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Research Article

Investigation And Evaluation Of Factors Affecting Knowledge Management Maturity (Case Study: Guilan Customs)

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Abstract: Even though many companies have a large number of KM implementation projects, many of them are designed as stand-alone initiatives with no link to the organization's strategy. We are seeing how KM programs are failing to provide the promised results. As a result, investigating the elements that influence KMM is crucial. The present study is based on applied research and is a survey. The goal of this report was to look into and assess the elements that influence KMM, and Guilan customs were chosen as a case study because of the relevance of the KM dilemma in customs. The study's statistical population includes all Guilan provincial customs managers and experts. A basic random approach was utilized for sampling, and data was collected using a Likert scale questionnaire. The probability sampling was computed utilizing Krejcie and Morgan method and was found to be 84. Professors and professionals assisted in the testing including the questionnaire's validity. Cronbach's alpha coefficient was also used to determine dependability. Leadership, human resources, KM infrastructure, business culture, and the KM process all influence KMM, according to the research.

Keywords: Knowledge Management, Knowledge Management Maturity, Critical Success Factors, Guilan Customs

1. Introduction

Scientific economics has grown in importance as a method for firms to enhance their productivity and benefits since 1990. [1], [2]. Previously, companies measured the measurable revenue that might be created by property resources such as mineral wealth, industrial devices, and laboratories, as well as economic centers. Information is an imperceptible property that may be generated, transferred, gained, and repurposed by persons, unlike the inescapable disintegration of physical assets. [3]. Every firm's primary goal in terms of KM is to improve staff productivity. [4], [2]. Companies are progressively contributing to Knowledge Management (KM) projects as they recognize the need of being nimble in a fast-paced corporate world. Although the business recognizes the value of knowledge management, just a few individuals are capable of harnessing and managing it. To capture, manage, and find information in KM, people, processes, and technology are all required. [5].

The level of an organization's competencies and capacities in many aspects impacting KM is referred to as the maturity of the organization in KM. Each organization has reached a degree of maturity in the area of KM by consenting to the exercises. A certain stage depicts the company's actual situation in terms of KM. A certain stage depicts the company's actual situation in terms of KM. Maturity models that are comparable to those that are now available in various firms may provide recommendations and regulations that can handle the activities necessary for KM. A maturity framework is composed of many stages of maturity that a company might reach through time. [6]. A Knowledge Management Maturity Model (KMMM) may be used to assess a company's capacity to manage knowledge systematically and comprehensively. Businesses may also use KMM to fill out benchmarking forms, detect any gaps, and prepare for a smooth transition. [7], [5]. Besides, KMM is additionally considered an appropriate method for persistent capability advancement for Customs [5]. KMM determines the amount of existing organizational capability that influences KM processes, with each company following a unique maturity path. KMM models outline the stages to progress, but it is anticipated that the company will develop its own KM and organizational execution strategy [8], [9].

Organizational knowledge management is one of the most essential aspects instead for a company's growth in today's fast-paced economy and data era. Organizational knowledge management is one of the most crucial elements in a firm's development in today's competitive economy and information era. The importance of this problem is such that many organizations now assess their knowledge and represent it as the organization's intellectual capital, as well as a pointer for positioning corporations in their reports [10]. Because the Customs Organization is one of the most important institutions dealing with international trade, and because the World Customs Organization (WCO) defines it as a government organization responsible for enforcing customs law, collecting salaries, and collecting import duties, as well as enforcing other related laws and regulations, such as the

import, transit, and export of goods (Customs Education, 2000) if the employees of this organization violate the law, it will result in a fine. Knowledge management in this company should be regarded for this reason.
Later studies have sought to quantify information [11]; [12], examining the role of leadership in increasing information generation, capacity, and sharing [13]; [14]; [12] and stressing the pertinence of big input in KM [15]; [12]. The environmental elements impacting KM, according to Alavi and Leidner (1999), include political, cultural, and technological aspects, as well as the major components of KM, human resources, and technology. [16]. The elements impacting KMM were first identified in this research, and the maturity status of KM in customs was calculated by rating these aspects. Then we identify and determine the factors affecting KMM, measure the impact of factors on KMM, and prioritize the factors affecting KMM in Guilan customs investigated that is expected to answer questions would be an effective step in identifying vital factors and assisting in the development of KMM in Guilan customs investigated that is expected to answer questions.

2.Literature Review

2.1 KMM

KMM determines the amount of existing organizational capability that influences KM processes, with each company tracking a unique level of maturity. KMM models outline the stages to progress, but it is anticipated that the company will develop its own KM and organizational execution strategy [9], [8]. It also selects the phases of control knowledge maturity that each institution is anticipated to pass through on its route to improving its sharpens and competitive focuses of interested parties. [17], [8]. The maturity models depict the nature of things through time, such as KM improvement, what is required to go from one level to the next, and the stability of a particular level. [18], [19], [8]. The more information-intensive enterprises become, the more effective and feasible methods for managing organizational knowledge as a critical asset for future sustainable progress will be required. The degree of an organization's competencies and abilities in multiple areas of KM is referred to as organizational maturity in KM.

Despite this, because of the necessity for KM plan consistency, many firms struggle to create and maintain effective KM systems [12]; [20]. Due to this demand for consistency, KM is difficult to evaluate, which impedes an organization's assessment "When it comes to knowledge management technique maturity,'s level is important. The KMM comparison indicates a company's progress through the stages of KM strategy development, as shown by Escrivao & Da Silva (2019). The authors recommend that a KMMM be used to examine KM activities from several angles to give a more full view. Many KMMMs have five stages: the initial stage, in which workers would see the idea of KM even though there are no strategies input; the second stage, in which employees recognize the importance and relation of KM to the business; the stage 3, where the company has established some basic infrastructure; the fourth stage, where KM methods are methodically backed, is part of the company culture, and are observed and assessed; and at last, those same operations are constantly improved and adapted into the external network [21]; [22]; [12].

2.2 OrganizationalKnowledgeManagementSystem

The notion of an organizational knowledge management system (OKMS) might help you get a better grasp of KM and its key components. The OKMS might be a framework that advances and enhances organizational learning preparation by fostering knowledge sharing and dissemination (whether implicit or explicit) [23]. The technology framework, organizational structures, organizational culture, information, and people may all be part of this framework. The data technology apparatuses (counting equipment, programs, and conventions) that enable the arrangement of electronic forms of organizational information and encourage the sharing and transmission of information are referred to as the technological framework. Organizational structures describe how personnel is grouped inside teams and organizational groupings (formal and informal) and how they interact with one another. The company's culture includes shared ideals and standards, as well as morality and conduct that have been honed inside the business. All types of organizational information (explicit and implicit) available inside the company or in the brains of workers are referred to as knowledge. Finally, individuals are nasty to the same stakeholders both within and outside the firm [23].

The Organizational Memory System (OMS) is composed of formats and modules from the Information System (IS) which is used to record, maintain, extract, expose, and regulate Organizational Memory (OM). The Knowledge Management System (KMS), is made up of the devices and forms used by information workers to differentiate and transmit data to the OM's database. To manage and apply knowledge, integration of the KMS and the OMS is employed. A KMS may be created in one of two methods. An construction/platform/technique and an operation/procedure/task-based strategy. Attendees among a procedure, function, or operation utilizing OM to enhance that procedure, role, or program are the emphasis of the operational methodology. This method differentiates between data and information needs, as well as where to get them and who requires them. The

KMS's purpose would be to surreptitiously record OM and allow access to anybody who asks for it. The infrastructure-based strategy strives to provide the foundation for gathering and disseminating OM throughout the company. The issue is that the technology required to provide strong mnemonic skills for distinguishing evidence, recovering, and applying OM is too expensive. The method stresses structure amplitude, database pattern, and categorization of data and resources. The awareness remains the subtext. The main comparison of the two techniques is that the operational method contains established subscribers with comparable ideas, but the constructive strategy seems not to [24].

The importance of using KM systems has increased dramatically. The reason for this importance is their relationship with the strategies and potential capabilities of the organization as well as a source of future improvement in organizational performance [25]; [26]. In proportion to the increasing maturity of organizations, more complex dimensions of knowledge and more diverse and specialized indicators will be required to evaluate and manage organizational knowledge. Thus, as organizations grow and their processes become more complex, more knowledge-based processes will be needed to manage these complexities [27]. One of the most important aspects is affecting the success of acceptance and establishment of the KM process is related to the appropriate infrastructure and prerequisites for using such a process and their maturity and appropriateness to facilitate and support the cooperation and interaction of scientists and scholars [28]; [29]; [30]. In other words, before any action, it is critical to evaluate the organization's preparedness to identify the lack or deficiencies in the organizational prerequisites necessary to establish KM and provide an improvement plan for them. Readiness is an essential prerequisite for an individual or a business to be successful in the face of change in the workplace, and KM readiness is a set of essential prerequisites for the effective deployment of KM [31].

2.3 Maturity Level

The degree to which one or more components of an organization's processes have been altered is characterized as the maturity level of the organization. Maturity models show how an entity changes over time. (This is where the nature of KM comes into play). Maturity models include the following properties typically:

1. Only a few maturity stages may be used to represent the growth of a single organism (usually four to six levels).

2. The qualities of these levels are certain conditions that all nature must meet at some point.

3. The stages are ordered from the most basic to the most advanced, with the ultimate stage representing the ideal degree of maturity.

4. Nature grows from one level to the next, with no level being deleted or neglected. [32]; [33].

Since maturity models, through their step-by-step structure, gradually and continuously lead the organization to maturity, KM is not a category that organizations can improve at once. Therefore, the application of maturity models to improve KM performance is a suitable and tested method.

2.3 Factors in Measuring KMM

According to Escrivao and Da Silva's (2019) analysis, there is still no agreement on the components that should make up a KMMM. It means that each research chooses a distinct collection of variables. In addition, no author has carefully chosen elements based on scientific criteria. Existing KMM models are built on key process domains, with each model referring to a set of key process domains. While in addition to key process areas, some other effective factors and indicators affect the organization’s level of maturity in KM. Only major procedure aspects are included in these models. To measure the level of KMM in the organization, we need a KMM model that includes more complete and comprehensive features and characteristics to measure the level of KMM in the organization. As mentioned, in proportion to the increasing maturity of organizations, more complex dimensions of knowledge and more diverse and specialized indicators will be needed to evaluate and manage organizational knowledge. As a result, the model we require should incorporate additional features and indications that are more thorough and accurate. Also, determining the levels and structure has a better and more complete situation than the existing models. In this regard, the need of conducting a comprehensive investigation of the important variables of KM success is vital and key. These criteria have also not been justified or verified via an empirical study by the writers. As a result, there is no uniform theoretical research paradigm to guide empirical study in the literature [34]; [21]. Furthermore, essential success criteria are often recognized after the successful implementation of activities, making them a strong foundation for maturity models that guide the execution of their areas of interest. The aspects that determine the efficacy of knowledge management projects should be understood by organizations. Ignorance of these vital components will almost probably result in the organization's collapse [35].

The criticism of maturity models in the field of KM, such as maturity models in the general field of information systems, issues with conceptual studies, and failure to provide extended models that have been done using precise study methods, is another reason to pay attention to studies on the critical factors of KM success. Another issue is that some models have a hazy general assessment approach that does not provide a roadmap for progress and is confined to discussing the steady improvement of levels without stressing the evaluation model to identify the degree of maturity for each maturity dimension. Finally, different maturity models often refer to separate activities or different dimensions, especially the technological dimensions of KM. In the literature on KMM models, the issue of alignment of KM activities and business strategies has not received much attention and the gap in a systematic model for evaluating and implementing KM in line with business is quite evident in scientific studies [36]. Therefore, in the present study, we intend to overcome these limitations of studies in the field of KMM. A set of criteria needed for future analyses must first be developed to develop the maturity model. Because the critical factors of success can provide a broad insight into the content of maturity models. To design a comprehensive model of KMM, the critical factors of success are examined.

Having a list of crucial success elements that are acceptable for businesses can assist them in thinking about the main concerns while planning a KM project. "Areas in which to generate sufficient results, ensures the organization's success," according to the definition of success factors[37]. These variables must be generated if they are not already existing in the company and nourished and developed if they are already there. External variables like environmental implications are ignored in the application of KM since the company has no control over them [35].

There are many techniques for analyzing KM, according to Kruger and Johnson (2010), including measuring the effect of KM on organizational fulfillment, even-handed scorecard, corporate finance, KM life cycle, and KMM. As previously said, KMM models assist businesses in evaluating KM initiatives and developing suitable progress methods. These models allow for an assessment of the existing situation as well as step-by-step planning to enhance KMM levels. Existing KMM models have been panned for three reasons: 1. They put a strong focus on technology concerns; 2. They are ambiguous; and 3. They pay little attention to cultural and management issues [38]. Several elements were found to be crucial in the application of KM, according to the literature study. Even though various researchers have used different terminology to represent these elements in the study, they can all be grouped and stated in terms of their themes. Furthermore, these aspects have been highlighted in several research.

For 13 years, from 1997 to 2009, Akhavan et al. (2010) studied and reviewed many works in the area of knowledge management, case studies, and other relevant sources in this field, a set of variables determining management success. Introduces information in the form of 24 elements in six dimensions, including individual employee factors, human group factors, infrastructure, cultural factors, strategic and management factors, and organizational structures and procedures[39].With a complete assessment of KM literature, Akbarpour and Kazemi Sefat (2007) stress the elements determining KM performance by concentrating on the four phases of knowledge generation, retention, transfer, and application, as well as a set of essential factors such as leadership and innovation. Trust, learning from errors, collaboration, information technology, training, change management, culture, organizational structure, and incentive systems were all discussed in detail [29].Frida Hasanali (2002) categorized the fundamental components of KM performance into five categories: leadership, culture, structures and roles, communications, information technology infrastructure, and assessment in separate research [40].

Siminuch and Sinclair (2004) also feel that businesses at any level of competence and capability should have the appropriate preparation for the fundamental foundations of KM and make effective use of this capability in the knowledge system's route. As a result, 14 aspects have been explored in determining whether or not an organization is ready to adopt KM, including creating trust via leadership; identifying knowledge and the role of the evangelist, and establishing knowledge ownership regulations. Developing and putting in place efficient security policies; establishing broad procedures and processes; Changing infrastructures, methods, and procedures to make publishing, searching, and quick access possible; Policy on incentives and rewards are being reviewed. Establish mechanisms for assessing knowledge management performance; Personal performance appraisers are being created to share information. Identifying communities of knowledge (compiling a knowledge map) Using a cost-benefit analysis while planning tasks; In grammatical processes, creating a goal-setting procedure; changing project review methods to assure knowledge acquisition, and establishing a dynamic skill and knowledge database as a result [41].

Taylor and Wright (2004) indicated six criteria for successful knowledge sharing in their study: an open leadership environment, breakdown learning, contentment with the transition process, excellence of data, pragmatic thinking, and having foresight for alteration [42]. Holt et al. (2004) examine organizational preparation for KM in terms of changed attitudes and identify the five components of people, the substance of alteration, the substance of adjustment, the process of alteration, and predisposition to KM [31]. Culture, organizational structure, information technology infrastructure, human resource capabilities, and change management are among

the 25 sub-criteria and five categories established by Musa Khani et al. (2010) in their notion of KM ready. Another research identified five categories for determining the preparedness for the formation of KM: person and culture, organizational framework, change management, KM, and technology [28].

Various thinkers also argue that the requirement for significant and in-depth study to accomplish progress in KMM is due to the involvement of many disciplines in KM, such as technology management, processes and organizational structure, human capital, and organizational culture [43]; [44].Also, Issaei et al. (2010) to provide a framework for evaluating the level and degree of KMM, point to more than 15 methods for evaluating organizations in terms of the level of maturity and readiness to apply KM and by analyzing the main levels and dimensions of the case. Emphasis on each of the maturity models explained the criteria for measuring readiness and the key factors for the success of the establishment of KM [45].Mohammadi (2006) presented a conceptual model with five key components of organizational culture, organizational structure, information technology infrastructure, support for change, change content, and 19 effective indicators after examining the models of organizational readiness and maturity for the successful establishment of KM [46].Strategy, leadership, culture, organizational structure, information technology, process, human resources, assessment, and 42 effective indicators are used by Khatibian (2010) to assess the degree of KMMM in firms. The components that contribute to successful KM were divided into eight groups.

Finally, Escrivao and Da Silva (2019) did a thorough search and literature review to prepare an outline of all material on the phases and features that should be included in a complete KMMM. In KMMM, CSFs were identified as organizational infrastructure, technology, culture, human resource management, and top management support [21]. Individual classifications and descriptions of the various scientific descriptions, criteria, and sub-criteria connected to assessing the readiness and maturity of acceptance and establishment of KM are included in Tables 2.1 and 2.2.

Table 2.1. Important indicators studied in KMM studies

KMM Studies	Measures for Maturity Assessment
Gallagher, S., & Hazlett, S. A. (2004, February)	Knowledge infrastructure, culture, and technology
Lee, J. & & Kim, Y. (2001)	Organizational knowledge, knowledge workers, KM processes, and information technology
Lin, H. (2007)	KM processes, the effectiveness of KM, technical - social support
Kruger, C.J. & Snyman, M. (2007)	Information and Communication Technology Management, Information Management, KM Issues (Principles, Policies, and Strategies), KM Implementation, Inclusive Knowledge and Evaluation of KM Growth
American Center for Productivity and Quality, 2008	Strategy, people, process, content, and technology
Hsieh, P., Lin, B. & Lin, Ch. (2009)	Culture, KM process, and information technology
Pee, L.G. & Kankanhalli, A. (2009)	People, KM process and technology
Khatibian, N., Hasan gholoi pour, T. & Abedi Jafari, H. (2010)	Strategy, Leadership, Culture, Evaluation, Organizational Structure, Information Technology, Process, and Human Resources
Serna, E. (2012)	Resource management, Analytical management, Meaning management, Action management
Zhao, J., Ordonez de Pablos, P. & Qi, Z. (2012)	Knowledge asset management, knowledge activity management, processes Improving KM, KM incentives
Jin, X., Chen, S., Wang, J., & Xia, J. (2013, July)	KM process, Culture, Management, Technology
Delak, 2016	information system maturity, IS maturity assessment, KM Process,
Sensuse, 2018	People, Process, Technology
Hartono, Sulistyo, Chai, and Indarti (2019)	Performance, Moderation, Size, Complexity, Construction
Escrivao and Da Silva (2019)	Organizational infrastructure, Technology, Culture, Human resources management, Support of top management
Haile, Timbula, Abdisa (2020)	Culture, KM process, Technology

By studying various articles in the field of KMM, some indicators have been repeatedly emphasized in the research literature related to KM. Based on this, the indexes that have the highest frequency in articles and the most global reputation have been selected and used. These factors, which are categorized according to the literature, show the basic and important areas needed for the successful implementation of KM, each of which is

considered at a stage of KMM. These factors are each measured by the indicators that are presented as indicators. Factors and extracted indicators affecting the success of KM are described in Table 2-2.

Table 2.2. Basic Factors in Measuring the Level of KMM in the Organization

Factors	Criteria	Research Done / Year
Leadership and Leadership Support	Support and commitment of senior management Determining goals and strategies Provision and allocation of resources Leadership support	Skyrme, D. and Amidon, D. (1997), Davenport, T. H. & Prusak, L. (1998), Liebowitz, J. (1999), Hasanali, F., (2002), American Center for Productivity (2002), Yew Wong, K. and Aspinwall, E. (2005), Ribiere, V.M. and Sitar, A.S. (2003), Abdul-Rahman, H., & Wang, C. (2010), Tian, L., Shan, Y., & Guo, S. (2010), Khatibian (2010), Mohammadi (2006), Holsapple, C. W., & Jones, K. G. (2009)
Organizational Culture	KM acceptance culture Supportive culture Culture of creating and sharing knowledge Appropriate knowledge culture	Davenport, T. H. & Prusak, L. (1998); Liebowitz, J. (1999); Hasanali, F., (2002); American Center for Productivity (2002); McDermott & O'Dill (2001); Yew Wong, K. and Aspinwall, E. (2005); Abdul-Rahman, H., & Wang, C. (2010); Mohammadi (2006), Allameh et al. (2011), Tian, L., Shan, Y., & Guo, S. (2010), Zheng et al. (2010), Skyrme, D. and Amidon, D. (1997)
Organizational Infrastructure	Team structure Information Technology Infrastructures Information quality	Davenport, T. H. & Prusak, L. (1998), Liebowitz, J. (1999), Hasanali, F., (2002), Hitchel and Namati (2000), Yew Wong, K. and Aspinwall, E. (2005), Mohammadi (2006), Brotherhood, et al.), Khatibian (2009), Tian, L., Shan, Y., & Guo, S. (2010), Zheng et al. (2010)
KM Process	Knowledge identification Knowledge creation Knowledge sharing Knowledge storage Knowledge transfer	Skyrme, D. and Amidon, D. (1997), Davenport, T. H. & Prusak, L. (1998), Holsapple, C. W., & Jones, K. G. (2009), Yew Wong, K. and Aspinwall, E. (2005), Bath (2000), Abdul-Rahman, H., & Wang, C. (2010), Mohammadi (2006), Khatibian (1388), Zahao et al. (2012)
Human Resource Management	- Reward and motivation systems - Staff participation - Staff training - Strengthen staff	Holsapel and Joshi (2000), Davenport, T. H. & Prusak, L. (1998), Wang and Spinwall (2005), Khatibian (2009), Hurak (2001), Yata and Gu (2002), Yew Wong, K. and Aspinwall, E. (2005), Mohammadi (2006), Macadem (2001), Berlide and Harman (2000), Akhavan et al. (2010), Abdul-Rahman, H., & Wang, C. (2010), Zahao et al. (2012)

3.Research Model

The purpose of measuring the ability of the organization to establish KM is to identify the essential prerequisites for KM. Essential organizational prerequisites are those KM prerequisites that relate to an insurmountable infrastructure in KM. Infrastructures without which the start of KM is not possible can make the advancement or success of KM impossible. As a result, determining whether or not an organization is ready to adopt KM is the first step toward effective KM deployment. But the most important issue is the readiness assessment model, which includes a set of criteria and sub-criteria for measuring organizational readiness to identify the essential prerequisites for the establishment of KM.

To achieve this significance, it has been attempted to be explained by studying, reviewing, and analyzing critical factors of KM success on the one hand, and reviewing models of assessment of the organization's readiness

and maturity to accept KM, on the other hand, criteria and sub-criteria Organization to establish KM. Leadership, infrastructure, human resources, organizational culture, and the KM process are the major variables in assessing the maturity of KM in a company, according to various studies. As a consequence, the following is the process framework for this research:

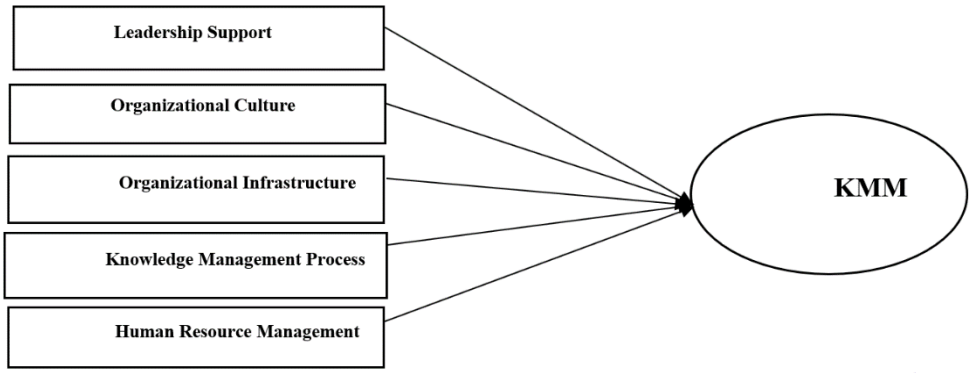

Figure 3.1. Schematic Model of Research

4. Methodology and Data Analysis

A questionnaire was employed to gather information about the survey and assess the study factors. Before being evaluated in the form of a questionnaire, the indicators to be examined in the study were appraised by many customs experts, and eventually from the agreed-upon questionnaire as a data collecting method. The statistical population of this study is made up of 102 specialists and managers who operate in the Guilan province's customs. Krejcie and Morgan's (1970) [64] table was used to establish the number of participants for this study. According to the information included within the table, 84 samples may be deemed sufficient for a statistical population of 102 people. As a consequence, the study's sample size is 84 people. Furthermore, since the researchers were given a list of all experts and managers, a simple random sampling approach was utilized to sample and disseminate the research questionnaire across the research statistical community. In the designed questionnaire, since the questions benefited from sequential scales (rankings), according to Table 4.1, the Likert scale was used and for the options, I completely agree, I agree, I have no opinion, I disagree and I completely disagree.

Table 4.1 Scale Measured in the Questionnaire

Overall	Numerical value
I completely agree	5
I agree	4
I have no opinion	3
I disagree	2
I completely disagree	1

Five, four, three, two, and one were used as coefficients. As a result, quantitative and frequency counts were used to understand qualitative and non-parametric data. In this study, Cronbach's alpha approach was utilized to measure the reliability of the questions. Five questionnaires were also sent to university professors and KM specialists. This is seen in Table 4.2:

Table 4.2 Combination of Questionnaire Questions and Cronbach's Alpha Coefficient

The variables understudy	Number of questions in the questionnaire	Cronbach's alpha coefficients
Leadership	5	0.71
Infrastructure	6	0.78
Human Resource	6	0.78
Culture	4	0.76
Process	6	0.73

The data in this study are analyzed using structural equation modeling. This approach includes two rounds of pattern testing: measurement and structural pattern testing. In the present study, the second generation of structural equation modeling methods, ie the "least partial squares (PLS)" method has been used to test the measurement model [47]. SPSS and Smart PLS tools were used to assess the data in this research.

A summary of the status of descriptive statistics of research variables is provided:

Table 4.3 Descriptive analysis of variables

Statistical indicators	Leadership	Infrastructure	Human Resource	Culture	Process
Average	3.52	3.08	3.19	2.97	2.76
Mean	3.5	3	3	3	2.5
Domain	3	4	3.5	4	3.5
Fashion	3.5	2	3	2.5	2
Standard Deviation	0.83	1.00	0.74	1.01	0.98
Variance	0.69	1.00	0.74	1.02	0.96
The Amount of Skewness	-0.22	-0.02	0.02	0.17	0.62
Standard Skew Error	0.26	0.26	0.26	0.26	0.26
The Amount of Stretch	-0.73	-0.90	0.94	-0.96	-0.56
Standard Elongation Error	0.52	0.52	0.54	0.52	0.52

As can be observed in Table 4.3, the leadership variable has the greatest average of 3.52 among the study variables, while the variable of KM processes has the lowest average of 2.76.

4.1 Extracted Average Variance and Composite Reliability

Cronbach's alpha is a more traditional measure of dependability. Composite validity, also known as hybrid reliability, is a more current measure of reliability. The Dillon-Goldstein coefficient is used to determine validity, and values larger than 0.7 are considered acceptable. The average variance shared between each structure and its features is likewise represented by the AVE criteria. This criterion depicts the degree of correlation between a structure and its attributes, with a greater correlation indicating a better model fit. For this criteria, values higher than 0.5 reflect the structure's suitable dependability. Two CR and AVE criteria for research buildings are shown in Table 4.4:

Table 4.4 Research Structures' Reliability Values

Variable	CR	AVE
KMM	0.83	0.50
Process	0.83	0.55
Culture	0.84	0.73
Human Resource	0.78	0.47
Leadership	0.81	0.47
Infrastructure	0.79	0.51

The composite validity value for all structures is more than 0.7, as indicated in Table 4.4. AVE values are also more than 0.5 for all structures except human resources and leadership. According to the values of factor loads and composite validity, the two structures of human resources and leadership may also be regarded as dependable.

4.2 Validity review

The permissible degree of divergence The validity of a model indicates that a structure interacts more with its characteristics than with the other structures in the model. The AVE root of a structure must be larger than its correlation with other structures, according to the Fornell and Larker criterion. This criterion is summarized in Table 4.5:

Table 4.5 Evaluation of Validity of Research Structures

Structure	KMM	Process	Culture	Human Resource	Leadership	Infrastructure
KMM	0.71					
Process	0.69	0.74				
Culture	0.55	0.39	0.85			
Human Resource	0.70	0.55	0.22	0.67		
Leadership	0.65	0.62	0.17	0.57	0.68	
Infrastructure	0.69	0.60	0.27	0.52	0.64	0.71

This matrix displays the correlations between the latent variables. The square root of the AVE is indicated by the numbers on the matrix's initial diameter. If these numbers are greater than their lower values, the structure has substantial validity, according to this criteria. Table 4.5 demonstrates that all of the structures are valid.

4.3 Coefficient of Determination (R2) and Statistical Significance

The KMM explained variance of the research dependent variable (KMM) was found to be 0.95. In other words, the independent variables in the study may be said to explain 95% of the changes in KMM. The t-statistic is also used to evaluate the relevance of pathways (dependent variable impacts on independent variables) (Table 4.6).

Table 4.6 Significance Test of Routes

Structure	KMM
Process	6.92
Culture	5.12
Human Resource	4.67
Leadership	5.57
Infrastructure	5.41

Figures 4.1 and 4.2 show the research's conceptual model for path coefficients and the t-statistic:

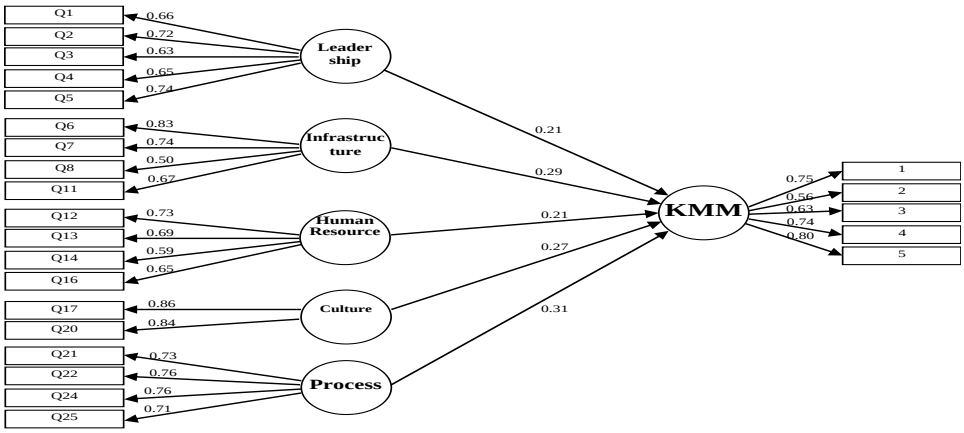

Figure 4.1 Research Variable Path Coefficients and Factor Loads

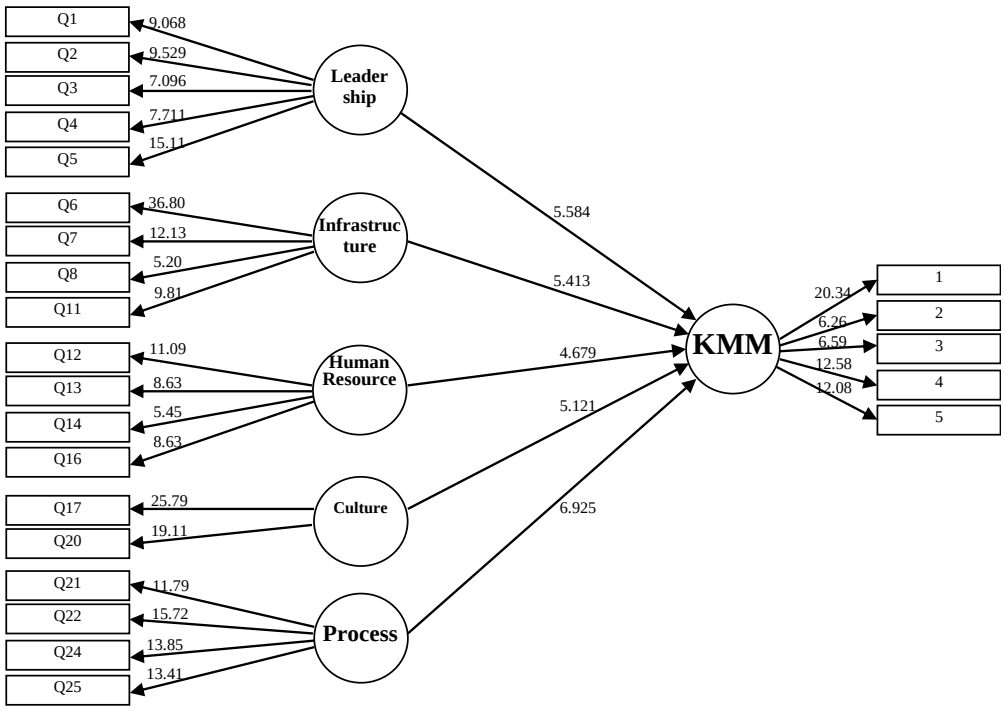

Figure 4.2 t-statistic / Path Significance

Table 4.7 shows the relationships among the independent and dependent variables using path coefficients and t-statistics:

Table 4.7 Path Coefficients and Path t-statistic

Route number	From	To	Path coefficient	t-statistic	Result
1	**Leadership**	**KMM**	0.21	5.58	**Straight Effect**
2	**Infrastructure**		0.28	5.41	**Straight Effect**
3	**Human Resource**		0.21	4.67	**Straight Effect**
4	**Culture**		0.27	5.12	**Straight Effect**
5	**Process**		0.31	6.92	**Straight Effect**

4.4 Ranking of factors affecting KMM

A non-parametric Friedman test was used to rank the elements impacting KMM in Guilan province's customs. Tables 4.8 and 4.9 show the outcomes of this experiment:

Table 4.8 Friedman Test Factors Affecting KMM

Number of Samples	Chi-squared Test	Degrees of freedom	Level of test statistics coverage
84	**39.751**	**4**	**0.000**

Given that the Friedman test has a significance threshold of less than 0.05 and a 95 percent confidence level of less than 0.05, it may be stated that the factors influencing KMM are significantly different. As a consequence, as stated in Table 4.9, the KMM components are prioritized:

Table 4.9 Prioritization of Factors Affecting KMM

Priority	Factor	Average rating
1	**Leadership**	3.79
2	**Human Resource**	3.12
3	**Infrastructure**	2.85
4	**Culture**	2.83
5	**Process**	2.41

According to the factors prioritization table, the leadership factor has a higher average and has the greatest impact on KMM. After that, the components of human resources and infrastructure are given the next priority. Also, the component of the KM process has the lowest average for the respondents and is the last priority.

5.Discussion and Conclusion

5.1 Leadership

The results show that the leadership factor is effective in KMM. Leadership and management agents in the organization deal with activities related to change management, process reengineering, and project management. This idea, in aggregate, prepares the organizational environment for knowledge management (KM), decreases resistance to creative changes, identifies and alters KM implementation barriers, and the utilization of information, technical knowledge, toolkits, and procedures for project operations [48]; [49]. To fulfill the requirements of knowledge projects. Skills in change management throughout the organization to facilitate the implementation of change are the key to success. The conclusions done in a particular section are consistent with those of Hasanali (2002); Akhavan et al. (2010); Khatibian et al. (2010); and Serna (2012); Escrivao and Da Silva (2019).

5.2 Human Resources

Another result of the research is the effect of human resources on the maturity of KM. This concept includes all the attention and considerations of human resources in the social environment of the organization. Do employees feel personally responsible for and committed to knowledge innovation? Do individuals and organizations have the ability to learn experiences quickly? Are the conditions for teamwork in the organization ready? Individuals are associated with a collection of codes that deal with the human dimension in the workplace, such as human resources, collaboration, employee empowerment, employee engagement and involvement, motivation/reward, and expert affiliations. Human resource maturity is defined by employees' ability to work with knowledge management systems, analytical capabilities, judgment calls, creative thinking, ability to solve problems, connection capabilities and language qualifications, self-control and self-development, and people's attitude toward management knowledge. Indicators of collaboration maturity include the presence of a spirit of cooperation and teamwork, as well as the presence of an incentive system for knowledge creation teams.

Employee involvement and participation maturity are measured by the presence of mechanisms to encourage employees to participate in planning, active motivation of workers to attend to the evaluation of KM projects, requiring employees to participate in creating a knowledge-dissemination environment, and the presence of sharing knowledge. To continuously improve employee participation. The maturity of motivation/reward is also related to criteria such as the possibility of assigning higher organizational positions to people with better ideas, the existence of appropriate motivations to encourage employee behaviors to implement KM, the existence of mechanisms to motivate employees to seek knowledge and Relationship between motivational approaches and job performance evaluation system. The findings in this section are consistent with Hasanali (2002), Akhavan et al. (2010), Pee and Kankanhalli, (2009), and Khatibian et al. (2010), Escrivao and Da Silva (2019), and Serna (2012).

5.3 Organizational Infrastructure

Creating the necessary organizational infrastructure is a crucial aspect of KM deployment. A stiff and dry organizational structure, non-standard organizational processes, and a lack of knowledge culture, according to research, impede information exchange. The capacity of the organization in terms of organizational structure and processes, training and learning, organizational culture, training management procedures, and financial resources is connected to the maturity of this component. The maturity of an organization's structure and processes is measured using measures such as organizational structure flexibility, the institutionalization of knowledge

management in work activities, employee turnover rate, and employee role clarity. Existence of training courses to introduce the idea of KM and the functions of knowledge-based systems to managers and staff Existence of procedures to encourage employees to pursue new learning opportunities (such as conferences and seminars), Instruments, and appropriate approaches are available. The component of education in this notion will be promoted by educational institutions that provide a self-learning and self-learning environment.

The amount of support for knowledge workers in the business, the availability of circumstances for creativity, the existence of trust between employees, and the readiness of individuals to learn continually are all markers of the maturity of knowledge culture. The maturity of training management procedures will be crystallized in the existence of mechanisms for evaluating training courses, the active role of employees in defining training needs, accurate training planning, and the possibility of sharing among employees in training courses. The allocation of financial and time resources to KM activities has also been emphasized in many studies. The results obtained throughout this part are supported by the findings of Hasanali (2002), Akhavan et al. (2010), Gallagher and Hazlett (2004), Krueger and Sneiman (2007), Pee and Kankanhalli (2009), Hsieh et al. (2009), Khatibian et al. (2010), Escrivao and Da Silva (2019), and Serna (2012) are consistent.

5.4 KM Processes and Flows

The results show that the KM process is one of the effective factors in KMM. This concept refers to the existence of a suitable communication platform and knowledge transfer channels to share knowledge and implement knowledge processes. This concept includes codes such as communication/knowledge flow and KM processes and activities. Knowledge management (KM), according to Ngai and Chan (2005), is a set of activities or actions that an organization utilizes to produce, acquire, store, and share knowledge. All staff must be able to grasp the procedures, which must be as clear and easy as feasible [54]. Communication occurs when different individuals at different levels and task units connect, which may be facilitated by actions such as creating a conducive climate for knowledge sharing, conducting open meetings, and utilizing various channels to gather and transmit information. The outcomes considered in the present part are developed based on Hasanali (2002), Akhavan et al. (2010), Gallagher and Hazlett (2000), Pee and Kankanhalli (2009), Hsieh et al. (2009), Khatibian et al. (2010), Serna (2012) and Zhao et al. (2012) are consistent.

5.5 Organizational Culture

The success of KM is based on organizational culture, which has been stressed in the theoretical foundations. Many experts feel that for KM to succeed, a strong corporate culture must be established to support it. Organizational culture is seen as a critical KM infrastructure. The attitude of individual behavior, motivation and work satisfaction, the degree of commitment to human resources, the design of organizational structures and processes, and the purpose of the organization have all been influenced by organizational culture, which is built on similar beliefs and values. Affects the development, formulation, and execution of policies, strategies, and other similar initiatives. As a consequence, through examining, adjusting, and establishing an acceptable and adaptive organizational culture, the pattern of interaction between people in the firm can only be gradually adjusted and KM used as a competitive advantage. The process through which an organization examines and, if necessary, communicates its shared values, beliefs, and practices is known as cultural transformation. The company's culture has a shared mental identity, which is a shared understanding of the company's strategy, products, values, and services among workers, customers, and executives. The existence of a knowledge-oriented culture and enough human infrastructure is the most important criterion for the success of KM implementation in enterprises (culture). The output in the whole part is made based on Isaie et al. (2010), Akhavan et al. (2010), Gallagher and Hazlett (2000), Pee and Kankanhalli (2009), Hsieh et al. (2009), Escrivao and Da Silva (2019), and Khatibian et al. (2010) are consistent.

Recommended to Future Researchers

It is advised that this study be carried out in a variety of organizations, depending on the kind of activity, so that a single model can be defined in all companies that utilize KM. It is also suggested that the Delphi method be used to determine and confirm the factors and indicators affecting KMM.

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