

INVESTIGATING THE FACTORS EFFECTIVE ON KNOWLEDGE MANAGEMENT ESTABLISHING PROCESS IN GILAN TELECOMMUNICATION COMPANY

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Abstract

The purpose of this study was to investigate the factors affecting the implementation of knowledge management in Guilan Telecommunication. The method of analyzing the finding of this study was taken in to account the assumptions made. Data were analyzed in two parts: descriptive and inferential statistics and results showed that all eight variables: organizational culture, organizational leadership support, information technology, organizational strategy, knowledge acquisition, knowledge conversion, knowledge utilization are effective in knowledge management in Guilan Telecommunication. Among the three main factors affecting the deployment of knowledge management in the technological factors organization, it has the highest status, and this indicates that the department has the appropriate infrastructure to establish effective knowledge management.

Keywords: knowledge management, organizational factors, technological factors, knowledge management factors.

1. INTRODUCTION

Organizational knowledge provides a valuable opportunity for the promotion of the organization as the most important sources of organizational improvement and development as a tangible asset.

The importance of knowledge management will become more pronounced when the organization regards knowledge and innovation as the key catalysts for organization success and competitiveness. [1]

Overall, what the researchers agreed on, that knowledge management influences organizational performance and competitiveness in a positive direction. [2]

The most basic skill for knowledge-based organization managers is knowledge management. [3]

A review of the theoretical background and opinions of the experts shows that the necessity of applying knowledge management in the organization is undeniable.

Factors like that Globalization, minimizing governments, citizenship, and the need for

citizen participation, requires special attention to knowledge management.

An organization should be able to effectively manage its knowledge capitals. [4]

Schiama et al. to explain the way of leading value creation via knowledge management indicate that the sources of organizational knowledge through organizational learning mechanisms knowledge management processes affect organizational capabilities, then when these capabilities are applied in products and services, in fact, they have become functional and value-based and provide value to benefits of the organization. [5]

Given the importance of knowledge and its central role in the knowledge age, it is necessary for organizations, special knowledge-based organizations, that knowledge is a strategic resource and a key factor in acquiring and presenting and maintaining the core.

Organizational competence in an organization, evaluate a design and implementation of knowledge management with a systematic approach to develop the capabilities that lead to

the evolution of knowledge as a key organizational resource.

According to various philosophers and experts, there are many factors for implementing the knowledge management process effectively. Based on field studies, in this study, it has been tried to based on studying a lot of information and knowledge is that needed by staff inside the Gilan Telecommunication Department, can help Telecommunications to achieve their goals.

The present study attempts to introduce the importance of knowledge management while highlighting its effective factors and influencing components of the knowledge management process, and open new perspectives toward Telecommunication company management of Gilan province and identify its existing obstacles .

Gilan Telecommunication Company should take effective steps in this regard in accordance with its native capacities and be careful in everything that improves the level of knowledge management and do this by changing cultural attitude and viewpoint, modify structural dimensions, human resources, learning change management, transparency of its documents, that effects on better and more quality establishment,.

These issues led the researchers to focus on discovering the relationship between infrastructures with knowledge management and eventually it will develop and present the system executive solutions for the knowledge management in the provinces Telecommunication.

to highlight the characteristics of value derived from the cooperation between firms and customers. In the current literature, although value co-creation is a cooperative phenomenon, research tends to focus on the benefits each actor receives

DEVELOPMENT.

Peter Darker in the book *Post-Capitalist Society* says the most important economic resources are no longer capital or nature resources and Labor, but, this economic source is and will be knowledge. [6]

In today's world where the production of goods and presentation of services have become extremely knowledge-based, knowledge is the

key to getting a competitive advantage, and one of the most important success factors of companies in competitive situations and information era is an organizational knowledge management. [7]

Knowledge is an organized collection of data and information that is present in the business and other organizations create and save it over time with rules and procedures that learned. [8]

Knowledge is expressed in the literature in different ways, that the most important ones are explicit knowledge and implicit knowledge.

Implicit knowledge is deeply rooted in behaviors, processes, communications, normal course of affairs, desires, values, and feelings.

Explicit knowledge is the part of knowledge that can be codified and transmitted in the official template such as documentation, databases, web pages, emails, tables and the like. [9]

To summarize, knowledge management in an organization occurs when implicit knowledge and explicit knowledge can be converted to each other. [10]

Ultimately, knowledge management is information management (explicit and written knowledge), process management (the hidden knowledge), and people management (implicit knowledge), that innovation management and asset management include in the knowledge management capacity. [11] Nowadays knowledge management is one of the topics that are very important for companies and organizations.

So far many definitions have been provided for knowledge management. These definitions have explored each aspect of knowledge management. In some definitions, focused on processes of knowledge management for better management of intellectual capital of the organization [12]

Some others emphasize the technology factor. [13]

The basic discussion in knowledge management in an organization is about development, subscribe and use the knowledge in an organization to gain sustainable competitive advantage. [14&15&16]

In fact, knowledge management provides an environment for sharing knowledge, experience, and skills [17&18].

The Telecommunication Department that has the characteristics of technology, human sources, and complex organizational culture, must be able to retain in the world of internal and global

competition while taking advantage of its organizational knowledge factors as a competitive advantage, by keeping agility and flexibility.

The challenge in implementing the knowledge management process in large organizations, such as Telecommunication, is that knowledge management is an organized object, the category that many organizations have invested heavily in informational and communicational technologies following the use of the knowledge management process in the organization. But it should be noted that information technology is only part of knowledge management and success full implementation of this process requires that various organizational factors, such as structure, culture, and technology have specific characteristics and have coherence and harmony; on the other hand, gap and inconsistency between them will hinder the success full implementation of knowledge management process.

Therefore, understanding the organizational factors in terms of necessary features, is an important early step that can provide a strong foundation for the next actions.

Knowledge management forms part of the whole process of management in the organization and engages itself with the understanding of the whole of knowledge and involves knowing how and applying such knowledge requires employing, motivation, communication, and appropriate behavior. In summary, knowledge management encompasses all knowledge processes and activities, including acquisition, creativity, development, storage and practical use, with a focus on individuals as a source of knowledge and it also includes value.

To be able to manage knowledge in the organization, first, we should understand, what knowledge is? And how we use effectively and properly. Also, it needs to be established in formal and informal communication structures and networks to transfer and distribute knowledge in the organization. [19]

Successful implementation of knowledge management requires that different organizational factors within an organization, including information technology, organizational strategy, and knowledge

management processes, have certain characteristics and have the necessary coherence and coordination.

Therefore, cogniting the situation of the organizational factors and agents that fill this gap is an important early step in an aspect of required features for the successful implementation of knowledge management that can provide a solid basis for future proceedings in this regard.

Organizations widely implement knowledge management to systematically manage their knowledge and intellectual resources as the most effective way to create competitive advantage and value creation of their main processes.

In the meantime, knowledge management also as any other system for performing and implementation in the organization requires its own specific tools.

The tools involved in the implementation and realization of KM are a combination of human-centered tools and technology-based tools that respectively emphasize the organization's human resources and information technology infrastructure.

So, it can be said that knowledge management tools are a set of human resources, organizational and information technology approaches that are used to attain organizational knowledge goals [20] Among knowledge management tools, the role of knowledge is to interact with human resources and organization professionals in their knowledge acquisition process of them and use information technology infrastructures to visualize and display the maps and create a technology-based user – friendly relationship to use it in an organization, it falls into a mix of human-centered and technology-driven.

Also, if key processes of KM are considered processes of knowledge recognition, knowledge creation, knowledge storage, knowledge sharing, knowledge utilization, [21]and knowledge evaluation, each of the knowledge management tools can be used to realize one or a set of these processes.

Abdellatif et al. (2017) [22] In the meantime, knowledge map plays an important role in the realization of all these processes, because of its flexibility in targeting its formulation according to the needs and goals of the organization, as well as incorporating a wide range of experts and

knowledge assets of the organization if compiled comprehensively.

Knowledge map and redesigning ontology-based maps are also seen as a solution to open problems in designing an organization's business processes and improving its performance measurement. [23, 24]

The purpose of knowledge management is to identify, collect, classify and organize, store, share disseminate, and make available knowledge at the organization level.

In organizations that are traditionally managed, knowledge flows from top to bottom along organizational lines.

In this case, knowledge is rarely available, at the right time where is the most needed. [25]

But in knowledge-based organizations that have performed and implemented knowledge management, knowledge is running through the organization and anyone who needs it at the right time can use it to perform their duties.

Experimental work of research teams at Aston College over the past 5 years covers this.

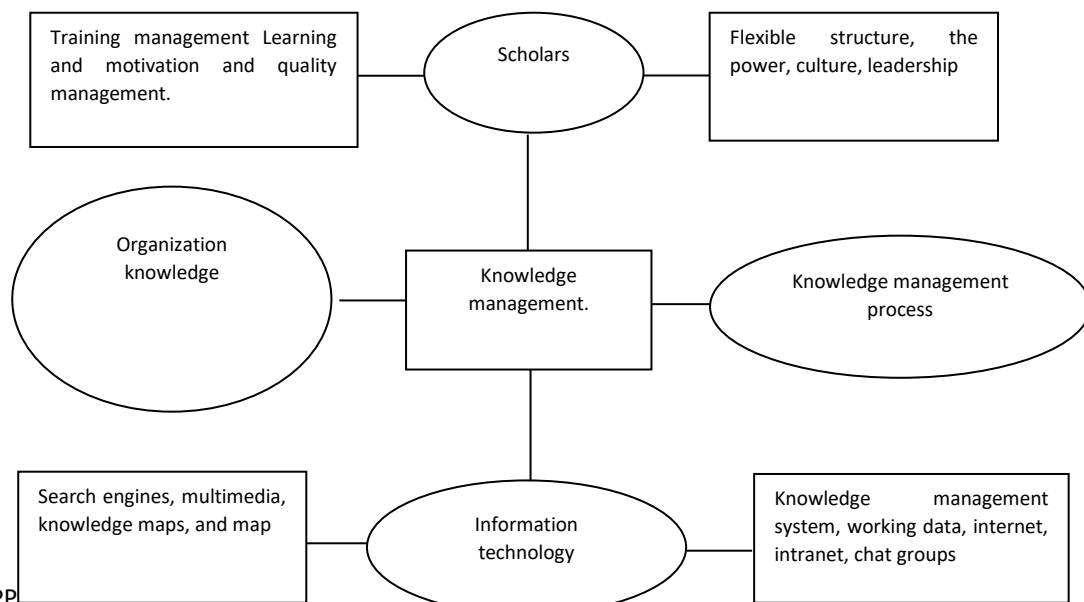
What we have seen at this point, this is as follows:

- Organizations that have been successful in knowledge management currently having little or no effect.
- The Organization that did good knowledge management for a while, and then stopped.

Organizations where knowledge management cannot be started in them [26].

The following is shown the elements and organizational approaches taken from [27]:

Figure 1. the elements and organizational approaches taken from (Lee & Kim 2001):



The managerial elements that influence scholars, include Leadership, power, performance evaluation, and reward system, organizational structure and culture.

The organizations by specifying rules and regulations and by creating the teams they need, simplify the knowledge management process.

Research methodology:

The purpose of this research is to identify the factors affecting knowledge management, find out the importance of each expert's point of view, and also evaluate these factors in the Telecommunication Department of Gilan province.

RESEARCH METHOD:

The type of research is applied, and the method is descriptive.

Research objectives:

- 1- Ranking organizational factors, information technology, and knowledge management processes in terms of impact.
- 2- Determining important variables in organizational factors, information technology, and knowledge management processes.
- 3- Measuring the status of research variables in the statistical population.

Research Hypothesis:

Main hypothesis

- 1- Organizational factors affect the establishment of knowledge management in the Gilan Telecommunication Department.
- 2- Technological factors affect the establishment of knowledge management in the Gilan Telecommunication Department.
- 3- Knowledge management processes affect the establishment of knowledge management in Gilan Telecommunication Department.

Subsidiary Hypothesis:

- 1- Organizational culture is effective for deploying knowledge management in

Gilan Telecommunication Department.

- 2- Organizational strategy is effective for deploying knowledge management in Gilan Telecommunication Department.
- 3- Organizational Leadership is effective in deploying knowledge management in Gilan Telecommunication Department.
- 4- Knowledge acquisition is effective for deploying the knowledge management Telecommunication Department.
- 5- Knowledge acquisition is effective for deploying the knowledge management Telecommunication Department.
- 6- Knowledge conversion is effective on knowledge management establishment in the Gilan Telecommunication Department.
- 7- Applying knowledge to deploy knowledge management is effective on the Gilan Telecommunication Department.
- 8- Knowledge retention is effective on the deployment of knowledge management in the Gilan Telecommunication Department.

Statistical society:

The statistical population of this research is staff and experts of Gilan Telecommunication Department.

Research Tools:

The research tools in this project were designed as a questionnaire.

In this questionnaire, it is attempted to seek the opinion of experts and specialists in relation to defined criteria and indicators, to determine the final indicators.

The information contained in this questionnaire was obtained through a questionnaire study and other internal and external researcher's questionnaire about knowledge management, factors affecting on its implementation, and the effect of these factors on the successful implementation of knowledge management in the organization.

Justifiability and stability:

Validity or justifiability represents the degree to which a device can evaluate a variable by a specific definition.

The purpose of the justifiability test is to identify possible problems and ambiguities in the wording of questions and the structure of the questionnaire and the like. First, the questionnaire was distributed among several experts and proficient for the validity and stability of the questionnaire. Having confirmed the obtained results, the questionnaire was distributed among research statistical population.

Reliability or stability is one of the technical features of the data measurement tool and indicate stability and logical consistency of replies in the measuring instrument and helps to evaluate the accuracy and goodness of measuring instrument.

In this study, the stability of the questionnaire or its reliability was calculated by using Cronbach's alpha measurement method.

Cronbach's alpha coefficient is used to measure one-dimensionality of attitudes, beliefs, and similar items.

In fact, we want to see how much the respondents perceived the questions to be the same.

Whatever, the Cronbach's alpha index closer to one, the inner correlation between questions will more, and thus the questions will be more homogeneous.

Cronbach's alpha for this study for the eight dimensions, separately for each dimension and in general, indicates acceptable and high reliability of the questionnaire.

We used Cronbach's alpha to measure the reliability of the 8 dimensions. According to the table below. A value of 0.832 that is more than 0.75, indicates that the research tool is stable and reliable.

Reliability statistics

Table 1. Cronbach's alpha measurement

| Cronbach's alpha | N of items |
|------------------|------------|
| 0/832 | 8 |

Table 2. Smirnov test to check for the normality of the independent variables

Data Analysis:

To analyze the data collected, I first examined the descriptive statistics of demographic variables of the study that including education, the working experience in a unit and others. Then the inferential statistic is presented.

As the statistical analysis shows, 75/8% of all respondents were male and 24/2% of respondents were female. two point three percent had a high school diploma and lower, 13.8% had associated degree, 55.4% had master's degree, and 28.5% had Doctoral education, works experience less than 2 years was 4.6%, between 10-15 years was 45.8%, between 15-20 years was 18.5%, between 20-25 years was 9.2%, and works experience more than 25 years was 11.2%, that have technical and nontechnical

Education

After demographic analysis, the hypotheses were analyzed and tested.

The following are also some of the limitations of doing research:

The unfamiliarity of many employees with the topic of knowledge management and also some of them are not familiar with the meaning and purpose of some items.

Given that the present study was conducted at the staff level of The Gilan Telecommunication Department, answering the questionnaire question was typically associated with its limitations and problems.

Different personality traits of staff and the effect of these characteristics on completing the questionnaire.

Tiredness, busyness, and lack of motivation of persons, when answering questions and completing the questionnaire.

To evaluate variables and hypothesis of the research, the bivariate relationship will be examined, and use nonparametric tests such as Wilcoxon and Spearman correlation coefficients. For analyzing hypothesis and the relationship between variables.

Inferential statistics:

Normality of variables:

We run the Kolmogorov – Smirnov test to check for the normality of the independent variables and the results are as follows:

| | | | | | | | | |
|-------------------------|------------------------|---------------------------|-------------------------|------------------------|-------------------|----------------------|--------------------|-----------------------|
| | Organizational Culture | Organizational Leadership | Organizational Strategy | Information Technology | Learned Knowledge | Knowledge Conversion | Applying Knowledge | Knowledge Maintenance |
| Number | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 |
| Statistics Value | 2/216 | 1/623 | 1/840 | 1/639 | 1/769 | 1/556 | 1/660 | 2/381 |
| Significant Level (Sig) | 0/00 | 0/010 | 0/002 | 0/009 | 0/004 | 0/016 | 0/008 | 0/000 |

The level of significance for variables is less than 5% (The null hypothesis is rejected when the significant level is less than 5%)
 So the variables have no normal distribution. Therefore, nonparametric tests such as Wilcoxon and Spearman correlation coefficients are used to analyze the hypothesis and the relationship between variables.

5. The Results for testing hypothesis:

Test the first hypothesis: organizational factors affect the establishment of knowledge management in the Gilan Telecommunication Department.

The first hypotheses:

Organizational factors affect the establishment of KM in the Gilan Telecommunication Department.

Table 3. The first hypotheses

| | |
|------------|--|
| | Establishment of organizational management |
| Z | -13.97 g ^b |
| Asymp.sig. | 0/000 |

Organizational factors affect the establishment of KM in the Gilan Telecommunication Department

Given that, the significant value of the test is 0.000, and is less than 0.05, so it can reject the statistical null hypothesis with a 5% error level; thus it expressed a confidence level of 95% that organizational factors affect the establishment of knowledge management in Gilan Telecommunication Department.

Test the second hypothesis:

Technological factors affect the implementation of knowledge management in the Gilan Telecommunication Department.

Second hypothesis:

Technological factors affect the implementation of KM in the Gilan Telecommunication Department.

Table 4. Second hypothesis

| | |
|------------|---|
| | Establishment of Technological management |
| Asymp.sig. | -13/97 g ^b |

Technological factors affect the implementation of KM in the Gilan Telecommunication Department

Given that, the significant value of the test is 0/000 and is less than 0/05, so it can reject the statistical null hypothesis with 5% error Level; thus, it could be claimed with a confidence level of 95% that technological factors affect the implementation of knowledge management in the Gilan Telecommunication Department.

Test the third hypothesis:

Knowledge management processes affect the establishment of KM in the Gilan Telecommunication Department.

Table 5. Test the third hypothesis

| | |
|--|-----------------------|
| | Management deployment |
|--|-----------------------|

| | |
|------------|--------------------|
| | Management process |
| Asymp.sig. | -13.982 |

Knowledge management processes affect the establishment of KM in the Gilan Telecommunication Department

Given that, the significant value of the test is 0.000 and is less than 0.05, so it can reject the statistical null hypothesis with a 0.05% error level, thus it could be claimed with a confidence level of 95% that management processes affect the establishment of knowledge management in the Gilan Telecommunication Department.

Table 6. Correlations among individua

| Variable name | Spearman correlation coefficient | Significance Level |
|---|----------------------------------|--------------------|
| Organizational Strategy and Knowledge management department | 0.617 | 0.00 |

Since in the table above, the correlation coefficient value is 0.617, sig = 0.00, it can be claimed that there is a significant relationship between the two variables; In other words, the more organizational strategy, knowledge management deployment will be also more in the Gilan Telecommunication company.

Table 8. Fifth hypothesis

| Significant Level | Spearman correlation coefficient | Variable Name |
|-------------------|----------------------------------|---|
| 0.000 | 0.786 | Knowledge acquisition And establishment Of knowledge management |

Knowledge acquisition is affective on the establishment of knowledge management in Gilan Telecommunication Company

Since in the table above, the correlation coefficient value is 0.786, sig = 0.000; it can be

The fourth hypothesis:

Information Technology is effective in deploying knowledge management in the Gilan Telecommunication Company.

| Significant Level | Spearman correlation coefficient | Variable Name |
|-------------------|----------------------------------|---|
| 0.000 | 0.434 | Organizational Technology And establishment of knowledge management |

Table 7. The fourth hypothesis

Information Technology is effective in deploying knowledge management in the Gilan Telecommunication Company.

Since in the table above, the correlation coefficient value is 0.434, sig = 0.000, it can be claimed that there is a significant relationship between the two variables; in other words, the more organizational technology, knowledge management deployment will be more in the Gilan Telecommunication Company.

Fifth hypothesis:

Knowledge acquisition is affective on the establishment of knowledge management in Gilan Telecommunication Company.

claimed that there is a significant relationship between the two variables; in other words, in other words, the more knowledge acquisition, the more knowledge management deployment in the Gilan telecommunications department.

Sixth hypothesis:

Knowledge conversion is effective in the establishment of knowledge management in the Gilan Telecommunication Company.

Table 9. Sixth hypothesis:

| Significant Level | Spearman correlation coefficient | Variable Name |
|-------------------|----------------------------------|--|
| 0.000 | 0.792 | Knowledge conversion And establishment Of knowledge management |

Knowledge conversion is effective in the establishment of knowledge management in the Gilan Telecommunication Company.

Since in the table above, the correlation coefficient value is 0.792, sig = 0.000; it can be claimed that there is a significant relationship between the two variables; in other words, the more knowledge conversion, knowledge

management establishment will be more in the Gilan Telecommunication Department.

Seventh hypothesis:

Applying knowledge affects the knowledge management establishment in Gilan Telecommunication Company.

Table 10. Seventh hypothesis

| Significant Level | Spearman correlation coefficient | Variable Name |
|-------------------|----------------------------------|---|
| 0.000 | 0.824 | Knowledge Applying And knowledge Management establishment |

Knowledge conversion is effective in the establishment of knowledge management in the Gilan Telecommunication Company

Because in the table above, the correlation coefficient value is 0.824, sig = 0.000, It can be claimed that there is a significant relationship between the two variables, in the other words, the more knowledge Applying, knowledge

management establishment will be more in the Gilan Telecommunication Department.

Eighth Hypothesis:

Knowledge retention is effective on the establishment of knowledge management in Gilan Telecommunication Company.

Table 11. Eighth Hypothesis

| Significant Level | Spearman correlation coefficient | Variable Name |
|-------------------|----------------------------------|--|
| 0.000 | 0.718 | Knowledge retention and Knowledge Management establishment |

Knowledge retention is effective on the establishment of knowledge management in Gilan Telecommunication Company. Because in the table above, the correlation coefficient value is 0.718, sig 0.000, it can be claimed that there is a significant relationship between the two variables, in the other words, the more knowledge retention, knowledge management establishment will be more in the Gilan Telecommunication Department.

Prioritize Dimensions:

In order to prioritize each dimension, the Friedman test was performed that the result of it, shown in the following table. The table shows that the significance level is less than 5%, that is to say, the claim of the same rank of these eight dimensions is rejected. So you can use this prioritization.

Table 12. Prioritize Dimensions ;According to the results of the Friedman test.

| dimensions | Mean Rank |
|-----------------------|-----------|
| Culture | 4.86 |
| Leadership | 4.23 |
| Strategy | 3.54 |
| Technology | 7.65 |
| Learn Knowledge | 4.48 |
| Knowledge conversion | 4.34 |
| Applying knowledge | 5.46 |
| Knowledge maintenance | 1.44 |

According to the results of the Friedman test, the first priority is information technology and the last priority is knowledge retention

CONCLUSIONS

The results of the creation and implementation of the knowledge management system in the organization can be considered in two ways. The first way; if we gain more knowledge and manage it effectively, we can expect direct results such as improved financial performance and competitive advantage, innovation, predicting issues and problems, organization learning enhancement, upgrading organizational learning, and more use of information.

The second way; knowledge and its effective management may play an indirect role in the organization, and by converting other resources for the company, create competitive advantages and distinguish it from other organizations.

Overall, according to the above mentioned, it can be concluded that knowledge management is one of the main variables affecting organizational performance in the Gilan Telecommunication Department and is a prerequisite for its improvement.

In fact, enhancing performance in this organization directly depend on knowledge management components and processes,

including creating and acquiring new information and knowledge at different levels of organization, registering and documenting existing knowledge in the organization, knowledge sharing, skills, and experiences among employees across all unit of organization and departments, and the use of knowledge formed to achieve the goals of organization.

Presenting suggestion for improving the current status:

Considering the results of each the effective factors and identifying the strengths and weaknesses of each organization, the following is suggested:

Increase the awareness of managers and staff about the interests of knowledge management, for this purpose training courses, can be incorporated, including knowledge management into agenda of general manager meeting and allocating part of the organization's portal space to knowledge management topics.

- Creating the culture of “knowledge – sharing is power” instead the motto of “knowledge is power” through the implementation of motivational programs in an organization.
- Welcoming new ideas and generating and generating new knowledge and solutions in organization and using them in redesigning processes and working methods.
- Creating an open space in the organization, so that employees feel free, and allowed to express their opinions.
- Creating learning culture through experience that is exploiting past mistakes and failures and using them in future activities.
- Describe the general benefits of trust for persons.
- Identifying and fixing distrust factors among employees.
- Strengthen the culture of participatory management in the organization; for this purpose, the suggestion system can be strengthened.
- Using Job rotation programs in the organization to disseminate knowledge in different organizational units and increase the level of learning among employees.
- Forming scientific or professional associations of (engineers, researchers, and the like) to generate and share Job knowledge.
- In order to be more effective, these associations need to be given the material and moral support they need, and allow eligible people to join the association.
- Expanding and institutionalizing the culture of study and learning, and reinforcing the questioning spirit of the staff.
- Create the motivation needed for staff to share and create new knowledge by the staff with the support of senior managers.
- Delegate new responsibilities to employees.

- Encourage employees to bring up their ideas.
- Creating a rewarding and motivation system to increase employee performance.
- Determining appropriate indicators to evaluate the efficiency and performance of organization projects.

Strengthen different parts of the organization by injecting specialist persons.

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