Identifying Agents and Effective Agents on Knowledge Management Maturity-Case Study of Mellat Bank Branches in Tehran

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Abstract- An organization success depends on attaining to pre-defined objectives and its maturity, its ability in maintain or develop performance in long-term and as a result, stack holders satisfaction continuity. Success in organization management literature has been replaced by organizational maturity. Organization successfulness follows two performance and targeting concept and evaluates pre-defined purposes. On the other hand, knowledge is considered as the reliable resource to create stable competitive advantage in organization.

In this research, we introduce knowledge management and models and organization maturity and then we recognize effective agents and indexes on knowledge management maturity. Also, we consider indexes prioritization and determine their weights. Then, we develop management maturity model based on these agents and indexes .we consider current position or maturity level of an organization according to these maturity model.

Keywords- knowledge management, organizaion maturity, indexes prioritization.

I. INTRODUCTION

Organizations, that are confront with knowledge era new challenges, understand that knowledge is considered as the strategic resource and competition axis and even survive in non- competition environments. So, management necessity of this strategic resource must be considered. Knowledge strategy helps organizations to identify their current and future needs to knowledge and manage this knowledge consciously. As inputs and outputs of an organization is knowledge, so knowledge acquisition, maintain and its division constructs most part of an organization activity. Knowledge management gathers all of information and knowledge around an organization and re-organizes and analyzes them systematically. So, it can reach to valuable content. Knowledge management not only integrates knowledge of each person, but also it unfolds hidden knowledge of people and enriches it. Totally, knowledge management gets and maintains knowledge to help organization works efficiently. So, it can reach to competitiveness. Implementation knowledge management systems have been increased to more utilization of this competitive resource. While most of these systems are implemented and outputs have differences with the purpose of implementation at the beginning of the work, attained purposes have more distance from defined purposes in knowledge management strategy. So, it is essential that current knowledge level of organization is identified before and during of implementation. Appropriate approach must be considered to remove them during implementation process. By using this approach, knowledge management system must be implemented with the least distance of favorable condition or its optimized condition and then must have achieved to determined goals.

Organizational knowledge management is one of the main important agents in competitive conditions and information era. Importance of the issue is to the extent that most of organizations measure their knowledge and they reflect it as organization mental capital and as an index for calibrating companies in their reports (Mousavi, 1384-SH). Knowledge management is considered as an essential and main part in organization success and it includes wide range of organizational ideas such as strategic, economical, behavioral and managerial innovations. In today world that goods production and services were knowledge- based, knowledge is considered as a key for competitive advantage.

II. THEORETICAL REVIEW AND RESEARCH HISTORY

Mokhtari (1386-SH) investigates organizational culture role in facilitating knowledge management process in Saipa. He studies organizational cultures role in facilitating implementation knowledge management dimensions. He found that market organizational culture is suitable for attraction, organizing, reserving and knowledge application, tribal culture for dissemination of knowledge (Khadivar, 1386-SH). In other study, knowledge management strategy methodology was presented and DSS intelligent was designed and was presented. In this research first of all theoretical basics and that comprehensive methodology has been presented for knowledge management strategy.

Sharifnia (1388-SH) investigate the relation between organization culture based on Glob model and knowledge management in ports and sail organization. He concludes that there is a positive relation between organization culture and knowledge management in ports and sail organization. It means that the more efforts done in organizational culture and

its variables, the more positive effect achieved. Salvani (1385-SH), worked on knowledge management in public organizations. He presented a model for knowledge management in Iran public organization and concluded that organizational agents had the most effect and influenced it directly. So, public organizations performance about knowledge creation culture, knowledge leadership, knowledge resources, knowledge ports, knowledge-based structure and processes for knowledge management and influences its success. Environmental agents and knowledge citizen influences knowledge management in Iran public organization through influencing organizational agents. So, political, cultural, technological agents and knowledge citizen influences organizational agents, and then influences knowledge management indirectly.

Dolati (1385-SH) investigated knowledge management position in Persian bank. He found that Parsian bank experts and managers have awareness about knowledge management. But, knowledge management processes aren't used in Persian bank. People don't have performance based on knowledge management and information technology isn't used in knowledge management. Hossieni (1385-SH) investigated the relation between organizational culture and establishing awareness management in Tarbiat Modaress University. He showed that awareness management is one of the strategies to improve on organization survive conditions. It implemented successfully, if appropriate cultural context is embedded in this system. Because awareness management is a spirit effort, it is related to human resource and is function of organization employee's culture. So, organizations must create culture for successful implementation of awareness management and they must act according to it.

Lahijanian (1383-SH) conducted a research to study knowledge management in universities. The purpose of this research is to design and present an appropriate pattern for utilization knowledge management in higher education system in profit and nonprofit universities and higher education centers that includes philosophy, purposes, theoretical review, knowledge conceptual framework, insight conceptual framework, skill conceptual framework, model implementation stages, evaluation system, model reengineering. This model was investigated by Pearson correlation index and analysis of variance. University managers gave the highest score to model purpose philosophy, theoretical review, and conceptual frameworks of leading element, evaluation system and reengineering. University presidents gave the highest score to evaluation system and reengineering. Group managers gave the highest score to model implementation stages, evaluation system and reengineering. Board of faculties considered knowledge element skills of model administrative framework.

Lee choie (2003) investigated knowledge management styles and its effects on organizational performance, he showed that how different types of knowledge management styles influence organization performance. So, 54 companies were selected and were tested. Results showed that among dynamic, systemic, human-centered and static, dynamic style has the most influence on tacit knowledge and explicit knowledge management. Also, systemic and human-centered styles

emphasized on tacit knowledge or explicit knowledge doesn't show any difference in organization performance and static style has the least share among them. So, explicit and tacit knowledge are effective in organizational knowledge capitalization. Pawlin and Mason (2002) investigated barriers and effective agents in accepting knowledge management program. Results showed that barriers on knowledge management inside of organization include: competition, competitor's pressure, their assumption about knowledge management causes increase in productivity and data loss can be prevented.

Rastogi (2000) conducted a case study to study main processes for effective management in 15 organizations all around the world. 25 consultants in knowledge management helped him in this study. Nonaka and Takeochi (1998) investigated knowledge management, the method of knowledge development in 15 Japanese organizations for competitive advantage. They emphasized on the method of knowledge production and organizational culture importance in knowledge production. Results showed that leadership has important role in encouraging people to express ideas and opinions about their role. Knowledge transformed because of people communications and interactions. Then organization communicational systems can play important role in creating and transforming knowledge. The more structure flexible, the organization act successfully in creating and transforming new ideas. It is necessary to identify and consider cultural factors and software and values that surround knowledge development and transformation in organization to create knowledge management system.

III. CONCEPTUAL MODEL

Asian productivity organization knowledge management evaluation tools are based on Asian productivity organization knowledge management framework. Questionnaires were prepared according to 7 present elements in framework.

Starting point of Asian productivity organization knowledge management is identifying vision, mission, organizational purposes and strategic routes. This helps to organization to analyze main abilities and capabilities and identify that group which needs to development and improvement.

Four accelerators (people, processes, technology and leadership) can help organization understand to what extent these reinforce agents, influence organization and also can help organization to employ knowledge successfully. Five main knowledge processes (identification, creation, storage, and sharing and knowledge employment) provide first evaluation of current activities related to knowledge management. So, it can be used effectively during knowledge management implementation. Sometimes, organizations use knowledge management without awareness. Results of knowledge management efforts are supported with success vital agents (accelerator, vision and mission). These results are evaluated and must show innovation and learning improvement that creates personal, team, organizational and social capabilities.

Finally, it results in products and services quality improvement, productivity, profitability and growth.

According to main elements organization knowledge framework of Asian productivity, there are seven audit groups in evaluation of knowledge management of organization, includes:

1. Knowledge management leadership: this group evaluates organization leadership capability for responding to knowledge- based economic challenges. Knowledge management leadership is evaluated in knowledge management politics and employed approaches. Also, leadership is evaluated in beginning field, strategy in knowledge management activity continuity.

2. Process: this group evaluates how to use knowledge in management, implementation and main working processes improvement. Also, this group evaluates to what extent organization evaluates and improves working processes to reach better performance.

3. People: this group evaluates organization ability ro create and maintain knowledge culture and its learning. Organization efforts are evaluated to encourage and share knowledge. Also, knowledge employee's development is evaluated.

4. Technology: this group investigates organization ability to develop and implement knowledge- based solutions such as knowledge sharing tools and content management systems. Also, reliability and availability of these tools is evaluated.

5. Knowledge processes: in this group, organization ability is evaluated to identify, create, share and systemic employment. Also, sharing the best way of doing works and learned subjects is evaluated to minimize rework and renovation.

6. Learning and innovation: this group determines organization ability to encourage, support and reinforce learning and innovation through knowledge systemic processes. Also, managers efforts is evaluated to institutionalize learning and innovation values and to provide incentives to share knowledge.

7. Results of knowledge management: this group measures organization ability to improve produced value for customer with new and improved products and services. Also, it evaluates organization ability to increase productivity, quality, profitability and maintaining growth by using resources effectively and in learning and innovation.

IV. IMPLEMENTATION METHOD OF RESEARCH

It is essential that draw research framework after considering theoretical history. So, choosing research method is one of important stages of research that depends on purposes, nature and implementation facilities. So, when we can determine about method that these cases are determined. At the beginning of this chapter, research method is investigated and then information gathering tools, sampling method, information gathering method, tools and research limitations and research in this area and finally data analysis methods are followed.

Survey, library method was used in this case study. Survey is suitable for implementing descriptive studies of a big population. Questionnaire was used on a sample between populations. So subjects have been evaluated through questionnaire in presented framework. Base of any science is its recognition method and its value is based on recognition method that is used in that science. Research method is set of rules, tools and reliable solutions and systemic to investigate realities, discoveries of unknown and attaining to problems solutions (poolani, 1962).

Main purpose of foundation research is testing hypothesizes, explain the relation between phenomena and add to knowledge set in a particular field. Purpose of practical research is developing practical knowledge in a special field. In other words, they guide to knowledge implementation application. Purpose of research and development is preparing programs, templates and etc. as special uncertain situation is determined, then according to research findings, special pattern or program is produced. This research is a practical research because of investigating knowledge management maturity evaluation and measurement and it can be used navigator and director for managers and project programmers in each step of knowledge management system and different processes. It causes correct and suitable implementation of knowledge management system and increasing productivity (Rabinson 2006).

This research is descriptive- survey research because it uses a questionnaire to evaluates knowledge management systems. Also, different methods can be used to gather information. In this research library and field methods has been used to gather information.

V. SAMPLE AND SAMPLING METHOD

One of following methods can be used for gathering required data:

Gathering data through complete count of the population or census Gathering data through sampling.

In this research sampling was used, because there is no possibility to distribute questionnaire among different unit's professionals in branches.

Determining the sample size:

Different agents such as purposes and methodology and financial resources are effective in determining volume or size of sample group. The method for determining sample size as following:

$$n = \frac{N z^2 \alpha / 2 p(1-p)}{(N-1)d^2 + z^2 \alpha / 2 p(1-p)}$$

N: volume of statistical population, n: required sample size

Z: amount of standard variable for 95% confidence level, its amount is equal with 1.96 related tables.

D: error of researcher in this survey and its amount changes from 0.01 to 0.1.

P: distribution of traits in society

P(p-1): qualitative attribute variance

Because of uncertainty, its maximum value 0.5*0.5=0.25 was used. In other words, if we can't find the better estimation for P, it can be equal with 0.5. If P=1.2, n finds its maximum value. This method causes, the sample is sufficiently large.

Due to uncertainty of sample size and unknown other parameters values, we can use following formula:

$$n = \frac{Z^2 pq}{d^2}$$

Confidence level value is set to Z=95%, 1.96 is obtained from related table. Accepted level error is considered as d=0.09 (between 0.1 and 0.01) and p and q is equal with 0.5 and put in formula.

$$n = \frac{(1.96)^2 (0.5)(0.5)}{(0.09)^2}$$

According to above formula, 119 samples are appropriate for statistical functions. 300 questionnaires were distributed among employees of different branches of Mellat bank. 210 completed questionnaires were gathered for statistical studies. So, response rate was equal with 70% that is accepted percent.

VI. RILIABILITY AND VALIDITY OF QUESTIONNAIRE

Reliability and validity test must be done to ensure relevance and applicability of qualitative evaluation scale in empirical research. Validity ensures whether a scale is compatible for evaluating studied concepts with basic concepts. In other words, it should be considered that constructed scale can evaluate research concepts appropriately or not. Validity ensures whether results of constructed scale are equal in multiple times. Actually, appropriate validity of a scale shows its stability and non-variability of its results (Marko, 2004).

A. Determining relaibe validity of measurement tool

Validity of tool is so-called credit, accuracy and reliability. it means that if a measurement tool is used for evaluating constructed variable and adjective in similar conditions , has similar results. In other words, valid tool is a tool that has Reproducibility property and evaluating equal results. In other words, validity of a measurement tool shows that how results are exact and reliable, if researcher wants to measure considered property with that tool or similar tools and in similar conditions.

Domain of validity coefficient is from zero (lack of relation) to +1 (full relation). Different methods are used to compute validity coefficient of measurement tool, include: test-retest method, matched test, half-split method, kuder-

richardson method and alpha-cronbach method. In this research, questionnaires were tested by cronbach alpha with SPSS21 software. In this case, cronbach alpha was equal with 0.947 that showed high validity and reliability.

B. Determining reliability of measurement tool

Presenting correct questions and phrases with minimum ambiguity, is the main condition for questionnaire reliability. Expression definitions must be clear and exact. As such terms must have same meaning for all of respondents. Also, reliability can be increased through discussion and consultation with professionals in terms of content. Reliability shows that whether scale and content or questions of tool can evaluate variables and studied subject. It means that gathered data is in excess of the required research and also part of required data for evaluating variables hasn't been removed in content of tool. In other words, it should show reality (Ohansen and Olysen, 2001).

VII. DATA ANALYSIS

In this section, after gathering questionnaire and entering data in computer, we pay to descriptive analysis of demographic variables such as personal information, education and etc.

Analysis description of questionnaire criterion

Knowledge management leadership

First question: to whom extent is knowledge management leadership in Mellat bank? According to literature review and conditions of Mellat bank, questions 1 to 6 were designed to evaluate knowledge management level in Mellat bank. According to figure 2, related scores of question 1 to 6 had been presented. Also, the average of knowledge management score was 2.89.
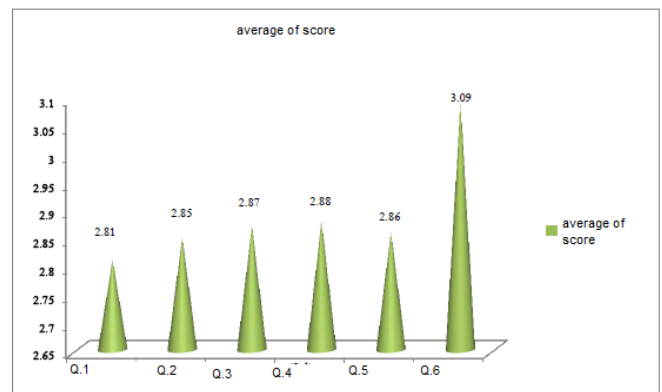

Figure 1.   Assess the level of knowledge management

Process:

In second question, to what extent is knowledge management process level in Mellat bank? According to literature review and conditions of Mellat bank, questions of 7-12 had been presented. Also, the average of scores was 3.08.
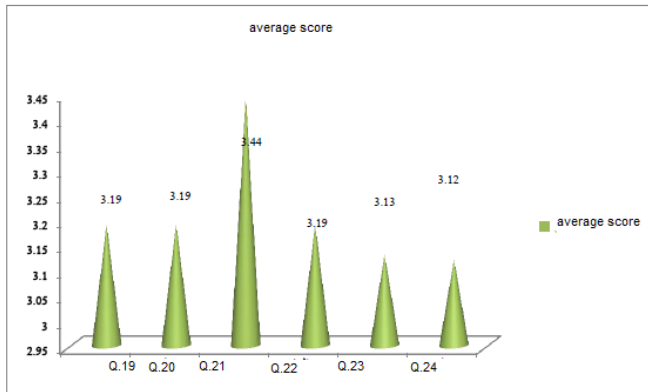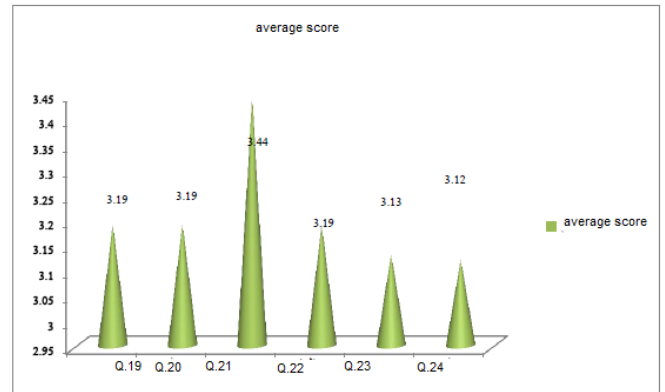
Figure 2.   Monitoring process

Figure 4.   Test Technology

People:

In third question, to what extent is the people level of knowledge management in Mellat bank? According to literature review and conditions of Mellat bank, questions 13 to 18 were designed to evaluate people level in Mellat bank. According to figure 4, scores of questions 13 to 18 had been presented. Also, the average of people score was 3.03.

Knowledge processes:

Fifth question: to what extent is the knowledge processes level of knowledge management in Mellat bank? According to literature review and conditions of Mellat bank, questions of 25 to 30, had been designed to evaluate knowledge processes level in Mellat bank. According to figure 6, scores of these questions had been presented. Also, the average of knowledge processes was 2.88.
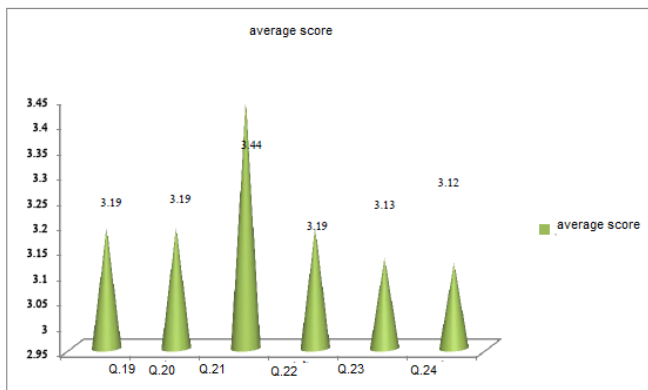

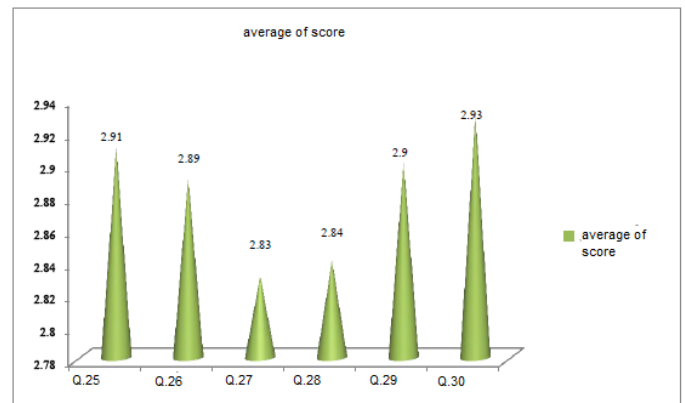Figure 3.   Measuring the level of Bank Mellat

Figure 5.   Assess the level of knowledge processes

Technology:

Fourth question: to what extent is the level of knowledge management technology? According to literature and conditions of Mellat bank, questions 19 to 24 were designed to evaluate technology level in Mellat bank. According to figure 5, score of these questions had been presented. Also, the average of technology score was 3.21.

Learning and innovation:

Sixth question: to what extent is the learning and innovation level of knowledge management in Mellat bank? According to literature review and conditions of Mellat bank, questions of 31 to 36 had been designed to evaluate learning and innovation in Mellat bank. According to figure 7, scores of questions 31 to 36 had been presented. Also, the average of learning and innovation was 2.90.
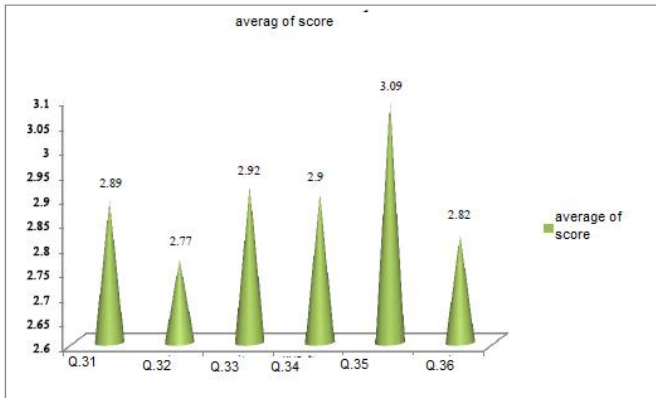
Figure 6. Assess the level of learning and innovation

R	SCALE name	Current condition	Favorable condition	Rating
1	Knowledge management leadership(Q1-6)	17.35	30	6
2	Process(Q7-12)	18.45	30	2
3	People(Q13-18)	18.17	30	3
4	Technology(Q31-36)	19.26	30	1
5	Knowledge processes(Q25-30)	17.31	30	7
6	Learning and innovation(Q37-42)	17.39	30	5
7	Management results(37-42)	17.69	30	4
	Total score		210	

Results of knowledge management:

The sixth question showed that to what extent is the results level of knowledge management in Mellat bank? According to literature review and conditions of bank Mellat, questions 37 to 42 had been designed to evaluate results level in Mellat bank. According to figure 8, related scores of questions 37 to 42 had been presented. Also, the average of learning and innovation scores was 2.96.
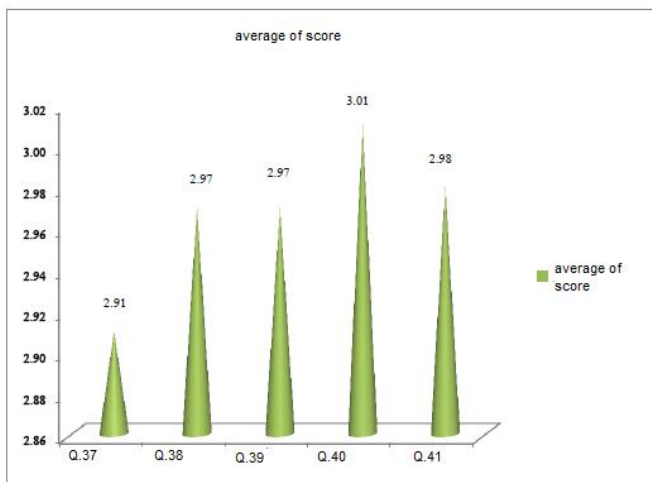

Figure 7. Test Results

Prioritization of considered criterions:

As we see in table 1, the highest score is for technology level and the lowest score is for knowledge process.

VIII. CONCLUSIONS

Knowledge management leadership evaluates organization leadership ability for responding to knowledge-based economy challenges. Knowledge management leadership is evaluated in knowledge management policies and employed strategies in organization. Also, leadership is evaluated in starting practices, strategy in continuity of knowledge management practices in organization. According to gathered data in this research, the level of knowledge management leadership was 17.35.

The process of using knowledge in management, evaluates the implementation and improving main working processes in organization. Also, it evaluates that to what extent the organization evaluates its working processes to reach better performance and improve it. According to gathered information in this research, the score of knowledge management process is 18.47.

Ability of organization people is evaluated to create and maintain knowledge culture and its learning. Organization efforts are evaluated to encourage and share knowledge. Also, improving knowledge employees is evaluated. According to gathered information, in this research, score of people knowledge management level is 18.17.

Technology group, investigate organization's ability to improve and implement knowledge-based solutions such as sharing knowledge and content management systems. Also, reliability and availability of these tools is evaluated. According to gathered information, the score of knowledge management technology level is 17.31.

IX. SUGGESTIONS

Some of suggestions and research opportunities for future researchers include:

- Research on other variables that has influence on knowledge management maturity (unexplained factors)

- Research in future years to compare its results with results of this research (as a base year)

- Research about increasing mechanism of effective agents on knowledge management maturity

- Research on effective internal agents of organization on knowledge management maturity

- Research on knowledge management maturity and effective agents on it with methods except survey

- Qualitative researches such as case study and longitude study

- Using this pattern in other organizations

- Research about effects and consequences of knowledge management maturity

- Research about barrier of knowledge management maturity

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