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## Data Article

Q1 Assessment of prioritizing the effective factors on  
Q2 human resources effectiveness (Case Study:  
Tehran Industrial Parks Organization)

Mehdi Pariav Fallah<sup>a</sup>, S.Z. Hashemi<sup>a</sup>, Majid Radfard<sup>b</sup>,  
Mohammad Mirzabeigi<sup>c,\*</sup>, Ahad Khalaji<sup>d</sup>

<sup>a</sup> Faculty of Management, Central Branch, Islamic Azad University, Tehran, Iran

<sup>b</sup> School of public Health, Tehran University of Medical Science, Tehran, Iran

<sup>c</sup> Ministry of Health and Medical Education, Tehran, Iran

<sup>d</sup> University of Social Welfare and Rehabilitation, Tehran, Iran

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## ABSTRACT

Identifying the effective factors on human resources effectiveness can help management and leadership to obtain success, organization goals and fulfillment of high effectiveness and efficiency. Thus, management and leadership always supposed to survey the effective factors on effectiveness of these valuable and transformational resources. Effective factors on employee effectiveness have different aspects and varieties. For instance, Hay Group<sup>®</sup> model which is in order to compare organizations based on employee effectiveness. The model includes different factors located in two groups of ENGAGEMENT and ENABLEMENT. The main purpose of this study is to assess and prioritize effective factors on employee effectiveness in Tehran Industrial Parks. On the other side, it is required to be surveyed and determined according to organizational properties and content dimensions of under study organization, and use of latent knowledge amongst organization experts (top managers). This cross-sectional and descriptive- analytical research is performed in 2017. So, it is trying to achieve the purposes of study through interview, Delphi method, Multiple Criteria Decision-Making (MCDM) and Analytical Hierarchy Process (AHP) [1–6].

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\* Corresponding author.

E-mail address: [pariav.m@gmail.com](mailto:pariav.m@gmail.com) (M. Mirzabeigi).

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### Specifications Table

Subject area	Human Resources Management
More specific subject area	Hay Group <sup>®</sup> model of Effectiveness, Iran Small Industries and Industrial Parks, Tehran Industrial Parks
Type of data	Tables, Diagram
How data was acquired	This cross-sectional and descriptive-analytical research is performed in 2017.
Data format	Raw, Analyzed
Data source location	Tehran Industrial Parks Organization as the main organization of Iran Small Industries and Industrial Parks (isipo) included 18 active industrial parks.
Data accessibility	Data is included in this article

### Value of the data

- Investigating the factors of employee effectiveness in Iran Small Industries and Industrial Parks for the first time.
- Studying the global models of employee effectiveness and choose Hay Group<sup>®</sup> model as the basis.
- Use of Delphi and AHP techniques as selected research method in order to make effective decisions in Human Resources.
- Impact of effectiveness improvement in growth of organization and employee productivity.

### 1. Data

First, provided tables about Experts, including their position, department, work experience and degree is shown below (Tables 1–8).

After consensus, participants (experts) in interview have stated common criteria for identifying factors affecting on employee effectiveness. Prioritized criteria in this research collected by experts based on Delphi method are included:

- Accessibility
- Comprehensiveness
- Influence level

#### AHP tables:

See [Supplementary Table 9](#) here.

According to [Table 9](#), the priority of the factors affecting on employee engagement based on criterion of "Accessibility" are respectively:

1. Pay and benefits
2. Development opportunities

**Table 1**

Total numbers of participants according to position.

Amount	Experts position
1	CEO
2	Consultant
3	Assistant
12	Manager
<b>18</b>	<b>Total</b>

**Table 2**  
Available participant according to department.

Amount	Experts department
5	CEO Area
3	Deputy of Planning and Economic Affairs
4	Deputy of Small Industries
3	Deputy of Civil and Environmental
2	Deputy of Support and Human Resources
<b>17</b>	<b>Total</b>

**Table 3**  
Participants work experience.

Amount	Experts work experience (Year)
4	8–12
4	13–17
6	18–23
3	Over 23
<b>17</b>	<b>Total</b>

**Table 4**  
Participants degree.

Amount	Experts degree
5	B.Sc.
12	M.Sc.
<b>17</b>	<b>Total</b>

3. Respect and recognition
4. Quality and customer focus
5. Clear and promising direction
6. Confidence in leaders

According to [Table 10](#), the priority of the factors affecting on employee enablement based on criterion of "Accessibility" are respectively:

1. Training
2. Resources
3. Performance management
4. Authority and empowerment
5. Collaboration
6. Work, structure and processes

According to [Table 11](#), the priority of the factors affecting on employee engagement based on criterion of "Comprehensiveness" are respectively:

1. Pay and benefits
2. Respect and recognition
3. Development opportunities
4. Confidence in leaders
5. Clear and promising direction
6. Quality and customer focus

**Table 5**  
Participants' responses to Delphi questionnaire.

<b>Delphi Questionnaire: Determining Experts' Criteria</b>																	
<b>Experts' Criteria</b>	<b>Influence level of effectiveness factors</b>					<b>Comprehensiveness of effectiveness factors</b>					<b>Accessibility to effectiveness factors</b>					<b>Additional criteria</b>	
	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	Strongly disagree	Disagree	Undecided	Agree	Strongly agree		
Participant 1	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	-	
Participant 2	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	-	
Participant 3	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	<b>Quality and customer focus</b> <b>Degree- Family status-</b> <b>Work experience-</b> <b>Gender- Age</b> <b>Employee position-</b> <b>Work place situation-</b> <b>Society situation</b>	
Participant 4	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
Participant 5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
Participant 6	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
Participant 7	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
Participant 8	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
Participant 9	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
Participant 10	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
Participant 11	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
Participant 12	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
Participant 13	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
Participant 14	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		<b>Training- Standards and policies</b>

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266	Participant 1
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	Participant 1
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**Table 6**  
Participants' responses for paired comparisons of criteria.

Paired comparisons of Experts criteria		Participants																Geomean		
		Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6	Participant 7	Participant 8	Participant 9	Participant 10	Participant 11	Participant 12	Participant 13	Participant 14	Participant 15	Participant 16		Participant 17	Participant 18
A	B																			
Comprehensiveness	Influence level	2.00	4.00	5.00	6.00	2.00	4.00	0.17	0.25	1.00	1.00	6.00	0.17	0.14	4.00	1.00	0.17			1.14
Accessibility	Influence level	2.00	2.00	1.00	0.20	2.00	0.33	0.14	3.00	1.00	7.00	6.00	0.13	0.14	0.20	0.25	1.00			0.74
Accessibility	Comprehensiveness	1.00	2.00	1.00	0.33	2.00	0.33	5.00	5.00	1.00	3.00	8.00	0.11	0.20	1.00	1.00	0.50			1.07

Participants criteria	Influence level	Comprehensiveness	Accessibility	Mean	Percentage
Influence level	1.00	1.14	0.74	0.96	31.59%
Comprehensiveness	0.88	1.00	1.07	0.98	32.35%
Accessibility	1.35	0.93	1.00	1.10	36.06%

**Table 7**  
Paired comparisons matrix of criteria.

<b>The participants criteria for effectiveness</b>	Influence level	Comprehensiveness	Accessibility	Mean	Percentage (%)
Influence level	1.00	1.14	0.74	0.96	31.59
Comprehensiveness	0.88	1.00	1.07	0.98	32.35
Accessibility	1.35	0.93	1.00	1.10	36.06

**Table 8**  
Raw data for paired comparisons matrix of criteria.

<b>The criteria of participants</b>	<b>Likert scale</b>									<b>The criteria of participants</b>								
Comprehensiveness	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Influence level
Accessibility	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Influence level
Accessibility	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Comprehensiveness

**Table 9**  
The result of paired comparisons matrix between factors of employee engagement based on criterion of "Accessibility".

1. The criterion of "Accessibility to factors of employee effectiveness"									
<b>Factors of employee engagement</b>	Clear and promising direction	Confidence in leaders	Quality and customer focus	Respect and recognition	Development opportunities	Pay and benefits	Geometric mean	Percentage (%)	Rank
Clear and promising direction	1.00	0.54	1.77	0.40	0.50	0.39	0.99	12.94	5
Quality and customer focus	0.57	0.57	1.00	0.55	0.58	0.29	1.00	13.03	4
Respect and recognition	2.50	0.87	1.81	1.00	1.35	0.87	1.30	17.06	3
Development opportunities	2.01	1.19	1.72	0.74	1.00	0.57	1.55	20.31	2
Pay and benefits	2.56	1.50	3.41	1.15	1.77	1.00	1.90	24.85	1

**Table 10**

The result of paired comparisons matrix between factors of employee enablement based on criterion of "Accessibility".

2. The criterion of "Accessibility to factors of employee effectiveness"									
Factors of employee enablement	Performance management	Authority and empowerment	Resources	Training	Collaboration	Work, structure and processes	Geometric mean	Percentage (%)	Rank
Performance management	1	1.23	1.20	0.40	0.93	1.10	0.98	15.13	3
Authority and empowerment	0.81	1	0.97	0.98	1.01	1.14	0.95	14.61	4
Resources	0.83	1.03	1	0.78	1.04	0.77	1.37	21.21	2
Training	2.48	1.02	1.28	1	2.53	2.71	1.4	21.56	1
Collaboration	1.08	0.99	0.96	0.40	1	1.31	0.91	14.08	5
Work, structure and processes	0.91	0.88	1.29	0.37	0.77	1	0.87	13.41	6

**Table 11**

The result of paired comparisons matrix between factors of employee engagement based on criterion of "Comprehensiveness".

1. The criterion of "Comprehensiveness of employee effectiveness factors"									
Factors of employee engagement	Clear and promising direction	Confidence in leaders	Quality and customer focus	Respect and recognition	Development opportunities	Pay and benefits	Geometric mean	Percentage (%)	Rank
Clear and promising direction	1	0.92	1.46	0.35	0.53	0.30	0.76	10.69	5
Quality and customer focus	0.68	0.45	1	0.79	0.57	0.39	0.65	9.13	6
Respect and recognition	2.89	1.21	1.27	1	1.13	0.55	1.34	18.88	2
Development opportunities	1.90	1.83	1.74	0.89	1	0.60	1.33	18.69	3
Pay and benefits	3.28	1.51	2.56	1.80	1.66	1	1.97	27.76	1

**Table 12**

The result of paired comparisons matrix between factors of employee enablement based on criterion of "Comprehensiveness".

2. The criterion of "Comprehensiveness of employee effectiveness factors"									
Factors of employee enablement	Performance management	Authority and empowerment	Resources	Training	Collaboration	Work, structure and processes	Geometric mean	Percentage (%)	Rank
Performance management	1	0.64	1.38	0.44	0.89	0.73	0.85	12.75	5
Authority and empowerment	1.56	1	1.41	0.68	1.03	1.46	1.19	17.88	2
Resources	0.73	0.71	1	0.69	0.92	1.29	0.89	13.37	4
Training	2.25	1.46	1.45	1	3.05	2.09	1.88	28.35	1
Collaboration	1.12	0.97	1.09	0.33	1	1.60	1.02	15.31	3
Work, structure and processes	1.36	0.69	0.77	0.48	0.62	1	0.82	12.34	6

**Table 13**

The result of paired comparisons matrix between factors of employee engagement based on criterion of "Influence level".

1. The criterion of "Influence level of employee effectiveness factors"									
Factors of employee engagement	Clear and promising direction	Confidence in leaders	Quality and customer focus	Respect and recognition	Development opportunities	Pay and benefits	Geometric mean	Percentage (%)	Rank
Clear and promising direction	1	0.76	1.93	0.45	0.37	0.28	0.80	9.72	5
Quality and customer focus	0.52	0.32	1	0.37	0.27	0.22	0.45	5.47	6
Respect and recognition	2.20	1.62	2.72	1	1.01	0.44	1.50	18.24	3
Development opportunities	2.68	1.80	3.75	0.99	1	0.61	1.80	21.95	2
Pay and benefits	3.54	2.00	4.46	2.27	1.64	1	2.49	30.25	1

**Table 14**

The result of paired comparisons matrix between factors of employee enablement based on criterion of "Influence level".

2. The criterion of "Influence level of employee effectiveness factors"									
Factors of employee enablement	Performance management	Authority and empowerment	Resources	Training	Collaboration	Work, structure and processes	Geometric mean	Percentage (%)	Rank
Performance management	1	0.80	0.78	0.31	0.67	0.90	0.74	11.11	6
Authority and empowerment	1.26	1	1.05	0.56	0.67	0.68	0.87	13.00	4
Resources	1.28	0.95	1	0.53	0.66	0.55	0.83	12.37	5
Training	3.24	1.79	1.88	1	1.26	1.77	1.82	27.28	1
Collaboration	1.48	1.49	1.52	0.79	1	1.72	1.33	19.94	2
Work, structure and processes	1.11	1.46	1.83	0.56	0.58	1	1.09	16.30	3

**Table 15**

Priority of engagement factors of employee effectiveness based on prioritized criteria.

Factors of employee engagement	The participants criteria for effectiveness	Priority of criteria	Clear and promising direction	Confidence in leaders	Quality and customer focus	Respect and recognition	Development opportunities	Pay and benefits
Accessibility	1	12.94	11.81	13.03	17.06	20.31	24.85	
	Priority of 5 factors		6	4	3	2	1	
Comprehensiveness	2	10.69	14.85	9.13	18.88	18.69	27.76	
	Priority of 5 factors		4	6	2	3	1	
Influence level	3	9.72	14.37	5.47	18.24	21.95	30.25	
	Priority of 5 factors		4	6	3	2	1	



**Table 16**

Priority of enablement factors of employee effectiveness based on prioritized criteria.

<b>Factors of employee enablement The participants criteria for effectiveness</b>	<b>Priority of criteria</b>	<b>Performance management</b>	<b>Authority and empowerment</b>	<b>Resources</b>	<b>Training</b>	<b>Collaboration</b>	<b>Work, structure and processes</b>
Accessibility	1	15.13	14.61	21.21	21.56	14.08	13.41
	Priority of 3 factors	3	4	2	1	5	6
Comprehensiveness	2	12.75	17.88	13.37	28.35	15.31	12.34
	Priority of 5 factors	5	2	4	1	3	6
Influence level	3	11.11	13.00	12.37	27.28	19.94	16.30
	Priority of 6 factors	6	4	5	1	2	3

According to Table 12, the priority of the factors affecting on employee enablement based on criterion of "Comprehensiveness" are respectively:

1. Training
2. Authority and empowerment
3. Collaboration
4. Resources
5. Performance management
6. Work, structure and processes

According to Table 13, the priority of the factors affecting on employee engagement based on criterion of "Influence level" are respectively:

1. Pay and benefits
2. Development opportunities
3. Respect and recognition
4. Confidence in leaders
5. Clear and promising direction
6. Quality and customer focus

According to Table 14, the priority of the factors affecting on employee enablement based on criterion of "Influence level" are respectively: (Tables 15 and 16)

1. Training
2. Collaboration
3. Work, structure and processes
4. Authority and empowerment
5. Resources
6. Performance management

## 2. Materials and methods

This cross-sectional and descriptive-analytical research is performed at Tehran Industrial Parks Organization in 2017. This organization has 18 active and scattered industrial parks in Tehran province

487 which are heterogeneous in terms of some features. The study sampling method for determining  
488 prioritized criteria was purposive, non-random and non-probable. For this purpose, the statistical  
489 population has been selected among top managers of the research community in the sample of 18  
490 people and they were asked by designed questionnaire and interview through Delphi method and  
491 Hierarchy Analytical Process (AHP) to score their criteria and determine the priority and rank of each  
492 criterion and factor. Subsequently, by multivariate decision making software, the weight of each  
493 criterion and factor has been obtained and the criteria are analyzed according to purpose of the  
494 effectiveness of human resources and the priority is determined accordingly [7–12].

## 496 **Acknowledgement**

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## 503 **Transparency document. Supporting information**

504  
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506 Transparency data associated with this article can be found in the online version at <https://doi.org/10.1016/j.dib.2018.07.017>.

## 509 **Appendix A. Supporting information**

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512 Supplementary data associated with this article can be found in the online version at <https://doi.org/10.1016/j.dib.2018.07.017>.

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