Examining the workforce- empowerment instruments and methods, factor analysis approach (Case: Food Industries of Qom Province)

Ghasem FARAJ POORKHANA POSHTANI[1], Iman SHEIKHI[2], Elham SHEYKHI[2],

Elham CHOBCHI LANGRODI[2]

[1]Assistant professor in Industrial Engineering Group, Islamic Azad University, Parand Branch, Tehran, Iran

[2]Industrial Engineering Master's student, Parand Branch, Islamic Azad University, Tehran, Iran

_____

Abstract. The most important capital of each organization is its employees. Therefore organizations need powerful employees to create competitive advantage and to continue surviving. These employees must be able to quickly adjust to changes in environmental changes and to solve organizational problems. The indexes affecting employee-empowerment have been examined in the present research through reviewing the previous studies. Three main factors were extracted after factor and exploratory analyses were conducted. With regard to the research literature, these three factors included occupational factors, personal factors, and organizational factors. Multi- variable regression, correlation coefficient, variance analysis, and Friedman test were used to examine the correlation between the main extracted factors. The results of the regression indicated that there is a significant relationship between the three organizational, personal, and occupational factor and the employees' occupational performance. Friedman test also indicated that the organizational factor was more important in empowering the employees.

Keywords: Empowerment, occupational performance, regression, food industries

_____

1. INTRODUCTION

One of the objectives of organizations is to train and empower employees and it has always been standing on the belief and advertisements that efficiency relies on employees who are smart, educated, and empowered. Long- term and short- term on- the- job training courses or other ways are their individual or group abilities and capacities in line with organizational objectives. After years of accumulating experience, the world has come to the conclusion that an organization must enjoy a highly- motivated, creative, and specialist manpower if it intends to be a pioneer in its economic and work affairs and not to be left behind in the field of competition. Human resources are the base of the actual wealth of an organization. In other words, empowering is an organizational development strategy.

With regard to the organizational perspective regarding empowering employees, it seems like the issue at hand would be how to share power with other sections of the organization. In fact what is intended is transferring power from the higher levels of the organization to the lower levels of the organizational hierarchy. The effective key for achieving employee empowerment to improve performance is for each individual in the organization to have a specific understanding of empowerment in the organization and the objectives they want to accomplish. Organizations take measures in executing programs which increase the abilities, capacities, and powers of their employees in order to survive, continue their life, and creatively handle the upheavals and to empower their employees. The commitment of the managers and authorities of the organization, thorough participation of the employees, suppliers, and clients, and connections are essential for minimizing error in the employee- empowerment process.

_____

*Corresponding author. *Email address: iman-sheikhi@yahoo.com*

This research aims at finding the answers for the following questions:

- What are the most important factors affecting employee empowerment?
- What is the relationship between the factors affecting employee empowerment and their occupational performance?
- What is the status of the factors affecting employee empowerment regarding the issue of importance?

The aim of this study is to present a framework for determining the proper instruments for increasing employee empowerment and improving their occupational performance. The research literature is first analyzed in the present research and then the research method and model will be examined.

2. RESEARCH LITERATURE

One of the goals of the organizations is to train and empower their employees and it has always been standing on the belief and advertisements that efficiency relies on employees who are smart, educated, and empowered. Long- term and short- term on- the- job training courses or other ways are their individual or group abilities and capacities in line with organizational objectives. After years of accumulating experience, the world has come to the conclusion that an organization must enjoy a highly- motivated, creative, and specialist manpower if it intends to be a pioneer in its economic and work affairs and not to be left behind in the field of competition. Human resources are the base of the actual wealth of an organization. In other words, empowering is an organizational development strategy. Empowering the employees has turned into one of the impressive concepts of today's management performance and theories [1]. Many organization aim at actualizing the potential abilities of their employees through empowering them. In many organizations, empowering occurs through delegating powers [2].

Empowerment contains numerous definitions. For instance Vogt [3] defines empowerment as: an action which allows the employees to have a role in the decisions made in their workplace and this is accompanied by an increase in the individual's independency and liberty in making decisions. In another definition, Morales [4], states that: empowerment is trusting, supporting, training, and respecting one another and creating motivation in line with developing and improving each other's skills. In another definition, empowerment is: breaking the traditional hierarchical structure and vesting some power in the employees involved and giving them the right to make decisions in order to resolve problems [5 and 6]. However, empowerment has a more develop meaning today and it does not only include delegating powers but it is a process through which the employees can improve their performance by learning knowledge, skill, and motivation [8]. Whetten and Comeron [7] consider empowerment as giving power to the employees, meaning, helping them improve their self- confidence and overcome their inabilities or frustrations and also giving them energy and intrinsic motivation to execute their jobs; they also mention that: empowering is not only delegating power to the employees although, like empowerment, it indicates the ability to do the works.

Power and empowerment are not the same thing, people may have or not have power. Although an individual can give power to another individual he must also have the capacity for empowerment [7].

Only organizations which have trained a knowledgeable and effective force and use them as an effective weapon in changing atmosphere and in a proper time could guarantee their survival in today's dynamic and changing atmosphere. With regard to the global competitions and the imported goods, the under- study companies need employees who could be strong and who could survive the changes through a trustworthy knowledge and a flexible structure. Therefore

in this applied research, we seek the answer to this question: what factors are involved in empowering the employees in these industrial organizations, especially in food industries?

In many researches [8] the researchers hold the belief that the individuals' autocracy in large occupations gives meaning to that occupations, improves the behavior and job satisfaction. It is essential to attend to the benefits of empowerment within the new environmental conditions in order to understand the importance of empowerment. Environmental upheavals such as technological advancement, the organizations becoming flat and the elimination of the middle layers, in addition to the need to maximize the use of the individuals' capacities simultaneously with the decrease in manpower makes the importance of empowerment greater each day [9].

Burdett [10] also considers three factors important in achieving employee empowerment, they include: a) coaching- based management b) occupations with larger scopes c) creating a learning organization.

The results of Spreitzer's studies indicated that empowered employees have more access to information in comparison with traditional organizations and thy have more team work.

Kanter [12] has attended to the concept of empowerment from a rational viewpoint. This view is dependent on sharing power with subordinates (power means an organizational power and not an individual authority), delegating power, decision- making not being concentrated, emphasis on collaborative management, quality cycles and autonomous teams and mutual goal-setting under conditions where it is followed by cooperation and accepting responsibility.

Zahedi et al. [13] examined the relationship between cognitive empowerment and organizational commitment. The results of their studies showed that people with cognitive empowerment are less committed to the organization.

Amirkhani [15] studied different aspects of cognitive empowerment in the field of human resources. He concluded that cognitive empowerment and its aspects it to trigger intrinsic motivation within individuals so that they fulfill their duties well.

Vatani [15] examined the factors influencing empowering human resources of Mellat Bank. Skill, view, and the personality of the employees were the three important factors which were identified in his research. Among all three factors, "skill" had a significant effect on empowering the employees.

3. RESEARCH METHOD

The present research is an applied research regarding its objective and it is a descriptive study regarding its method. Then the data needed to examine the relationship between these two variables (empowerment and occupational performance indexes) were collected through a questionnaire and the scores the supervisors had gave the employees. The collected data were analyzed through using regression matrix analysis, step- by- step regression analysis, variance analysis, and Friedman test through the SPSS software. The duration of the study included the three first months of 1390 (solar calendar) and the research was conducted in the food industries factories of Qon Province.

Table (1) shows the results of factor analysis. Kaiser-Meyer test indicates that the sample size is suitable for factor analysis and the value is 0.93. Bartlett's test is also an estimate of Chi-Square and the level of significance (Sig) is smaller than 0.05 which indicates that factor analysis is very suitable for identifying the structure.

**Table 1.** The results of the exploratory analysis.

Kaiser- Meyer- Olkin Measure of Sampling Adequacy		0.93
Bartlett's Test of Spheicity	Approx. Chi- Square	1605.047
	df	112
	Sig.	0.000

Table (2) shows the rotated matrix of the components which include the factor load of each of the variables in the residual variables after rotation.

Table 2. Matrix of the rotated factors.

Indexes	Occupational factors	Personal factors	Organizational factors
Career field	0.353	0.022	0.465
Job monotony	0.165	0.180	-0.20
Role conflict	0.085	0.117	0.132
Participation and team work	-0.016	0.267	0.752
Organizational attachment and mentality	0.207	0.553	0.436
Recognition and gratitude	0.317	-0.094	0.665
Information, knowledge, and skill	0.447	0.313	0.411
The organization's goals being specific	0.792	0.264	0.097
Enriching the job and promotion	0.848	0.130	0.116
Decreasing supervision and inspection	0.820	0.124	0.099
On- the- job training	0.802	0.204	0.212

The reliability of the research was measured by Cronbach's alpha which was equal to 0.88 and indicated that the research was quite reliable. Figure (5) shows the structure of the research model.
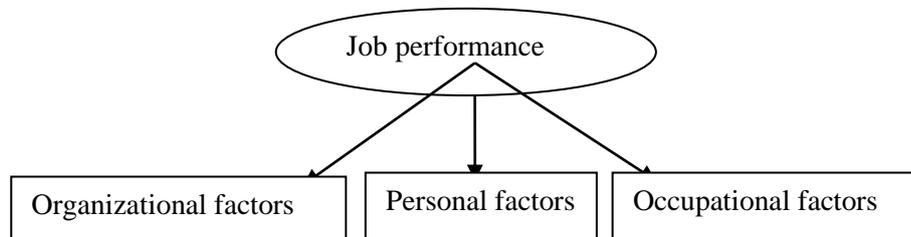
Figure 1. The structure of the research model.

After obtaining the main factors through exploratory and factor analyses, multiple regression was used to examine the relationship between the indexes affecting employee empowerment and their job performance.

Regression results could only be valid if the presumptions for utilizing them are realized. One of the preconditions for utilizing regression test on a series of variables is for the dependent variable to be continuous and have a normal distribution, the remaining must also be independent and have a normal distribution.

Smirnov- Kolmogorov test was used to examine the normality of the "employees' job performance" variable. We first form the null hypothesis and the hypothesis as below:

H_0: $F(x) = F_e(x)$ for all the values of the range

H_1: $F(x) \neq F_e(x)$ at least for one value of the range

The results of the Smirnov- Kolmogorov test for examining the homogeneity of the normal distribution of "employees' job performance" variable have been presented in table 3. With regard to the level of significance and the obtained KS, it is clear that H_0 hypothesis is not rejected at it could be stated at 99 percent level of confidence that the employees' job performance variable is a normal distribution.

**Table 3.** The results of Smirnov- Kolmogorov test

Normal distribution parameters	Mean	43.108
	Standard deviation	3.0065
Minimum differences	Absolute value	0.105
	Positive	0.131
	Negative	-0.150
KS		0.401
Estimated level of significance		0.997

Histogram and normal probability graphs can be used to examine the normality of the residues (graphs 1 and 2)
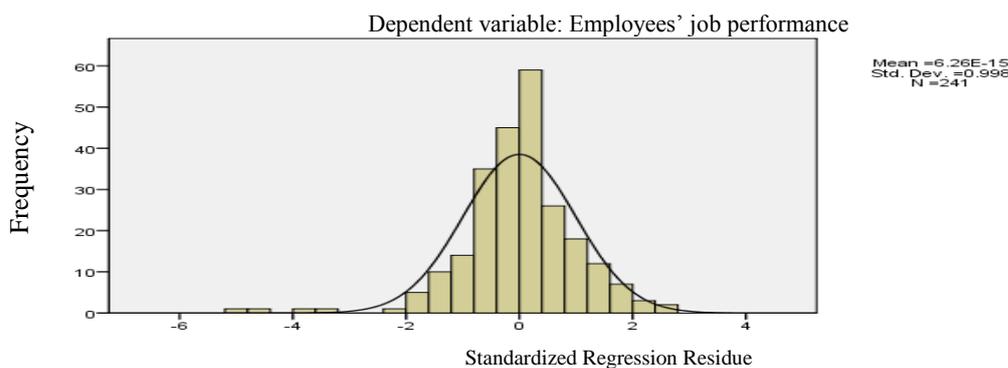
Graph 1. Histogram of residues' normal distribution.

It is clear with regard to graph (1) that the residue values have an almost normal distribution with a mean of almost zero and a standard deviation of 1.
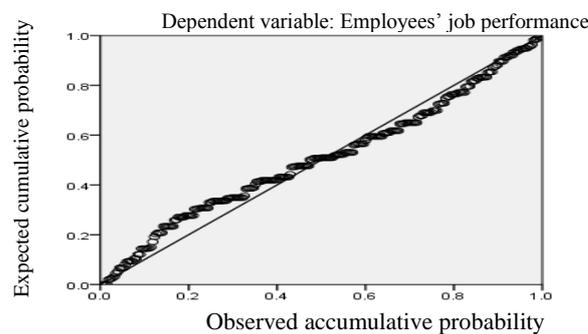
Graph 2. Normal probability graph.

Graph (2) is a plot normal graph. This graph compares the observed accumulative probability with the expected accumulative probability. If all the points on this graph are on the

bisector of the first quarter then the data completely follow a normal distribution. The graph above, shows that the residuals have an almost normal distribution.

Now that the conditions for regression are realized, we will first name the variables as: employees' job performance (Y), occupational factors (X_1), personal factors (X_2), and organizational factors (X_3).

Correlation coefficients and the level of significance of the relationship between the variables have been presented in table (4). The obtained results indicate that variables have a significant relationship with one another in all cases. And so if these variable enter the model simultaneously, the model will often not enjoy a proper fit therefore the step- by- step method is used. This method adds the variables one by one to the model.

Table 4. Pearson correlation coefficient between the predictive variable (empowerment index) and response variable (job performance).

Variables		Occupational factors	Personal factors	Organizational factors	Job performance
Occupational factors	Correlation	1.000	0.438	0.562	0.490
	Level of significance	-	0.000	0.000	0.001
Personal factors	Correlation	0.365	1.000	0.861	0.905
	Level of significance	0.000	-	0.000	0.000
Organizational factors	Correlation	0.562	0.861	1.000	0.974
	Level of significance	0.000	0.000	-	0.000
Job performance	Correlation	0.490	0.905	0.974	1.000-
	Level of significance	0.000	0.000	0.000	-

With regard to table (4), organizational factors have the closest relationship with job performance of the employees.

We will use variance analysis to examine the significance of multiple regression. We form the null hypothesis in this manner and used the variance analysis to test it (table 5).

Null hypothesis: the regression is not significant

Hypothesis: the regression is significant

Table 5. Summary of variance analysis.

Model		Sum of squares	Degrees of freedom	Mean squares	F	Level of significance
1	Regression	985.589	1	985.589	48.589	0.001
	Residual	4825.399	239	20.190		
	sum	5810.988	240			

As it could be seen in the table, with regard to the obtained value for F it could be concluded that at least of the independent variables (predictive) affect the prediction of the independent variable (response) and also considering the fact that the level of significance of the model is 0.000 and this value is smaller than 0.01, H_0 null hypothesis (regression is not significant) is rejected at a 99 percent level of confidence which means it could be stated that the regression model is significant. In other words, at least one of the empowerment indexes have a significant relationship with the employees' job performance.

Also Friedman test was used to specify the status of the indexes of employee empowerment. Using this test will make it clear which if the main indexes of employee empowerment is at a high degree of freedom.

The statistical hypotheses are as explained below:

H_0= all the empowerment indexes of managers are the same

H_1= at least two of the empowerment indexes are not alike

The results obtained from Friedman variance analysis are as explained in table (6). It will be clear with regard to the obtained results that the highest rank is related to the organizational factors and occupational factors and personal factors indexes are in the following ranks.

Table 6. The ranks of the employee empowerment indexes

Indexes	Rank means
Organizational factors	4.31
Occupational factors	2.84
Personal factors	1.65

4. DISCUSSION AND CONCLUSION

As mentioned in the previous sections, employee empowerment is using the potential capacities of the employees which is not completely being used currently. The results of the research indicated that the organizational factors are more importance in comparison with the rest of the factors regarding the matter of empowering the employees, occupational factors and then personal factors are important after the organizational factors. Many organizations such as the organizations which have been studied in this research spend a lot of money on administrative bureaucracy, controlling, and inspecting while job enrichment and developing programs which include participation for improving the skills and work conditions can to a large extent help the employees with empowerment issue.

The indexes obtained in the previous researches such as the studies conducted by ESkandari [2], Amirkhani [4], Zahedi [43], and Berdett [17] were commonly collected from the researches which had been conducted before and so their validity was not quite acceptable. However in addition to studying the research literature and extracting the indexes in this research, the individuals of the organization were also asked to state their opinions and these indexes were approved through factor analysis on validity which was neglected in the previous studies. Moreover this research used a new approach, meaning exploratory factor analysis on the main indexes, and explained the research model and then attended to examining the relationship between these factors and employees' job performance factor which is less seen in the previous researches.

Employee empowerment is one of main components of many programs which lead to organizational changes such as the program for constantly improving quality. It must also be noted that the success of the organizational change process relies on empowering the employees. The findings of this study show that the employees' job performances will be very successful in case the employees are empowered. With regard to the research results, organizations with empowered specialists and employees enjoy better job performance as well. There are many obstacles in the way of empowering the employees such as: an official and hierarchical structure governing the organization, low self- confidence and the members of the organization not trusting one another, the managers having an inappropriate view of the

employees, management styles, and incorrect leading styles, lack of essential skills, dramatic difference between the people in the organization, uncoordinated personnel systems, and tension and stress in the workplace. A primary and proper foundation must be made in the organizations in order to empower the employees. The manpower will be definitely used best and the organization will be efficient in organizations which completely and thoroughly execute the factors which influence empowerment. It is advisable to develop the mode of the present research or to enter intervening variables such as management style, organizational structure, and organizational agreement in future researches in order to help develop and improve the present study.

REFERENCES

[1] Eskandari, Mojtaba (1383), designing systemic pattern for management empowerment, Humanities Instructor Periodic, volume 2, p. 53

[2] Zahedi, Shamsossadat, Poodlani, Hasan, Satarinasab, Reza, Kooshki Jahromi, Alireza (1388), analyzing the relationship between psychological empowerment and organizational commitment, Parkha Va Marakeze Roshd Periodic, volume 24 p.p. 59- 70

[3] Amirkhani, Amir Hoseyn (1387) psychological empowerment of human resources: views and aspects, Peyke noor, sixth yea, volume 1, p.p. 41- 51

[4] Vatani, Khosro (1389), examining the factors influencing human resources empowerment: case study Mellat Bank Credits Division and Credit Planning and Supervision General Offices (researcher) Management Periodic (Faslnameye Modiriyat), seventh year, volume 20, p.p. 42- 28.