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Analysis of Psychological Empowerment and its Relationship with Knowledge Management (The Case of Jam Petrochemical Company Located in South Pars Area, Iran)

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Abstract

Today, knowledge is considered a valuable and strategic resource as well as an asset and organizations need to do knowledge management in its best in order to succeed. One factor that can help organizations in successful implementation of knowledge management is the use of powerful forces in the organization. The purpose of this study is analysis of psychological empowerment and its relationship with knowledge management in Jam Petrochemical Company selected as a sample. This study is a combination of correlation and description studies. The population includes employees of Jam Petrochemical Company (818 people), from which 263 people were selected by simple random sampling. To collect data, two questionnaires of psychological empowerment and knowledge management were used. Reliability was calculated through Cronbach's alpha coefficient and the data were analyzed by SPSS software. Test results of correlation test show a significant relationship between psychological empowerment and its components with knowledge management. The results of multiple regression test imply that apart from the impact (excluded from the regression model), autonomy had the most significant effect and meaning had the least effect on knowledge management.

Keywords: Psychological Empowerment, Knowledge Management, Components of Psychological Empowerment, Components of Knowledge Management (KM), Jam Petrochemical Company

Introduction

Today, knowledge is considered as the sole strategic source of competitive advantage in the world economy (Zack, 1999). Customer needs are constantly changing and organizations should adapt to these conditions. To survive in today's highly competitive environment, organizations must create new knowledge, distribute it and convert it to goods and services (Zafranian et al., 2008). To reach this goal, knowledge should be manage within organizations.

The review of theoretical background and opinions of the experts suggests the undeniable need for KM in organizations. Organizations should be able to manage their knowledge capitals effectively (Abtahi and Salavati, 2006). Managers are now trying to extract knowledge in the minds of members and distribute it among all people through knowledge management. The knowledge stored in the system changes into a constantly useable source and creates a sustainable competitive advantage for the organization (Huysman, 2006).

Also, key to the survival and existence of organizations is the human resources quality and capabilities. In other words, the importance of human resources is far more than new technologies and financial and material resources. HR empowerment, as a new approach to occupational intrinsic motivation, leads to realization of dynamics of staff and creating the ground and opportunities for talents, individual abilities and competencies to flourish. In also deals with perceptions of individuals about their role in their jobs and role in the organization (Abdollahi, 2005). Empowerment begins with a change in beliefs, thoughts and attitudes of staff. This means that they should believe they have the abilities and competencies required to perform successfully and that they have freedom and independence to carry out their activities. They should believe in their own ability to influence and control over their work results, they follow meaningful and valuable career goals and they are treated honestly and fairly.

Some conditions must be provided so that we can implement knowledge management in organizations. These conditions are known as knowledge management enablers and include culture, structure, human resources and information technology. HR is one of the factors that should possess the preparation required for successful implementation of knowledge management in organizations. Empowering HR prepares people to implement knowledge management in organizations. Given the fact that the role of human resources is very important in KM, researchers' attention has shifted to increasing empowerment in organizations. In this study, psychological empowerment and its relationship with knowledge management in the Jam Petrochemical Company is examined.

Jam Petrochemical Company is a petrochemical company based in South Pars Special Economic Zone (Asaluyeh) in the southern Iran. The company has the highest nominal capacity in the world in terms of Ethylene production. Subordinate units of the complex produce various liquid and solid products including light and heavy grades of polyethylene. 818 official and more than 1,600 contract employees work in this company. In this study, Jam Petrochemical Company is selected as the sample and five basic questions are asked to investigate whether there is a relationship between psychological empowerment and knowledge management; and whether empowering the staff psychologically can assist organizations in successful implementation of knowledge management.

Literature Review

Psychological Empowerment

The term *Empower* is defined in Concise Oxford Dictionary as "give authority or power to; authorize; give strength and confidence to". The term involves giving power and freedom of action to your office. In organizational sense, it is structure design for the organization so that its people, while controlling their selves are ready for more responsibility (Lawler, 1994).

Many researchers and scientists have been conducting research in the area of empowerment. They have different definitions of empowerment including: delegation of legal authority, delegation of authority, appointing and enabling (Grove, 1971). Empowerment strengthens people's faith and increases their self-confidence and their efforts

to effect the activities of the organization (Gorden, 1993). Empowerment is to give authority and decision making to employees in order to increase their efficiency and useful role in the organization (Erstad, 1997). Empowerment is in fact the delegation of official authority and legal power to employees (Argyris, 1998). Empowering includes the contribution of employees in provision of information in order to form groups and design the structure of the organization (Conger and Kanungo, 1998).

The concept of empowerment was first introduced in the 1980s (Blanchard *et al.*, 1996; Whetten and Cameron, 1998), but in the 1990s the concept received great interest among researchers, academics and practitioners of organizational management (Bowen and Lawler, 1995; Thomas and Velthouse, 1990; Spreitzer, 1995).

Organization and management scholars and researchers in the 1990s define empowerment of human resources as management strategies and actions like delegating power and decision-making authority to lower ranks of the organization, sharing information with employees and providing access to enterprise resources for them (Blanchard *et al.*, 1996; Foy, 1997; Bowen and Lawler, 1995). Quinn and Spreitzer (1997), called this approach to the empowerment the mechanic approach. But, from the 1990s onwards, organizational psychology experts have considered empowerment of human resources as a complex and multidimensional concept and have distinguished between the situation characteristics (the managerial measures) and employees' perceptions of these features (Thomas and Velthouse, 1990). Conger and Kanungo (1988) have proposed that management measures are the only set of conditions that can empower employees, but this is not necessarily the case. Delegation of authority and decision-making powers by senior managers to lower level staff is not empowerment. Recently, researchers study the concept in terms of beliefs and emotions of employees. Quinn and Spreitzer (1997); Thomas and Velthouse (1990); Ford and Fottler (1995) and Whetten and Cameron (1998) acknowledge that empowerment is a multi-dimensional concept and has several different meanings for different people. Quinn and Spreitzer (1997) called this the organic approach.

Based on the organic approach, empowerment is not something that managers should do for personnel; rather, it is the employees' attitudes about their role in their job and the organization. At the same time, managers can provide opportunities for empowerment of staff. According to Conger and Kanungo (1988), empowerment is rooted in motivational needs of individuals. Each strategy or action that can strengthen the need to self-efficacy in people, will lead to empowerment. Thomas and Velthouse (1990) state that psychological empowerment is a process of enhancing intrinsic motivation to do the job which includes four domains, i.e. competency, autonomy, meaning and impact. This was the first time the concept of psychological empowerment entered the management literature. Using model of Thomas and Velthouse, Spreitzer (1995) defines psychological empowerment as a motivational concept consisting of four dimensions: competency, autonomy (the right to make choice), meaning and effectiveness.

Whetten and Cameron (1998) defined empowerment as giving power to employees. This means that we should help them to feel confident and to overcome the sense of powerlessness or helplessness. These authors confirm the four domains of empowerment mentioned by Thomas and Velthouse (1990); Spreitzer (1995), but they added the dimension of trust. Psychological Empowerment thus involves a sense of autonomy, competence, efficacy, meaningfulness and trust.

1. Autonomy: autonomy or right to choose means having a sense of freedom and individual independence in determining activities necessary to perform job duties (Thomas and Velthouse, 1990).

2. Competence: the degree to which a person can perform job tasks successfully with the required skills (Thomas and Velthouse, 1990).

3. Impact: the degree to which a person can affect strategic, administrative and operational outcomes (Spreitzer, 1995).

4. Meaning: the value of career goals and the individual's inner interest in the job (Thomas and Velthouse, 1990).

5. Trust: Whetten and Cameron (1998) have pointed out that empowered people have a sense of trust and are sure that they will be treated fairly and honestly. In other words, they are certain that owners of power and influence will not harm them and that they will be treated impartially.

Knowledge Management (KM)

Complexity and breadth of KM have caused different concerns regarding the concept. Therefore, various experts studied and defined it from different perspectives. Given this point, examples of the most common definitions of knowledge management are presented here.

Knowledge management is a set of processes that convert data and information to valuable knowledge in the organization. This process involves the creation, acquisition, distribution, application and assimilation of knowledge (Lee *et al.*, 2001). Pet Rish presented a comprehensive definition of knowledge management as follows: acquisition of the right knowledge by the right individuals at the right time and place so that they can best use the knowledge to achieve organizational goals (the American Center of Quality and Productivity, 1996). According to Merwick (2001), knowledge management is a systematic set of activities in order to achieve greater value through knowledge available. Available knowledge includes all those experiences and lessons learned by individuals in an organization as well as reports within an organization. Shahgholian (2006) presented a six-dimensional model to assess the knowledge management level, i.e. recognition, acquisition, application, distribution, development and maintenance of knowledge.

1. Recognition of knowledge: Recognition of needed knowledge is essential to support the goals of the organization, identify individual abilities and expertise, and determine the gap between existing and necessary knowledge.

2. Acquisition of knowledge: the organization can acquire new knowledge through hiring experts, and partnerships with research and academic institutions.

3. Application of Knowledge: knowledge will be valuable only if it is applied. The organization should apply knowledge in its right place.

4. Distribution of knowledge: knowledge should be shared and distributed across the entire organization. The use of information technologies (internet, Intranet and computer networks) and the formal and visible structure of organization (instructions, letters) can help the distribution of knowledge within the organization and individuals can thereby interact with each other. In addition to the formal structures, knowledge can be transferred through the informal structure (discussion sessions).

5. Development of knowledge: the organization tries to use knowledge to create capabilities that are not still present within and outside the organization.

6. Maintenance of knowledge: knowledge maintenance ensures its protection, reuse and synchronization in the organization. To quickly access their knowledge, organizations should choose those events, entities and processes that are valuable and store their experience in an appropriate form. Finally, they should make sure that the organizational memory is updated (Shahgholian, 2006).

Psychological Empowerment and Knowledge Management

Spreitzer (1995) concluded that getting access to information on various aspects of the work is related to employees' psychological empowerment. When individuals feel they are empowered, they use such information and actively implement and combine it to get the best result.

Empowered people feel that they should share what they know and the information they acquire with others. Regarding creation of knowledge, Doll *et al* (2005) stated that knowledge creation and innovation would not be possible without empowered people.

Motivated people are employed in the process of knowledge creation. They usually tend to share their knowledge and actively search new cases. They can apply new cases in the organization and try to acquire more knowledge, because they feel their need for knowledge is increased. When empowered individuals feel they have more autonomy and their activities are more effective, they can be used in knowledge management activities.

Muhammad (2006) stated that people, who feel competent, also feel they are more effective. They tend to share more information than do people who feel they are not competent. Such people can generate more knowledge. They try to have access to more information and apply it more than others. The results of Muhammad's studies show that psychological empowerment leads people towards knowledge management activities.

Ahmadi *et al* (2012) studied the relationship between psychological empowerment and knowledge management and found no significant relationship between psychological empowerment and knowledge creation and assimilation. The results show that there is significant relationship between psychological empowerment and knowledge transfer, organization and application activities.

The Conceptual Model for this Study

There are various empowerment models. In this study, the model presented by Thomas and Velthouse is used to investigate autonomy, competence, impact and meaning. The last component of psychological empowerment is trust as proposed by Whetten and Cameron. Thus, given the literature review, in this study the above mentioned psychological empowerment are investigated.

Different researchers have proposed different models in the field of knowledge management. Keivan Shahgholian (2006) presented a six-dimensional model to assess the knowledge management level, i.e. recognition, acquisition, application, distribution, development and maintenance of knowledge. The present study uses this model to measure knowledge management.

According to what said about these models, the conceptual model of this study is presented in Figure 1.

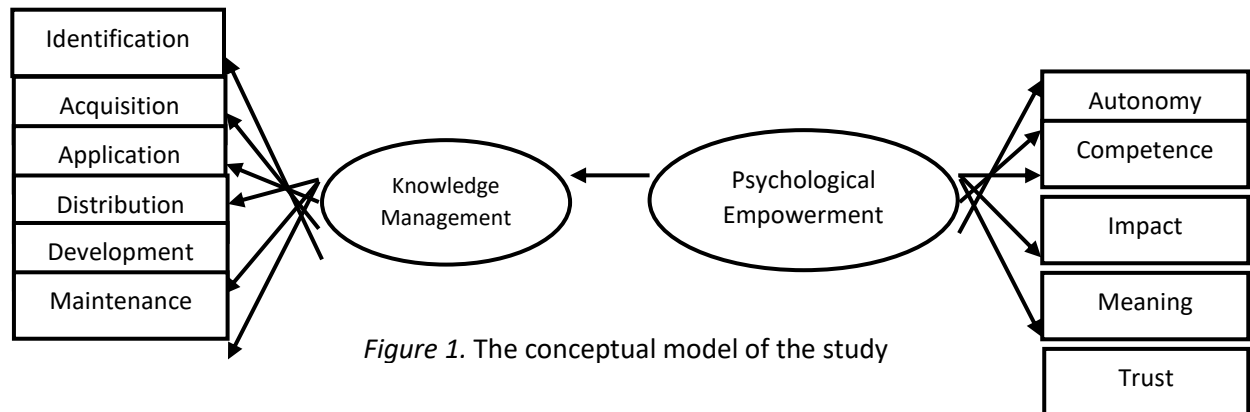


Figure 1. The conceptual model of the study

Research Hypotheses

This study has a main hypothesis and five sub-hypotheses as follows:

The main hypothesis: There is a significant relationship between psychological empowerment and knowledge management in Jam Petrochemical Company.

Sub-Hypothesis 1: There is a significant relationship between autonomy and knowledge management in Jam Petrochemical Company.

Sub-Hypothesis 2: There is a significant relationship between competence and knowledge management in Jam Petrochemical Company.

Sub-hypothesis 3: There is a significant relationship between impact and knowledge management in Jam Petrochemical Company.

Sub-hypothesis 4: There is a significant relationship between meaning and knowledge management in Jam Petrochemical Company.

Sub-hypothesis 5: There is a significant relationship between trust and knowledge management in Jam Petrochemical Company.

Methodology of Research

The correlation method was used to test research hypotheses. The population included all employees of Jam Petrochemical Company which were 818 individuals. To test the hypotheses of the study, a sample was selected by simple random sampling. The sample size was calculated by Morgan table as between 260-265. The calculation was repeated through Cochran formula and the resulting number was 261. Therefore, 280 questionnaires were distributed and 263 questionnaires returned with a return rate of 94%.

To collect data, two questionnaires of psychological empowerment (15 items) and knowledge management (30 items) were used. The questionnaires used a 5-point Likert scale in which, 3 show the average.

Although questionnaires were standardized, to determine their validity they were checked and confirmed by a number of university professors. In order to determine the reliability, Cronbach's alpha coefficient was used that was 0.85 for Psychological Empowerment questionnaire and 0.96 for knowledge management questionnaire. This shows that they have high reliability and can be used to measure these two variables.

In this study, data collected from the questionnaires were analyzed by SPSS21. Descriptive statistics was used to investigate the research variables and analytic methods (correlation coefficient and multiple-regression tests) were used to test the hypotheses and the simultaneous effect of independent variable components of the dependent variable.

Findings

First, the components of psychological empowerment were examined and compared.

Table 1

Descriptive statistics for components of psychological empowerment

| | Ranks | Mean | Std. Deviation | Friedman Mean Rank |
|------------|-------|--------|----------------|--------------------|
| Autonomy | 4 | 3.4810 | .72798 | 2.57 |
| Competence | 2 | 3.9322 | .50290 | 3.57 |
| Impact | 3 | 3.5418 | .72410 | 2.68 |
| Meaning | 1 | 3.9759 | .70309 | 3.72 |
| Trust | 5 | 3.4480 | .78609 | 2.46 |

Table 1 shows that meaningfulness of the job is in the best and trust is in the weakest position. The Friedman nonparametric rank test also confirmed this. The results also show that all components are above average (3) and are thus in good condition.

The state of variables of psychological empowerment and knowledge management at Jam Petrochemical Company was investigated. The results of data analysis show that the mean score of psychological empowerment was 3.67 ND and the mean score of knowledge management was 2.90. Given that the two variables are normally distributed, to check their status in the sample, normal population mean was used.

Table 2

One-Sample Test

| | Test Value = 3 | | | | | |
|----------------------------------|----------------|-----|--------------|-----------------|-------------------------------------------|----------|
| | t | df | Sig(p-value) | Mean Difference | 95% Confidence Interval of the Difference | |
| | | | | | Lower | Upper |
| Psychological Empowerment | 22.332 | 262 | 0.000 | 0.67579 | 0.6162 | 0.7354 |
| Knowledge Management | - 2.916 | 262 | 0.004 | - 0.09502 | - 0.1592 | - 0.0309 |

The results of this test (Table 2) show that at 95% confidence, the mean score of psychological empowerment is between 3.616 and 3.735 and that of knowledge management is between 2.840 and 2.969. Thus, it can be concluded that the state of psychological empowerment at Jam Petrochemical Company is above average value (3) and thus in good condition. But, knowledge management is lower than average value and is in unfavorable conditions.

Next, the normality of distribution was investigated using the Kolmogorov – Smirnov test. The results show that both psychological empowerment and knowledge management variables are normally distributed. However, the component of psychological empowerment is not normally distributed. Therefore, Pearson and Spearman correlation methods were used to test the main hypothesis and the sub-hypotheses respectively. The results of data analysis show that as in all hypotheses, the p-value is less than 0.05; there is a relationship between the independent and the dependent variable in all hypotheses.

Table 3

Correlation coefficient test to test the hypotheses

| | Psychological Empowerment | autonomy | competence | impact | meaning | trust | |
|----------------------|---------------------------|----------|------------|--------|---------|-------|-------|
| Knowledge Management | Correlation Coefficient | 0.484 | 0.422 | 0.276 | 0.305 | 0.275 | 0.343 |
| | Sig(p-value) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Table 3 shows that the correlation coefficient is positive for all relationships. Therefore, there is a significant positive relationship between psychological empowerment and its components (feelings of competence, autonomy, impact, meaning and trust) with knowledge management at Jam Petrochemical Company.

After the relationship among variables was investigated, multiple regressions were used to investigate the effect of psychological empowerment components on knowledge management. In this study, backward method was used to perform regression test. In this method, the five components of psychological empowerment (feelings of competence, autonomy, impact, meaning and trust) were included in the model. Impact was excluded because its p-value was greater than 0.10.

Table 4

Regression Model summary

| R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|------|----------|-------------------|----------------------------|---------------|
| .513 | .263 | .252 | .45720 | 1.665 |

Table 4 shows that the correlation of the model is 0.51. In other words, there is a relationship between the remaining four components and knowledge management. R^2 Value shows that 26 percent of changes in KM are the result of effects of psychological empowerment components and other changes are related to other factors.

Table 5

Coefficients^a

| | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|------------|-----------------------------|------------|---------------------------|-------|------|
| | B | Std. Error | Beta | | |
| (Constant) | .826 | .251 | | 3.294 | .001 |
| autonomy | .219 | .044 | .302 | 5.026 | .000 |
| competence | .156 | .062 | .148 | 2.513 | .013 |
| meaning | .089 | .044 | .118 | 1.997 | .047 |
| trust | .102 | .042 | .152 | 2.431 | .016 |

a. Dependent Variable: Knowledge Management

The main output of regression testing is Table 5. The Beta column in the table shows the effect of independent variables on the dependent variable. This table shows that autonomy with 0.302 has the highest and meaning with a value of 0.118 had the lowest effect on knowledge management among the four factors.

Column B in Table 5 shows the linear regression equation as follows:

$$y = 0.826 + 0.219x_1 + 0.156x_2 + 0.089x_3 + 0.102x_4 \quad (1)$$

Based on this equation, the effects of changes in a component of psychological empowerment on knowledge management can be predicted.

Results and Conclusions

In this study, the results of the analysis of demographic data show that 81.7% of employees hold a bachelor's degree or above; 44.5% of employees have over 10 years experience and 87.7% of employees are under forty years of age. These results show that Jam Petrochemical Company has employees who are young, experienced a relatively highly educated. The company should take advantage of this human resource.

The results of data analysis for psychological empowerment variables show that Jam petrochemical company is in a good condition in terms of this variable. But, the results show that the knowledge management variable is not in a good condition. Given that in current competitive market, KM is recognized as an important competitive advantage, the company should plan and invest in this area until the desired results are achieved.

In a comparison between psychological empowerment components, it was revealed that meaning and competence have the highest and autonomy and trust have the lowest effect on knowledge management at Jam Petrochemical Company. The regression results show that autonomy and trust have the highest and competence and meaning have the lowest effect on knowledge management. In other words, components in better conditions have less effect and components in lower conditions have a greater influence on knowledge management. This is one of the points that should be emphasized. Thus reinforcing a sense of autonomy and trust can be used to pave the way for the implementation of knowledge management in the organization.

The results of the hypotheses tests show that psychological empowerment and its components are directly associated with knowledge management. Therefore, organizations should invest on HR empowerment. Obviously, without empowered employees, knowledge management cannot be implemented in organizations. Managers should therefore pay attention to the followings:

- Organizations should emphasize the issue of implementing knowledge management and do the necessary planning.
- Organizations should determine the factors they need to implement knowledge management and assess their present status.
- Organizations must investigate components of empowerment to determine the status of each of them and to try to strengthen the weaker elements.
- Organizations need to prepare the context and conditions required for empowering employees.
- Organizations should identify the strengths of their human resources and take optimum advantage of them.

- Organizations should identify the weaknesses of their human resources and plan to fix them.
- Managers should encourage their empowered human resources to achieve organizational goals with proper plans and use of motivational factors.

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