The Effect of Emotional Intelligence on Four Dimensions of knowledge Conversion in Selected Industrial Organizational

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Abstract
There is a relation between Emotional intelligence, knowledge management and culture of each organization. In this research the impact of organizational cultures have been studied. The methodology has been used for this research was descriptive. According to type and size of their projects, organizational culture was estimated as bureaucratic in seven organizations. The Quinn organizational culture questionnaire along with several interviews with managers verified the bureaucratic culture in four organizations. The applied tool for data collection was a questionnaire consisting of 33 questions. Moreover, the sample size was 344 employees in four organizations. To investigate the reliability of the questionnaire the Cronbach’s alpha value has been measured and the validity has been confirmed by the field. Moreover, according to Goleman’s emotional intelligence model the five factors have been measured in the selected organizations. Also the knowledge management's Model presented by Nonaka and Takeuchi has been used by considering four presented elements.

The results demonstrated that in the bureaucratic cultures, externalization and combination are in a proper status. Analyzing the research data depicted the relationship between different dimensions of emotional intelligence and the ability of individuals in different aspects of converting the knowledge. For example Social skill and empathy ability of individuals have a positive and significant relationship with socialization.

Keywords: emotional intelligence, socialization, externalization, combination and internalization

1. Introduction
Development of cutting edge technologies changes the economy and it has boosted the importance of knowledge every day (Chattopadhyay, 2007). These variations have caused The sudden development of information technology has boosted the role of knowledge through changing the economy (Tseng, 2009 & Ruiz et al, 2006). These variations have caused that the traditional bases of economic power are no longer considered as the fundamental factors for businesses, and knowledge became the competitive advantage of organizations (Hoffman, 2006). As Drucker stated, knowledge can be replaced with equipment, capital, machinery, and manpower and has played a role as the most important element in many industries (Drucker, 2001). In other words, the broad developments of information technology in recent years have led to formation of the global economic system and preparation of active players for dynamic industries (Chang, 2005). These changes have directed the industries to employ different management models, such as e-commerce (EC), enterprise resource planning (ERP), customer relationship management (CRM) and knowledge management (KM) to comply with enormous business changes (Basu, 2003). As an example, a large number of corporations are now making use of knowledge management for cost reduction, enhancing the customer services, improve decision making approaches and encourage the innovation and creativity between personnel (Hansen, 2001 & Skyrme, 1998). It should be taken into consideration that creating and developing an organizational culture with thorough concentration on producing, sharing, and apply of knowledge has a pivotal role success of knowledge management systems (DeTiene, 2001, Ford, 2003 & Ooi, 2009). If an organization has not established an
appropriate culture for knowledge sharing, this process would become very difficult and limited (Simonin, 1999 & Pauleen, 2002). Organizational structures are of a remarkable effect on knowledge management activities (Walczak, 2005). In this area, widespread discussions added to many scientific papers have been published on the organizational culture influence on knowledge management activities (Hislop, 2009). Therefore, before implementing a new technology in the organization, understanding these technologies and integrating them into the organization’s human and cultural aspects is an essential task to ensure the successful KM programs. Eisner believed that almost all the strategic activities are affected by organizational culture and vision (Fliaster, 2004). Although numerous researches have considered the organizational culture as an important factor for successful knowledge management (Apshvalka, 2005), very little research has been accomplished on the effect of this culture on knowledge transfer. One of the main goals of this research is to address the effect of bureaucratic organizational culture on four elements of transforming the knowledge. There is a consensus among academics that knowledge is laid in the individuals’ mind. In this regard, Davenport and Prusak (Davenport, 1998) wrote that knowledge exists among people, and is a part of human complexity. From that perspective, if people manage their knowledge appropriately and share it with other people inside the organization, they can give more benefit to themselves, other persons, and the organization. On the other side, Alpushka stated that since the emphasis of organizational knowledge is mainly on workers, qualitative management of this knowledge is of extreme importance. Added to that, it can be claimed that no one can manage this knowledge as effective as its owner (Apshvalika, 2004). Overall, while addressing the relationship between knowledge management, and, human characteristics in one hand and organizational culture on the other hand, This research has tried to the assess effect of bureaucratic culture on knowledge conversion and to evaluate the relationship between intelligence and knowledge conversion dimensions according to the mentioned models.

1.1 Emotional Intelligence

Salovey and Mayer define emotional intelligence the ability of monitoring the feelings in addition to capabilities of oneself as well as other people and also distinguish them during the tasks. Emotional intelligence is typically used to conduct personal thoughts and behaviors among people. After such explanations, both writers provided another definition on emotional intelligence, which is quiet widely accepted (Salovey, 1990). In the other word, emotional intelligence understanding the feelings, to manage them for easier and more efficient thinking, and to adjust feelings for personal promotion (Mayer, 1997). In general level, it is the recognition of feelings in the first place and to manage them accordingly (Goleman, 2001). In another definition by Mayer, emotional intelligence is defined as the capability for an accurate argument on feelings and to use such emotional feelings and awareness to promote thinking. Briefly, it can be said that emotional intelligence helps us to recognize our and others’ emotional moods and then, use it to realize our feelings and progress our behaviors and actions in practice.

Individuals with higher emotional intelligence are better in building interpersonal relations and acquiring others’ supports. In the book on emotional intelligence, Goleman argued that the importance of feelings in human life is more than its rational part (Goleman, 1995 & Koubova, 2010). In this paper, the The questionnaire has been designed according to Goleman model, he claims the three aspects of emotional intelligence are linked to self-management and other two which are empathy and social skills are related to creating relationship ability.

Table 1 depicts the model.

<table>
<thead>
<tr>
<th>Dimension index</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-motivation</td>
<td>Commitment: dedication to the group’s or organization’s objectives</td>
</tr>
<tr>
<td></td>
<td>Optimism: perseverance to achieve the goals rather than complaining for problems</td>
</tr>
<tr>
<td></td>
<td>Initiation: readiness to exploit opportunities</td>
</tr>
<tr>
<td></td>
<td>Growth orientation: trying to progress or achieve superior standards</td>
</tr>
<tr>
<td>Self-management</td>
<td>Adaptation: flexibility to accept the change and then maintain it</td>
</tr>
<tr>
<td></td>
<td>Dutifulness: accept the responsibility by considering the reliability of performance conserving honesty</td>
</tr>
<tr>
<td></td>
<td>Reliability:Conserving truthfulness criteria</td>
</tr>
</tbody>
</table>
Self-control: realizing one's awareness recognizing their impacts

Self-awareness
- Emotional awareness: understanding one's emotions
- Self-assurance: feeling own aptitude, worthiness, and capability
- Self-Assessment: identifying improvement areas, strengths, and restrictions,

Social skill
- Cooperation: team work to achieve common goals
- Conflict management: resolution of issues through conversation
- Influence: applying influential techniques
- Communication: effective listening and acceptance message
- Leadership: boosting morale and guiding the group members

Empathy
- Understanding others: realizing emotions of other people, their opinion and recognizing their influence on key decisions
- Variety: Employing individuals by considering variety in cultures and ethnic groups to develop the opportunities.
- Service orientation: forecasting, recognizing and fulfillment needs of others.

1.2 Knowledge Conversion

Nonaka asserted that knowledge is convertible. He postulated knowledge conversion, called SECI, as the four stages of conversion, Nonaka and his colleagues believe that Knowledge can be seen in the organizations in two types that are implicit and explicit.[34]. They are explained that implicit and explicit of knowledge are converted into each other through a helical process. Four main stages are as follows:

1. Socialization is transforming tacit knowledge to new tacit knowledge, which is constructed through establishment of relations between members and as a result, the implicit knowledge is enriched. Having common culture and the ability of perform tasks in a group is necessary to conduct effectively (1995). Empathy knowledge also defined as the result of socialization process (Davenport, 1998).

2. Internalization This is the process of expressing the explicit knowledge in the format of tacit knowledge. The result of this step is new implicit knowledge from current explicit knowledge.

3. Combination is the process of transforming explicit knowledge into more complex sets of explicit knowledge. This will be when the conversion is done between explicit knowledge and implicit knowledge.

4. Externalization is the process of expressing tacit knowledge into explicit knowledge. Therefore, the acquired new knowledge will use for everyone. Through this process the tacit knowledge in people's minds, which could not be articulated and perceived collectively, is converted as a transformable knowledge for people (2011).

Organizational culture is defined as an important factor in shaping organizational growth trends (Jernigan and Slokum, 2007), integrating organizational capabilities (Day, 1994), making solutions to face problems (Shine, 1984), and overcoming barriers or paving the ground for achieving organizational aims (Denison, 1990). Ferraro defines organizational culture as what people as community members think or do (Ferraro, 1998). Organizational culture is considered as the most important social behavior criterion and actually shows the personality of an organization (Ribiere, 2003). It conducts employees in building relations and in their daily behaviors. As each person has his/her own unique traits, organizations are also recognized by their unique attributes (Chang, 2005). This fact would indicate the unique culture of organizations. An organizational culture has a strong impact on organizational structure, trends, and the process of monitoring and controlling. Organizational culture typically consists of confirmed laws, behavioral principles and methods, which have been shaped by people's general beliefs during time (Bailey, 1995). Quinn (1999) introduced four types of culture: tribal, adhocracy, bureaucracy and market (Cameron, 1999). In bureaucratic culture, organizational workplace and structure are formal and they monitor the members’ actions. It is worth to note that these four organizational cultures treat internal information in different manners (Martinsons et al, 2007).
2. Method

Based on our investigations, the surveyed organizations enjoy widespread knowledge and experiences from their experts in many fields such as power, mechanics, management, so on. They are generally involved in numerous and diverse projects. In these four organizations, a huge volume of knowledge is generated due to the breadth and diversity of their operations, a part of which is recorded in the format of evidences, documents, and reports. Another part of such knowledge is intangible in the format of hidden experiences, relations, and skills in the minds of people and there is a low chance in reutilization or transfer of such knowledge.

Lack of sharing and also reutilization of the generated knowledge indicates the lack of productivity in the organization. Since intangible knowledge is hidden in the people’s minds, leaving the company by those knowledge (for any reason) would lead to losing such knowledge. In the surveyed organizations, many knowledge workers were about to be retired. A huge volume of knowledge is regularly generated, but the dominant culture of such organizations does not support the knowledge management activities. Hence, executing knowledge management systems with the aim to impact on identifying, generating, stocking, reviving, transferring and utilizing the knowledge appears to be necessary. Initially, 7 industrial organizations were selected to conduct the present study in bureaucratic organizations. The preliminary speculation was that they possess bureaucratic culture due to their sizes and projects. Then, Quinn organizational culture questionnaire was implemented in all seven organizations to confirm our speculation. According to the results gained from Quinn organizational culture questionnaire, the dominant organizational culture in four bureaucratic organizations was verified. As the next step, their managers and personnel were interviewed. Consequently, the type of the organizational culture was determined by the authors. A four–segment questionnaire, including demographic information, organizational culture, and emotional intelligence, and knowledge conversion questions was employed in the present study. The organizational culture questions had three choices, which distinguished the types of the organizational cultures. Emotional intelligence and knowledge conversion questions were selected by Liker five–item scale. The validity of the questionnaire was supported by elites while its reliability was computed by Cronbach’s alpha as 0.89, which is considered as a plausible figure. The respondents with common knowledge traits were selected. To the same reason, people holding academic degrees were chosen in all 4 organizations. A part of participants consisted of deputies / supervisors while another part consisted of managers, including HR managers and the knowledge management and R & D experts. Moreover, data collection was carried out in spring and summer 2013. Sample size was computed by Cochran’s formula and finally, 344 plausible questionnaires were returned. In each of the four organizations, 73%, 81%, 67% and 77% of the employees selected bureaucratic culture as their dominant organizational culture in their organizations, respectively. Concerning the two other parts of the questionnaire, In order to study the relationship between emotional intelligence and knowledge conversion correlation test were used to compare four aspects of knowledge conversion in bureaucratic culture through the average test. The following is a conceptual model. The questionnaire was developed with regard to the Quinn’s four dimensions of culture. This questionnaire with 3 questions was designed based on the individuals’ agreement with each of the four options through which the kind of organizational culture can be detected by corresponding the selected answer. In addition, its internal consistency was 0.77 based on alpha coefficients

The Emotional intelligence questionnaire that has been used was proposed by H. Wizings. It has 25 items, which determine individuals’ emotional intelligence. Each person can gain a score from 25 to 125. The scores between 50 and 100 depict the medium emotional intelligence and the low emotional intelligence will be with scores less than 50 represent. According to the results, 65% of the participants were in medium range, 4% were in low range and 31% were in high range of emotional intelligence. The Knowledge conversion of questionnaire includes eight questions according to four elements of Knowledge transformation the options were "totally disagree, disagree, no idea, agree and totally agree". Correlation among the elements was determined which was as follows: 0.522, 0.714, 0.686, 0.510, 0.619 and 0.597. Moreover internal consistency was 0.829 according to the alpha [37]. Internal reliability of the questionnaire in this test calculated based on alpha coefficient that was 0.83, 0.73, 0.77 and 0.83 for socialization, externalization, combination, and internalization aspects.
3. Results

3.1 Analysis of Mental Information

Table 2 illustrates the demographic information of participants.

Table 2. The demographic status of respondents

<table>
<thead>
<tr>
<th>Index</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>(51%) man, (49%) woman</td>
</tr>
<tr>
<td>Education</td>
<td>(1%) associate, (51%) bachelor, (40%) master, and (8%) doctorate degrees</td>
</tr>
<tr>
<td>Work experience</td>
<td>(50%) less than five years, (20%) between 5-10 years, (25%) between 10-15 years, (5%) more than 15 years</td>
</tr>
</tbody>
</table>

3.2 Kolmogorov–Smirnov test

According to Kolmogorov–Smirnov test, Normality of all variables was confirmed.

Table 3. Kolmogorov–Smirnov test

<table>
<thead>
<tr>
<th>Index</th>
<th>N</th>
<th>Sig</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socialization</td>
<td>344</td>
<td>0.046</td>
<td>0.79</td>
</tr>
<tr>
<td>Externalization</td>
<td>344</td>
<td>0.08</td>
<td>0.73</td>
</tr>
<tr>
<td>Combination</td>
<td>344</td>
<td>0.049</td>
<td>0.95</td>
</tr>
<tr>
<td>Internalization</td>
<td>344</td>
<td>0.034</td>
<td>0.65</td>
</tr>
<tr>
<td>Self-motivation</td>
<td>344</td>
<td>0.01</td>
<td>0.70</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>344</td>
<td>0.09</td>
<td>0.50</td>
</tr>
<tr>
<td>Self-management</td>
<td>344</td>
<td>0.00</td>
<td>0.76</td>
</tr>
<tr>
<td>Empathy</td>
<td>344</td>
<td>0.04</td>
<td>0.68</td>
</tr>
<tr>
<td>social skill</td>
<td>344</td>
<td>0.23</td>
<td>0.72</td>
</tr>
</tbody>
</table>

3.3 Mean Test

According to the results of the mean test presented in Table 4, it can be seen that the mean of the four elements of knowledge transformation is 3.6326. The status of socialization and internalization aspects is in a way that the achieved mean for these two elements is in the range of 3.5 to 4.5 with 95% probability. It shows that these two aspects have a proper status in the adhocracy culture. Regarding two other aspects, i.e. externalization and combination, considering the result, although they are not positioned in a proper status, their mean is more than 3. Additionally, it should be mentioned that externalization has a more proper condition compared with the combination. The results are depicted in Table 4.
Table 4. Mean Test

<table>
<thead>
<tr>
<th>Knowledge transformation</th>
<th>Socialization</th>
<th>Externalization</th>
<th>Combination</th>
<th>Internalization</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.9625</td>
<td>3.9008</td>
<td>4.7784</td>
<td>3.0946</td>
<td>3.3349</td>
</tr>
<tr>
<td>95% Confidence</td>
<td>2.2161</td>
<td>3.1529</td>
<td>3.5249</td>
<td>2.7548</td>
<td></td>
</tr>
</tbody>
</table>

3.4 Correlation Test

The results have been depicted in Table 5, accordingly level of academic knowledge and years of work experience have a significant impact on emotional intelligence and knowledge transformation. Hence, there is a positive relationship between education, knowledge transformation, and emotional intelligence. This means that the people with higher level of academic knowledge, they will be able to transform the knowledge more successfully. The scores of individuals' emotional intelligence are increased for higher education levels. Similar results were seen about the individuals' work experience. It is noted that the achieved significance level confirms the above results. No relationship was identified between other demographic information, knowledge transformation, and emotional intelligence.

Having studied on Table 6, can be seen that there is a positive correlation between "socialization" and four dimensions of "self-awareness", "self-management", "empathy", and "social skill". This relationship is accepted considering this fact that the significance level is zero. The more capabilities the individuals have in these factors, their ability in "socialization" will be boosted. According to the outcomes, there is a positive and significant correlation between "sympathy" and "social skill" and the relation is stronger in the "sympathy". Additionally, the combination of factors has a positive correlation with "self-motivation".

4. Discussion

It should be stated about the role of organizational culture in knowledge management that knowledge management in organizations will become limited, if the organization does not acquire appropriate culture for knowledge sharing. On the other hand, knowledge transformation is a social process in which the people with different level of knowledge are involved. Such a transformation could lead to knowledge growth at both quantitative and qualitative dimensions. In addition, knowledge is not a physical material, but an intangible asset. It is because of its psychological characteristics. Researchers have greatly emphasized on the factors related to human nature and accentuated that sharing the knowledge needs to be considered as a human activity. As a result, this activity is of all the strengths and weaknesses of any human performance. Consistent with these information,
it can be conjectured that human characteristics play a pivotal role in social interactions for knowledge creation. In investigating the effect of demographic factors in this regard, it was found that the people with high emotional intelligence are in high positions in the organization. The very important reason can be this fact that emotional intelligence is an effective factor in career advancement and success. It was also found that the more the work experience is, the higher the emotional intelligence will be and in other words, the more the ability to control their effects will be. With regard to knowledge transformation, it was comprehended that the individuals in higher positions in organizations are of more capabilities. In this regard, it was found out that the higher the work experience is, the higher the higher the success in knowledge transformation will be. With respect to the role of organizational culture, it can be seen that at low averages of socialization, the internalization is evident in the bureaucratic culture. Since socialization is generally performed through close connections in the workplace, any weakness in this factor is likely due to this fact that the bureaucratic organization is faced with fundamental problems in encouraging employees to express and share their personal feelings and experiences. On the other hand, the dry and inflexible climate associated with this organizational culture has caused to another problem where employees perform poorly in learning new skills through observation, imitation, and practice. The two other dimensions of knowledge transformation (including composition and externalization) had higher averages, indicating the appropriate status of these two dimensions, in comparison with internalization and socialization. The reason might relate to this matter that the documentation rules in the bureaucratic organizations are relatively tight and acceptance of many projects is related to delivery of the high volume of documents. Utilization of the information technology platform for circulation of knowledge, especially in the documentation process is a proof for the mentioned point. The achieved results on the influence of organizational bureaucratic culture on knowledge conversion process are compatible with the findings by Tseng. These results do not match the findings by Jennex and Wilm et al. They had concluded that organizational culture and structure impose no barrier for knowledge sharing and rather, they are the methods of knowledge sharing that should be particularly taken into consideration. Additionally, the findings do not match the Chim’s research. He proved the negative impact of the organizations’ bureaucratic culture on knowledge sharing. In organizational bureaucratic culture, the majority of employees think that knowledge management activities are merely related to managers and hence, they have no responsibility in this regard. Waleczak found that organizational structures have a remarkable impact on knowledge management activities. Regarding the relationship between emotional intelligence and the dimensions of knowledge transformation, it can be noted that there is a positive correlation among socialization, empathy and social skills. This correlation is reasonable, because socialization is made by the close relationship between two individuals, and therefore, this dimension may become even stronger if both sides are of more abilities to work as a team. In fact, team working is one of the characteristics of the social skills that leads to the ability to communicate with others and understand their feelings. Externalization is another dimension of knowledge transformation, which is of positive correlation with the following three dimensions: self-awareness, empathy and social skills. The reasons for this positive correlation can be expressed in this way that externalization is the process of transforming implicit knowledge into explicit knowledge, and then, it requires expressing implicit knowledge in an understandable way for everyone. As a result, it needs the ability to correct the communications with others. The ability to communicate with others, influence on others, persuade them, and develop effective relationships with others are the specifications of empathy and social skills. In addition, self-awareness directs people to understand their own emotions, help others express their feelings in an appropriate and constructive way, and consequently help themselves to establish effective communications. Overall, based on the mentioned reasons, they can help people to be successful in transferring their implicit knowledge through expressing their ideas in the community. The positive relationship between composition, and self-motivation and self-management can be stated in the way that people with self-motivation are constantly prowling towards progress and they are always prepared to make use of the opportunities. On the other side, persons with self-management are able to manage their emotions, are flexible in facing changes. Such properties have caused their success in the “composition”. Self-motivation features also lead to a positive correlation between this dimension and internalization. Despite the theoretical evidence and arguments about the relationship between knowledge transformation, emotional intelligence, and organizational culture, there is no major study in this regard. In this study, the relationship between the five dimensions of emotional intelligence (self-awareness, self-motivation, empathy, social skills) and four dimensions of knowledge transformation (socialization, externalization, internalization and composition) in knowledge management were evaluated by using the statistical methods. Investigations showed that the higher the abilities in empathy and social skills are, the higher the abilities in transforming implicit knowledge will be, and this ability has emerged in both externalization and socialization. Self-motivation as a factor indicating the persons’ interest in development and use of opportunities
has shown its positive effect on both composition and internalization. The mean test also confirmed that the status of composition and externalization was better than internalization and socialization in bureaucratic cultures, and is also better in both internal and external dimensions of the combination and socialization. It should be noted that the mean obtained for both composition and externalization is higher than the two other dimensions. Concerning the dominant culture in the surveyed organizations, their managers are recommended by the authors of this paper to remove the knowledge management cultural barriers through holding constant workshops, establishing elites’ associations, acknowledging knowledge management experts, organizing brainstorming sessions, building the culture to record the knowledge into software systems on daily or weekly basis, and publishing knowledge management journals by their personnel. With regards to the influence of emotional intelligence on knowledge management activities, the managers are highly recommended to respect the employees’ feelings, give importance to non-verbal communications, listen to employees’ suggestions, and explain the importance and role of emotional intelligence in employees’ life success through consistently organizing relevant workshops and directing employees to improve such psychological components. Future research in this field can study this subject in the organizations with different behaviors and attitudes, and can attend the relationship between other types of organizational cultures with the dimensions of knowledge transformation and emotional intelligence.

References


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