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Studying and Measuring the Status of Needed Infrastructures for Proper knowledge Management Establishment in Public Organizations (Case study: North Khorassan, Governor General Office)

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ABSTRACT

important tools for organizations for their success and achieving and keeping competitive advantage. Knowledge management has been in the locus of tasks by governments and an inseparable element of strategies, planning, consultancies and execution for long time. Government are now well aware of knowledge management in policy making and serving the people and in some governmental sectors, knowledge management is put into their agenda. However, it is not as easy as it sounds. Knowledge management benefits are not readily delivered to governments and challenges cannot be responded without assessments. The aim of present paper is to study the situation and feasibility of knowledge management establishment in North Khorassan's Governor General Office. It is a descriptive survey and a field study. Its population consists of employees in North Khorassan Governor General Office (n = 260) while the sample consists of 155 subjects selected by cluster sampling method and Kokaran equation with the preciseness of 95%. Research findings are confirmed by SPSS software package.

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INTRODUCTION

To make using knowledge as a competitive and strategic advantage objective and organizing knowledge management development steps in an organization, it is necessary to recognize current status in the organization on knowledge management and to determine affecting factors on organizational decision making in order to use and improve management. In other words, it is vital to conduct a depth analysis on the readiness of organizational infrastructures on knowledge management. Organizations should create an environment to share, transfer and contrast knowledge among their members and train their people to conceptualize their interactions and try to pave the ground for identifying the factors to establish knowledge management in their organization [5].

The most important determinant of 21st organizations is to emphasize on knowledge and information [20]. Today organizations need to acquire, manage and utilize knowledge and information to improve their efficiency. Knowledge management is considered one of the main processes in knowledge – based organizations [19]. Concerning knowledge management, Peter Drucker (1993) asserts: “in today economy, knowledge is not a source like other production factors such as labor, capital and land. It is the only meaningful source of current age” [1].

Knowledge infrastructure is a mechanism by which organization manages knowledge management and people in different departments can share their knowledge so that other member can use their knowledge effectively. Such infrastructures lead into necessary processes of knowledge with the maximum efficacy, to use both hardware and software technologies more efficiently and to generate, share and utilize knowledge management. The main aim of such infrastructure is nothing than flowing knowledge in the veins of organization's working processes [25]. Obviously, when needed grounds for knowledge are not available, one cannot expect efficiency and effectiveness of knowledge and to use its countless advantages. Therefore, before

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any initiative to execute knowledge management system, this question comes to authors' minds that "are knowledge management infrastructures in studied organization suitable for establishing proper knowledge management?"

Knowledge management in public sector:

Organizational administrative scholars and managers are reservoir of learnt knowledge and experience in the organization. Retirement of each employee means leaving huge experiences and reservoirs of organizational knowledge and acquiring them requires huge expenditures, reworks and retesting the experiences. Often, organizations believe that their needed knowledge is inside them while it is a radical difficulty for them to identify, revive and utilize them. In studying the background of knowledge management in public organizations, Cong and Pandya assert that it relates to startup public organizations. Therefore, it should be especially regarded. They believe that knowledge is a social and human issue and in contrary to information, it is not depended on technology. By leaving educated and professional forces from public organizations, a part of system on which the organization has invested for several years would be exited from the system and it calls for knowledge management model to prevent wasting such capitals as national ones.

The importance and necessity of the issue:

Although many organizations have invested on knowledge development and have been successful, many organizations have also failed. The lack of right mechanism to evaluate and execute knowledge management has changed such investment to a surplus investment in managers' minds. Hence, organizations should create an environment to share, transfer and exchange knowledge among their members and attempt to pave the ground and identify the factors of knowledge management establishment [5].

Needed infrastructures to establish a modern system like knowledge management is important since executing such system without ready grounds and their weaknesses/strengths would often lead to failure.

By using knowledge management system through knowledge flow and its proper distribution in the organization, the velocity and quality of services are added [22]. As a result, one of the most important aims of North Khorassan Governor General Office namely proper accountability to varied needs of executive organizations will be realized.

On the other hand, studying needed infrastructures to execute knowledge management in organization is a managerial consideration to use knowledge more profitability. Therefore, it is necessary to study the readiness of North Khorassan Governor General Office before executing knowledge management system.

In developing knowledge – based economy, knowledge management is considered as a main pillar. Below reasons are mentioned for such claim [10]:

1. Very rapid progress of different technologies in new century
2. The velocity of generating innovations and hyper competition in marketing
3. Reducing the size of manpower influenced by competition in global economy
4. Decreasing the time of acquiring knowledge and experience

As the most important executive and supervising organs, huge clients including people other executive organizations and the diversity in their services, Governor General Offices can improve the velocity and preciseness of affairs and make their clients satisfied by executing knowledge management in their different department.

Definitions:

Data:

Data are objective and absolute facts on events [12]. Data is the origination of knowledge and reflects complete, single and integrated interactions and exchanges as mentioned trivial elements. Data is raw material and needed elements fro decision making [12].

Information:

By adding value to data, we convert them into information [12]. Peter Drucker recalls that information is "relevant data." In other words, he believes that data is the relation and aim of information that are not relevant objective alone. Data is converted into information when provider gives them meaning and concept. By adding value to data, we convert them to information [12].

Knowledge:

Knowledge is rooted in information and information is rooted in data. It is the function of human to change information to knowledge [12]. Knowledge is opinions, understandings and learnt lessons overtime and acquired by someone through experience, argument, vision, learning, reading and listening. Knowledge is understanding, awareness or cognition during study, research, observation or experience to surrounding environment [14].

McDermott considers six attributes for knowledge:

1. Knowledge is the result of human activity.
2. Knowledge is the result of thinking.
3. Knowledge is created suddenly.
4. Knowledge is the result of collective e wisdom.
5. Knowledge is disseminated among people via different ways.
6. New knowledge is based on ole knowledge [27].

Difference between knowledge and information:

Information is processed data in computers increasingly accessible for all people due to broad impact by IT and globalization. However, there are conflicting descriptions on information and connoisseurs have used it as a process, merchandise, industry and so on.

Types of knowledge:

All knowledge resources are likened to an iceberg that its tangible part is explicit knowledge. This part of knowledge can be easily accessed, identified and shared. The hidden part is called tacit knowledge. It recalls statement by Michael Polanyi (1966): “we know more than we can express” [21]. Explicit knowledge is the one described and defined clearly and is expressed simply and without any ambiguity which is coded and stocked in databases. Tacit knowledge is and implicit one inside the person which is also called latent or hidden knowledge and in most cases, it is difficult to describe and transfer it. Tacit knowledge includes learning, awareness, judgment, general rules and aspiration. One may say that tacit knowledge is the same unique personal information located in knowledge process after information. Knowledge is intangible and hard to measure. Using knowledge is changing or increasing and one can use it in different situations by different process. Its life cycle in often long, it usually exists in organizations and impacts highly on organization [27]. This kind of knowledge is unofficial and is the result of personal experiences. It cannot be coded and saved so it is stocked as a personal knowledge. Because of created gap, the value of this knowledge is felt when its possessor leaves the organization.

Wisdom:

Wisdoms include initiatives which lead into decision making and improvement. When knowledge is used for decision making and improving decisions, processes and productivity or profitability, it is changed to wisdom. In order to be wise, people should not only acquire knowledge but also they should possess complete understanding of principles dominating knowledge.

Knowledge management definition:

Knowledge is the main capability for organizations and need to be managed [26]. A wide range of definition are provided in literature on knowledge management since knowledge management roots are backed to different areas [17]. Knowledge management includes different areas such as customers’ knowledge, the knowledge of products and services, employees’ knowledge, processes knowledge, organizational memory, communication knowledge and assets knowledge [26]. Gupta and McDaniel [14] believe that that knowledge has two aspects: running current knowledge and the ability to create new knowledge. In former, knowledge management produces needed information for a person when he/she needs it. The latter consists of such as activities as acquiring, integrating, distributing, applying and creativity of knowledge to improve organizational operation which finally creates a competitive advantage for organization. Davenport believes that “knowledge management is an attempt to explore latent assets in the minds of people and converting it into organizational asset so that many people who are involved in organizational decision making can access and use this wealth [11]. Another author has defined knowledge management as: “knowledge management is an attempt to concert employees’ knowledge (human capital) into organizational joint asset (structural intellectual capital) [13]. According to Schein (2001), knowledge management is process which allows the organization to use new knowledge in the format of creation, reputation, distribution and application and to improve smart performance through a set of organizational traits. Knowledge management is management awareness and action of creating, distributing and applying knowledge for organizational strategic aims [7].

The barriers of executing knowledge management in organizations:

Researches indicate that the most important barrier against effective knowledge management execution is the lack of knowledge sharing culture and lack of understanding its numerous advantages by employees. In other words, the main reasons of knowledge management unsuccessfulness in kinds of enterprises include:

- Lack of organizational learning due to weak communications among employees (20%)
- Failure in using knowledge management favorably in all daily activities (195)

- Lack of allocating proper time to learn how to use knowledge management and understanding its complexities (18%)
- Lack of training the employees (15%)
- Employees' misperception regarding low advantages by knowledge management to users (13%) (Fernandez, 1999).

Noteworthy, remained 15% is due to other factors.

Knowledge management advantages:

The benefits of using knowledge management include from technical to strategic levels which impact on organizational culture and productivity. Some of these benefits include [25]:

- Improving competitive response: enabling organizations to respond rapid market changes and accelerating the time of delivering goods to markets
- Mitigating the costs and avoiding wasting mental capitals: possessing tacit knowledge allows the organization to use the knowledge to keep the processes for future applications and to eliminate employees' retraining costs.
- Removing the needs to act globally: operations that are dispersed geographically demand particular demands in cultural fields and knowledge management. Organizations with effective culture in the field of knowledge management can terminate "they and us" and convert everything to "we" and maximize the usage of dispersed resources.
- Job effectiveness: using knowledge management infrastructure eliminates traditional limitations, increases knowledge sharing among employees and improves effectiveness.
- Organizational effectiveness: tools, models and best applications of knowledge management accompanied with knowledge sharing culture create a collaborative environment and improve organizational effectiveness.
- Determining strategic orientation: using knowledge culture improves creativity and innovation and impacts on strategic orientation.

Background:

Among conducted studies on knowledge management one can refer to a research by Shamin Ghafoor (2008) on studying the readiness to implement knowledge management in local government "case study: a Swedish Municipality". In this study, five factors which foster knowledge management (organizational culture, HR, technology, information and strategy and leadership) were studied and organizational structure was considered as an important factor in addition to these factors. To managers in the municipality and IT, HR, development and financial sections were interviewed. The interviews were flexible and interviews were allowed to express their ideas. Research findings support a positive relationship between these five factors and knowledge management success.

Husseini and Zamani (2007) conducted a study titled "studying knowledge management infrastructure in Isfahan Educational and Psychology University". Its population consisted of its faculty members and all of them were considered as research sample. Their findings indicate that its cultural infrastructure is not in proper situation to execute knowledge management. Likewise, the university was not managerially ready to execute knowledge management. However, IT infrastructure was assessed well to execute knowledge management.

Vooly (2007) cites Messi (2001) and believes that successful knowledge management strategy needs to identify critical factors and to use them in order to achieve working results. It draws a framework by which the organization can manage new methods of knowledge management (Choi & Jong, 2010). Hence, it seems that one should consider the critical role of knowledge management success and initiatives in studying knowledge management strategies.

A research is conducted by Ali Reza Azhdari (2010) on knowledge management in public organization. He tried to show the importance of knowledge management institutionalization in public organizations and to provide the benefits of knowledge – based organizations.

In his research titled "Is higher education is ready to execute knowledge management?" Rowley [23] studied the ability to use knowledge management concepts in Canadian universities. He asserted that there are difficulties in creating knowledge – based environment. According to Rowley [23] one of the most important problems is cultural one and students' belief on "wisdom power". Such opinion by academics is a big problem for knowledge sharing. Also, his findings indicate that executing effective knowledge management in Canadian universities requires modifying organizational structure and awarding system. He explained that such reforms are effective in improving knowledge wisdom culture. In contrary to previous two infrastructures, Rowley believes that IT infrastructure is desired in Canadian universities to facilitate knowledge sharing. He pointed out some facilitating systems to transfer and share knowledge in universities such as Internet and management information system. However, he emphasized that there are problems in these universities to create knowledge based environment since the culture of knowledge sharing is not in desired level in these universities [23].

Literature:

There is a wide domain of factors which can influence on knowledge management establishment in organizations. Anne Brookyn believes that one can define the determination of knowledge management successful establishment factors as areas that would guarantee successful performance of the organization if the results are satisfied [24].

Some factors of successful knowledge management establishment by authors are outlined in table 1.

Table 1: some factors of successful knowledge management establishment (Allen, 2007).

Authors	Main factors of successful KM establishment
Skyrme and Amidon (1997), Chong (2006), Akhavan & Jafari (2006)	Top management leadership and support
Skyrme and Amidon (1997), Davenport (1998), Duplesis (2007)	Organizational culture
Skyrme and Amidon (1997), Davenport (1998), Hong (2005)	IT
Chong (2006), Davenport (1998), Libovitz (1999), Elfman (2005)	Infrastructure management
Skyrme and Amidon (1997), Davenport (1998), Joshi (2000)	Processes and activities
Davenport (1998), Joshi (2005), Harman (2000), Wong (2005)	Organizational belonging
Davenport (1998), Duplesis (2007), Hong (2005), Elfman (2005)	Contribution in decision making and motivation
Davenport (1998), Joshi (2005), Wong (2005), Akhavan (2006)	Performance appraisal

*Knowledge management infrastructures in present study:**Information technology:*

Information technology facilities knowledge share, stock and apply in organization [16]. Right technology should be utilized for effective knowledge management. Technology causes the synergy of organizational structures which would increase the effectiveness of knowledge management [4].

IT supports all knowledge management process in the organization. Identifying types of IT and their right selection are, inter alia, the main issues to establish knowledge management in an organization. IT plays four different roles in knowledge management as below:

1. Knowledge acquiring
2. Defining, stocking, categorizing, listing and linking knowledge – based components
3. Searching and recognizing relevant concepts
4. Flexible expression of concepts based on different applied fields [29]

One should always remember that IT is the only communicative and systematic way to stock information for knowledge exchange. Such technology cannot generate knowledge. for instance, in an organization with knowledge avoidance culture, using IT cannot guarantee knowledge generation or promotion and the culture of knowledge stockpiling cannot be converted into knowledge sharing culture [12].

Organizational culture:

The findings by Chese (1997) indicate that culture is the greatest barrier for organization to create a successful knowledge based organization. Concerning the affecting nature of culture in successful execution of knowledge management in organization, Davenport [11] asserts that organizations should assure the appropriateness of their culture with knowledge management activities. Organizational culture is a set of values, beliefs, norms and procedures in which organizational members have common points. Organizational culture plays a vital role in creating a proper environment to exchange and support knowledge activities in organization [2]. Likewise, learning capability of organizations, developing organizational memory and knowledge sharing in them are all depended on culture [18].

Since culture is a wide concept and involves many aspects cannot be explained here, a brief summary of each aspect necessary to establish knowledge management rightly in organizations are provided below. They include knowledge sharing culture, contributive culture, trust – oriented culture, innovative culture, open culture and learning organization culture.

Action process aspect:

Knowledge is not a statistic and linear process; rather, it is a dynamic process and needs employees to acquire new knowledge constantly and use it to modify decisions [13].

The third important factor in knowledge management execution is process. It means that drawing knowledge management methodology includes below process in terms of current background identifying the knowledge, acquiring the knowledge, selecting the knowledge, stocking the knowledge, distributing the knowledge, using the knowledge, and measuring and evaluating the knowledge and finally technology. Organizational knowledge should be kept well. Technology should be selected so that it provides people with their needed knowledge. For knowledge management in public organizations, one should look for technologies which make it possible to establish a dynamic interaction with citizens [9].

Organizational policy aspect:

Any organization can use certain policies on employees who contribute in knowledge sharing. One policy is to award employees based on sharing their knowledge in organization. It can increase employees' motivation to share their knowledge. Noteworthy, knowledge assessment should be put in organization's plans to determine the effectiveness of the knowledge. Also, recipes and manuals should be considered for sharing knowledge and information in organizations.

*Research aims:***Major aim**

The main aim of present study is to measure the status of necessary infrastructures to establish proper knowledge management in public organizations.

Minor aims

1. Feasibility study on knowledge management establishment in terms of IT status in North Khorassan Governor General Office;
2. Feasibility study on knowledge management establishment in terms of action process status in North Khorassan Governor General Office;
3. Feasibility study on knowledge management establishment in terms of organizational cultural status in North Khorassan Governor General Office;
4. Feasibility study on knowledge management establishment in terms of organizational policy status in North Khorassan Governor General Office;

*Research hypotheses:**Major hypothesis:*

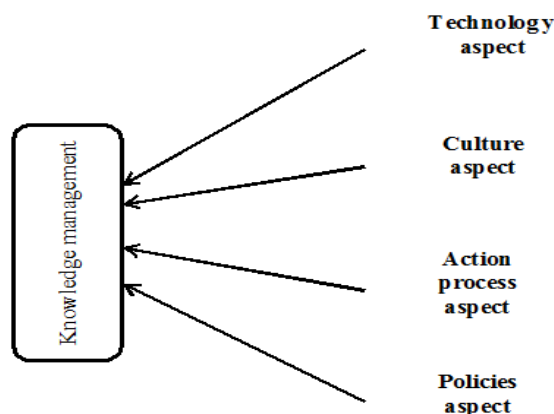
Knowledge management infrastructures lack necessary readiness to establish knowledge management North Khorassan Governor General Office.

Sub-hypotheses:

1. IT infrastructures are not appropriate to establish knowledge management North Khorassan Governor General Office.
2. There is no appropriate organizational culture to establish knowledge management North Khorassan Governor General Office.
3. Action process aspect is not proper to establish knowledge management North Khorassan Governor General Office.
4. Organizational policy infrastructures are not appropriate to establish knowledge management North Khorassan Governor General Office

*Conceptual model:**Knowledge management model:*

Different models are provided for Knowledge management infrastructures and our selected model for present study is drawn as below:

*Methodology:*

Current study is a descriptive survey. To gather data for theoretical basics and extracting the indicators, library technique is used while a questionnaire is devised to confirm model factors and indicators as well as categorizing factors and indicators. North Khorassan Governor General Office has 160 employees of whom 155

were selected by Kokaran equation in 95% of preciseness. The questionnaires were distributed by cluster sampling method and total 150 questionnaires were responded.

Validity and reliability of the questionnaire:

The aim of 20-item questionnaire was to measure knowledge management status (7 questions for technology aspect, 4 for culture aspect, 3 for action process and 6 for policy aspect).

Operational definition of questionnaire variant:

In this study, knowledge management refers to score given by employees to 20 items of knowledge management questionnaire.

Questionnaire scale:

This questionnaire is based on Likert scale (1 = very low; 2 = low; 3 = sometimes; 4 = high; 5 = very high). Its content validity was confirmed by relevant elites and scholars. Questionnaire reliability (+0.85) was computed by Chronbach's alpha value in SPSS software package.

Data analysis:

T-Test is used to analyze statistical data.

T-Test with statistical assumption of $\mu > 3H_0$ and $H_1: \mu \leq 3$: if $\text{sig} < 0.05$, H_0 is refused and H_1 is supported; if $\text{sig} \geq 0.05$, H_0 is supported.

$$\left\{ \begin{array}{l} \mu > 3H_0: \text{major hypothesis is refused} \\ H_1: \mu \leq 3: \text{major hypothesis is not refused.} \end{array} \right.$$

Table 2: One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
IT	150	3.0229	.36264	.02961
Culture	150	2.8700	.54397	.04442
Knowledge process	150	2.8644	.60706	.04957
Policies	150	2.4111	.38651	.03156
KM	150	2.7921	.28287	.02310

Table 3: One-Sample Test.

	Test Value = 3		Sig. (2-tailed)	Mean Difference
	t	df		
IT	.772	149	.441	.02286
Culture	-2.927	149	.004	-.13000
Knowledge process	-2.735	149	.007	-.13556
Policies	-18.660	149	.000	-.58889
KM	-9.001	149	.000	-.20790

Sub-hypothesis 1:

IT infrastructures are not appropriate to establish knowledge management North Khorassan Governor General Office.

As seen, $\text{sig} \geq 0.05$ so H_0 is supported. It means that major hypothesis is refused. Research findings indicate relatively desired status of IT to establish knowledge management North Khorassan Governor General Office.

Sub-hypothesis 2:

There is no appropriate organizational culture to establish knowledge management North Khorassan Governor General Office.

As seen, $\text{sig} < 0.05$, so H_0 is refused. It means that major hypothesis is not refused. This aspect consists of three components of contribution, trust and learning. So we conclude that North Khorassan Governor General Office has no proper status in all these components. Overall, organizational culture is not suitable to establish knowledge management in this organization.

Sub-hypothesis 3:

Action process aspect is not proper to establish knowledge management North Khorassan Governor General Office.

As seen, $\text{sig} < 0.05$, so H_0 is refused. It means that major hypothesis is not refused.

Research findings indicate undesired status of action process to establish knowledge management North Khorassan Governor General Office.

Sub-hypothesis 4:

Organizational policy infrastructures are not appropriate to establish knowledge management North Khorassan Governor General Office.

As seen, $\text{sig} < 0.05$, so H_0 is refused. It means that major hypothesis is not refused.

Research findings indicate undesired status of policies to establish knowledge management North Khorassan Governor General Office.

Major hypothesis:

Knowledge management infrastructures lack necessary readiness to establish knowledge management North Khorassan Governor General Office.

As seen, $\text{sig} < 0.05$, so H_0 is refused. It means that major hypothesis is not refused.

Concerning the results of one-sample T-Test, we conclude that North Khorassan Governor General Office does not enjoy needed readiness to establish knowledge management in terms of necessary infrastructures.

Conclusion:

Today, knowledge management is considered as one of the most critical and newest management discussions. In fact, knowledge management is seen as a reaction to increasingly changes in surrounding environment of today organizations. Changes in management performance are necessary and unavoidable. Types of enterprises need to execute effective knowledge management strategy in order to survive, develop and adapt competitive environment changes. Knowledge has become an important determinant of competitiveness in public sector. The main tasks of government are, inter alia, providing services and policymaking. In a knowledge economy, governments are increasingly exposed by competition in both national and international levels. Like any other system, necessary infrastructures of the system should be initially determined for proper establishment of knowledge management. Then, the status of such infrastructures should be determined and to plan for its establishment.

As research findings indicate, of four infrastructures for knowledge management, only IT infrastructure is in relatively desired status while action process, culture and policy infrastructures are not proper. Therefore, these infrastructures should be improved to execute knowledge management successfully.

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