



Evaluating a Model for Implementing Knowledge Management in Banking Informatics Corporations in Iran

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ABSTRACT

The purpose of this paper is to measure the perceived importance and practical establishment of five factors affecting successful establishment of knowledge management (KM) in banking informatics corporations in Iran based on Barney model. The five Factors examined include business strategy, organizational structure, knowledge management team, knowledge accounting, and knowledge map. For this purpose, 24 questionnaire surveys were distributed among three leading organizations of brilliant history in banking informatics services. The middle and senior managers were selected as sample using simple random method. The findings showed that the managers were averagely aware of the importance of factors influencing knowledge management establishment. However, these factors are given less attention regarding practical establishment. Following the survey, the five factors were rated. Regarding the perceived importance, organization strategy was the most important factor in the success of knowledge management. Other factors are ranked in order of importance: organizational structure, knowledge management team, knowledge map, and knowledge audit. Overall, all the factors contributing to the success of knowledge management in the banking organization are considered to have medium importance, but these are less executed.

Indexing terms/Keywords

Knowledge management; knowledge management establishment; business strategy; organizational structure; knowledge management team; knowledge audit; knowledge map.

Academic Discipline and Sub-Disciplines

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1. INTRODUCTION

Offering economical products and services of proper quality without proper management and use of knowledge are difficult and sometimes impossible. Accordingly, the present and future success in the competition between enterprises has little dependence on the physical and financial resources and is greatly based on knowledge management. Therefore, one major task of an organization leader is to create an environment for knowledge management. To put it more clearly, in this era, the current challenge facing managers is preparing a suitable environment for the growth and cultivation of human mind in a knowledge-based organization. It is obvious therefore that banking informatics organizations dependent on the state banks require a certain vision and insight to satisfy organization needs through knowledge management [11, 12].

Today, the importance of data, information and knowledge is not hidden to anyone. However, banks have not neglected this major issue. For observing risk control standards on one hand and proper management of their collection on the other hand, banks require timely access to information produced in or outside the organization. Hence, studying the establishment level of success factors in this industry is crucial along with investigating their importance level in successful implementation of knowledge management [5].

Knowledge management, as one of the systematic functions in the banking system, is created to improve the efficiency, effectiveness and survival in a competitive environment [6]. It is stated in the literature that KM is an important managerial approach in attracting customers and increasing their satisfaction. Important individual and organizational motivating factors are also given here to promote knowledge management.

The purpose of this paper is to measure the perceived importance and practical establishment of five factors affecting successful establishment of knowledge management (KM) in banking informatics corporations in Iran based on Barney model [1]. The five Factors examined include business strategy, organizational structure, knowledge management team, knowledge accounting, and knowledge map. By reviewing the gap between the perceived importance and practical establishment of these five factors, this paper attempts to evaluate the readiness of banking informatics corporations for establishing knowledge management. It is expected that the results of this research can be used to better understand the process of establishing KM in the state banking structure and serve as a guide in this regard.

In this study, the importance level of these factors in the banking informatics is assessed and then, their level of establishment is examined. The objectives of this research are specifically as follows:

1. Evaluating the organization readiness for establishment of knowledge management
2. Investigation and comparison of the perceived importance and practical use of five factors

The rest of the paper is organized as follows: In Section 2, we investigate the banking system structure and KM challenges and opportunities. Furthermore, we discuss the literature and the factors affecting successful implementation of knowledge management. Section 3 contains the research method and hypotheses. Section 4 discusses the research findings and ranking of the factors, and finally we conclude the paper in section 5.

2. RESEARCH BACKGROUND

2.1 The banking system structure: challenges and opportunities of knowledge management

Knowledge management is an endeavor towards helping managers for a better access to the information they need. It is also a guide for the researchers to generate information which are applicable to the organization. Due to speed of changes in the banking system, sensitivity of monitoring economic indicators and the need to exploit new marketing strategies, the need to preserve KM internal and external capitals becomes very important. Knowledge management is a structured approach which establishes procedures to identify, organize, evaluate, store and apply knowledge to meet the organizational needs and goals [4].

Undoubtedly, establishment of a comprehensive banking system and information organizing, as some of the main elements of a knowledge-based organization, helps the banking system in risk management, fighting against money laundering, quality control, establishment of a comprehensive system of integrated marketing and other management imperatives [11, 12].

Considering the lack of studies on the factors affecting the KM implementation and its importance in the economy, further studies are required. Such studies will have effective results and recommendations for creating a competitive advantage and opportunities as well as improving performance through KM establishment [10, 14].

Such organizations intelligently predict the future events and changes in market and will help to its survival and development through offering products and services, technology, and new working practices. Knowledge management has both direct and indirect effects on organizations and considering it in the banking industry is essential. This is because nature of the organizations business requires predicting the future events and changes to efficiently exploit the future opportunities and apply some strategies for maintaining and improving organization operations; knowledge management is regarded as the main source in the competition arena.

2.2 Factors influencing the successful establishment of knowledge management

Many studies are performed on establishing knowledge management in organizations and its benefits so as to offer a comprehensive list of these success factors [10, 14]. (Wong, 2005) defined the success factors of knowledge

management as the activities or actions which should be identified to ensure the success of KM implementation [16]. Accordingly, Davenport and Prusak defined eight factors in the management success [4], Ryan and Prybutok introduced five factors [9], Moffett et al. identified ten other factors [7] and finally, Chong and Choi recognized eleven factors in this regard [3].

Abundant models are offered on knowledge management, most of which are similar regarding content but different in terms of words and phases. In these models, it is assumed that the stages and activities are mostly simultaneous, sometimes successive and seldom in a linear sequence. Identifying the primary factors affecting the KM success in organizations should be considered prior to establishment of a full-scale knowledge management program. Regarding explanation of how the knowledge is implemented, Barney model is one of the best among them. Since little attention is paid to the factors of knowledge management establishment, the Barney model is chosen and studied as success factors of the presented knowledge management [1]. Contrary to other models, this one focuses on five factors effective on the success of knowledge management. It addresses the issues prior to knowledge establishment and organization readiness and pays attention to all organizational levels (individual, team and organizational).

Barney identified the following as the success factors of knowledge management: aligned business strategy and knowledge management, creating a knowledge map, auditing knowledge assets and designing a knowledge management team [2]. Barney believes that the organization needs to answer four questions before formal establishment of knowledge management [1]:

- Where does the knowledge value come from?
- How does the organization create and use specific terms and features of knowledge and accordingly test its competitive power?
- What does the company do to prevent duplication of special features by other companies?
- How does the company organize resource allocation in order to establish knowledge management?

These factors are presented in numerous studies such as in [2, 8 and 15]. The factors contributing to the success of knowledge management are presented in Figure 1: business strategy, organizational structure, knowledge management team, knowledge audit and knowledge map. These factors are completely described in Table 1.

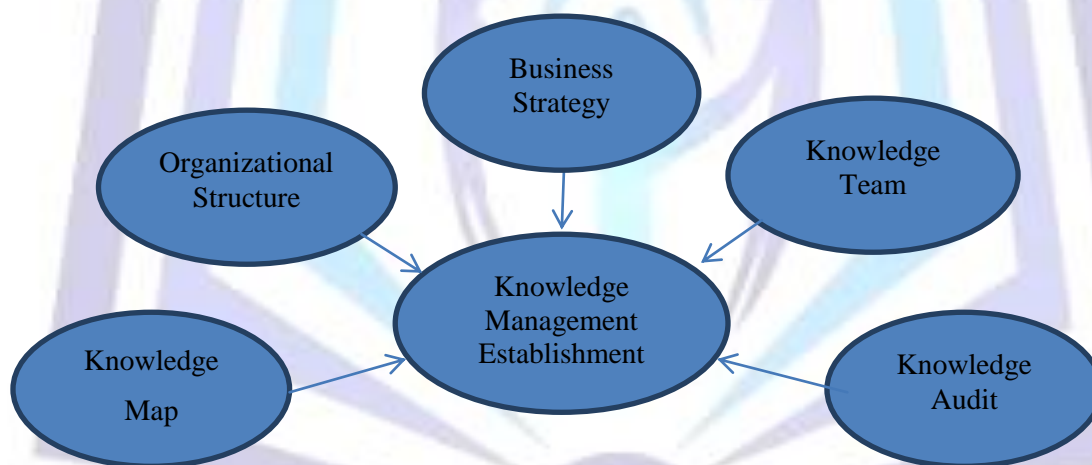


Fig 1: The five factors affecting knowledge management success based on Barney model [1]

Table 1. Describing the five factors influencing KM success

Business Strategy	Strategy expresses the direction towards which the company will be guided [14]. Attempts to connect the KM programs and the business strategy have turned into a vital source of competitiveness for all organizations. Tiwana stated that "knowledge drives the strategy, and the strategy stimulates knowledge" [15]. Different strategies of knowledge management are successful when the adopted strategy is in line with the business strategy.
Organizational Structure	Organizational structure can be described as characteristic of the jobs which should be done inside the organization plus the way those jobs are interrelated. In addition, matrix structures and emphasis on leadership rather than management facilitates knowledge sharing by eliminating limitations of traditional segmentation.
Knowledge Audit	Knowledge assets are essential for proper planning of a KM system and a rich source of information about the organization's strengths. Every organization needs to know the knowledge location in the organization. This becomes important when designing the



	strategies to ensure that knowledge is created, transmitted, and supported correctly by qualified individuals. Therefore, it is vital for organizations to audit knowledge before KM implementation in order to assess what knowledge assets exist in the organization.
Knowledge Map	Knowledge-based organizations use guides, maps and paths for searching knowledge among multi- functional levels. According to Tiwana, this is where the knowledge map shows a snapshot of the position organization owns compared to its rivals [15]. This helps how to find, what to find and where to find useful knowledge within the organization. The required knowledge should be compared with current knowledge and the comparison will possibly lead to identification of the gaps [16]. Thus, it is necessary for the organization to have a map for its knowledge assets prior to KM establishment. This is where an effective strategy can be programmed for eliminating the gaps.
Knowledge Team	<p>Teams are some groups made up of two or more people who interact and affect one another. They are mutually responsible for achieving common objectives and are the social entity within an organization. In knowledge-based organizations, teams are the units doing tasks practically. Teams let the organizations handle multiple skills and experiences in processes and problem solving.</p> <p>The primary responsibility of a knowledge team is creation, establishment, focusing and expansion of knowledge management system. Since the knowledge management system is built upon expertise, knowledge, perception, skills and insights of various stakeholders, the quality of relations and cooperation among them determines the ultimate success of the system.</p>

3. RESEARCH METHODOLOGY

This study is descriptive and applied research. The literature review is done using library and field research methods. Then questionnaire and survey are used for data collection. Barney model is selected for studying knowledge management in this article. This is the only model which explains clearly and distinctly various knowledge levels and their level of conversion. Considering the factors examined and literature review, the hypotheses are as follows:

- Knowledge management affects organizational strategy in banking informatics corporations.
- Knowledge management affects organizational structure in banking informatics corporations.
- Knowledge management affects the knowledge management team in banking informatics corporations.
- Knowledge management affects the knowledge accounting in banking informatics corporations.
- Knowledge management affects knowledge map in banking informatics corporations.

Considering the fact that the questionnaire is prepared for knowledge workers, middle managers and above, the designed questionnaire consists of two parts in order to verify correctness of the presented hypotheses. The first part examines the personal and public characteristics of the participants including age, gender, education, work experience, and organizational post. The second part contains 24 questions including organizational strategy factors, organizational structure, knowledge management team, knowledge accounting, and knowledge map.

All middle and senior managers working in these organizations, number of which was over 60 people, are selected as the research population. Using a simple random sampling method, a sample of 25 participants was selected from the community. The designed questionnaire was given to the senior and mid-level managers, and 23 completed questionnaires were returned (80% return rate of questionnaires). Data statistical characteristics can be seen in Table 2.

Table 2. Population characteristics

Gender	Working Experience (in the organization)	Educational Degree	Org Role
Female 40%	Less than 5 years	Bachelor's 40%	Middle manager 80%
Male 60%	More than 5 years	Higher 60%	Senior manager 20%

4. RESEARCH FINDINGS

Factor analysis is performed on 24 features in order to measure importance and degree of knowledge management establishment. The item showing a low correlation lacks the necessary reliability and validity and should be removed to reduce the errors. Thus, the characteristics whose load factor is less than 50% should be removed. Accordingly, all the features had a correlation of above 0.5 and no item was excluded.



Factor analysis results implied that the managers of banking informatics considered all 5 factors averagely critical on successful implementation of knowledge management. Factor analysis results also showed that all factors and their characteristics had a high factor load. Thus, the research results were consistent with theory and practice. Table 3 investigates the factor analysis of the importance and implementation of the variables.

Table 3. Factor analysis of the importance and implementation of the variables

Factor 1: Organizational strategy	load factor (for establishment)
1. All staff is aware of the importance of knowledge management.	0.593
2. The organization develops strategic programs with a focus on knowledge acquisition.	0.78
3. The organization has special objectives regarding knowledge management.	0.87
4. The mission statement of the organization reflects the importance of knowledge management initiative.	0.77
5. The mission and goals are well institutionalized at all levels of the organization.	0.72
Eigenvalue	2.86
variance percentage	57.33
Factor 2: Organizational structure	
6. The organizational structure is flexible and is able to adapt to environmental changes.	0.88
7. The resources are allocated to the knowledge management team.	0.77
8. The knowledge management concept is designed with regard to the organizational structure.	0.87
9. The organizational structure does not interfere with the data flow and does not disrupt it.	0.72
Eigenvalue	2.66
variance percentage	66.72
Factor 3: The Knowledge management team	
10. Knowledge management team is formed to lead the knowledge management projects.	0.83
11. Knowledge management team is created to support and ensure the success of knowledge management establishment.	0.83
12. Knowledge management expertise is made based on the skills of various stakeholders.	0.72
13. The external consultant is hired as part of the knowledge management team.	0.83
14. All members of knowledge management members are the organization's employees.	0.70
Eigenvalue	2.97
Percent of the variance	59.54
Factor 4: Knowledge Audit	
15. Knowledge audit is performed regularly.	0.88
16. A standard format is used for documenting the knowledge management results.	0.87
17. Knowledge audit is established to assess the knowledge-based levels.	0.85
18. Identifying the knowledge audit advantage is implemented for organization competitiveness.	0.55



19. The knowledge audit team has participants of various operational parts.	0.62
Eigenvalue	2.98
Percent of the variance	79.94
Factor 5: Knowledge map	
20. The required knowledge is identified to improve the competitive position.	0.88
21. The organization detects more knowledge.	0.83
22. Well-defined strategies are used to find the needed knowledge.	0.82
23. Feedbacks are usually gathered from customers and staff.	0.68
24. Knowledge map is created to measure the lack of knowledge.	0.86
Eigenvalue	3.35
Percent of the variance	67.05

4.1 Ranking of the five critical factors

From the respondents' perspectives, as shown in Table 2, organizational strategy is the most important factor in success of knowledge management in terms of perceived importance. Other effecting factors are respectively organizational structure, knowledge management team, knowledge map, and knowledge audit. Critical factor of 0.65 is considered as the average perceived importance. Organizational structure is the most important factor in practical implementation, while the least established factor is knowledge audit.

Five factors contributing to the success of knowledge management in the banking organization are regarded averagely important, but these factors are less implemented. Table 4 shows the average ranking of the critical factors.

Table 4. Average rating of the critical factors

Critical Factors	Rating Establishment Averages
Organizational strategy	2.53
Organizational structure	2.51
Knowledge management team	2.45
Knowledge map	2.42
Knowledge audit	2.31
Critical factor index	0.49

(Organizational strategy is seen as the most important factor in KM success)

In the following we present some suggestions to better organize the KM practices in the banking informatics corporations:

- There exists a significant gap between the importance degree and establishment in the surveyed organizations which forces them to make efforts for filling the gaps. For the business strategy to be supported by the knowledge management, organizations should thereby strive to develop the objectives of knowledge management in the planning phase to identify the goals that must be achieved.
- Regarding the 2.51 degree, flexibility of the organizational structure is considered important as well as the ability to adapt to changing environment. Since the organizations are operating in a competitive environment in which changes always occur, they must adopt a flexible organizational structure in order to successfully establish the KM.
- A knowledge team of 2.45 index is needed for establishing KM activities and reforming KM programs. These organizations should constitute a competitive knowledge team of various operational department members in order to strengthen the establishment level of knowledge management.
- By obtaining an average of 2.42 score, knowledge map received little attention in such organizations. Of course, this can be due to time consumption and costliness of data collection for identifying knowledge gaps. A proper knowledge map will help the organizations to identify areas of knowledge gaps and guide the organization to fill this gap.
- Regarding the average establishment rating of 2.31, knowledge audit is another important factor in the KM success receiving little attention in such organizations. Knowledge design and layout is useless without auditing of the existing knowledge. Knowledge audit is to ensure that the right information is delivered to the right people at the right time and form.



5. CONCLUSION

We measured the perceived importance and practical establishment of five factors affecting successful establishment of knowledge management (KM) in banking informatics corporations in Iran based on Barney model. As the data analysis showed, the intended banking organization was aware of the relative importance of knowledge management but was not ready for establishment of knowledge management. The factors were important for a successful knowledge management because they acted as a checklist for establishment of knowledge management in such organizations. These organizations needed to think about more effective factors and pay attention to the way of prioritizing each factor and its activities before establishment of knowledge management.

Managers of this organization were aware of the importance of knowledge management efforts in maintaining a competitive advantage in today's market, but these factors have gained little success in terms of establishment. Some factors like organizational structure and strategy were somewhat implemented but other factors such as knowledge team, knowledge audit and knowledge map are not executed; maybe the knowledge management concept is not completely perceived yet and the organizations have problems in its establishment. Considering that provision of these factors before KM establishment is very important, knowledge management efforts should be focused on the factors. Without a good plan for these five factors, there will be no success in establishing them.

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Author' biography with Photo



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