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# Modeling the Problems of the System of Recruitment, Retention and Training of Human Resources

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#### **Keywords:**

Human Resources, Human Resources Management, System of Recruitment, Retention and Training. **Purpose**: The present study was conducted to model the problems of the system of recruitment, retention and training of human resources by the mixed exploratory research method.

Methodology: The statistical population of the qualitative part included a number of experts including the senior managers of National Iranian Oil Refining and Distribution Company (NIORDC) and human resource management professors in higher education centers; and employees of the NIORDC (Sari) and Iranian Oil Pipelines and Telecommunication Company (IOPTC) (North) in the quantitative part, n = 835 (789 men and 46 women). In the qualitative part, by the snowball sampling method, 20 people, and in the quantitative part, by relative stratified sampling method based on Cochran's formula, 263 people were selected as the statistical sample. In the qualitative part, the data were extracted by the Delphi technique and semi-structured and structured questionnaires; and the 120-item researcher-made questionnaires in the quantitative part and analyzed using SPSS and AMOS. The content and construct validity of the questionnaires was confirmed. Reliability and composite reliability (CR) were also confirmed by Cronbach's alpha coefficient 84%. Descriptive statistics (mean, variance, and standard deviation) and inferential statistics (exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) and Friedman test) were used for data analysis.

**Findings**: The results showed that the model of problems of the system of recruitment, retention and training of human resources has 6 organizational (internal), environmental (external), occupational, individual (personal), governmental (political) and cultural-social dimensions and 30 components.

**Conclusion**: The results of the quantitative part showed that all dimensions of the research model were confirmed.

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## 1. Introduction

In today's competitive world, despite asymmetric information markets, the existence of efficient and knowledge-based human resources is the most valuable resource for survival and maintaining the competitive position of the organization. It is obvious that the development and retention of this precious resource is not possible without recognizing the future risks of human resources (Mousavi, Shariat Nejad & Saedi, 2018). In today's competitive markets, maintaining trained, experienced and quality employees is always one of the constant concerns of any organization that wants to achieve competitive advantages and a greater share of the market. Also, every organization needs micro and macro strategies and plans for the development. The position and role of human resources in these strategies as the main resources of the organization is extremely important (Babaei, 2017). Human resources is considered as the most important organizational assets, which in case of dissatisfaction leads to a decrease in organizational efficiency (Omidi & Mousavi, 2018). Therefore, the only sustainable competitive advantage of any organization is human resources and the essential role in the success of the organization, which is possible through the recruitment and retention of human resources (Amjadi et al., 2018). Every year, organizations lose part of their employees through early retirement, burnout and resignation, affecting the daily performance of the organization and the effectiveness of the workforce. Public and private organizations are constantly facing this. On the other hand, with the advancement of technology and creation of competition between organizations, employees are facing many job opportunities, which makes it difficult for organizations to retain employees. Therefore, preventing employees from leaving the service and their retention in the long term is one of the main issues of organizations (Clark, 2013). In the business world, human resources management is considered as a very important factor of the success of any organization. In addition, the challenge facing many organizations is retaining their human resources, which can be a competitive advantage for the organization (Davoudi, 2013). The desire to leave service reflects the interest of employees to leave the organization and search for alternative jobs (Nahas et al., 2013). Leaving the service of key employees can be harmful for organizations in terms of replacement cost and disruption of work (Tavaklinejad et al., 2015). The intention to leave the service of an employee affects both the organization and other employees. Therefore, it is very important to think to minimize the negative impacts of leaving the service on the performance of the organization (Rahman & Nas, 2013). Leaving the service is very expensive and due to the recent economic recession, the importance of retaining key employees for the success of the organization has been emphasized a lot (Flint et al., 2013). The desire to leave the service is a significant phenomenon. Leaving the service imposes costs in terms of recruitment, training and loss of organizational knowledge, and through the loss of social and human capital, it has negative impacts on performance in both public and private sectors (Campbell et al., 2014). When employees have the desire to leave the service, they do not depend on the organization and do not value it, and in fact, the psychological contract and relationship between employees and the organization is broken (Christiaensen & Ellis, 2014). Today, retaining human resources is the number one problem of organizations. In addition, the role and importance of these resources in the development of the organization has caused intense competition to attract talented and competent people between organizations (Tavakoli Nejad et al., 2016). By increasing competition and the expansion of human resources development methods, organizations try to retain and empower their talented employees so that they can show high performance. But organizations are always afraid of losing their human capital and suffering as a result; Because every organization spends a lot of money to train and prepare its employees to the optimal level of efficiency, and with the loss of valuable personnel, it suffers the loss of skills and experiences that have been gained over years of effort (Beigi Nia, Ghazizadeh & Hayati, 2017)

The study results of Amjadi et al.(20189) show that organizational, individual and cultural factors are effective on the mediating variable of "employee attitude" and the highest frequency belongs to the effect of organizational factors on employee attitude. Also, these factors have an effect on "employee retention" as the dependent variable. The study results of Shekari, Zabihi and Nejati (2017) showed that among the factors affecting the human resources retention system of Khorasan Razavi Gas Company, job satisfaction has the

highest priority, among the sub-criteria of employee leaving the service, the nature of the job, among the sub-criteria of physical and mental health, the ability to perform duties, among the sub-criteria of employee alignment with the organization's policies, attention to the organization's goals, among the sub-criteria of job satisfaction, interest in the job, and finally, among the sub-criteria of organizational commitment, job security is prioritized. The study results of Rostami (2017) showed that the factor of low salaries in terms of the effect on the system of maintaining human resources in the studied society ranks first and the factors of lack of secondary work position, lack of information sharing, weakness in leadership operations, weakness in communication, lack of insight into goals, weak cooperation in units and non-cooperation between units are ranked second to eighth. The study results of Fahima and Molai Raisi (2016) showed that salaries are the most effective and the management style of leadership is the least effective on the human resources retention system.

In a study by Ohunakin et al. (2020), the effect of talent retention methods (training, development and job security) on the behavioral results of employees in the Nigerian hospitality industry (employee job performance and employee job commitment) was investigated. The results showed an important role of the retention strategies in the behavioral results of employees, indicating that the management should show its continuous support for the development of employment and the economic stability of its workforce, especially professionals, strengthen the succession plan and retain the best talents. The study results of Moses and Sharma (2020) on the factors of attracting and retaining human resources in the Indian healthcare industry showed that while human resource management methods based on market logic help recruiting human resources, human resource methods based on community logic help to maintain human resources management and human resources methods based on market and community logic are responsible for attracting and retaining human resources. According to the study results of Akunda, Chen and Gikiri (2018) on the role of human resources management in retaining talented workers in one of the companies in Uganda, although there are many solutions for applying talent management and employee retention programs, their success is based on the use of different approaches to employee retention, in which human resources functions should be supported by other management departments. A study by Chukwuka and Nwakoby (2018) on the effect of human resource management methods on employee retention and performance in the insurance industries of Nigeria showed that human resources management methods did not have much effect on employee retention, indicating the weak performance of the companies regarding the labor laws of Nigeria, the service compensation system and employee benefits.

Many of the problems of Iranian organizations are not in the field of equipment, but in the field of employees. One of the greatest helplessness of employees is the inability to reach understanding and cooperation with others. The success of any organization depends on the proper use of its tools, materials, capital, and human resources, which is achieved when organizations can use the skills, abilities, and individual and collective characteristics of their employees consistent with the goals of the organization. NIORDC is not exempt from this, but the role of adequate human resources is much more important than other organizations. NIORDC is one of the 4 main companies of Iran's Ministry of Oil, which itself has 3 subsidiaries. Also, 9 refineries of the country (which have been privatized since 2010) are working under the supervision of this company. 20,000 people are employed in NIORDC. This company was established in 1990 by the Iranian Ministry of Oil based on the principle of separating the activities of the upstream companies of the Ministry of Oil from the downstream companies. Due to the company's need for specialists and assistants to work in its various units and departments, NIORDC has paid special attention to the process of recruitment of human resources and always sought to attract the talented. If this company has a complete system, accordingly, the employees will have the necessary motivation, which will undoubtedly have a great effect on the country's economy. Because the most important income of the country is still oil and NIORDC play a role in the government's business. In such system, the goals of the employees are aligned with the goals of the organization, and other employees do not think about their side concerns and will do their best to achieve their goals, which are aligned with the goals of the organization. The role of various organizational, environmental, and other factors in the retention of high-quality employees in the organization is undeniable. Hence, if NIORDC, given the very serious responsibilities it bears in the economy of the country does not have a proper plan for the establishment of human resources retention system, while it faces problems in attracting suitable employees, it also faces a crisis in retaining qualified employees, which itself has a very negative impact on the country's economy. Because the employees of this company play a key and more important role than other factors. Given the importance of the subject, the present study was conducted to develop the model of problems of the system of recruitment, retention and training of human resources of NIORDC and seeks to answer the question, What is the model of problems of the system of recruitment, retention and training of human resources with what dimensions and components?

# 2. Methodology

The research method and design is also mixed exploratory (qualitative-quantitative). The statistical population of the research, in the qualitative part, according to the system of recruitment, retention and training of human resources, included experts who have expertise in this subject. For sampling, given the importance of the research subject, a number of experts in the field of "recruitment, retention and training of human resources", including senior managers of NIORDC and professors in the field of human resources management in higher education centers were selected using the "snowball" sampling method until theoretical saturation was reached. In this section, 20 people were selected. The statistical population of the research in the quantitative part included employees of NIORDC (Sari) (n= 390) and employees of IOPTC (North) (n= 445), a total of n=835 (789 men and 46 women). Using relative stratified sampling method with the Cronbach's alpha coefficient, 263 people were selected, so that NIORDC (Sari) and IOPTC (North) were divided into two classes. Next, each of the affiliated organizations represented a subclass. Questionnaires were distributed randomly in the class and according to the population of that class. The research method in this study was mixed exploratory:

- A. Qualitative part; to get from the proposed primary model to the reformed (secondary) research model, by surveying experts and using the Delphi technique.
- B. Quantitative part; to test and quantify the modified model, by surveying statistical samples and using structural equations modeling by AMOS.

#### 3. Findings

Results of the qualitative part: analysis of the results of four Delphi technique rounds

The Delphi technique is one of the qualitative research methods that is used to reach consensus in group decisions. In practice, the Delphi technique is a series of questionnaires or consecutive rounds with controlled feedback that tries to reach a consensus among a group of experts on a specific issue. Usually, the Delphi technique includes the following basic stages. First, the research problem is defined and, accordingly, the necessary characteristics for the participants in the expert panel are determined. Then, the candidates for participation in this expert panel are identified and invited. This stage ends with determining the members of the expert panel. The second round of the Delphi technique is dedicated to the generation of ideas in the field of the research problem. At this stage, the expert panel members present their ideas about the factors related to the research subject. By analyzing these ideas, removing repeated cases and using the same words, the researcher extracts the final list of factors related to the research problem. At this stage, the opinion of the members may be asked about the factors that have been determined in advance. Third, the expert panel members determine the importance of the factors or select a number of the most important ones. Accordingly, the number of factors is reduced to the extent that work with them can be done. In fact, this stage is done to reduce the number of factors to an acceptable number for continuing the work. In this study, the Delphi technique was completed in four rounds, and in this section, the results of each round are presented separately.

# Organizational (internal) problems

First, the proposed components of organizational (internal) problems based on the previous studies include 1) organizational justice, 2) organizational support, 3) service compensation, 4) organizational structure, 5) participation opportunity, 6) organizational communication, 7) organizational identity and 8) spiritual support. In the first round of the Delphi technique, the highest importance is related to organizational justice with a mean of 3.55 and a standard deviation of 0.86, and the lowest importance is related to organizational identity with a mean of 2.11 and a standard deviation of 0.86. In the second part of the questionnaire of the first round of the Delphi technique, the experts were asked that if there is a key and important component in their opinion that has not been given much attention or has not been mentioned in literature, but it was important to express their opinion that by analyzing the content of the answers, the components of management and supervision based on competency and educational programs were added to the Delphi technique first round questionnaire in this section. In the second round of the Delphi technique, the highest importance is related to service excellence with a mean of 3.67 and a standard deviation of 0.69, and the lowest importance is related to organizational identity with a mean of 1.97 and a standard deviation of 0.80. The organizational identity has a mean of less than 2 and at this stage this component is excluded from the components of organizational (internal) problems. In the third round of the Delphi technique, the highest importance is related to service compensation with a mean of 3.70 and a standard deviation of 1.05, and the lowest important is related to spiritual support with a mean of 1.80 and a standard deviation of 0.87. The spiritual support has a mean of less than 2 and at this stage, this component is excluded from the explanatory components of organizational (internal) problems. In the fourth round of the Delphi technique, the highest importance is related to service compensation and competence-based management and supervision with a mean of 3.66 and standard deviation of 0.98 and 0.75, respectively, and the lowest important is related to educational programs with a mean of 3.20 and a standard deviation of 0.73. Kendall's coefficient of concordance for the answers of the fourth round of the Delphi technique is 0.880, which has only increased by 1.28% compared to the third round of the Delphi technique, which was equal to 0.752. This coefficient does not grow significantly with the consensus between the expert panel members in two consecutive rounds. Therefore, finally, organizational (internal) problems, after four rounds of the Delphi technique, have eight components as follows: 1) organizational justice, 2) organizational support, 3) service compensation, 4) organizational structure, 5) participation opportunity, 6) organizational communication, 7) competencebased management and supervision, and 8) educational programs.

# Environmental (external) problems

First, the proposed components of environmental (external) problems based on previous studies include 1) labor market, 2) job effects, 3) trade unions and 4) value of the organization were determined. In the first round of the Delphi technique, the highest importance is related to the labor market with a mean of 3.50 and a standard deviation of 0.89, and the lowest important is related to trade unions with a mean of 2.13 and a standard deviation of 0.90. In the second part of the questionnaire of the first round of the Delphi technique, the experts were asked that if there is a key and important component in their opinion that has not been given much attention or has not been mentioned in literature, but was important to express their opinion that by analyzing the content of the answers, the component of laws and protective regulations was added to the Delphi technique first round questionnaire in this section. In the second round of the Delphi technique, the highest importance is related to the value of the organization with a mean of 3.55 and a standard deviation of 0.82, and the lowest importance is related to trade unions with a mean of 1.66 and a standard deviation of 0.66. The component of trade unions has a mean of less than 2 and at this stage this component is excluded from the components of environmental (external) problems. In the third round of the Delphi technique, the highest importance is related to the value of the organization with a mean of 3.60 and a standard deviation of 0.95, and the lowest importance is related to job effects with a mean of 3.25 and a standard deviation of 0.84. In the fourth round of the Delphi technique, the highest importance is related to the value of the organization

and supportive laws and regulations with a mean of 3.75 and a standard deviation of 0.90 and 0.65, respectively, and the lowest importance is related to job effects with a mean of 3.20 and a standard deviation of 0.84. Kendall's coefficient of concordance for the answers of the fourth round of the Delphi technique is 0.824, which has only increased by 9% compared to the third round of the Delphi technique, which was equal to 0.714. This coefficient does not grow significantly with the consensus between the expert panel members in two consecutive rounds. Therefore, finally, environmental (external) problems, after four rounds of the Delphi technique, have four components as follows: 1) labor market, 2) job effects, 3) the value of the organization, and 4) supportive laws and regulations.

# Occupational problems

First, the proposed components of occupational problems based on previous studies include 1) job stress, 2) job nature, 3) job security, 4) job characteristics, 5) job attitude and 6) job suitability. In the first round of the Delphi technique, the highest importance is related to job security with a mean of 3.69 and a standard deviation of 0.79, and the lowest importance is related to job attitude with a mean of 2.05 and a standard deviation of 0.65. In the second part of the questionnaire of the first round of the Delphi technique, the experts were asked that if there is a key and important component in their opinion that has not been given much attention or has not been mentioned in literature, but was important to express their opinion that by analyzing the content of the answers, the components of "professional growth opportunity" and "independence and freedom of work" were added to the Delphi technique first round questionnaire in this section. In the second round of the Delphi technique, the highest importance is related to the components of job security and professional growth opportunity with a mean of 3.70 and a standard deviation of 0.75 and 0.69, respectively, and the lowest important is related to job attitude with a mean of 1.87 and a standard deviation of 0.65. The component job attitude has a mean of less than 2 and at this stage this component is excluded from the components of occupational problems. In the third round of the Delphi technique, the highest importance is related to the component of job security with a mean of 3.79 and a standard deviation of 0.79, and the lowest important is related to job nature with a mean of 1.95 and a standard deviation of 0.55. The component of job nature has a mean of less than 2, and at this stage, this component is excluded from the components of occupational problems. In the fourth round of the Delphi technique, for the components of occupational problems, the highest importance is related to the variable of job security with a mean of 3.71 and a standard deviation of 0.74, and the lowest important is related to job characteristics with a mean of 3.15 and a standard deviation of 0.92. Kendall's coefficient of concordance for the answers of the fourth round of the Delphi technique is 0.805, which has only increased by 5.5% compared to the third round of the Delphi technique, which was equal to 0.750. This coefficient does not grow significantly with the consensus between the expert panel members in two consecutive rounds. Therefore, finally, occupational problems, after four rounds of the Delphi technique, have six components: 1) job stress, 2) job security, 3) job characteristics, 4) job fit, 5) professional growth opportunity and 6) independence and freedom of work.

## Individual (personal) problems

First, the proposed components of individual (personal) problems based on previous studies include 1) personal perspective, 2) job satisfaction, 3) organizational commitment, 4) job feeling and 5) work-family balance. In the first round of the Delphi technique, the highest importance is related to job satisfaction with a mean of 3.66 and a standard deviation of 0.67, and the lowest important is related to job feeling with a mean of 2.11 and a standard deviation of 0.70. In the second part of the questionnaire of the first round of the Delphi technique, the experts were asked that if there is a key and important component in their opinion that has not been given much attention or has not been mentioned in literature, but was important to express their opinion that by analyzing the content of the answers, the "skills development" component was added to the Delphi technique first round questionnaire in this section. In the second round of the Delphi technique, the highest importance is related to job satisfaction with a mean of 3.69 and a standard deviation of 0.69, and

the lowest important is related to job feeling with a mean of 2.07 and a standard deviation of 0.79. In the third round of the Delphi technique, the highest importance is related to job satisfaction with a mean of 3.72 and a standard deviation of 0.55, and the lowest important is related to job feeling with a mean of 1.84 and a standard deviation of 0.59. The component of job feeling has a mean of less than 2 and at this stage this component is excluded from the components of individual (personal) problems. In the fourth round of Delphi, the highest importance is related to job satisfaction with a mean of 3.70 and a standard deviation of 0.61, and the lowest important is related to work-family balance with a mean of 3.13 and a standard deviation of 0.79. Kendall's coefficient of concordance for the answers of the fourth round of the Delphi technique is 0.815, which has only increased by 5% compared to the third round of the Delphi technique, which was equal to 0.755. This coefficient does not grow significantly with the consensus between the expert panel members in two consecutive rounds. Therefore, finally, individual (personal) problems, after four rounds of the Delphi technique, have five components as follows: 1) personal perspective, 2) job satisfaction, 3) organizational commitment, 4) work-family balance and 5) skill development.

# Government (political) problems

First, the proposed components of governmental (political) problems based on the previous studies include 1) laws and instructions, 2) scope of organization and government decisions, and 3) public services. In the first round of the Delphi technique, the highest importance is related to the laws and guidelines with a mean of 3.45 and a standard deviation of 0.80, and the lowest importance is related to public services with a mean of 2.33 and a standard deviation of 0.60. In the second part of the questionnaire of the first round of the Delphi technique, the experts were asked that if there is a key and important component in their opinion that has not been given much attention or has not been mentioned in previous texts and articles, but was important to express their opinion that by analyzing the content of the answers, the component "government policies towards privatization" was added to the Delphi technique first round questionnaire in this section. In the second round of the Delphi technique, the highest importance is related to the laws and guidelines with a mean of 3.65 and a standard deviation of 0.79, and the lowest importance is related to public services with a mean of 1.90 and a standard deviation of 0.59. The component of job feeling has a mean of less than 2, and at this stage this component is excluded from the components of government (political) problems. In the third round of the Delphi technique, the highest importance is related to the laws and instructions with a mean of 3.75 and a standard deviation of 0.64, and the lowest importance is related to the scope of organization and government decisions with a mean of 3.33 and a standard deviation of 0.83. In the fourth round of the Delphi technique, the highest importance is related to the laws and instructions with a mean of 3.80 and a standard deviation of 1.03, and the lowest importance is related to the scope of decisions of the organization and the government with a mean of 3.39 and a standard deviation of 0.73. Kendall's coefficient of concordance for the answers of the fourth round of the Delphi technique is 0.820, which has only increased by 5.7% compared to the third round, which was equal to 0.763. This coefficient does not grow significantly with the consensus between the expert panel members in two consecutive rounds. Therefore, finally, government (political) problems, after four rounds of the Delphi technique, have three components as follows: 1) laws and instructions, 2) scope of decisions of the organization and the government, and 3) government policies towards privatization.

#### Cultural-social problems

First, the proposed components of cultural-social problems based on previous studies include 1) dignity and social support, 2) social reward and 3) job opportunities and unemployment rate. In the first round of the Delphi technique, the highest importance is related to job opportunities and unemployment rate with a mean of 3.52 and a standard deviation of 0.90, and the lowest important is related to social reward with a mean of 2.22 and a standard deviation of 0.59. In the second part of the questionnaire of the first round of the Delphi technique, the experts were asked that if there is a key and important component in their opinion that has not

been given much attention or has not been mentioned in previous texts and articles, but was important to express their opinion that by analyzing the content of the answers, the components of "uncertainty and fear of change in the future" and "attention to existing values" were added to the Delphi technique first round questionnaire in this section. In the second round of the Delphi technique, the highest importance is related to uncertainty and fear of change in the future with a mean of 3.67 and a standard deviation of 1.04, and the lowest importance is related to social reward with a mean of 2.12 and a standard deviation of 0.64. In the third round of the Delphi technique, the highest importance is related to the components of uncertainty and fear of change in the future, job opportunities and unemployment rate with a mean of 3.60 and standard deviation of 0.92 and 0.8, respectively, and the lowest important is related to social reward with a mean of 1.81 and standard deviation of 0.62. The component of social reward has a mean of less than 2 and at this stage this component is excluded from the components of social-cultural problems. In the fourth round of the Delphi technique, the highest importance is related to the component of uncertainty and fear of change in the future with a mean of 3.55 and a standard deviation of 0.91, and the lowest importance is related to attention to existing values with a mean of 3.42 and a standard deviation of 0.66. Kendall's coefficient of concordance for the answers of the fourth round of the Delphi technique is is 0.855, which has only increased by 12.5% compared to the third round of the Delphi technique, which was equal to 0.730. This coefficient does not grow significantly with the consensus between the expert panel members in two consecutive rounds. Therefore, finally, social-cultural problems, after four rounds of the Delphi technique, have four components: 1) dignity and social support, 2) job opportunities and unemployment rate, 3) uncertainty and fear of change in the future. and 4) attention to existing values.

Table 1 shows the results of the fourth round of the Delphi technique for the components of organizational (internal) problems, environmental (external) problems, and occupational problems, from the experts' point of view.

**Table 1**. Statistical description of respondents' opinions about organizational (internal) problems, environmental (external) problems, and occupational problems in the fourth round of the Delphi technique

components	Number of answers	Min	Max	M	SD	priority		
organizational (internal) problems								
Organizational justice	20	2.00	5.00	3.50	0.80	3		
Organizational support	20	2.00	5.00	3.33	0.79	5		
Services compensation	20	1.00	5.00	3.66	0.98	1		
Organizational structure	20	2.00	5.00	3.33	0.89	5		
Participation opportunity	20	2.00	5.00	3.25	0.90	7		
Organizational communications	علوم السوي	1.00	5.00	3.45	0.64	4		
Competence-based		4	4					
management and	20	2.00	5.00	3.66	0.75	1		
supervision								
Educational programs	20	2.00	5.00	3.20	0.73	8		
environmental (external) problems								
Labor market	20	2.00	5.00	3.44	0.83	3		
Job effects	20	2.00	5.00	3.20	0.86	4		
Value of organization	20	2.00	5.00	3.75	0.90	1		
supportive laws and regulations	20	2.00	5.00	3.75	0.65	1		
<u>-</u>	occupational	problems						

Job stress	20	2.00	5.00	3.60	0.85	3
Job security	20	2.00	5.00	3.71	0.74	1
job characteristics	20	2.00	5.00	3.15	0.92	6
Job fit	20	2.00	5.00	3.48	0.77	4
Professional growth opportunity	20	2.00	5.00	3.65	0.71	2
Independence and freedom of work	20	2.00	5.00	3.33	0.67	5

Table 2 shows the results of the fourth round of the Delphi technique for the explanatory components of individual (personal) problems, governmental (political) problems, and cultural-social problems, from the experts' point of view.

**Table 2**. Statistical description of the respondents' opinions about individual (personal) problems, government (political) problems and cultural-social problems in the fourth round of the Delphi technique

components	Number of answers	Min	Max	M	SD	priority	
individual (personal) problems							
Personal perspective	20	2.00	5.00	3.25	0.76	4	
Job satisfaction	20	1.00	5.00	3.70	0.61	1	
Organizational commitment	20	2.00	5.00	3.55	0.66	2	
Work-family balance	20	2.00	5.00	3.13	0.79	5	
Skill deveopment	20	1.00	5.00	3.40	0.81	3	
	government (poli	tical) pro	blems				
Laws and instructions	20	2.00	5.00	3.80	1.03	1	
scope of organization and government decisions	20	1.00	5.00	3.39	0.73	3	
Government policies towards privatization	20	2.00	5.00	3.66	0.82	2	
	cultural-socia	l problei	ns 👆 –	Jr.			
Dignity and social support	20 20	2.00	5.00	3.50	0.75	2	
Job opportunities and unemployment rate	20	1.00	5.00	3.50	0.83	2	
Uncertainty and fear of change in the future	20	2.00	5.00	3.55	0.91	1	
Attention to existing values	20	1.00	5.00	3.42	0.66	4	

#### Results of the quantitative part

# Descriptive statistics

For descriptive analysis of the research subjects, there are 247 men (93.92%) and 16 women (6.08%), 37 single (14.07%) and 226 married (85.93%). For age groups, 26 subjects are 30 years old and below (9.89%), 67 subjects are between 31 and 40 years old (25.48%), 107 subjects are 41-50 years old (40.68%) and 63 subjects (23.95%) were more than 50 years old. For level of education, 67 subjects had associate degree or less (48.25%), 135 subjects had bachelor degree (51.33%), and 61 subjects (23.19%) had master degree or higher. For work experience, 21 subjects had 5 years and less (7.98%), 48 subjects had between 6 and 10

years (18.25%), 63 subjects had between 11 and 15 years (23.95%), 75 subjects (52 28.0%) had 16-20 years and 56 subjects (21.29%) had more than 20 years.

### Inferential statistics

At this stage, by conducting a qualitative study and taking into account the relevant explanations in the qualitative section, a researcher-made questionnaire with 120 items was developed, whose formal validity was first confirmed through a survey of several experts and their modification. Based on content validity ratio (CVR) and content validity index (CVI) for each of the items, the content validity of the questionnaire was confirmed by a group of 20 people consisting of academic and organizational experts, so that the range of CVR and CVI for each of the items is 0.7-1.0 and 0.80-1.0, respectively. To measure the model, the researcher-made questionnaire was distributed among 263 subjects by relative stratified sampling method, and the data was analyzed by EFA and CFA using SPSS and AMOS.

Question 1: What are the dimensions and components of the model of the problems of the system of recruitment, retention and training of human resources?

To determine whether the desired data (sample size and relationship between variables) are suitable for factor analysis, Kaiser-Meyer-Olkin Measure of sampling Adequacy (KMO) and Bartlett's test of sphericity were used. KMO is an index of sampling adequacy for the smallness of partial correlation between variables. KMO for six problems: 1) organizational (internal) problems, 2) environmental (external) problems, 3) occupational problems, 4) individual (personal) problems, 5) government problems (politics) and 6) cultural-social problems is equal to 0.823, 0.768, 0.803, 0.844, 0.776 and 0.814, respectively and the significance level of Bartlett's test of sphericity is equal to 0.0009. Therefore, in addition to KMO, the factor analysis based on the study's correlation matrix will also be justified. According to the study results of the extracted factors and the percentage of variance explained by the organizational (internal) problems, eigenvalues of 8 factors are higher than 3, which are responsible for almost 61% of the total changes, and the eigenvalue of the first factor is equal to 24.99, the eigenvalue of the second factor is equal to 7.81, the eigenvalue of the third factor is equal to 6.37, the eigenvalue of the fourth factor is equal to 5.20, the eigenvalue of the fifth factor is equal to 4.49, the eigenvalue of the sixth factor is equal to 4.46, the eigenvalue of the seventh factor is equal to 4.24, and the eigenvalue of the eighth factor is equal to 3.62.

For environmental (external) problems, eigenvalues of 4 factors; higher than 10, which are responsible for almost 61% of the total changes, and the eigenvalue of the first factor is equal to 28.22, the eigenvalue of the second factor is equal to 11.79, the eigenvalue of the third factor is equal to 10.94, the eigenvalue of the fourth factor is equal to 10.05.

For occupational problems, eigenvalues of 6 factors are higher than 4, which are responsible for almost 61% of the total changes, and the eigenvalue of the first factor is equal to 3622, the eigenvalue of the second factor is equal to 11.24, the eigenvalue of the third factor is equal to 9, the eigenvalue of the fourth factor is equal to 6.72, the eigenvalue of the fifth factor is equal to 5.96 and the eigenvalue of the sixth factor is equal to 4.97.

For individual (personal) problems, eigenvalues of 5 factors are higher than 5, which are responsible for almost 62% of the total changes, and the eigenvalue of the first factor is equal to 31.93, the eigenvalue of the second factor is equal to 11.40, the eigenvalue of the third factor is equal to 7.08, the eigenvalue of the fourth factor is equal to 6.37, and the eigenvalue of the fifth factor is equal to 5.87.

For government (political) problems, eigenvalues of the 3 factors are higher than 13, which are responsible for almost 61% of the total changes, and the eigenvalue of the first factor is equal to 32.04, the eigenvalue of the second factor is equal to 15.28, and the eigenvalue of the third factor is equal to 13.83.

For cultural-social problems, eigenvalues of 4 factors are higher than 8, which are responsible for almost 64% of the total changes, and the eigenvalue of the first factor is equal to 31.07, the eigenvalue of the second factor is equal to 13.75, the eigenvalue of the third factor is equal to 10.30 and the eigenvalue of the fourth factor

is equal to 8.55. For the research model, second-order CFA was used, the results of which are shown in Table 3.

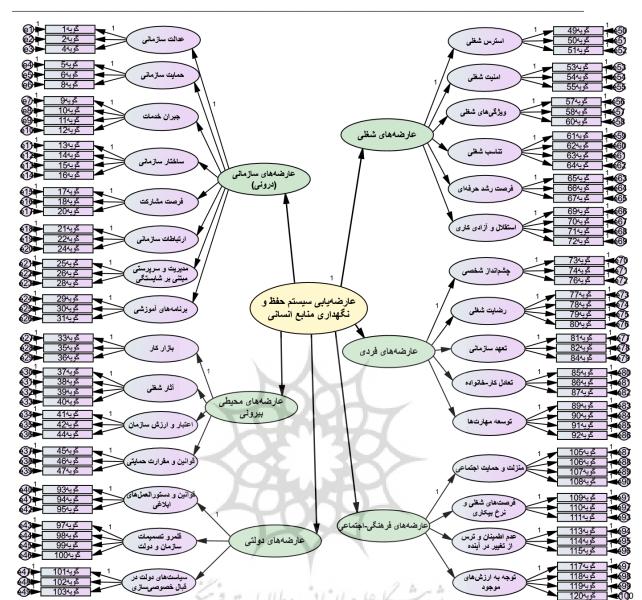
**Table 3.** Path coefficient and significance of the model of problems of the system of recruitment, retention and training of human resources

path         path coefficient         t         p-value         result           Organizational justice         0.59         6.933         0.0009         significant           Organizational support         0.57         7.648         0.0009         significant           Service compensation         0.57         7.648         0.0009         significant           Organizational structure         0.70         8.581         0.0009         significant           Participation opportunity         0.70         9.127         0.0009         significant           Organizational communications         0.61         7.826         0.0009         significant           Competence-based management and supervision         0.63         7.603         0.0009         significant           Educational programs         0.71         8.824         0.0009         significant           Labor market         0.62         7.595         0.0009         significant           Job effects         0.61         6.772         0.0009         significant           Value of organization         0.60         7.823         0.0009         significant           Job stress         0.62         7.209         0.0009         significant           J	and training of numan resources									
Organizational support         0.57         8.457         0.0009         significant           Service compensation         0.57         7.648         0.0009         significant           Organizational structure         0.70         8.581         0.0009         significant           Participation opportunity         0.70         9.127         0.0009         significant           Organizational communications         0.61         7.826         0.0009         significant           Competence-based management and supervision         0.63         7.603         0.0009         significant           Educational programs         0.71         8.824         0.0009         significant           Labor market         0.62         7.595         0.0009         significant           Job effects         0.61         6.772         0.0009         significant           Value of organization         0.60         7.823         0.0009         significant           supportive laws and regulations         0.45         5.868         0.0009         significant           Job stress         0.62         7.209         0.0009         significant           Job scurity         0.79         9.910         0.0009         significant	path	path coefficient		p-value	result					
Service compensation         0.57         7.648         0.0009         significant           Organizational structure         0.70         8.581         0.0009         significant           Participation opportunity         0.70         9.127         0.0009         significant           Organizational communications         0.61         7.826         0.0009         significant           Competence-based management supervision         0.61         7.603         0.0009         significant           Educational programs         0.71         8.824         0.0009         significant           Labor market         0.62         7.595         0.0009         significant           Job effects         0.61         6.772         0.0009         significant           Value of organization         0.60         7.823         0.0009         significant           supportive laws and regulations         0.45         5.868         0.0009         significant           Job stress         0.62         7.209         0.0009         significant           Job characteristics         0.64         9.066         0.0009         significant           Job fit         0.52         6.484         0.0009         significant				0.0009	- 0					
Organizational structure         0.70         8.581         0.0009         significant           Participation opportunity         0.70         9.127         0.0009         significant           Organizational communications         0.61         7.826         0.0009         significant           Competence-based management and supervision         0.63         7.603         0.0009         significant           Educational programs         0.71         8.824         0.0009         significant           Labor market         0.62         7.595         0.0009         significant           Job effects         0.61         6.772         0.0009         significant           Value of organization         0.60         7.823         0.0009         significant           supportive laws and regulations         0.45         5.868         0.0009         significant           Job stress         0.62         7.209         0.0009         significant           Job characteristics         0.64         9.066         0.0009         significant           Job fit         0.52         6.484         0.0009         significant           Professional growth opportunity         0.42         4.771         0.0009         significant <t< td=""><td>Organizational support</td><td>0.57</td><td>8.457</td><td>0.0009</td><td>significant</td></t<>	Organizational support	0.57	8.457	0.0009	significant					
Participation opportunity         0.70         9.127         0.0009         significant           Organizational communications         0.61         7.826         0.0009         significant           Competence-based management supervision         0.63         7.603         0.0009         significant           Educational programs         0.71         8.824         0.0009         significant           Labor market         0.62         7.595         0.0009         significant           Job effects         0.61         6.772         0.0009         significant           Value of organization         0.60         7.823         0.0009         significant           supportive laws and regulations         0.45         5.868         0.0009         significant           Job stress         0.62         7.209         0.0009         significant           Job scurity         0.79         9.910         0.0009         significant           Job characteristics         0.64         9.066         0.0009         significant           Job fit         0.52         6.484         0.0009         significant           Professional growth opportunity         0.42         4.771         0.0009         significant           Pe	Service compensation	0.57	7.648	0.0009	significant					
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Competence-based supervision         management supervision         and supervision         7.603         0.0009         significant           Educational programs         0.71         8.824         0.0009         significant           Labor market         0.62         7.595         0.0009         significant           Job effects         0.61         6.772         0.0009         significant           Value of organization         0.60         7.823         0.0009         significant           supportive laws and regulations         0.45         5.868         0.0009         significant           Job stress         0.62         7.209         0.0009         significant           Job security         0.79         9.910         0.0009         significant           Job characteristics         0.64         9.066         0.0009         significant           Job fit         0.52         6.484         0.0009         significant           Professional growth opportunity         0.42         4.771         0.0009         significant           Independence and freedom of work         0.28         3.583         0.0009         significant           Personal perspective         0.63         8.038         0.0009         significant	Participation opportunity	0.70	9.127	0.0009	significant					
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Work-family balance 0.67 8.519 0.0009 significant  Skill development 0.73 9.081 0.0009 significant  Laws and instructions 0.41 4.664 0.0009 significant  scope of organization and government decisions 0.64 5.233 0.0009 significant  Government policies towards privatization 0.59 5.550 0.0009 significant  Dignity and social support 0.49 6.144 0.0009 significant	Job satisfation	0.64	8.451	0.0009	significant					
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scope of organization and government decisions0.645.2330.0009significantGovernment policies towards privatization0.595.5500.0009significantDignity and social support0.496.1440.0009significant	Skill development	0.73	9.081	0.0009	significant					
Government policies towards privatization 0.59 5.550 0.0009 significant  Dignity and social support 0.49 6.144 0.0009 significant	Laws and instructions	0.41	4.664	0.0009	significant					
Dignity and social support 0.49 6.144 0.0009 significant	scope of organization and government decisions	0.64	5.233	0.0009	significant					
	Government policies towards privatization	0.59	5.550	0.0009	significant					
Job opportunities and unemployment rate 0.60 7.162 0.0009 significant	Dignity and social support	0.49	6.144	0.0009	significant					
	Job opportunities and unemployment rate	0.60	7.162	0.0009	significant					
Uncertainty and fear of change in the future 0.59 6.674 0.0009 significant	Uncertainty and fear of change in the future	0.59	6.674	0.0009						
Attention to existing values 0.74 7.799 0.0009 significant	Attention to existing values	0.74	7.799	0.0009	significant					

From the point of view of samples, the six problems and thirty components of the exploratory model are the model constructs for explaining the problems of the system of recruitment, retention and training of human resources of NIORDC.

Question 2: What is the model of the problems of the system of recruitment, retention and training of human resources of NIORDC?

Figures 1 and 2 show the research model in its general state and standard coefficients.



Chi\_square=\CMIN; DF=\df; P-VALUE=\p; GFI=\gfi;CFI=\cfi;RMSEA=\rmsea

Figure 1. Final model in general by the software

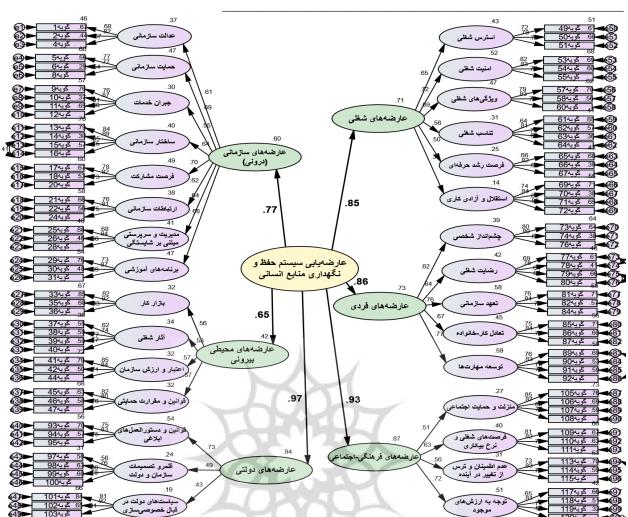


Figure 2. Final model by the standard coefficients

Chi\_square=7296.489; DF=4798; P-VALUE=.000; GFI=.663;CFI=.826;RMSEA=.045

After reviewing each of the dimensions and components of the model of the problems of the system of recruitment, retention and training of human resources, the final model of the research was presented. The hidden variable of public relations with an emphasis on the role of the media has shown that this is more complete than other models, which at this stage include the components related to each of the factors after calculation as an observed index in the model, and all unavoidable errors are also included in the model with more statistical and analytical value than models with observed components.

Table 4. Model of the problems of the system of recruitment, retention and training of human resources

1	J	,		0	
path	Standard coefficient	t	P-Value	result	priority
organizational (internal) problems	0.77	6.625	0.001	significant	5
environmental (external) problems	0.65	5.850	0.0009	significant	6
occupational problems	0.85	7.505	0.016	significant	4
individual (personal) problems	0.86	7.716	0.0009	significant	3
governmental (political) problems	0.97	9.352	0.0009	significant	1
cultural-social problems	0.93	7.168	0.0009	significant	2

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In general, in any statistical research that the researcher has made a decision based on linear or non-linear models (including regression, first-, second-, and third-order CFA, path analysis and other dynamic or static models), it is inevitable to address the adequacy of the model, which is called Goodness of fit. In the models of CFA and path analysis, many indicators are mentioned in the articles and statistical references, almost all of them are measured based on the residuals. The value of chi-square statistic in the model is 7296.489, the degree of freedom of the model is also equal to 4798, and the result of the ratio is equal to 1.521, which is an acceptable value. On the other hand, the fit indices of the model, such as CFI and IFI, are all acceptable and suitable, and the SRMR is 0.085.

Question 3: What is the importance of each of the problems of the system of recruitment, retention and training of human resources?

After fitting the model of the problems of the system of recruitment, retention and training of human resources using third-order factor analysis, functional prioritization of the dimensions and components of the research model was done using the average ranks obtained from Friedman's test.

Among the six problems of the system of recruitment, retention and training of human resources, the highest priority is related to individual (personal) problems with a mean rank of 3.98, the second priority is related to cultural-social problems with a mean rank of 78 3.3, the third priority is related to occupational problems with a mean rank of 3.58, the fourth priority is related to environmental (external) problems and governmental (political) problems with a mean rank of 3.29 and the last priority is related to organizational (internal) problems with a mean rank of 3.08.

In organizational (internal) problems, the highest priority is related to the organizational communication with a mean rank of 5.68, and the lowest priority is related to the participation opportunity with a mean rank of

In environmental (external) problems, the highest priority is related to the job effects with a mean rank of 2.84, and the lowest priority is related to the supportive laws and regulations with a mean rank of 1.90.

In occupational problems, the highest priority is related to the job stress with a mean rank of 4.12 and the lowest priority is related to the job characteristics with a mean rank of 2.88.

In individual (personal) problems, the highest priority is related to the organizational commitment with a mean rank of 3.45 and the lowest priority is related to the job characteristics with a mean rank of 2.29.

In governmental (political) problems, the highest priority is related to the laws and instructions with a mean rank of 2.30 and the lowest priority is related to the territory of organization and government decisions and government policies regarding privatization with a mean rank of 1.85.

In cultural-social problems, the highest priority is related to job opportunities and unemployment rate with a mean rank of 3.13, and the lowest priority is related to uncertainty and fear of change in the future with a mean rank of 1.97.

Question 4: What is the correlation between the dimensions of the problems of the system of recruitment, retention and training of human resources?

Table 6 shows the results of the Pearson correlation coefficient between the six problems of the system of recruitment, retention and training of human resources.

**Table 6.** Correlation coefficients between the six problems of the system of recruitment, retention and training of human resources

six problems of the model of the system of recruitment, retention and training of human resources	organizational (internal) problems	environmental (external) problems	occupational problems	individual (personal) problems	governmental (political) problems	cultural-social problems
organizational (internal) problems	1					
environmental (external) problems	**0.388	1				
occupational problems	**0.675	**0.476	1			
individual (personal) problems	**0.462	**0.305	**0.594	1		
governmental (political) problems	**0.396	**0.363	**0.409	**0.525	1	
cultural-social problems	**0.449	**0.325	**0.489	**0.589	**0.617	1

<sup>\*</sup>significant at the level of 0.05 and \*\*significant at the level of 0.01

The highest correlation coefficient was related to occupational problems with organizational (internal) problems with a correlation coefficient of 0.675, which is also significant at the level of 0.01. the lowest correlation coefficient was related to individual (personal) problems with environmental (external) problems with a correlation coefficient of 0.305, which is also significant at the level of 0.01.

This study has modeled the problems of the system of recruitment, retention and training of human resources

#### 4. Conclusion

Ghazizadeh, Amani and Karimi (2008).

in NIORDC. Organizational (internal) problems (0.77 and 6.625), environmental (external) problems (0.65 and 5.85), occupational problems (0.85 and 7.505)), individual (personal) problems (0.86 and 7.716), governmental (political) problems (0.97 and 9.352) and cultural-social problems (0.93 and 7.168) explained the final model of the research. According to the dimensions identified in the model, the study results confirm and are consistent with the study results of Coetzee and Stoltz (2015), Francis and Roger (2012), Alnaqbi (2011), Martin (2011), Patriota (2009), Hytter (2007), Sourdif (2006), Tourangeau and Cranley (2006), Tayebi Abu al-Hasani and Khodabakhshi (2017), Beigi Nia, Ghazizadeh and Hayati (2017), Tavakolinejad et al. (2016), Razmi (2016), Mirkamali, Haj Khozaimeh and Ebrahimi (2015), Ranjbar and Shafizadeh (2015), Amiri and Mahmudzadeh (2015), Rasouli and Rashidi (2015), Mirzaei, Mojalal and Beikzad (2015), Ranjbar and Shafizadeh (2015), Fateh Nia (2014), Karampour et al. (2013), Chamani Cheraghtepe, Mahmoudi and Baba Mahmoudi (2012), Ghazizadeh, Pourasharaf and Tulabi (2009) and Amani and Karimi (2008). The organizational justice (0.59 and 6.933), organizational support (0.57 and 8.457), service compensation (0.57 and 7.648), organizational structure (0.70 and 8.581), participation opportunity (0.70 and 9.127), organizational communication (0.61 and 7.826), competence-based management and supervision (0.63 and 7.603) and educational programs (0.71 and 8.824) explained the organizational (internal) problems. According to the components identified for organizational (internal) problems, the results of the present study confirm and are consistent with the study results of Francis and Roger (2012), Alnaqbi (2011), Martin (2011), Patriota (2009), Hytter (2007), Tourangeau and Cranley (2006), Tayebi Abu al-Hasani and Khodabakhshi (2017), Beigi Nia, Ghazizadeh and Hayati (2017), Tavakolinejad et al. (2016), Razmi (2016), Mirkamali, Haj Khozaimeh and Ebrahimi (2015), Ranjbar and Shafizadeh (2015), Amiri and Mahmudzadeh (2015), Rasouli and Rashidi (2015), Mirzaei, Mojalal and Beikzad (2015), Ranjbar and Shafizadeh (2015),

Fateh Nia (2014), Karampour et al. (2013), Chamani Cheraghtepe, Mahmoudi and Baba Mahmoudi (2012),

The labor market (0.62 and 7.959), job effect (0.61 and 6.772), the value of the organization (0.60 and 7.823) and supportive laws and regulations (0.45 and 5/868) explained environmental (external) problems. According to the components identified for environmental (external) problems, the results of the present study confirm and are consistent with the study results of Tayebi Abu al-Hasani and Khodabakhshi (2017), Tayakolinejad et al. (2016), Ranjbar and Shafizadeh (2015), and Ghazizadeh, Amani and Karimi (2008).

The job stress (0.62 and 7.209), job security (0.79 and 9.91), job characteristics (0.64 and 9.066), job fit (0.52 and 6.484), professional growth opportunity (0.42 and 4.771) and work independence and freedom (0.28 and 3.583) explained occupational problems. According to the components identified for occupational problems, he results of the present study confirm and are consistent with the study results of Coetzee and Stoltz (2015), Francis and Roger (2012), Alnaqbi (2011), Tarangio and Carnelly (2006), Tourangeau and Cranley (2006), Tayebi Abu al-Hasani and Khodabakhshi (2017), Tavakolinejad et al. (2016), Razmi (2016), Ranjbar and Shafizadeh (2015), Amiri and Mahmudzadeh (2015), Rasouli and Rashidi (2015), Mirzaei, Mojalal and Beikzad (2015), Fateh Nia (2014), Karampour et al. (2013), Chamani Cheraghtepe, Mahmoudi and Baba Mahmoudi (2012), Pourashraf and Tulabi (2009) and Jahangiri and Mehr Ali (2008).

The personal perspective (0.63 and 8.038), job satisfaction (0.64 and 8.451), organizational commitment (0.76 and 9.532), work-family balance (0.67 and 519.8) and skills development (0.73 and 9.081) explained the individual (personal) problems. According to the components identified for individual (personal) problems, the results of the present study confirm and are consistent with the study results of Coetzee and Stoltz (2015), Francis and Roger (2012), Martin (2011), Patriota (2009), Hytter (2007), Tourangeau and Cranley (2006), Razmi (2016), Mirkamali, Haj Khozaimeh and Ebrahimi (2015), Amiri and Mahmoodzadeh (2015), Rasouli and Rashidi (2015), Mirzaei, Mojalal and Beikzad (2015), Fateh Nia (2014), Chamani Cheragh Tepe, Mahmoudi and Baba Mahmoudi (2012), Hosseinian et al. (2011), Pourashraf and Tulabi (2009) and Jahangiri and Mehr Ali (2008).

The laws and instructions (0.41 and 4.664), the scope of decisions of the organization and the government (0.64 and 5.233) and the government's policies regarding privatization (0.59 and 5.55) explained government (political) problems. According to the identified components for government (political) problems, the results of the present study confirm and are consistent with the study results of Tavakolinejad et al. (2016) and Pour Ashraf and Tulaie (2009).

The dignity and social support (0.49 and 6.144), job opportunities and unemployment rate (0.60 and 7.162), uncertainty and fear of change in the future (0.59 and 6.674) and attention to existing values (0.74 and 7.799) explained cultural-social problems. According to the components identified for social-cultural problems, the results of the present study confirm and are consistent with the study results of Tourangeau and Cranley (2006), Tavaklinejad et al. (2016), Mirkamali, Haj Khozaimeh and Ebrahimi (2015), and Pourashraf and Toulabi (2009). Finally, according to the results, the model of the problems of the system of preservation, maintenance and training human resources of NIORDC is presented as follows:

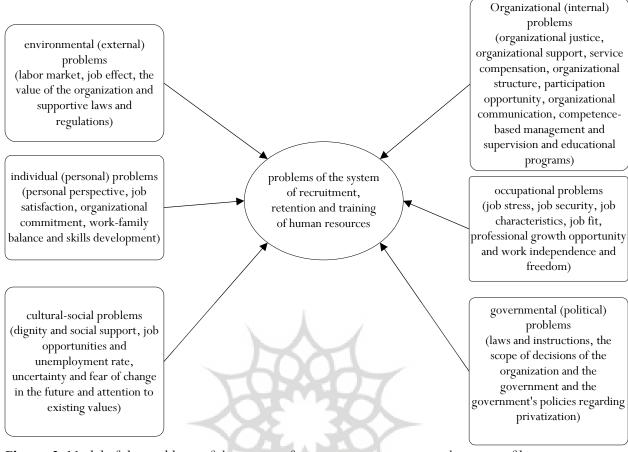


Figure 3. Model of the problems of the system of recruitment, retention and training of human resources

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