

# Designing a model to create a suitable platform in order to maintain human capital and increase the productivity of the organization in the central building of Iran Oil Company

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## Abstract

The current research has been conducted to design a model to create a suitable platform for the preservation and maintenance of human capital and increase the productivity of the organization in the central building of Iran Oil Company. The statistical population of this research consists of two groups, the first group includes experts who are familiar with the theories of human capital preservation and organizational productivity, whose number is unknown and are scattered throughout the country, and their selection was selective and in This research has been used in the design part of the model according to them, the second group included all the employees of the central building of Iran Oil Company (582 people), according to Cochran's formula, 232 of them were selected as a sample. To collect data, questionnaires on human capital maintenance and organization productivity were used. The results indicate that there is a significant relationship between the maintenance of human capital and the productivity of the organization in the central building of Iran Oil Company. There is a significant relationship between individual factors, organizational factors, managerial factors, and job factors with organizational productivity in the central building of Iran Oil Company.

Keywords: preservation of human capital, organizational productivity, oil company  
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## 1 Introduction

The productivity of the public sector has long existed as one of the important and challenging issues in the literature on public affairs and public administration. Managers and policymakers have been looking for ways to improve the productivity of the public sector. In our country, the issue of productivity has been emphasized in policies and macro programs [9]. But so far, comprehensive research has not been done to identify the strategies and policies for improving the productivity of the public sector, and the efforts made are only limited to examining the effect of a factor on the productivity of the public sector or its measurement, and the mechanisms for improving the productivity of the public sector have been neglected [10]. Many researchers report on the role and importance of productivity in the economic growth of countries [11]. In its latest annual report in 2019, the Asian Productivity Organization announces half of the

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economic growth of the countries of Southwest Asia. Meanwhile, the official statistics of this organization show that labor productivity in our country has been declining compared to other Asian countries [3]. While in the 1970s the labor productivity of our country was higher than countries such as Japan, Singapore, and Hong Kong, it was at the top of the Asian countries, but in the following decades the downward trend continued and in 2014 the labor productivity of our country was less than one Second, countries such as Singapore and Hong Kong have reached [8]. Unfortunately, there are no official statistics on the productivity of the public sector in our country, but considering the high share of the workforce in the public sector, it can be concluded that the state of productivity in the public sector in the country is not very favorable and this causes many problems and challenges for the sector. The administration (public and private) of the country, such as the National Oil Company, has provided, and considering that a significant share of the country's assets and revenues is dependent on the oil industry and comes from the sale of crude oil and its related materials, Reduction of productivity in this important national company can cause irreparable damage to the country, and in order to get rid of this, creating a suitable platform for the preservation of human capital can be a solution to the extent possible [1]. Human power is one of the inputs of the organizational system. The more competent the organization can attract and maintain and use it more effectively, the more successful it will be in achieving its goals and ahead of its competitors [2]. Organizations' competition is not limited to gaining more profit and market share, etc., but all these things are the result of a more important factor, which is competent human resources, and this is the point that organizations have realized, and the competition in attracting these forces and try to keep them and prevent them from leaving the service [4]. Therefore, the optimal system of maintaining human resources will reduce the turnover of human resources in the long term and increase the productivity of the organization and increase administrative health. Perhaps, in an organization with the best recruitment methods, the most qualified people have been selected and served in that organization (recruitment system), then with different evaluation and training methods (improvement system), the insight, skills, and knowledge of these employees have been increased [5]. But if they are not well maintained during their service, or if more and better attractions are available in other organizations, it will cause those people, especially experienced people, to easily leave the said organization and be attracted to those organizations. Or that they endanger the administrative health of the whole organization, as a result, efforts, efforts, and costs related to hiring, training, and equipping human resources and investing in people are wasted [7]. Public and private sector organizations are constantly facing many challenges, and with the creation of new technologies and competition between organizations, professional employees have faced relatively large job opportunities, and this issue has made it difficult for organizations to maintain specialist employees, so preventing Leaving the service and maintaining knowledge and specialist employees in the long term is considered as one of the most important challenges for organizations and companies, and the National Oil Products Distribution Company of Iran is no exception to this rule due to its important role in the country. Therefore, the only sustainable competitive advantage for the National Iranian Oil Company and its sub-assemblies is the maintenance of human capital in order to improve and increase the productivity of this company [6]. Considering that the National Iranian Oil Company is one of the top companies in the region and can compete with international companies, the productivity and efficiency of this company will increase Iran's competitiveness in the region and reduce its dependence on the West, escaping from the current economic crisis. There are strict sanctions and etc. with the help of this company, you can access advanced international technologies [10]. Therefore, it is very necessary to create a suitable platform in order to maintain the human capital of this company in order to increase productivity and competitiveness with other competitors and national and international oil companies, and for the National, Iranian Oil Company to be effective in the fields of International and planning to compete with competing companies requires the preservation and maintenance of efficient human capital and the creation of suitable platforms for their development in the organization for the greater productivity of this company in the national and international arenas [11]. Therefore, it is important to give special attention and emphasis to the creation of a suitable platform for the preservation and maintenance of human capital and increasing the productivity of the organization, so that in the coming years, the support of employees with basic knowledge and the preservation and maintenance of human capital and the effective use of Human force of the organization, let's witness the promotion and development of the National Oil Products Distribution Company and a special position in the region. According to the said material, the main question of the study is what is the model of creating a suitable platform for maintaining and maintaining human capital and increasing the productivity of the organization in the central building of Iran Oil Company?

## 2 Methods

The research selection method depends on the nature of the subject and research objectives. Therefore, according to the topic of the present research under the title of designing a model to create a suitable platform to preserve and maintain human capital and increase the productivity of the organization in the central building of the Iranian Oil

Company, the type of research method is descriptive and correlational. This research is practical and developmental in terms of purpose, which collected data in the field research method. The statistical population of the current research consists of two groups, the first group includes experts who are familiar with the theories of human capital preservation and organizational productivity, whose number is unknown and are scattered throughout the country, and the way they are chosen is selective and in this, The research in the design part of the model has been used according to them, the second group includes all the employees of the central building of Iran Oil Company (582 people), according to Cochran's formula, 232 of them were selected as a sample. The human capital maintenance questionnaire consisted of 28 questions in the dimensions of individual factors (6 questions), organizational factors (5 questions), managerial factors (8 questions), and job factors (9 questions), whose validity was confirmed, and the method of answering It was a 5-point Likert scale that was set from completely inappropriate (1 point) to completely appropriate (5 points). The questionnaire on the state of organizational productivity in the central building of Iran Oil Company consists of 18 five-choice questions, which have dimensions of economic productivity (6 questions), cultural productivity (6 questions), and political and legal productivity (6 questions). The spectrum and scoring tables of this questionnaire were adjusted from completely inappropriate (1 point) to completely appropriate (5 points). Cronbach's alpha is a measure used to assess the reliability, or internal consistency, of a set of scale or test items. In other words, the reliability of any given measurement refers to the extent to which it is a consistent measure of a concept, and Cronbach's alpha is one way of measuring the strength of that consistency. Cronbach's alpha is computed by correlating the score for each scale item with the total score for each observation (usually individual survey respondents or test takers), and then comparing that to the variance for all individual item scores:

$$\alpha = \left( \frac{k}{k-1} \right) \left( 1 - \frac{\sum_{i=1}^k \sigma_{y_i}^2}{\sigma_x^2} \right)$$

where:

- $k$  refers to the number of scale items
- $\sigma_{y_i}^2$  refers to the variance associated with item  $i$
- $\sigma_x^2$  refers to the variance associated with the observed total scores

Alternatively, Cronbach's alpha can also be defined as:

$$\alpha = \frac{k \times \bar{c}}{\bar{v} + (k-1)\bar{c}}$$

where:

- $k$  refers to the number of scale items
- $\bar{c}$  refers to the average of all covariances between items
- $\bar{v}$  refers to the average variance of each item

The formula for calculating Cronbach's  $\alpha$  is:

$$\alpha = \frac{n}{n-1} \left( 1 - \frac{\sum s^2(X_i)}{s^2(Y)} \right)$$

in this case:

- $n$  refers to the number of scale items
- $s^2(X_i)$  refers to the variance associated with item
- $s^2(Y)$  refers to the variance associated with the observed total scores

The reliability of the human capital preservation questionnaire was 0.86 and the organizational productivity questionnaire was 0.99. To analyze the data, statistical methods and tests at two descriptive and inferential levels, such as Pearson's correlation coefficient test, univariate t-test, Kolmogorov-Smirnov test, and exploratory and confirmatory factor analysis, and SPSS version 21, MINITAB version 17, and LISREL version 8 software were used. 8/ has been used.

### 3 Results

According to the contents of the table 1 which is shown for all the relationships, there is a significant relationship between all the factors of the model, because the T value for these relationships is more than 1.96, which shows the appropriateness of the structural model.

Table 1: Validation results of the final model of the relationship between the dimensions and components of human capital preservation and organizational productivity.

Investigating relationships within the structural model of research	T-Value	Standard coefficients
Maintenance → productivity of the organization	7.67	0.69
Individual factors → organization productivity	9.62	0.89
Organizational factors → organization productivity	4.40	0.47
Management factors → organization productivity	6.83	0.66
Job factors → organization productivity	3.51	0.32

Based on the graphs in Table 1, the strength of the relationship between the variables of maintaining and maintaining human capital and the productivity of the organization has been calculated as 0.69, which shows that the correlation is strong and favorable and of a direct type. The t-statistic of the test is also 7.67, which is greater than the critical value of t at the 5% error level, i.e. 1.96, and it shows that the observed correlation is significant. Therefore, it can be said that there is a significant relationship between the preservation of human capital and the productivity of the organization in the central building of Iran Oil Company. Also, based on Table 3, the strength of the relationship between the variables of individual factors and the productivity of the organization has been calculated as 0.89, which shows that the correlation is strong and favorable and of a direct type, and the strength of the relationship between the variables of the organizational factors and the productivity of the organization has been calculated as 0.47 which shows that the correlation is strong and favorable and of a direct type. The t-statistic of the test is also 4.40, which is greater than the critical value of t at the 5% error level, i.e. 1.96, and it shows that the observed correlation is significant. The strength of the relationship between the variables of managerial factors and the productivity of the organization has been calculated as 0.66, which shows that the correlation is strong and favorable and of a direct type. The t-statistic of the test is also 6.83, which is greater than the critical value of t at the 5% error level, i.e. 1.96, and it shows that the observed correlation is significant, and the strength of the relationship between the variables of job factors and organizational productivity is calculated as 0.32. Which shows that the correlation is strong and favorable and of a direct type. The t-statistic of the test is also 3.51, which is greater than the critical value of t at the 5% error level, i.e. 1.96, and it shows that the observed correlation is significant.

The output of Lisrel software shows the appropriateness of the proposed research model (Table 2) so that the value of the root mean square error of estimation (RMSEA) is equal to 0.041, the normalized chi-square value (CMIN/DF) is equal to 263 is 2.00 and the goodness of fit index (GFI) is 0.96. Other indicators for fitting the proposed research model are listed in the table below. To check the fit of the overall model, the GOF criterion is used, and three values of 0.01, 0.25, and 0.36 are introduced as a weak, medium, and strong values for GOF. This criterion is calculated through the following formula:

$$GOF = \sqrt{\text{communalities} \times R^2}$$

Table 2: Fit indices of the main research model

Indicator	Acceptable limit	Reported value
Root Mean Square Error of Estimate (RMSEA)	equal to or less than 1	0.041
Normalized Chi-Square (CMIN/DF)	equal to or less than 3	1.989
Goodness of Fit Index (GFI)	equal to or greater than 0.9	0.96
Modified Goodness-of-Fit Index (AGFI)	equal to or greater than 0.9	0.96
Comparative Fit Index (CFI)	equal to or greater than 0.9	0.97
Normalized Fit Index (NFI)	equal to or greater than 0.9	0.98
Tucker-Lewis Index (TLI)	equal to or greater than 0.9	0.97
Incremental Fit Index (IFI)	equal to or greater than 0.9	0.95

## 4 Discussion

Based on the obtained results, it was determined that the correlation and the strength of the relationship between these two variables are favorable, and these results are in agreement with the findings of Budlay et al. and are congruent and consistent [3]. Retention of employees analyzes the process of designing health and safety programs and providing welfare services”, ”Retention is the concept of preventing people from leaving the service and keeping people in the organization, and in this field, organizations must take the necessary measures” Maintenance is a process in which the management tries to increase the willingness of employees to continue serving in the organization by using factors such as an effective payment system, training, and improvement, promotion based on merit and providing comfort facilities and appropriate services. ”Retention means creating favorable employment conditions for employees so that they are not willing to transfer to another organization [5]. Human power is considered the most important capital in achieving the goals of any organization, institution, and company. Therefore, serious attention should be paid to its preservation and maintenance, and most importantly, if the organization does not think of a solution to maintain competent personnel, the organization will face many problems, including lack of productivity, and inefficient and unmotivated human resources will not be able to achieve the goals. be an organization [11]. Protecting human resources is a process to maintain the efficiency of human resources and also maintain the profitability of an organization [7]. The findings of Boam et al. (2018) showed that there is a significant relationship between the maintenance of human capital and organizational productivity in Lithuanian service industries [2]. Also, these results are in line with the findings of Lao et al. (2018), which showed that (internal factors, external factors, and environmental factors) strategic planning of human resources play a prominent role in the maintenance and adjustment of knowledge workers in the organization [9]. The components (internal factors, external factors, and environmental factors) are in favorable condition. There is a significant relationship between each of these factors. One of the operational tasks of human resources management is the maintenance and restoration of human resources. People are employed by organizations and managers undertake to reward them for the services they provide to that organization. For this, organizations must create specific policies in this direction. Human resources management should make optimal use of different systems of maintaining and maintaining people that lead to their mental and physical rehabilitation and restoration and for this purpose in different fields such as various medical, life, accident, and disability insurances. Planned and implemented them (8). Talking about the maintenance of human capital and increasing the productivity of the organization creates a special feeling in the context of the organization’s employees, in such a way that it indicates the need of organizations for knowledge workers, while such employees do not necessarily need the organization. Knowledge workers are recognized as an effective and speeding factor in the creation and transfer of knowledge, and this can help the organization in improving its performance.

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