# Identification and Prioritization the Critical Success Factors of Knowledge Management in IAU of Tabriz (Iran)

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**Abstract:** This study aimed to identify and prioritize the Critical Success Factors of knowledge management in Islamic Azad University of Tabriz in the year 2012, taking into CSF: organizational culture, organizational structure, human resource management, information technology infrastructure, knowledge strategy and leadership, training of human resources and studies have been done on them. Using statistical tests indicate a significant impact of all factors on KM. Sample population was all 468 university faculty members. Also estimating the contribution of each factor in predicting KM, one of the most powerful contributions is organizational structure (0.391) and other factors are organizational culture: 0.291, information technology infrastructure: 0.289, knowledge strategy and leadership: 0.248, training human Resources: 0.2 and human Resource Management: 0.21 respectively.

**Keywords:** knowledge Management, Critical Success Factors , Higher Education

## Introduction

Since 1970s and with the development of top technologies, especially in the field of communications and computing, the pattern for world economic growth changed dramatically.

Afterwards, since 1990s knowledge, as the most important property, replaced monetary and physical assets (Chen, & et. al., 2004). With the turn of the millennium rapid changes in technologies happened .In such circumstances, a competitive strategy requires a new type of organization that is able to have a qualitative knowledge. Therefore, the managers are expected to have a deep understanding of the organizational performances. They must also improve their organization's performance through investing on knowledge-based projects (Rahnavard & Mohammadi, 2009).

KM focuses on creating value which means managing the existing knowledge and converting it into useful knowledge in organizations and has two main parts: KM and increasing the ability to create new knowledge and innovation which the most important change in the new millennium is not using everyday growing knowledge but knowledge is used more and therefore becomes useless (Niazazari and Amoyie, 2007). KM is a field in which knowledge managers and the forces act at ideal time, knowledge is used for the organizational purposes, storage, and retrieval.

## Literature Review

The definition of the concept of KM presented by Petrish puts: KM is achieving the proper knowledge for the right people at the right time and place in a way that they can utilize the knowledge effectively to attain the organizational goals (American Center for Quality and Productivity, 1996). Snowden introduces KM as the optimal planning and active management of the intellectual capital .This knowledge can be the explicit knowledge present on human-built constructions or it can be in the form of implied knowledge which is available to individuals or groups (Zafaryan and et. al, 2008). Semen believes that KM is the intellectual designation of processes, tools and structures with the aim of increasing, renewal, sharing and improving the knowledge that can be found in each of the three elements of intellectual capital (structural), social and humanistic properties (Gupta and et. al, 2000).

KM is a process which helps organizations identify, choose, organize and publish the important information and skills that are regarded as the memory of organization and so these elements are usually organized in this manner (Karnamehhaggi and Akbari, 2004). Researches in the field of KM indicate that the factors expressed in these researches are whether very general or very detailed (Matusik and Hill, 1998). Besides, in some of these researches some components of KM cycle have been listed among the key factors of success showing a high overlap for the mentioned factors (Arazmcho and

Khonsari, 2009). Meanwhile, in most of the studies choosing the key factors has been done according to their frequency neglecting the original environmental conditions. It is just Holsapple and Joshi that have utilized Delphi method and a panel consisting of 31 researchers of KM field. They have categorized the factors of success to three groups: management, resources and environment (Ghanbarian & et. al, 2009). The impact of management subcategory includes coordination, control, measurement and leadership; the second one contains knowledge, individuals, materials and financial resources; and finally the last one includes competition, markets, time pressure, economic and governmental atmosphere (Holsapple and Joshi,2000).

According to Rockart the key factors of success include a limited number of areas of activity which will have a successful competitive performance (Rockart, 1979). In another definition of key factors for success Bruno and Leidecker mention that these factors include characteristics, conditions or variables which will have a considerable effect on the competitive position of the organization if they are managed properly (Bruno & Leidecker, 1984).

Pinto and Slevin define these factors as ones that improve the chance of implementing the projects considerably (Pinto & Slevin, 1987).

Skyrme and Amidon identified seven factors for implementing KM including strong commitment to business, architecture and perspective, knowledge leadership, the culture of knowledge sharing and knowledge creation, continuous learning, infrastructure of developed technology, and the processes of organizational knowledge (Skyrme & Amidon, 1997).

Davenport and his colleagues in their study to clarify the factors of success in KM projects analysed 31 projects in 24 different companies identifying 9 key factors including: the importance of industry, common language and goal, standard and flexible structure of knowledge, multiple channels for knowledge transition, knowledge-friendly culture, organizational and technical infrastructure, incentive measures, and the support of senior management (Davenport & et. al, 1998).

Chourides and his colleagues identified various key factors for successful implementation of KM in functional sector of the organization including: strategy, human resources management, information technology, marketing, and quality (Chourides & et. al, 2003).

The findings of Monavaryan's (2005) research show that factors like organizational culture, information technology, human resources and education influence the KM. Moreover, cultural element is the most important factor for administering KM in organizations.

The research of Doaei tries to apply Fuzzy approach to KM in academic institutes. It makes an effort to analyze the slash between the expectations and conceptions of the staff and faculty members of state and Azad universities of Yazd and Isfahan. The findings show that state universities are better than Azad universities in all aspects of KM. The most obvious slash in Azad universities is related to knowledge creation and the learning organization (Doaei & Dehgani, 2010).

Gholipour et.al (2009) in a research entitled" measuring maturity level of KM in organizations through a developed model of KM maturity" investigated the verified indexes and also at developed model of KM maturity level. Data analysis was done through paired sample, Freidman tests.

The results show that strategy indexes and processes are of same rankings but the other 6 factors indexes namely (leadership, culture, organizational structure, IT, human resources, and evaluation)do

not have same rankings and their priority should be considered when improving . Also, existing factors at second and forth level of the study's developed maturity model have same rankings but the 3 factors at the third level (IT with first priority, process with second priority and organizational structure with third priority) do not have the same ranking and their priority must be attend.

Higher educational system is responsible for some important tasks in the economic, social, political, cultural and educational development of societies (Scott, 1981). Without designing efficient systems it is not possible to improve the regional rank of the country. University and educational centers as the knowledge-based organizations must take the key role in this process (Chourides & et.al, 2003). These organizations and knowledge-based centers must be the sources of creating knowledge. Universities are one the major social firms which have got a large amount of intellectual capital.

Therefore, they must take the leadership in settling KM; they must also try to focus on teaching, creating and distributing the knowledge (Nyazazary & Amuyi, 2007).

According to Nanonka Takuchi and Davenport, nowadays the main challenge in universities is the gap between traditional, classical structure of the organization and the structure of information age. Knowledge-oriented universities need new structure to be able to adapt themselves to the knowledgeable societies; they need multifaceted communication channels to help them in decision making. The new structure of university provides communication among the members of academic staff in educational

groups and faculties as well as the administrative employees and students so that they could learn and grow (Rahimi, 2007).

**Materials and Methods**

The sample of this study were educational staffs of all faculty members of Tabriz (Iran) IAU at 2012 with a total number of 468 faculty member were employed in this university. Morgan table was used to determine sample size. The sample size was 214 according to Morgan table. For choosing the sample stratified random sampling method was used .For the measurement of CSF researcher questionnaire was used based on previous studies. The items of

questionnaire were 70 questions with 5 degrees of the Likert scale.

**Results**

Organizational culture on the implementation of KM in IAU of Tabriz is effective.

According to Levene's test results (Table 1), no significant differences between the two groups. The results of t-test assuming equal variances between the two groups is parsed . As can be observed T value equal to 11.07 and its significance level equal to 0.000. Therefore can be said with confidence more than 95% of organizational culture on the implementation of KM in IAU of Tabriz is effective.

**Table 1: T-test results for the variable of organizational culture.**

| T- Test | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Variable | | Levene's Test | | T | df | Sig | Mean Difference | Standard deviation Difference | 95% Confidence Interval of the Difference | |
| | | F | Sig | | | | | | Lower | Upper |
| organizational culture | equal variance | 8.97 | .23 | 11.07 | 212 | 0.000 | 18.86 | 1.70 | 15.50 | 22.22 |
| | unequal variance | | | 8.83 | 85.7 | 0.000 | 18.86 | 2.13 | 14.61 | 23.11 |

Organizational structure on the implementation of KM in IAU of Tabriz is effective.

The Levene's test results table (2) differences between the two groups was not significant. So assuming equal variance t test results

are interpreted by the two groups. As can be observed T value equal to 7.22 and its significance level equal to 0.000. Therefore with confidence more than 95% of the organizational structure on the implementation of KM in IAU of Tabriz is effective.

**Table 2: T-test results for the variable structure**

| T- Test | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Variable | | Levene's Test | | T | df | Sig | Mean Difference | Standard deviation Difference | 95% Confidence Interval of the Difference | |
| | | F | Sig | | | | | | Lower | Upper |
| Organizational structure | equal variances | 19.72 | 0.061 | 7.22 | 212 | 0.000 | 18.22 | 2.60 | 13.15 | 23.43 |
| | unequal variances | | | 5.32 | 77.92 | 0.000 | 18.22 | 3.43 | 11.45 | 25.13 |

Human resource management on the implementation of KM in IAU of Tabriz is effective.

The Levene's test results (Table 3), no significant differences between the two groups. The results of t-test assuming equal variances between the

two groups is parsed. As observed t value is equal to 13.98 and its significance level equal to 0.000. Therefore with certainty more than 95 percent of human resource management on the implementation of KM in IAU of Tabriz is effective.

**Table 3: T-test results for a range of human resource management**

| Variable | | Levene's test | | T | df | Sig | Mean Difference | Standard deviation Difference | 95% Confidence Interval of the Difference | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig | | | | | | Lower | Upper |
| Human resource management | equal variances | 1.37 | .24 | 13.98 | 212 | 0.000 | 14.70 | 1.05 | 12.56 | 16.80 |
| | unequal variances | | | 13.27 | 135.36 | 0.000 | 14.72 | 2.10 | 12.53 | 16.92 |

Information technology infrastructure on implementing KM in IAU of Tabriz is effective.

The Levene's test results (Table 4), the variance between the two groups was not significant. The results of t-test assuming equal variances between the two groups is parsed. As observed t value is equal to 14.4 and its significance level equal to 0.000. Therefore with certainty more than 95 percent of the information technology infrastructure on implementing KM in IAU of Tabriz is effective.

**Table 4: T-test results for a range of IT infrastructure.**

| Variable | | Levene's test | | T | df | Sig | Mean Difference | Standard deviation Difference | 95% Confidence Interval of the Difference | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig | | | | | | Lower | Upper |
| IT infrastructure | equal variances | 0.90 | .34 | 14.4 | 212 | 0.000 | 20.76 | 1.47 | 17.85 | 23.68 |
| | unequal variances | | | 14.32 | 174.9 | 0.000 | 20.76 | 1.45 | 17.90 | 23.63 |

Strategy and leadership on implementing KM in IAU of Tabriz is effective.

The Levene's test results table (5), differences between the two groups was not significant. The results of t-test assuming equal variances between the two groups is parsed. As can be observed t value equal to 6.13 and the means - do it equal to 0.000. So reject the null hypothesis and say with 95 percent certainty over strategy and leadership on implementing KM in IAU of Tabriz is effective.

**Table 5: T-test results for the variables of strategy and leadership.**

| Variable | | Levene's test | | T | df | Sig | Mean Difference | Standard deviation Difference | 95% Confidence Interval of the Difference | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig | | | | | | Lower | Upper |
| Knowledge strategy and leadership | equal variances | 7.34 | .065 | 6.13 | 212 | 0.000 | 9.95 | 1.62 | 6.75 | 13.15 |
| | unequal variances | | | 5.75 | 103.5 | 0.000 | 9.95 | 1.72 | 6.52 | 13.38 |

Training of human resources on the implementation of KM in IAU of Tabriz is effective.

The Levene's test results table (6), no significant differences between the two groups. The results of t-test assuming equal variances between the two groups is parsed . As can be observed t value equal to 19.32 and its significance level equal to 0.000 . Therefore with confidence more than 95% of the training on the implementation of KM in IAU of Tabriz is effective.

**Table 6: T-test results for the Training of human resources.**

| | | | | | | | | 95% Confidence Interval of the Difference | |
|---|---|---|---|---|---|---|---|---|---|
| Variable | | Levene's test | | T | df | Sig | Mean Difference | Standard deviation Difference | |
| | | F | Sig | | | | | | Lower | Upper |
| Training of human resources | equal variances | .499 | .481 | 19.32 | 212 | 0.000 | 8.19 | 0.428 | 7.34 | 9.03 |
| | unequal variances | | | 19.15 | 211.9 | 0.000 | 8.19 | 0.427 | 7.34 | 9.03 |

Overall factors ( CSF ) of organizational culture, organizational structure, human resource management, information technology infrastructure, knowledge strategy and leadership, training of human resources affecting on KM implementation in IAU of Tabriz.

The Levene's test results table (7), no significant differences between the two groups. The results of t-test assuming equal variances between the two groups is parsed. As observed t value is equal to 15.75 and its significance level equal to 0.000 . So reject the null hypothesis and more than 95 percent can be said CSF of KM in the implementation of KM in IAU of Tabriz is effective.

**Table 7: T-test results for CSF of KM.**

| | | | | | | | | 95% Confidence Interval of the Difference | |
|---|---|---|---|---|---|---|---|---|---|
| Variable | | Levene's test | | t | df | Sig | Mean Difference | Standard deviation Difference | |
| | | F | Sig | | | | | | Lower | Upper |
| CSF | equal variances | 14.66 | 0.23 | 15.75 | 212 | 0.000 | 76.47 | 4.85 | 66.91 | 86.04 |
| | unequal variances | | | 14.54 | 122.9 | 0.000 | 76.47 | 5.25 | 66.06 | 86.89 |

The priority and contribution of each of the CSF on the implementation of KM in IAU of Tabriz is different.

According to Table (8): can be seen that each of the CSF of KM lower than 0.05 is (0.05> Sig), the unique contribution of each of the significant variables have to predict the criterion variables. Considering that the beta coefficient of component structure has the highest value (0.391), the strongest unique contribution to explaining the criterion variable of provides. And has the first priority and the priority variables, organizational culture (0.291), infrastructure (0.289), Strategy and Leadership (248/0), education (0.210) and human resource management (0.205) to explain the criterion variable.

**Table 8: Multiple regression analysis for CSF of KM .**

| Variable | T | B | Sig | Correlation coefficient | Coefficient of determination |
|---|---|---|---|---|---|
| Organizational structure | 10.12 | 0.391 | 0.000 | 0.348 | 12 |
| Organizational culture | 3.182 | 0.291 | 0.000 | 0.257 | 6 |
| IT infrastructure | 4.228 | 0.289 | 0.022 | 0.238 | 5 |
| Strategy and leadership | 2.250 | 0.248 | 0.030 | 0.208 | 4 |
| Training of human resources | 2.081 | 0.210 | 0.001 | 0.167 | 2 |
| Human resource management | 0.350 | 0.205 | 0.042 | 0.071 | 0.6 |

**Conclusions**

Successful implementation of KM in uiversities regardless of organizational culture is virtually impossible. Because of the "heart" of knowledge is practically impossible. Because culture is considered as the heart of a knowledge-based university. Cultural organization also needs to properly share knowledge. Motivation, sense of belonging, trust and respect for the prior subscription, must occur before development and use of knowledge.

Organizational structure is important in implementing KM at universities. The structural requirements for effective management of knowledge in organizations include: Reducing borders: the need to escape from the constraints boundaries separating axis and creating knowledge and common intellectual framework by which we can create a corporate cultural identity and build relationships based on trust.

Effective management requires knowledge of current knowledge not cumulativating it. Organization's current psychological knowledge allows students to have a dramatic impact on performance. Informal relationships enhance internal and external networks for facilitating knowledge flows.

Communication: effective KM largely depends on managing implicit knowledge. Informal relationships increase interpersonal interactions, para-responsibility, within the organization and the most important method of creating and sharing tacit knowledge is coding and innovation.

So no organizations can have a non-flexible structure but a dynamic process created various processes by the phenomenon that can be re-expressed. This requirement is met by the informal relationships.

Flexibility: the outputs can be generated based on the knowledge of the structure which should be flexible, not absolute; Students should organize their time and manage the knowledge and gather toghether units and individuals to meet the needs of individuals and organizations.

So organizations can't have a non-flexible structure however a dynamic process created by various processes and can be re-expressed. This requirement is met by the informal relationships. IT infrastructure is effective for the implementation of KM in universities. Introducing organizational rules and procedures for the introduction of standard, updating repositories of information technology. This requirement is met by the informal relationships.

IT infrastructure is effective for the implementation of KM. Introducing organizational rules and standard procedures for updating repositories of information technology, application of web professionals to manage these tools, and the development of organizational culture for knowledge sharing between employees, and transmission can be effective in preventing possible problems.

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