institutions Government is 35% meaning that it is still 65% which has not been prepared.

#### V. CONCLUSIONS

Based on the results of the analysis and use of the method that is done by direct validation in the relevant department and requesting an expert judgment on the KMCSF factors presented in the form of a questionnaire, it can be concluded that from the three-aspect approach referred to, the measurement results show that the Readiness level KM on local government in Soult Halmahera is 1.75 or in percentage the readiness is still 34%, which means it is still in the not ready stage. Although in the Hard aspect, ICT infrastructures and physical environments have shown preliminary (level 2). So there is still another 66% to be prepared and planned carefully for the implementation of knowledge management in the future.

As a suggestion of this research to measure the maturity level, especially in rural areas in eastern Indonesia. That a standard cannot be applied to all cases of governments because based observes geographical, cultural, infrastructure and other factors are different in each region. The relevant contingency model must propose jointly between government business, citizen and academia local religion.

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