Indian Journal of Fundamental and Applied Life Sciences ISSN: 2231– 6345 (Online)
An Open Access, Online International Journal Available at www.cibtech.org/sp.ed/jls/2015/01/jls.htm
2015 Vol.5 (S1), pp. 3978-3988/Amir et al.
Research Article

EFFECTIVE FACTORS IN HUMAN RESOURCE PRODUCTIVITY USING MADM TECHNIQUES IN REGIONAL ELECTRIC COMPANY IN ILAM

***Amir Talebbeydokhti[1], Alham Mozafari Khorgo[2] and Abbas Rezaeizade[2]**
[1]Department of Industrial Engineering, Najafabad Branch, Islamic Azad University, Isfahan, Iran
[2]Department of Management, Qeshm Branch, Islamic Azad University, Qeshm, Iran
**Author for Correspondence*

ABSTRACT
Since the managers, authorities and employees of the organizations are considered as the most important affective human resource in the activity of any organization, and eventually their human resources will affect the other functions of human resources and financially the productivity of the entire organization. Therefore improving the productivity of human resources will be considered as a valuable attempt. The present study examines the effective factors to increase the productivity of human resources. This study, which is counted as descriptive research, has been carried out in the statistical population containing managers and authorities of regional electric company in Ilam. To study these factors, the productivity of the human resources, function of personal, occupational, organizational and environmental factors are considered. Therefore, in this research, the authorities and the managers perceptions about effective criteria to increase productivity has been studied. To analysis data, in addition to descriptive statistics, test- T, analysis, variance and M.A.D.M model has been used.

Keywords: *Human Resources, Productivity, Effective Criteria and The Regional Electric in Ilam*

INTRODUCTION
In today accelerating and transforming world, all the evidences mark a pivotal role of human and human resources in solving the problems, making the advanced technologies and producing different products. Actually manpower forms the cornerstone of any organization or in other words human resources that if these resources have sufficient motivation, they will utilize their talents and skills to serve their organization.

MATERIALS AND METHODS
This study is descriptive - measurable. Since this study examines the current status of research in the field of descriptive research, and since examines the people ideas and preferences via questionnaires, it is a measurable research. In such an approach, one sample of experienced experts is selected and then evaluated using interviews or questionnaires. To apply this method in the field of research after library studies, a questionnaire among selected statistical samples distributed randomly.

Statistical Population
The statistical population of this research is formed by experts with knowing the power industry having experience working in the Regional Electricity Company of Ilam. Due to the limited number of experienced and qualified experts in the company, determining the number of population, sampling is not performed.

Statistical Sample
As regards this research, studies all the effective factors on productivity of regional electric in Ilam. Therefore, in this study statistical sample will be selected randomly from experts and managers.
There are different perspectives in the field of human resources; some experts know it as goals and some ones as instruments. In instrumental view, what matters is important is the productivity of human resources in working environment in order to achieve better quality and quantity standards in doing work.
Considering the goal, development of human resource is summarized in this short phrase: "Enabling people for a better quality of individual, social and institutional life." Regardless of view, what is

important to consider is that human resource is the only immortal resource that it is not only easily available but also developing successively, if there is a correct management. Therefore developing the human resource is an instrument to improve individual productivity in a workplace. In any aspect, human resources of a country are the most important factor of development whether they are decision makers and law makers in macro level or managers and employees in micro level (Ishaq *et al.*, 1998).

Essentially human resources are the most valuable natural resources of a country. Some developed countries have known human resources as the most important and the only resource of economical growth and as a resource to develop skills and training treatments and motivations. Investment in these factors improves the quality of in work force. Human resources have exclusive importance both as a decision maker for the society and as employees in economical sectors of the country. This research looks for affective factors in the productivity of human resources in Regional Electric Company in Ilam, and presents the summary of its findings in chapter four and five. These findings may help in the management.

Data Collection Methods and Instruments

In this study, to determine how to prepare and set questionnaires, we tried to use the ways that lead to the desired results. Therefore Likert response scale was used for this work. The total numbers of questions of the questionnaire are 44. The way of scoring questions is from very low to very high order of 1 to 5.

Methods of Data Analysis

After the provision of the questionnaire and its distribution to the respondents, the questionnaire will be set based on the scoring, and based on any question the scores are summed and analysis of the data was done using descriptive and inferential statistical methods. We analyze data using the characteristics of descriptive statistics, such frequency, percentage, mean, standard deviation and in the inferential level, tests below were used. Inferential parametric test, variance analysis test

Inferential Parametric Test

T-Test: T - test of a group between the four effective dimensions in the productivity human resource

$$T = \frac{\overline{X} - \mu}{\frac{S}{\sqrt{N}}}$$

Table 1: The result of T-test on a group among the four dimensions of the research

Df	amount t	Standard Error	SD	Mean	n	
32	60.79	0.67488	3.87689	44.03	33	Individual
29	53.59	1.04870	5.74396	59.20	30	Organizational
32	22.48	0.54577	3.13521	15.27	33	Environmental
31	59.13	1.03953	5.88045	64.46	32	Occupational

Based on T-test of a different group, the four dimensions in the statistical level less than 0.001 meaningful that the table is as follows:

Comparing the averages of four factors indicate that the job with an average 4688.64 with priority of organizational factor with the average 2000.59 second priority, the individual factor is with third priority 0303.44 and the Fourth priority environmental factor with the average 2727.15.In this study, four factors are prioritized based on MADM model. Therefore to continue this, we investigate the factors discussed using the above models.

***MADM Model (Multi Criteria* Decision Making)**

In this method, choosing an option from other options is possible according to the priority of alternatives.

Compilation Priorities (Prioritizing)

The first step in prioritizing the elements of an issue is doing the paired comparisons, meaning that the components are compared in pair based on criteria.

Research Article

To do a paired comparison using matrix method is the best method. The matrix-method is a simple and useful tool that presents a framework to obtain further information via all possible comparisons and a sensitivity analysis of total priorities with changes in the judgments. To start the process, paired comparisons of the hierarchy begins with the selection criterion C for an initial comparison. Then the lower level of the standard components that should be compared is selected (component $A_1 A_2 A_3 \cdots\cdots A_7$). These components are arranged in matrix figure (1).

C	A_7 ..... A_2 A_1
A_1	1
A_2	1
.	.
.	.
.	1
.	
A_7	

Figure 1: Components of Matrix $A_1 A_2 A_3 \cdots\cdots A_7$

In this matrix the element A_1 in column with the element A_1 to A_7 row according to their criteria, which is written in the upper left corner of the matrix, are compared. This process is repeated for A_2 and the rest of the column. To fill up matrix, paired comparisons of numbers are used. To do so, to the relative importance of each element relative to other elements is determined in relation to that property. Table (2) shows the scale for paired comparisons.

Table 2: The scale of paired comparisons

Degree of importance in comparison two by two	Amount in number
The same preference	1
The same to relatively preferable	2
relatively preferable	3
Relatively to strongly preferable	4
strongly preferable	5
strongly to very strongly preferable	6
Very strong preference	7
Very to extremely preferable	8
extremely preferable	9

The table above defines value of numbers from 1 to 9 relevant to judgment (in paired comparisons). Experience shows that the scale 9 is reasonable, and it reflects the degrees so that we can differentiate between the severities of relationship between elements. When comparing an item with itself a number is written in a matrix (comparison A_1 row with A_1 columns in Figure 1). Therefore the diameter of matrix will always be a set of numbers 1. To compare other elements we always compare the first element (elements in left column of matrix) with the second element (the element in the top row), the numerical value is evaluated from available scale in table (2). Later the inverse value of that number will be used to

compare the second element to the first element. For example, if two elements are compared and the first element is important five times than the second element, then as regards the importance, the second element will be $\frac{1}{5}$ of the first element. The number of the judgments of each table should be obtained from the formula 2 $\left(n^2-n\right)\div$. In this study, table of paired comparison to choose the criteria of individual factor consists of: 5-4 table 1 (individual)

Table 3: Judgment matrix

Individual	Education Degree	Experience and Skill	Possibility to Success	Respect for Individuality	Perception in Organization	Occupational Success
Education Degree	1	7	$\frac{1}{5}$	8	9	7
Experience and Skill	$\frac{1}{7}$	1	6	6	$\frac{1}{5}$	$\frac{1}{8}$
Possibility to Success	5	$\frac{1}{6}$	1	7	$\frac{1}{7}$	$\frac{1}{7}$
Respect for Individuality	$\frac{1}{8}$	$\frac{1}{6}$	$\frac{1}{7}$	1	$\frac{1}{7}$	$\frac{1}{5}$
Perception in Organization	$\frac{1}{9}$	5	7	7	1	7
Occupational Success	$\frac{1}{7}$	8	7	5	$\frac{1}{7}$	1

This table compares the index of education degrees with other 5 indexes in effective individual criteria in increasing the productivity of human resources. 5 similar tables are obtained from the result of paired comparison of the indexes in the next rows with other indexes.
Three other measures of the four factors, organizational, occupational, environmental are affective factors of the productivity, these criteria, respectively, according to the indexes including the tables as follows:
9 tables: organizational criteria 6 tables: job criteria
2 tables: Environmental criteria

Integrating Judgments

Table 4: Matrix integrating judgments

	Education Degree	Experience and Skill	Possibility to Success	Respect for Individuality	Perception in Organization	Occupational Success
Education Degree	1	0.5683	2.0651	1.6093	3.9617	3.8884
Experience and Skill	1.7550	1	2.5251	0.8543	1.7264	0.8428
Possibility to Success	0.3926	0.3300	1	0.2800	3.7681	1.9390
Respect for Individuality	1.2384	1.1688	3.5630	1	1.9954	1.0764
Perception in Organization	0.2519	0.5783	0.2647	0.4998	1	0.3370
Occupational Success	0.2599	1.1840	1.0266	0.9276	2.9576	1
Total	4.8978	4.8294	1.0444	5.171	15.4092	9.0836

Research Article

To develop a set of priorities for a problem, we should integrate the judgments that were obtained by paired comparisons.

This means that we should do an operation to obtain a number which indicates the priority of each element. To obtain the relative priority of each index according to the individual criteria, we should integrate the judgments. To do this, for this first we should add the numbers in column 1 row 2, 6 tables together and then we integrate the tenth root of total numbers in column 1 row 2 of the table d. Similarly, all cells of the table are completed. The diameter of the table is still number 1.Merge table, ten individual matrixes.

To obtain the relative priority of each index, first we add the numbers in each column together and divide the numbers of each column to the sum of the numbers in that column. This matrix makes more meaningful comparisons between elements. Finally, we add the numbers in each row of the matrix together and obtain its mean. This action causes to obtain the percentage of the relative priority in each index.

Comparison Table of Ten Matrixes of Individual Factors and Consolidation of 10 Matrixes

Table 5: Weighted mean of matrix

	Education Degree	**Experience and Skill**	**Possibility to Success**	**Respect for Individuality**	**Perception in Organization**	**Occupational Success**	$\sum$	$\frac{\sum}{6}$
Education Degree	0.2041	0.1176	0.1977	0.3112	0.2570	0.4280	1.5156	0.2515
Experience and Skill	0.3583	0.2070	0.2417	0.1612	0.1120	0.0927	1.1769	0.1961
Possibility to Success	0.0801	0.0683	0.0957	0.0541	0.2445	0.2134	0.7561	0.1265
Respect for Individuality	0.2528	0.2420	0.3411	0.1933	0.1294	0.1184	1.277	0.2118
Perception in Organization	0.0514	0.1197	0.0253	0.0966	0.0648	0.0370	0.3947	0.06
Occupational Success	0.0530	0.2451	0.0982	0.1793	0.1919	0.1100	0.8775	0.14

Based on Table 5, the first priority of factors to Education Degree is with 0.2515 percent and the last priority to the Perception in Organization is with 0.06 percent.

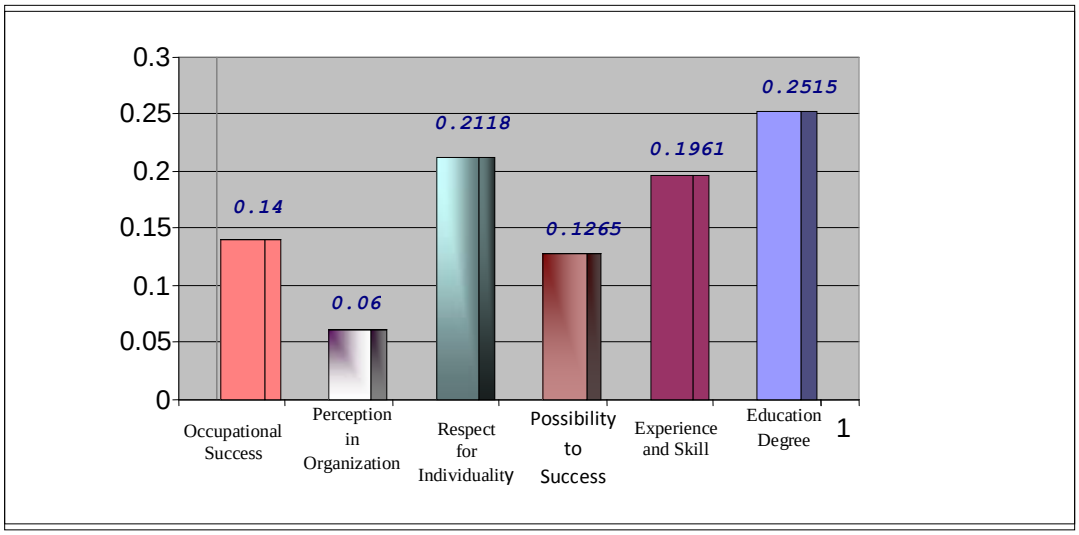

Figure 1: Ranking indices of individual factors in increasing the productivity of human resources

In order to prioritize, other effective factors in the productivity including organizational, occupational and environmental criteria is done like this that respectively prioritized tables of the indices in each criterion are shown as follows:

Table 6: Weighted mean in institutional indices

	Designation and Reward	**Salary System**	**Corporation**	**Competent Managers**	**Equipments**	**Taking responsibility**	**Occupational Security**	**Relevant Teaching**	**Logical Division**	$\sum$	$\frac{\sum}{9}$
Designation and Reward	0.1929	0.1719	0.1416	0.2615	0.1795	0.1499	0.1921	0.01096	0.1476	1.5439	0.1715
Salary System	0.1042	0.1447	0.3247	0.1158	0.1520	0.1251	0.2528	0.087	0.1125	1.4186	0.1576
Corporation	0.1152	0.0376	0.0849	0.0839	0.0671	0.0929	0.1135	0.0759	0.1232	0.7942	0.0882
Competent Managers	0.0971	0.2717	0.1333	0.1322	0.02015	0.1991	0.0961	0.1476	0.1193	1.3925	0.1547
Equipments	0.0493	0.0438	0.0583	0.0301	0.0462	0.0636	0.08000	0.0291	0.02741	0.4278	0.0475
Taking responsibility	0.0780	0.0694	0.0343	0.0397	0.0406	0.0488	0.0620	0.0284	0.0465	0.4477	0.0497
Occupational Security	0.1246	0.0710	0.0929	0.1708	0.0717	0.1218	0.1245	0.3839	0.2360	1.3972	0.1552
Relevant Teaching	0.1491	0.0929	0.0750	0.0740	0.01080	0.0977	0.0369	0.0829	0.1134	0.8299	0.0922
Logical Division	0.0897	0.0966	0.0545	0.0917	0.01331	0.1008	0.0417	0.0577	0.0792	0.745	0.827

Based on MADM model, the highest priority in the organizational factors to the index (Individual Designation people based on merit principles) is with 0.1715 percent and the last priority to (providing equipments and facilities that is needed to do the job) is with 0.0475 percent.

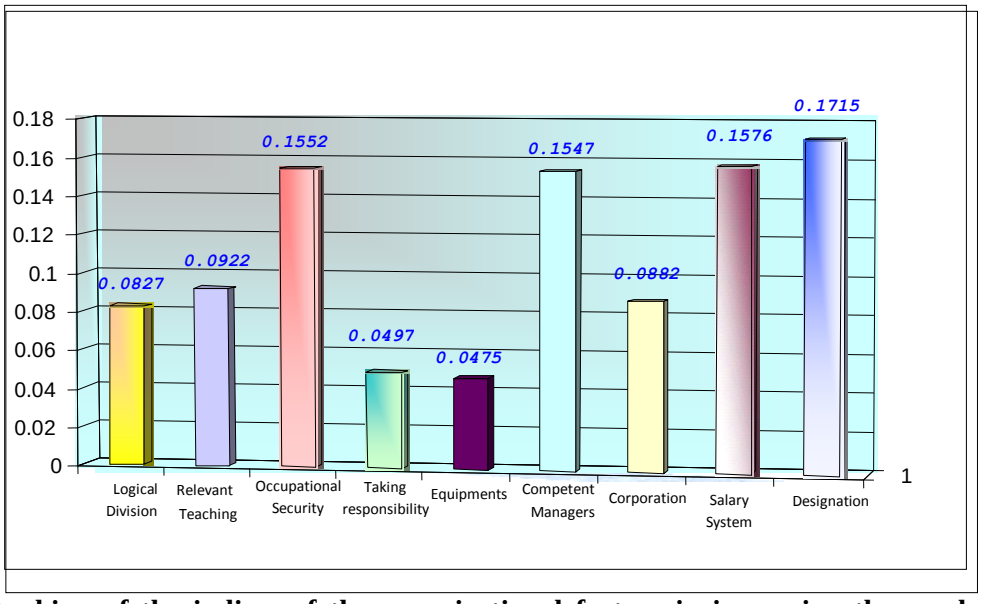

Figure 2: Ranking of the indices of the organizational factors in increasing the productivity of human resources

Table 7: Comparing environmental factors and consolidating ten matrixes

	Economic	**Administrative**	$\sum$	$\frac{\Sigma}{2}$
Economic	0.8097	0.8090	1.6187	0.8093
Administrative	0.1902	0.1909	0.3811	0.1905

In the environmental factors the first priority (economic condition of the country) is with 0.8093 percent, and next priority (relevant to the Administrative condition of the country) is with 0.1905 percent.

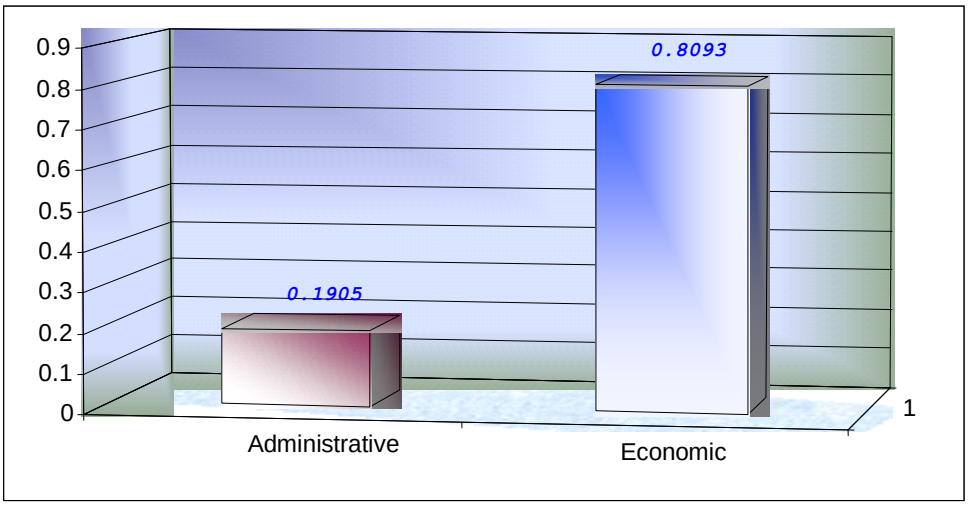

Figure 3: Ranking of the indices of occupational factors in increasing the productivity of human resources

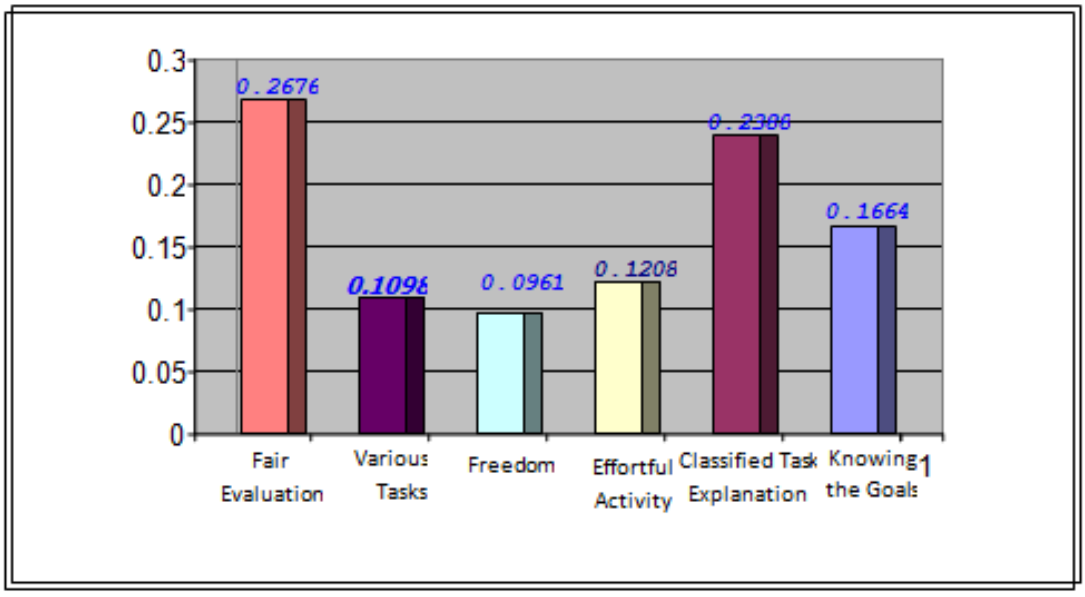

Figure 4: Ranking indices of occupational factors in increasing the productivity of human resources

In the occupational factors, the first priority is to (evaluation of fair activity and honestly expression of strengths and weaknesses) with 0.2676 percent and the last priority is to (Having freedom in work and decision making) with 0.0961 percent.

Table 8: Matrix of weighted mean

	Knowing the Goals	Classified Task Explanation	Effortful Activity	Freedom	Various Tasks	Fair Evaluation	$\sum$	$\frac{\sum}{6}$
Knowing the Goals	0.02007	0.2047	0.1944	0.1093	0.1228	0.1667	0.9986	0.1664
Classified Task Explanation	0.2072	0.2116	0.3249	0.2286	0.2883	0.1725	1.6321	0.2388
Effortful Activity	0.1167	0.736	0.3211	0.1109	0.1491	0.1616	0.7251	0.1208
Freedom	0.0887	0.0997	0.0913	0.1078	0.0986	0.0909	0.577	0.0961
Various Tasks	0.0721	0.0900	0.0931	0.1340	0.1228	0.1468	0.6588	0.1098
Fair Evaluation	0.3142	0.3201	0.1829	0.3092	0.2182	0.2613	1.6059	0.2676

Table 9: The table of weighted value of the four factors

	Individual	Occupational	Environmental	Organizational	$\sum$	$\frac{\sum}{6}$
individual	0.5123	0.4810	0.3483	0.5437	1.8853	0.47
Occupational	0.1426	0.1610	0.3573	0.0958	0.7567	0.18
Environmental	0.1744	0.0534	0.1187	0.1791	0.5256	0.13
Organizational	0.1705	0.3044	0.1754	0.1813	0.8316	0.20

According to the results of the criteria comparison in the MADM model, the first priority to the factor ((person)) is with 0.47 percent and the last priority factor relevant to ((environmental)) is with 0.13 percent. Therefore prioritizing the four factors hasn't have effect in the same size; according to the respondents, in the productivity of human resources. Most impact was relevant to the individual factors and lowest impact was relevant to the environmental factors.

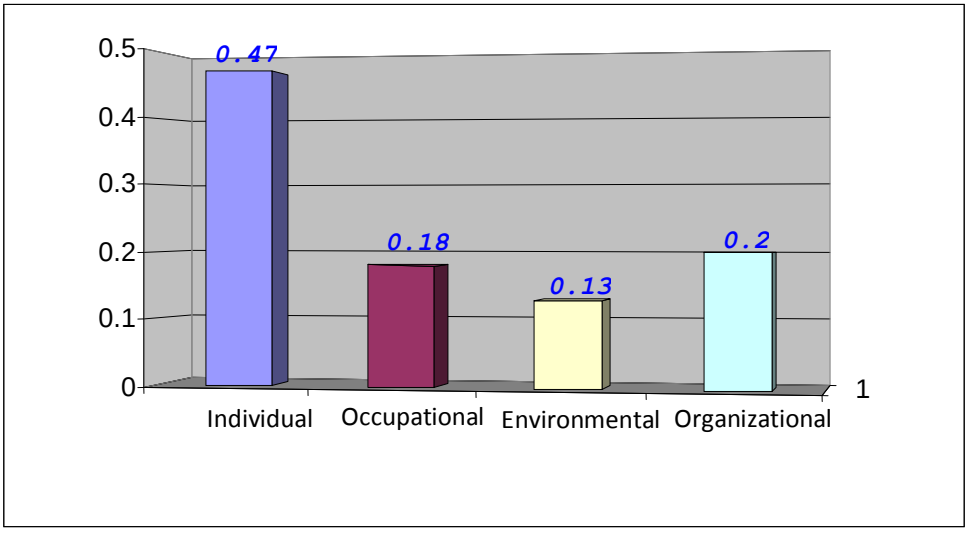

Figure 5: Ranking of the effective four factors in the productivity of human resources

Investigating the Study hypothesis

Hypothesis (1): Organizational factors have the first priority in the productivity of human resources.
Hypothesis (2): Individual factors have the second priority in the productivity of human resources.
Hypothesis (3): Occupational factors have the third priority in the productivity of human resources.
Hypothesis (4): Environmental factors have fourth priority in the productivity of human resources.

Hypothesis (1): Organizational factors have the first priority in the productivity of human resources.

The results of the table shows the observed amount of the mean of organizational factor in comparison with other effective factors in the productivity, has the second priority. Consequently the first hypothesis of the study based on the priority of organizational factors is rejected and cannot be claimed that organizational factors in prioritizing effective factors in the productivity of human resources has the first priority .

Hypothesis (2): Individual factors have the second priority in the productivity of human resources. Based on the mean of respondents' views on the effect of individual factors and the results obtained from prioritizing the factors in Table 9, the individual factors have the first priority. Therefore, the second hypothesis of this study, according to the results obtained from prioritizing is rejected.

Hypothesis (3): Occupational factors have the third priority in the productivity of human resources. The results of the table shows the average scores of the respondents regarding the effect of occupational factors in increasing the productivity of human resources, this factor will be ranked the third priority. According to the priorities obtained the third hypothesis is accepted.

Hypothesis (4): Environmental factors have fourth priority in the productivity of human resources.

According to the results obtained from the mean of respondents' views about the effect of environmental factors, environmental factors in ranking have the fourth priority. According to the prediction in the fourth hypothesis the hypothesis is accepted.

Interpretation of the Results

Based on the data analysis of this study, the following results were obtained:

Studying the results obtained showed that respondents, based on MADM method and paired comparing factors in increasing the productivity, consider the individual factors as the effective factor in increasing the productivity. And also we can induce that these factors play an important role in the productivity of human resources.

Table 10: prioritizing subset of the individual factors based on the degree of importance

	Question
1	Education Degree
2	Respect to you in the workplace
3	Competent Managers and relevant skills to the job
4	occupational success
5	Possibility of career advancement
6	Your perception to a job, organization, and generally your work

Table 11: Prioritizing subset of occupational factors based on the degree of importance

	Question
1	Economic condition of the country such as inflation, unemployment and etc
2	Administrative condition of the country such as management

Table 12: Prioritizing subset of organizational factors based on the degree of importance

	Question
1	Your designation based on the merit principle
2	Fair salary system based on qualifications and effort
3	Occupational security
4	existence of competent managers in your organization
5	The training that increase your skills related to your job
6	Your cooperation in decision making related to your job
7	Correct and logical task division based on skills
8	Increasing levels of responsibility
9	Providing equipments and facilities that is required for the job work

Table 13: Prioritizing subset of occupational factors on the degree of importance

Question	
1	Evaluating your work fairly weak and identifying the strength and the weakness honestly
2	Existence of clear and classified task description
3	Knowing the occupational goals and duties and perceiving its importance
4	Effortful work(activities which are not the same and stable)
5	Various and outspread occupational duties
6	Freedom in work and decision making relevant to your job

Statistical test using MADM methods in prioritization the four effective, since the factors were done with the paired comparison, is done with high accuracy by the respondents. This model differentiates the factor priorities from the research, so the results may not be comparable with other studies.

ACKNOWLEDGEMENT
We are grateful to Islamic Azad University, Qeshm branch authorities, for their useful collaboration.

REFERENCES

Abtahi H (1996). *Productivity,* first edition (Publications of the Institute for Trade Studies and Research), Tehran **6**.
Aghdas M and Sakkaki H (1996). Descriptive introduction of two organic and mechanical systems and their impact on productivity. *Public Administration Quarterly* **35**(8) 10-63.
Alvani SM (1993). *Public Administration,* sixth edition (Nashr-e-Nei Publications) Tehran.
Azar A and Ali Rajab Z (2002). *Applied Decision Making (MADM Approach)* (Nashr-e-Negah Publications) 119.
Azar A (2003). Research Notes. Power and Water University of Technology.
Bahrami P (2003). Study of effective factors in effectiveness of (senior, middle, operational) managers. Esfahan Oil Refining Company, Public Administration Master Thesis, School of Management, Islamic Azad University, Dehaghan Branch.
Bast J (1987). *Research Methods in Educational and Behavioral Science,* translated by Hassan Pasha Sharifi and Narges Taleghani (Roshd Publications) Tehran.
Bzazjzayeri S (1994). Staff training as an acknowledged priority in the office and industrial organizations. *Journal of Applied Public Administration* **26**(6) 56-66.
Beheshti MB (1994). *The Study of Productivity in the Public Organizations and Ways of Increasing It*. The seminar of administrative issues in 1998 (Published by Allameh Tabatabai University) Tehran.
Cheyenne E (1990). *Organizational Psychology,* translated by Aboulfazl Sadeghpour and Habibollah Behzadi (Tehran University Press) Tehran 42-30.
Daft Richard L (1997). *Theory and Design of Organization,* translated by Ali Parsaeian and Mohammad Arabi, Office of Cultural Research.
Emadzadeh M (1995). The role of educated workforce in increasing productivity management Knowledge.
Ghaffarian V and Samadi A (1998). Development of today executive Managers is tomorrow's necessity of life a scientific and educational. *Journal of Tadbir* **90** 22-37.
Hagighat MA and Akram H (1993). *8500 Management and Accounting Terms* (Termeh Publications, Management & Accounting English - Persian Dictionary Tehran.
Hersey C and Blanchard VAK (1996). *Management of Organizational Behavior,* translated by Kabiri Gh (Jihad University Press) Tehran.
Hiks V (1997). *Theories of Organization and Management,* translating and writing, Dr. Goel Koen (Ettelaat publications) **I**.
Hall Richard H (1997). *Organization, Structure, Process and Presents,* translated by Ali Parsaeian and Muhammad Arabi First Edition (Office of Cultural Research).

Johnson Richard A and Gori KB (2006). *Statistics Principles and Methods,* translated by Dr. Fattah Mikhail (Arkan Publications).
Khaki GH (1997). *Introduction to Productivity Management* (Culture Center and Sayenama Publications) Tehran.
Khaki GH (1997). Value added. A way to measure the productivity, Institute for the Study of Educational Planning.
Kadkhodaei H (1996). Determining the causes of low productivity. *Public Administration Quarterly* **9**(8) 34-33.
Kuntez H, O'Donnell and Haniz Y (1991). *Principles of Management,* translated by Mohammad Ali Tosi and Ali Akbar Farhangi and Mahdavian, First edition, Tehran, Center of Public Management Education.
Lutanz F (1994). *Organizational Behavior,* translated by Sarmad Gh (Publications of Banking Institute of Iran) Tehran.
Marashi N and Farokhzad S (1992). Measurement and analysis of productivity and proportions of technical control. Articls sets of the First Congress of Industrial Engineering and Productivity, the Center of Industrial Engineering and productivity, Tehran.
Mir Sepasi N (1992). *Human Resource Management and Labor Relations,* 10 Edition (Naghsh-eJahan publications) 508-509.
Mitchell Ter R (1994). *People in Organizations,* translated by Shekarkan H (Roshd Publications) Tehran.
Moghimi SM (2001). *Organization and Management, Research Approach,* second edition (Termeh Publications).
Najaf Loui Trkmani M (1992). Study of the relationship between employees ' awareness of the goals of the institution and their efficiency in Tehran pharmaceutical companies. *Scientific and Research Quarterly of Management Knowledge* **18**(9) 12-25.
Nahavandian M (2003). The principle is the man not the capital. *Journal of the Central Insurance of Iran* **15**(6)16-36.
Paul H and Kenneth HB (1994). *Management of Organizational Behavior,* translated by Kassem Kabiri (Jihad University Press) Tehran 10-507.
Proukounikou J (1993). *Productivity Management,* first edition, translated by Ibrahim (Published by Institute of Labour and Social Security).
Rabinenr Stephen P (1990). *Fundamentals of Organizational Behavior,* translated by Kabiri G (Islamic Azad University Publications) Tehran.
Rezaeian A (1900). *Management, Organizational Behavior* (Tehran University Press) 34-35.
Rezaeian A (2000). *Principles of Business Management* (Samt Publications).
Robbins Stephen P (2001). *Theory of the Organization,* translated by Seyed Mehdi Alwan Hassan Danaifar, fourth edition (Saffar Publications).
Saatchi M (1997). *Psychology of Productivity* (Nashr Publication) Tehran.
Sarmad Z and Abbas Bazargan E (1997). *Research Methods in Behavioral Science* (Agah Publications) 169.
Saadat A (1996). *Human Resource Management* (Samt Publications) Tehran
Sakkaki SH (1996). Productivity frontier. Ph.D. Dissertation, University of Tarbiat Modarres.
Shiyoulsoun R (2003). *Statistical Reasoning in the Behavioral Sciences, Statistical Inference,* translated by Ali Kiamanesh (Jihad University Press) **II** 256.
Taheri SH (2001). *Productivity and Analysis in Organizations* (Havaye Tazeh Publications) Tehran.
Tafazoli F (1993). *History of Religious Beliefs* (Nei Publications).
Tousi MA (1995). Productivity and national culture. *Journal of Public Administration* **31** 26-39.
Zarei Matin Hk (1990). Culture and organizational function. *Scientific and research Journal of Knowledge Management* **2** 353-63.