Evaluation of Relationship between Knowledge Management and Human Resources Empowerment

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ABSTRACT

The present study aims to practically collect descriptive information using Delphi survey method to investigate the significant lack of relationship among minor hypotheses as well. The majors assess the relationship between knowledge management and empowerment of human resources. Statistical population consists of managers, assistants and teachers working in education organization, north Khorasan province including 150 managers, and 260 teachers of high school level. 199 people were selected through random sampling method and Cochran formula. In this study Kolmogorov-Smirnov Test used to determine the significance of relationship between knowledge management and empowering human resources, Pearson correlation coefficient to test hypotheses, and t-Student Test for determining existence or inexistence of defined variables for knowledge management and empowerment hypotheses. In addition in this article factor analysis based on new and advanced method of structural equations partial least squares (VPLS) applied to analyze coefficient and more important factors, estimate independent variables coefficient and determine effectiveness level of each independent variables on each other. Also, deciding on appropriateness of each item and its coefficient in explaining related index was considered in this method. Results show that prioritizing knowledge management aspects based on their rank include problem solving and transfer of experience, participation, creativity, and benchmarking. This prioritizing indicates that the focus of organizational activities for increasing knowledge management have to be allocated to what priorities and for how much.

Key words: empowerment, human resources, knowledge management, education organization

Introduction

One of considerable means for organization survival and reaching goals is human resources. Meanwhile, what improves evolution and ensure the organization survival is increasing information and knowledge of human resources for making them efficient. Enterprises use a few sources like money, materials, machines and human resources to achieve long –term and short –term goals. The fact is that if the organizations are deprived of creative persons, many opportunities will be lost as a result.

In global scale, training and development of human resources due to the organizational survival is crucial. In this domain, the education, managers and way of KM in organizations play a relatively key role in competition and achievement of firms.

This article tries in addition to presenting a brief definition of KM and empowerment; study the KM relationship with empowerment of human resources.

The empowerment literature lacks a set of well-accepted and consistently applied definitions of the important elements in the empowerment process.

Many studies define empowerment as intrinsic task motivation, perceptions and commitment, job structure, the transfer of power or authority and sharing of resources and information [1]. Empowerment is an on-going process, taking place in a dynamic environment, involving many elements that operate at different levels of analysis. Empowerment refers to psychological or motivational issues, structural changes, historical and cultural elements and attitudes and perceptions within their specific organization context. Employees empowerment consists of a set of systems, methods and activities used to develop people’s capabilities in order to improve and extend efficiency and growth of organization and human resource accelerate reaching organizational goals [2].

In this study, we try to evaluate the empowerment of human resources relation with organizational knowledge management. Following the review of related literature, the methodology applied is presented and then a case studied and finally we come to a conclusion.

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2. Review of related literature:

1-2: Theoretical background:

In post modern era, knowledge regarded as a valuable element that is achievable by new transferring tools. Advances in information technology and communications have challenged human communities in general and industrial community in specific to seek new devices and approaches fitting the permanent conditions. Thus, according to a mass of data and information volume, KM has found a special place in management literature and authorities’ concerns. KM as one of recent concepts and methodologies support training process through creation, simplification, acceleration and sharing knowledge and information to cause improvement in human resources quality.

Considering KM theories, they in some part are taken into consideration for adaptation with external environment (e.g., market, social and political conditions, and clients preferences) and in other part knowledge is considered as a product not a production resource. KM involves a knowledgeable and influential leader in the organization. Organizational culture in which “creativity and innovation” counted as a virtue can be one of leading elements in KM. A few of job scholars have classified 1980s as the quality movement (insisting on personnel’s intellectual power to get better results in quality), 1990s the reengineering decade (application of technology for improving job processes and reduction of expenditures), and finally 2000s as KM.

Library studies and applied articles show that scholars believe that empowering of human resources is the most on hand and sustainable competitive advantage of organizations.

Geisler [3] defines empowerment as power injection to the employees. Based on the post modern theories in management, empowerment could be regarded as a management style in which the managers and human resources have been invited to more engagement in professional processes through participation in decision making processes. Today’s managers do attempt to extract intellectual knowledge of organization’s members via KM and then share it among all people. In this state, the knowledge stored in system will change into a permanent useable resource and supply organization with sustainable competitive advantage [4].

Empowerment bears many different broad general and specific definitions that have made difficulties in coming to a well-defined concept. Empowerment refers to a variety of elements including intrinsic motivation, perception and commitment, gob structure, transfer of power or authority and sharing knowledge or information. One of effective factors on employee empowerment is information, knowledge and job skill. Therefore, now empowerments can be described as contribution of organization frontline employee in 4 elements of information, knowledge, reward and power [5].

In an investigation naming “study of organizational characteristics of successful companies”, a couple of factors have been proposed as the organizational factors of success. One of those elements is knowledgeable employees [6]. To mention one of the most outstanding effects of training in organizations as a result of it the employees will be changed from human resources into human capital. Using this worthy capital considered is up to human resources managers. KM as a process enables the company to make wealth out of knowledge or intellectual capital [7].

Easily, KM is a process within which the company generates value out of intellectual and knowledge-based capitals. Generating value often involves sharing knowledge among employees, organizational sectors or even other companies. As another definition, KM is the process of creating, obtaining, capturing, sharing and applying knowledge wherever it exists to enhance learning and performance in organizations [8]. KM is something more than a technology or product. It is a technology. However, IT counted as a very crucial element for KM luck.

IT facilitates KM though the IT itself can’t be regarded as KM. Indeed, the basis for KM success in the company is using IT factor [9]. KM systems are going to be expanded by use of a few of technologies rooted in IT. Considering mentioned points, to present an easy definition of KM, it acts to optimize IC application due to achieve organizational goals.

2-2: Importance of study:

The main need of current organizations is changing attitudes from traditional management to professional. In fact, today’s organizations seek luck in form of specialization. Before, transfer of experience and technique was only factor in organizations success though, at present assimilation and mastery of new knowledge in related profession counted as the main success factor. To mention some reasons why organizations profit from KM, recognition of inadequacies in organizational knowledge, higher extraction of human resources, more efficient and effective learning of staff, providing goods and services with more added value, staff and clients satisfaction, prevention of repeated mistakes, decrease of duplication, time saving, eliciting creativity and innovation motivation and improving competitive situation of organizations. Therefore, it’s possible now to say KM is a process during which firms engage in making wealth via knowledge or intellectual capital. The duties KM carries on its shoulder are counted as follows:

-developing personnel’s creativity for finding effective approaches in doing their everyday tasks.
ability of problem solving through systematic methods
- Benchmarking successful firms and transfer of knowledge and technology
- Increasing of staff members participation in organization management
- Transfer of experience from inside the organization and similar firms

According to mentioned duties, one of challenging problems of managers is lack of knowledge and specialty in doing every day inside the organization duties. KM is responsible for specialization need in a firm. A reason to carry this study out is finding approaches for increasing human resources empowerment through associated paths to KM.

2-3- Background:

The studies have been carried out on human resources empowerment in different countries so far have generalized 3 models or approaches in this area.

First, the rational approach that believes in sharing of power with subordinates, giving general authority, decentralization of decision-making process, establishment of participatory management and finally formation of quality circles.

Second, the motivational approach that considers power gaining as an inner state for gaining influence and control on other people and a basis for empowerment.

Last but not least is the incentive approach which presents a more theoretical perspective for empowerment through creation of intrinsic motivation by nurturing environment and making a sense of efficacy and higher energy.

Table 1: comparison of previous studies

<table>
<thead>
<tr>
<th>No.</th>
<th>Author</th>
<th>Year</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rinehart &amp; Short</td>
<td>1993</td>
<td>Effective factors</td>
</tr>
<tr>
<td>2</td>
<td>Wu &amp; Short</td>
<td>1996</td>
<td>Job commitment</td>
</tr>
<tr>
<td>3</td>
<td>Morris</td>
<td>1996</td>
<td>In-service training</td>
</tr>
<tr>
<td>4</td>
<td>Fox</td>
<td>1998</td>
<td>Teacher-learner model</td>
</tr>
<tr>
<td>5</td>
<td>Spreitzer</td>
<td>2000</td>
<td>Effective factors</td>
</tr>
<tr>
<td>6</td>
<td>Siegall and Gardner</td>
<td>2000</td>
<td>Psychological background</td>
</tr>
<tr>
<td>7</td>
<td>Savery and Luks</td>
<td>2001</td>
<td>Job satisfaction and stress level</td>
</tr>
<tr>
<td>8</td>
<td>Mohammadi</td>
<td>2001</td>
<td>Evaluation of strategies</td>
</tr>
<tr>
<td>9</td>
<td>Khatibi et al</td>
<td>2002</td>
<td>Educational-professional system</td>
</tr>
<tr>
<td>10</td>
<td>Buckingham and Klifton</td>
<td>2003</td>
<td>Identification of factors and background</td>
</tr>
<tr>
<td>11</td>
<td>Lampers</td>
<td>2004</td>
<td>Creativity</td>
</tr>
<tr>
<td>12</td>
<td>Mokhtari zadeh</td>
<td>2004</td>
<td>Factors analysis</td>
</tr>
<tr>
<td>13</td>
<td>Hor Abadi</td>
<td>2005</td>
<td>Organizational structure</td>
</tr>
</tbody>
</table>

Based on Downport et al, knowledge is a flexible and changeable combination of experiences, values, meaningful information and professionals' perceptions that provides a framework for evaluation and consistency of new information and experiences. In another definition these researchers consider knowledge as a dynamic combination of experiences, values, existing information and systematic opinions that creates a framework for assessment and using from new information and experiences. Knowledge produces and applied in scholar mind. Knowledge in organizations imagined not only in knowledge documents and resources but also in professional procedures of organization processes, activities and norms [23]. Proust et al defines knowledge as a total set of understandings and skills that people use to solve the problems.
Knowledge involves theories, every day rules and orders for action. Knowledge based on data and information but unlikely is always limited to people and constructed by them and show their common believes about causal relations [24]. Vasquez et al describe knowledge as processed information by human mind that consist of reactions, deductions, concepts and contexts. It also possesses characteristics such as difficulty in structuring, and perception, taking by machine, difficulty of transfer and being unobservable [25]. Buckley and Carter point that KM is a set of internal mechanisms for convergence within which key information gathered by persons is in charge of gathering and analyzing information and environmental fortunes has been integrated and applied [26]. Newman and Conard recognizes KM as a system through keeping and strengthening present and future values of knowledge properties of company seeks to develop performances of both people and firms. KM systems involve either people’s activities and machines or their products at the same time [27].

A number of KM definitions are based on technology and a few others on human resources. However, the recent definitions, both concepts have been included. In many of definitions, KM goals have been referred that meanwhile diversity of views is clear. Some definitions targeted inner company goals and some others environmental. Generally speaking, it looks that the author’s professional and academic tendencies, subject and background of the study, and research population (in cases a definition presented in a certain study) were effective in author’s theoretical approach.

3-Methodology:

The method used in this study is purposely practical and descriptive in collecting information, and data. It is a part of Delphi survey in order to come to an agreement among specialists.

1-3: Method:

To carry this study out firstly the related well-defined literature in human resources empowerment collected and then a questionnaire based on the conceptual pattern for statistical population designed. Finally, after the questionnaire was distributed the data were analyzed to reach a conclusion.

2-3: Research hypotheses:

Sense of competence, independence, efficacy and sense of trust were determined as dependent variables to empowerment. The independent variables include creativity, problem solving, benchmarking, participation and transfer of experience as the indicators of independent variables.

Main hypothesis:

A strong relationship exists between KM and human resources empowerment.

Minor hypotheses:

1. There is a significant relationship between creativity and human resources empowerment.
2. There is a significant relationship between problem solving and empowerment of human resources.
3. There is a meaningful relationship between benchmarking and empowerment.
4. There is a significant relationship between human resource empowerment and participation.
5. There is a significant relationship between transfer of experience and empowerment.

3-3: Population, statistical sample and sampling method:

The statistical population in this study includes managers, assistants and teachers working at education organization, north Khorasan province. They consist of 150 managers, 260 teachers, high school level, and total number 410 people. The randomly sampling method and Cochran formula with 199 subjects used as the sampling method.
Where,

P = 0.5: possibility of existence of a characteristic in the population due to inaccessibility equals 0.5.

\[ Z_{1-\alpha/2} = 1.96 \quad (\alpha = 0.05) \]

d = 0.05: maximum accepted error

N = 410: population size

Since it is predicted that some unanswered questionnaire might be available, 11 people were added to the statistical sample that the total number of questionnaire increased to 210 which among them 200 questionnaire were completed at the end.

3-4: Data analysis method:

The relationship between human resources empowerment (dependent variable) with KM (independent variable) was tested through Pearson correlation coefficient (SPSS version 19). For the remaining hypotheses, the human resources empowerment relationship (sense of competence, independent, efficacy and self-confidence) as the dependent variable with aspects of KM (creativity, problem-solving, benchmarking, participation, innovation and transfer of experience), the independent variable, was assessed by use of structural equations PLS method.

Additionally, to measure the rate of empowerment and KM in related organization at present time, “t-student” Test used. That is if population mean exceeds a fixed number ( ordinal mean of seven option spectrum equals 4) it is a signal of empowerment and aspects of KM existence in the organization of present condition. Otherwise, its absence confirmed. Finally, correlation coefficient analysis for each aspect of KM and empowerment was calculated. Necessary to say that the resulted answers were qualitative and the items mean of each index was numerical selected as independent variable. Thus, Pearson’s correlation coefficient test (SPSS 19) used.

3-5: Data collection, validity and reliability of questionnaire:

As it was mentioned, a seven option-questionnaire used as the data collection instrument. It first distributed in a pilot scale among 30 subjects and after revised for final distribution. Next, two standardized questionnaires for measuring human resources empowerment and KM after validation distributed.

By validity, we mean how much accurate the indexes are in assessing a certain phenomenon. To assess empowerment, the Spreitzer’s questionnaire (1995) applied. It is developed based on Thomas and Volt House model of empowerment to measure psychological empowerment. He organizational learning assessed through Nief’s questionnaire (2001). Theses questionnaire validity has been confirmed within different international and domestic studies.

Reliability holds characteristics like repetition, stability and adaption in measurement instrument. It tests how much exactly a concept in each time. Since the two questionnaires of this study are standardized their reliability in different international and domestic studies has been approved. To have more confidence on achieved results, the questionnaires reliability tested by use of Cronbach’s alpha, SPSS 15, once more.

\[
\alpha = \left( \frac{j}{j-1} \right) \left( 1 - \sum \frac{s_j^2}{s^2} \right)
\]

Where,

\( \alpha \): is test reliability

\( j \): number of items

\( s_j^2 \): variance of j subset

\( s^2 \): test variance

This value was calculated higher than 75% for both questionnaires.

4: Research findings:

1-4: Kolmogorov-Smirnov Test for evaluation of sample distribution normality:

To test normality of KM and human resources empowerment variables, Kolmogorov-Smirnov Test used. The obtained results are shown in table 2.

According to significance level of more than 5% for each variable, the normality of distribution confirmed.

Diagram 1: relationship between independent variables of KM and dependent variables of human resources empowerment

<table>
<thead>
<tr>
<th>Table 2: Kolmogorov-Smirnov Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>KM</td>
</tr>
<tr>
<td>Human resources empowerment</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

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2-4: Test of normality through histograms and normal curve:

Diagrams 2 and 3 show frequency distribution of questionnaires. Bar diagram indicates number of seven option answers and standard normal linear diagram shows SPSS calculation for standard normal distribution.

**Diag. 2:** histogram with standard normal curve of KM

![Diagram 2](image)

**Diag. 3:** histogram with standard normal curve of empowerment

![Diagram 3](image)

4-3: Pearson’s correlation coefficient results for main hypothesis:
H1: no significant relation exists between human resources empowerment and organization knowledge management.
H0: organization knowledge management positively relates to human resources empowerment.

Table 3: Pearson’s correlation coefficient for H1:

<table>
<thead>
<tr>
<th>result</th>
<th>p-value</th>
<th>Correlation coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct and strong relation, hypothesis approved</td>
<td>0.0000</td>
<td>0.791</td>
</tr>
</tbody>
</table>

As it is clear from table 3, p-value is lower than level of significance 1%, therefore, it could be concluded that in 99% level of significance a direct and strong relationship exists between organization KM and human resources empowerment.

Table 4: Pearson’s correlation coefficient of KM aspects and empowerment

<table>
<thead>
<tr>
<th>Test result</th>
<th>Sig</th>
<th>Correlation coefficient</th>
<th>KM aspects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct and significant relationship, hypothesis approved</td>
<td>0.0000</td>
<td>0.592</td>
<td>creativity</td>
</tr>
<tr>
<td>Direct and significant relationship, hypothesis approved</td>
<td>0.0000</td>
<td>0.604</td>
<td>Problem solving</td>
</tr>
<tr>
<td>Direct and significant relationship, hypothesis approved</td>
<td>0.0000</td>
<td>0.327</td>
<td>benchmarking</td>
</tr>
<tr>
<td>Direct and significant relationship, hypothesis approved</td>
<td>0.0000</td>
<td>0.498</td>
<td>participation</td>
</tr>
<tr>
<td>Direct and significant relationship, hypothesis approved</td>
<td>0.0000</td>
<td>0.614</td>
<td>Transfer of experience</td>
</tr>
</tbody>
</table>

As it could be seen from table 4, creativity correlation coefficient achieved 0.592, problem solving 0.604, benchmarking 0.327, participation 0.498, and transfer of experience 0.614. This means all of variables have a positive and direct relationship with empowerment of human resources. It confirmed in 99% level of confidence.

4-5: factor analysis of main variables and factors:

In this part, factor analysis method based on new and advanced method of structural equations Visual partial least squares (VPLS) applied to analyze the more important coefficient and factors, estimation of independent variables and determination of each independent variable effectiveness on each other. Diagram below presents VPLS software output containing coefficients of variables and their significance (t statistic).

Diagram 3: structural equation VPLS software output

As it is clear, coefficient of determination is (R=0.889) and indicates that with 89% approximation, the empowerment changes (dependent variable) will be explained with aspects KM. in table 5, impact factor each independent variable on dependent and t-statistic for evaluation of variables significance is listed.
Table 5: estimation of model coefficients

<table>
<thead>
<tr>
<th>Index Estimation of model coefficients</th>
<th>t-student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct and significant relationship</td>
<td>2.039</td>
</tr>
<tr>
<td>Direct and significant relationship</td>
<td>2.193</td>
</tr>
<tr>
<td>Direct and significant relationship</td>
<td>2.025</td>
</tr>
<tr>
<td>Direct and significant relationship</td>
<td>2.554</td>
</tr>
<tr>
<td>Direct and significant relationship</td>
<td>2.945</td>
</tr>
<tr>
<td>Direct and significant relationship</td>
<td>0.153</td>
</tr>
<tr>
<td>Direct and significant relationship</td>
<td>0.368</td>
</tr>
<tr>
<td>Direct and significant relationship</td>
<td>0.141</td>
</tr>
<tr>
<td>Direct and significant relationship</td>
<td>0.219</td>
</tr>
<tr>
<td>Direct and significant relationship</td>
<td>0.447</td>
</tr>
</tbody>
</table>

As it can be seen from table 5, t-student estimation of each model coefficients is higher than 95% (1.96) level of confidence; therefore, the hypotheses are confirmed as follows.

1. For every one unit increase in creativity, empowerment of human resources raises up to 0.153.
2. For every one unit increase in problem solving, empowerment of human resources goes up to 0.368.
3. Every increases in benchmarking, increases human resources empowerment up to 0.141.
4. When participation level rises as one unit, human resources empowerment increases near 0.219.
5. with one unit increase in transfer of experience, human resources empowerment goes up to 0.447.

4-6: Evaluation of current studying organization from KM perspective:

The results of computational hypothesis test for determination of existence of KM aspects in the organization have been presented in the table below.

Table 6: t-student Test results (fixed value equals 4).

<table>
<thead>
<tr>
<th>Index</th>
<th>t-student</th>
<th>mean</th>
<th>index</th>
</tr>
</thead>
<tbody>
<tr>
<td>No creativity observed in the company.</td>
<td>1.352</td>
<td>3.96</td>
<td>creativity</td>
</tr>
<tr>
<td>Problem solving is evident.</td>
<td>3.658</td>
<td>4.27</td>
<td>Problem solving</td>
</tr>
<tr>
<td>Benchmarking is available.</td>
<td>3.850</td>
<td>3.70</td>
<td>benchmarking</td>
</tr>
<tr>
<td>No participation seen.</td>
<td>1.621</td>
<td>4.01</td>
<td>participation</td>
</tr>
<tr>
<td>Transfer of experience was significant.</td>
<td>3.924</td>
<td>4.26</td>
<td>Transfer of experience</td>
</tr>
</tbody>
</table>

As table 6 shows, except creativity, and participation, the mean for other aspects of organizational KM exceeds the fixed value 4 and it sends this signals that these aspects in education organization bears in a relatively proper conditions. Though, to enhance performance the remaining weak aspects have to significantly be considered.

5-Conclusion:

The main purpose in this study was the evaluation of relationship between knowledge management and empowerment of human resources. The Kolmogorov-Smirnov Test (Table 2) shows that human resources empowerment possesses a direct and meaningful relationship with KM. According to the level of significance for both of variables, the normality of distribution confirmed. The Pearson’s correlation coefficient also indicates that in 99% level of confidence, a strong and direct relationship exists and variables such as creativity, problem solving, benchmarking, participation and transfer of experience positively hold a relationship with empowerment of human resources. Moreover, factor analysis for main variables by use of VPLS software indicates that with 89% approximation, changes of human resources empowerment (dependent variable) with KM (independent variable) are accurately explained. For each unit of change in independents, human resources empowerment changes as well.

Suggestions for major and minor hypotheses:

From main results achieved, determination of correlation coefficient between dependent and independent variables is noteworthy. It is recommended researchers due to enhancing the organizations empowerment, seek to determine structural equations and calculate the organization’s function according to definite variables. Following some suggestions have been presented.

1. With 0.791 correlation coefficient a strong and direct relationship exists between KM and empowerment of human resources. That is to say, to strengthen empowerment, impact factor (according to defined concepts) has to be increased.
2. For increasing organization empowerment through intrinsic variables of human resources, senior managers have to plan for empowerment of human resources augmentation based on correlation coefficients of table 4 and problem solving (0.604), transfer of experience (0.614), creativity (0.592), participation (0.498) and benchmarking (0.614) variables respectively.
3. According to table 5, t-Students Test results show that there is going to be a direct and significant relationship occurs between human resources empowerment and KM. each unit of increase in creativity, problem solving, benchmarking, participation, and transfer of experience increases empowerment 0.153, 0.368, 0.141, 0.219, and 0.447.
respectively. As a result, organization managers could define function or mathematical model of human resources empowerment in their organization and make it operational.

4. Based on table 6, at present no variables such as creativity and participation observed in the organization. They also have no weak or less meaningful relationship with human resources empowerment. It is recommended that senior managers seek to establish organizational creativity and participation through managerial methods.

Suggestions for future researchers:

1. Planning, establishment and implementation of KM and determination of organization used resources in enhancement of human resources empowerment.
2. Using mathematical model in related funding to enhancement of human resources empowerment.
3. Application of Freedman Test for classification of increasing patterns of empowerment of human resources variables for linear programming.
4. Determination of other enablers through future studies based on Dourin-Wathson Test.
5. Determination of empowerment function according to effective pattern by step-by-step regression as ultimate empowerment model.

Reference

9. OECD, 2004 "Knowledge Management: Innovation in the Knowledge Economy, Implications for Educations and Learning".

