

# Predicting Work Performance based on the Job Characteristics and Organizational Trust with the Mediation of Work Alienation in Healthcare Workers in the Oil Industry in the Northwest of Iran

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## Abstract

**Background:** Nowadays, the work performance of human resources is an important and key competitive advantage that can be affected by several factors.

**Objectives:** The present study aimed to predict work performance based on job characteristics and organizational trust with the mediation of work alienation.

**Methods:** The correlation research method was based on structural equation modeling. The statistical population of the research entailed 240 people in different fields of health and medical workers in the Northwestern oil industry of Iran. The sample size was calculated at 145 cases based on the Table of Krejcie and Morgan with proportion stratified random sampling. Four questionnaires were used to measure all variables. The psychometric properties of the questionnaires are valid and reliable. PLS software was used for data analysis.

**Results:** The results of the structural equation modeling demonstrated that the ability to predict the work performance of employees based on organizational trust and job characteristics with the mediation of work alienation was at a high level ( $R^2 = 0.94$ ), and the ability to predict work alienation based on organizational trust and job characteristics was at an average level ( $R^2 = 0.85$ ). Organizational trust and job characteristics showed a significant positive relationship with work performance. There was a significant inverse relationship between job characteristics and work alienation ( $P < 0.001$ ).

**Conclusion:** Human resource management programs that can promote organizational trust and job characteristics and reduce work alienation will improve the work performance of health workers.

*Keywords:* Health, Health personnel, Trust, Work performance

## 1. Background

The work performance (WP) of human resources should be regularly evaluated. The WP is affected by various factors. Job Characteristics (JC) play a major role in the performance of people in the organization. Employees in the workplace evaluate their jobs in terms of matching their abilities and interests (1). A wide array of studies (2-7) have pointed to the positive relationship between JC and WP. Based on the Hackman and Oldham model, enriched jobs in the form of skills variety, task identity, task significance, autonomy, and job feedback motivate employees to learn more and be creative. After that, as the level of job motivation of people increases through job enrichment, we will witness a sharp rise in the level of accuracy and efficient innovation (8). Research in management and social sciences has demonstrated that Organizational Trust (OT) is vital for the performance of employees (9). In the last quarter of the century, trust has emerged as a central concept in organizational psychology and organizational behavior (10). The OT is the confidence that the employees of an organization have in its beneficial actions for its members. It is created based on a mutual understanding of shared values in an employment relationship between the organization

and its members (11). According to social exchange theory, when organizations implement healthy practices, and teams provide resources, employees trust their superiors and colleagues and try to reciprocate these benefits by improving their own performance (9, 12, 13). Several studies investigating the relationship between OT and WP have illustrated that employee performance is affected by OT (14-16). On the other hand, Work Alienation (WA) is one of the new concepts and variables that affect performance. It is recognized as one of the obstacles to the improvement of WP among the employees of different organizations, affecting OT and JC. The employees who are victims of alienation give more importance and attention to external rewards than their WP; therefore, they are more likely to leave their jobs in a short period of time (17). Suarez et al. defined WA as awareness of the discrepancy between employees' perception of their actual work situation and their personal concerns, such as requirements, values, ideals, desires, or expectations (18). The WA was first proposed in the studies by Karl Marx. What Marx proposed is the inability of employees in their work in such a way that losing control over their work causes WA (19). From Seaman's point of view, WA can be classified as powerlessness, meaninglessness, social isolation, normlessness,

and self-estrangement (20). Several studies have pointed out that WA has an effective role in the reduction of WP (8, 17, 21-25). Various studies on the relationship between JC and WA also indicated significant relationships between variables (26-31).

By reviewing the previous studies, it can be stated that WA in executive organizations is a problem in Iran (26, 32), and it seems that the literature on WA is incomplete (17), and this variable needs more study. On the other hand, despite paying special attention to human resources in the oil industry, human resources performance is still far from optimal conditions (33). Performance and work indicators, such as useful working hours, client satisfaction, and cost control, have always been of great concern to executive managers of organizations (34). The personal experiences of the researcher in the health and treatment of the oil industry also demonstrate that WA and WP of employees in different categories can be a matter of concern to managers in this center, and there is a need for a new way of thinking in this connection about the possible factors affecting them.

## 2. Objectives

Based on the theoretical and research literature and considering the novelty of the research subject, in relation to the factors affecting WA and WP of employees in this part of executive organizations, the variables of OT and JC were selected as predictor variables, the variable of WA was selected as a mediating variable, and the variable of employees' performance was chosen as a criterion variable. We are looking for an answer to this question: can WP be predicted based on the JC and OT with the mediation of WA in the healthcare workers of the oil industry in the northwest of the country?

## 3. Methods

The correlation research method based on structural equation modeling was used in this study. The statistical population of the research consists of all 240 employees of health and medical centers of the oil industry in the northwest of Iran, including physicians, nurses, midwives, laboratories, health workers, consultants, employees, and staff managers of the health department in different categories. To determine the sample size, the sample size determination table of Krejcie and Morgan was used. The sample size was calculated at 145 cases based on this table. The proportional random sampling method was based on the proportion of medical staff and non-medical staff. After determining the sample size, as well as the ratio of each of the sampling classes

based on their ratio in the statistical population, first, the list of employees of each of the administrative and treatment units under study was compiled with random numbers and in the next step, the final samples are randomly selected.

Based on this, a total of 65 subjects (44.83%), including 37 physicians (25.52%), 23 nurses and midwives (15.86%), 5 dentists (3.45%) from the medical staff, and a total of 80 subjects (55.17%), including 8 cases (5.52%) were laboratory workers, 7 subjects (4.83%) were pharmacy workers, 3 cases (2.07%) were dental workers, 13 subjects (8.96%) were from other medical staff (counseling, reception attendants specialized clinic, audiometry staff, industrial medicine, occupational health, environmental health, insurance agent, and medical document staff), 25 cases (17.24%) from security, service, and facility staff, and 24 subjects (16.55%) were selected from administrative and educational staff based on their class ratio in the statistical population.

The inclusion criterion was working in the health and medical centers of the oil industry in the northwest of Iran, and the subjects were allowed to withdraw from the study at any stage. The exclusion criteria entailed subjects' unwillingness to continue participation in the research, leaving at least five items unanswered, and selecting the same option for at least five consecutive items.

According to the inclusion criteria, random sampling was used to improve internal validity and reliability in research, prevent possible bias in sample selection, and reduce error variance. Moreover, to prevent possible bias in data collection and improve data accuracy and confidentiality of information, the participants were assured that obtained data would be used merely for research purposes. The following questionnaires were used to collect data.

### *Questionnaire of JC*

Hackman and Oldham's (1976) questionnaire of JC has 15 items that measure each of the five job dimensions with three items. Despite being old, this questionnaire is still one of the common tools for data collection in measuring the JC in Iran and other countries (2). In this study, the composite reliability of this questionnaire was 0.97, and its convergent validity was 0.9.

### *WA questionnaire*

To measure WA, the questionnaire of Rastegarkhaled et al. was used, which was designed and validated based on Siemens classification for Iranian employees. This 10-item questionnaire measures each dimension of WA with two items (32). In this study, the composite reliability of this questionnaire was 0.91, and its convergent validity was 0.68.

### OT Questionnaire

In this research, the suggested dimensions of Pain's theory (2003) were used to measure OT. Payne proposed guidelines for measuring trust in organizations and proposed items to measure them. Based on these items, Danayifard et al. compiled an OT questionnaire for Iranian employees and reported its psychometric values as valid (35). In this study, the composite reliability of this questionnaire was 0.93, and its convergent validity was 0.83.

### Researcher-made questionnaire for WP evaluation

In order to measure the employee WP variable, based on the annual performance evaluation form of the employees in various executive organizations of Iran, which is also used in the oil health and treatment sector, a questionnaire was designed, and in order to evaluate the content validity, it was given to 16 experts, including managers and professors of management fields. The results of the estimation of content validity in two indices of content validity ratio and content validity demonstrated that in 20 items out of 26 items, the content validity index was higher than 0.79, and the content validity ratio was higher than 0.49. Based on this, the content validity of this questionnaire has been confirmed in the final 20 items both in the content validity index and in the content validity ratio. In this study, the composite reliability of this questionnaire was obtained at 0.89, and its convergent validity was reported as 0.79.

Questionnaires on the JC, OT, and WA were answered using self-report, and the WP evaluation questionnaire was answered by their immediate supervisors. Considering that based on the results of the first-order factor analysis, the factor loading of all

items in all four questionnaires was above 0.4, and based on the results of the second-order factor analysis, all the items used in measuring variables or sub-dimensions of variables in the explanation of that variable or their sub-dimensions had T values higher than 1.96 and significance level less than 0.05. All the items were valid in measuring the variables, and no item was omitted. The partial least squares regression and structural equation modeling with PLS software were used to analyze the collected data at a significance level of less than 0.05. Ethical considerations, including obtaining informed consent from research participants, maintaining confidentiality, and collective data analysis, were observed.

## 4.Result

In the studied workers, 65 (44.83%) respondents were medical staff, including physicians, dentists, nurses, and midwives, while 80 (55.17%) cases were non-medical staff, including laboratory, consultation, pharmacy, administration and support, health and safety executive, public services, financial affairs, and medical documents. In terms of administrative positions, 16 (11.03%) cases had managerial positions. According to Table 1, the JC with a mean of  $62.57 \pm 12.75$  is above average, WA with a mean of  $18.19 \pm 7.7$  is lower than average, OT with a mean of  $45.4 \pm 8.87$  is higher than the average, and the WP of the employees with a mean of  $83.8 \pm 17.18$  is higher than the average. In addition, based on the data in Table 1, in examining the dimensions of JC, the status of all dimensions is above average. In examining the dimensions of WA, the status of all dimensions was lower than average.

**Table 1. Descriptive indicators of research variables**

Variable	Min	Max	SD±Mean	Status
Job Characteristics	30	75	$62.57 \pm 12.75$	Higher than Average
Work Alienation	10	40	$18.19 \pm 7.7$	Lower than average
Organizational Trust	22	55	$45.4 \pm 8.87$	Higher than Average
Work performance	40	100	$83.8 \pm 17.18$	Higher than Average

Based on Table 2 and according to the evaluation criteria of the model fit, since the coefficient of determination ( $R^2$ ) is equal to 0.94 and higher than 0.67 in the model for predicting the WP of employees, it indicates a higher-than-average relationship and a good fit structural model. In addition, based on the goodness-of-fit (GOF) index, it can be stated that

considering that in predicting the WP, this index is equal to 0.58 and higher than 0.36, the model has high goodness of fit, and based on this, the presented general model is valid. According to Table 2, other fit indices also show a high fit of the structural equation model.

**Table 2. Goodness-of-fit index of the confirmed model**

Fit Index	Value	Acceptable Fit	Good Fit
$R^2$	0.94	$0.33 \leq 0.67 \leq R^2$	$\leq 0.67$ $0.99 \leq R^2$
GOF	0.58	$0.25 \leq 0.36 \leq \text{GOF}$	$0.36 \leq 0.99 \leq \text{GOF}$
NFI	0.97	$0.90 \leq \text{NFI} < 0.95$	$0.95 \leq \text{NFI} \leq 1.00$
SRMR	0.03	$0.05 \leq \text{SRMR} \leq 0.08$	$0 \leq \text{SRMR} < 0.05$

Based on Figure 1, in examining the standard path coefficients of the direct effect of OT on WP, the path coefficient is 0.22, the effect of JC on WP is 0.65, the effect of JC on WA is -0.85, and all three

path coefficients are significant ( $P < 0.001$ ). The effect of OT on WA is -0.07, and the effect of WA on WP is -0.12 and not significant ( $P > 0.05$ ).

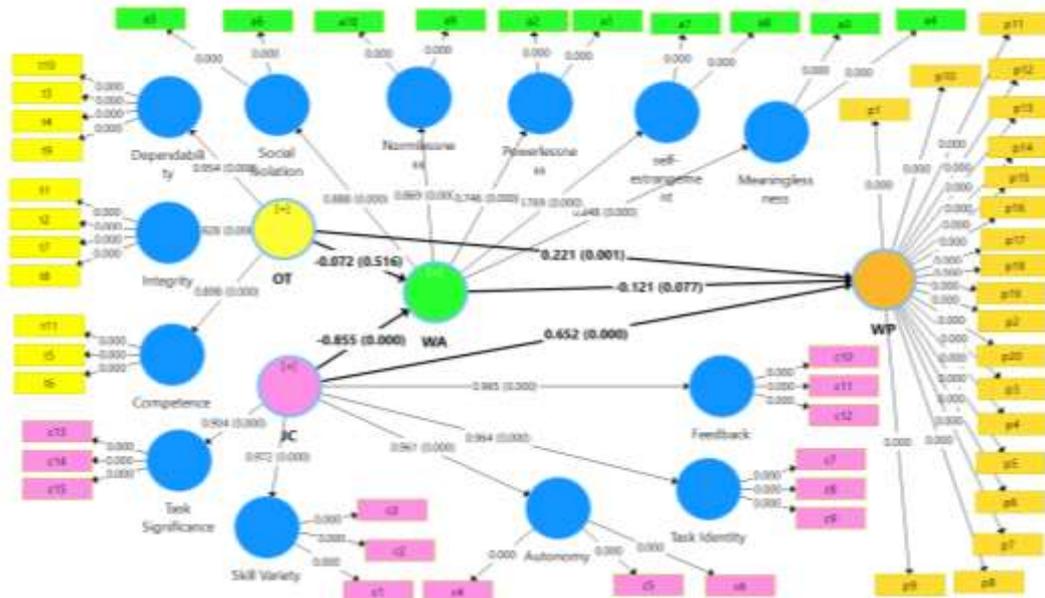


Figure 1. Values of the path coefficients and P Values of the WP prediction

Based on Figure 2, in examining the indirect effects of JC on WP with the mediation of WA, the path coefficient is equal to 0.1, and in the indirect impact

of OT on WP with the mediation of WA, the path coefficient is equal to 0.009; both indirect effects were not significant ( $P > 0.05$ ).

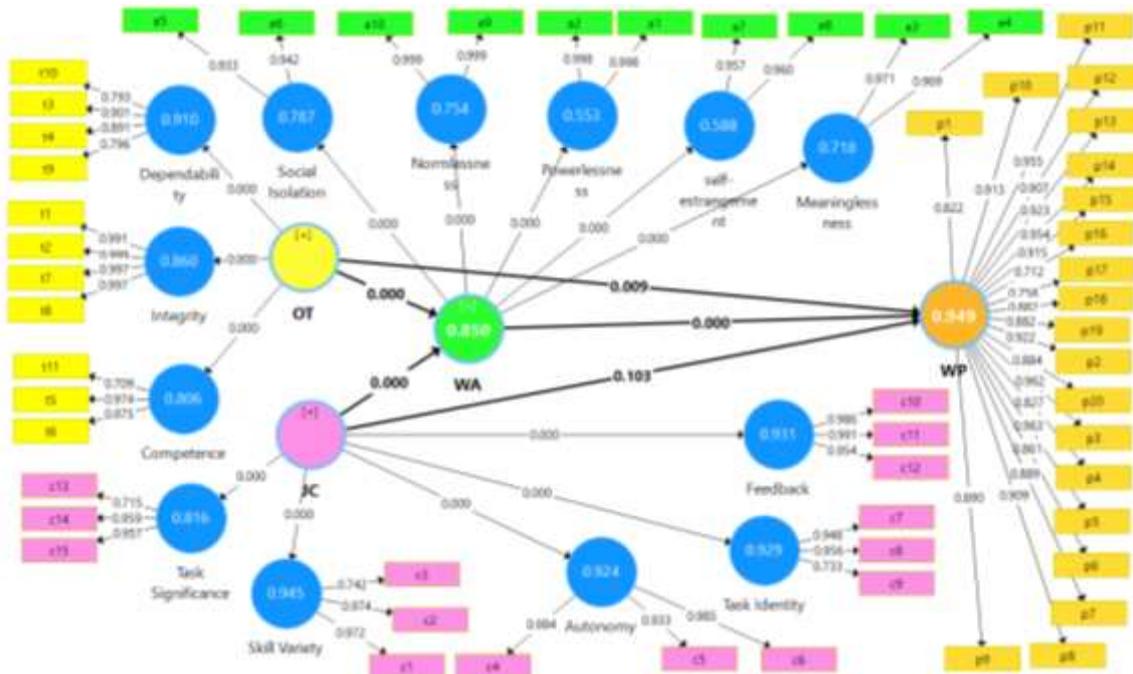


Figure 2. Values of the indirect effects of the WP prediction

Based on Figure 3, in predicting the increase in WP

based on variables of OT, JC, and WA, the coefficient

of determination is equal to 0.94, and in predicting the decrease of WA, the coefficient of determination is equal to 0.85. According to the values of the

coefficient of determination, it can be stated that the predictability of increasing performance based on predictor variables is higher than average.

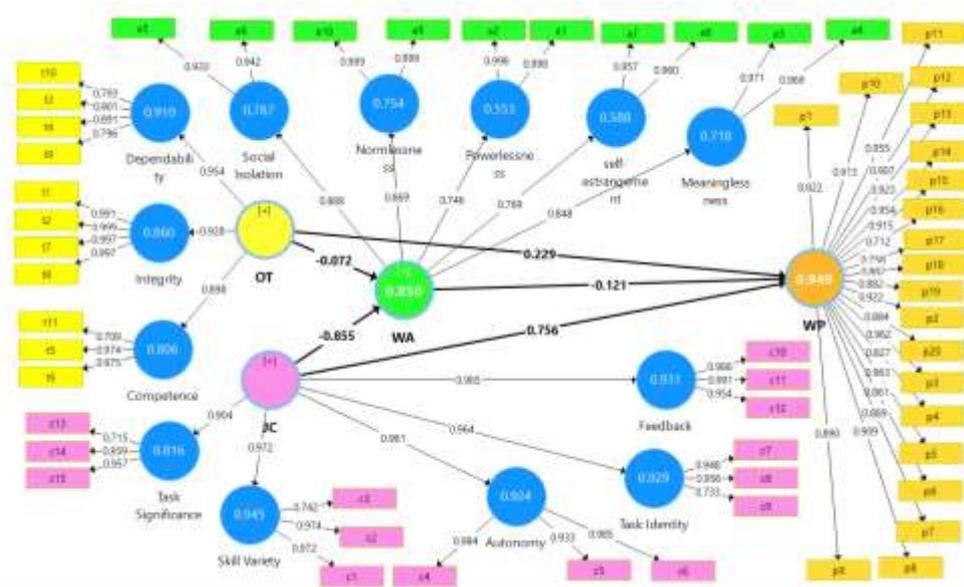


Figure 3. Values of the total effects and adjusted R2 values of the WA and WP prediction

### 5. Discussion

The results of this research pointed out that the ability to predict the improvement of employees' WP based on OT, JC, and WA was at a high level, and predicting the reduction of WA based on OT and JC was at an average level. The direct effect of OT on WP has also been reported in previous studies, and the findings of this research are in accordance with the results of several studies (9, 14). In its explanation, it can be argued that OT is defined as confidence in the ability and correctness of the exchange partner. The high level of OT partially compensates for the weakness in other resources necessary to improve productivity, affecting the internal and external relations of the organization by creating intra- and extra-individual effects. The OT makes people more motivated to learn new knowledge about their business and solve new organizational problems.

Furthermore, the results of the present study indicated that OT has a direct effect on WA. This finding is in agreement with those reported by Al Hosani et al. (28) and Atik and Ozer (25). The lack of trust in the organization causes employees to avoid expressing their ideas and opinions since they are worried that their plans will fail. Therefore, WA decreases by increasing OT in the organization, and by improving the state of OT, employees are more successful in advancing goals and feel more responsible and committed. According to the findings of the current research, the direct effect of JC on reducing WA and increasing WP, as well as the indirect effect of JC on WP with the mediation of

WA, was significant. This finding is also in line with the results of previous studies (29-31). The JC affects the performance, attitude, and behavior of employees in both work and life. A well-designed job allows the employer to value their work. When work becomes boring or limiting, people experience WA, and well-designed job elements can reduce WA among employees. Employees who are engaged in monotonous, repetitive, and closely supervised jobs are more prone to alienation than those engaged in interesting work.

A wide array of studies have pointed to a significant relationship between JC and WP (2, 3). Employees, who have autonomy in the decision-making process, need a variety of skills to perform work, understand the specific identity of their job, and while valuing their work, receive feedback from their work results, take responsibility for work, and play a central role in strengthening performance at the workplace. The WA has a significant and negative relationship with WP. Studies have suggested a negative relationship between WA and WP (8, 20, 23, 24). Alienation is characterized by a disturbance in the sense of self, employees' attitudes, the organization's goal, as well as social and human networks.

The main limitation of this research is the use of quantitative methods and questionnaire tools, which have their own limitations, while qualitative research methods and interview tools can lead to detailed information from the research sample. Moreover, the statistical population was restricted to treatment centers of the oil industry in the two cities of Tabriz and Urmia in the northwest of Iran.

Consequently, great caution should be exercised in generalizing the results to other populations.

## 6. Conclusion

As evidenced by the findings of the current research, it can be concluded that JC and OT are key and determining factors in improving the performance of healthcare workers in the oil industry. Accordingly, more suitable fields should be provided in line with workers' positive perceptions of their JC. Suppose the employees recognize their work as important in the course of organizational activities and processes and understand the specific nature of their job from the process of current activities in the organization and realize its importance in the performance of the organization and the completion of its missions. In that case, it is expected that they will enjoy their work, feel more satisfied, and have less desire to leave work. This feeling of satisfaction and pleasure from receiving feedback on performance results and using a variety of skills in order to improve work activities will lead to more effort and, ultimately, better performance. In addition, the promotion of OT through the promotion of competence, honesty, trustworthiness, openness, attention to employees, sense of identity, mutual supervision, satisfaction, and commitment can be a suitable field for improving WP. Favorable grounding to reduce WA both through OT and positive perception of JC can also lead to better WP by reducing powerlessness, isolation, meaninglessness, abnormality, and hatred. Based on the research findings, it is suggested that by using such methods as collaborative management and teamwork, a more appropriate field can be provided to promote a positive perception of JC and OT and reduce WA to improve WP.

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## Conflicts of interest

The authors of the article declared no conflict of interest.

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