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Leveraging Self-Management for Enhanced Productivity: Insights from Tehran's Water Sector

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Abstract: This study was undertaken to elucidate the influence of self-management on the productivity levels of personnel within the Water and Wastewater Department, District 2, Tehran, utilizing a descriptive survey method that engaged 119 respondents. The assessment was founded on the administration of meticulously validated questionnaires, with subsequent statistical analysis conducted using Statistical Package for the Social Sciences (SPSS). The analysis included the Kolmogorov-Smirnov test to confirm the normal distribution of the variables, namely, self-management strategies and productivity levels, and the Pearson-Spearman tests to evaluate correlations. The findings, underscored by Cronbach's Alpha values of 0.879 for self-management strategies and 0.906 for productivity levels, confirmed the hypothesis of a significant positive impact of self-management on workforce productivity. Notably, the natural reward strategy was identified as having the least effect on ameliorating workplace conditions. This investigation contributes to the body of knowledge by highlighting the critical role of self-management practices in enhancing the efficiency of public sector operations. The insights garnered from this study pave the way for the implementation of strategic self-management practices aimed at boosting productivity within public sector entities.

Keywords: Self-management; Productivity of human force; Water and Wastewater Department; Statistical hypothesis test; Paired t-test

1 Introduction

After studying the management literature regarding the improvement of employees' productivity and performance, it can be found that managers are always recommended to determine their goals and plans, design indices to ensure their accomplishment, and constantly evaluate and control employees. From a realistic viewpoint, this management is expensive and may reduce the organization's efficiency. Self-management is the solution to this problem. Self-management is essential for effectively managing people, groups, organizations, and societies. However, according to related research, it can be found that almost none of them have considered self-management. Self-management is the process of behavior modification that involves the systematic management of stimuli, cognitive processes, and contingency results [1]. This term focuses on behavior modification instead of changing values, attitudes, or characteristics. In today's knowledge-based economic system, skilled employees are considered vital assets of organizations, and losing such employees is unacceptable. Managing these skilled employees is necessary if they act successfully and are involved with their organization. In other words, performance does not depend on employees' competency, ability, or cognitive skill. Still, it depends on how employees react to their jobs and organizations. This study aims to investigate the effects of self-management on the productivity of the human force. Employees who practice self-management exercise control over their behavior, instead of relying on external supervisor control. Manz and Sims Jr [2] stated that self-management might be substituted for leadership since people with high self-management are responsible for most managerial functions, such as performance monitoring, reformatory measures, and resource research. Therefore, this research is studying the relationship between self-management and the productivity of the human force, as it has the potential to enrich the workplace.

2 Literature Review

One of management's different aspects is self-management. In today's competitive world, productivity as a philosophy and a viewpoint based on an improvement strategy can embrace the activities of all parts of society. The philosophy of productivity improvement makes human beings think, add, innovate, and develop a systematic attitude [3]. Enhancing productivity is crucial across various fields and industries, directly influencing overall efficiency and economic growth. Scholars and researchers have dedicated significant efforts to exploring methods and strategies aimed at improving productivity [4–7]. One of the indices of productivity is to use the available resources appropriately as the inputs of the organization [8, 9]. These resources include materials, machinery, human force, money, methods, technology, etc., while self-management, as the missing resource, is always forgotten. This research studies this item and examines its effects on the productivity of the human force. The question "Can human force, as the fundamental element in solving organizational problems, manage itself or not?" has always been an exciting and notable subject. These questions are raised afterward: what are the effects of self-management on the productivity of the human force? And do employees who manage themselves show more productivity? The results of this research determine the effects of self-management on organizational improvement. The answers to the mentioned questions can convince both employees of the effect of self-management on the organization and organizations of the importance of considering employees' aspects. The latter point distinguishes between this research and the previous works.

Self-management is a sequential process in which people and group employees encourage and guide themselves to achieve a specific behavior or outcome. The self-effect theories, emphasizing self-navigation, self-control, and self-management, are the source of this concept.

Today, any organizational system survives if it pays deep and sufficient attention to its human force and attempts to create value by considering employees as the most valuable asset. As mentioned before, the shortest, simplest, and most successful way is to increase the appropriate use of strategic factors (the human force) and release its potential energy to accomplish organizational goals. Enhancing productivity at the national level (organizational and personal productivity) affects all social and economic activities and is essential to achieving sustainable development and a higher standard of living [10].

The effect of this concept on the organization, as well as the productivity of the human force, has been studied in this research. Undoubtedly, enhancing productivity guarantees the survival of any organization in today's competitive world, which is accomplished through the following accurate working principles [11]. There is no limitation to productivity; however, being the best at doing organizational responsibilities is very important [12]. Since, among the production factors (goods and services), human force is one of the most important elements of increasing or decreasing productivity, it seems essential. It requires excellent attention [13].

3 Most Related Works and Contributions

A rich body of literature can be found focused on studying the effects of self-management on different aspects of productivity. However, among them, human force productivity is the most related. In this regard, Bloom and Van Reenen [14] studied the relationship between human resource management and productivity. They mention that, in 1996, about 17% of U.S. establishments had self-managed strategies; the amount has increased in recent years.

In another related work, Yildiz et al. [15] employed the fuzzy analytic hierarchy process (FAHP) and fuzzy TOPSIS to explore the relationship between self-management and human force productivity. The results of their study reveal that new career orientations like protean and boundaryless careers are built upon the fact that career decisions are affected by individuals' values and perceptions. They emphasize that an important strategy that managers should consider is self-management. Inspired by this fact, this study aims to investigate the effectiveness of self-management on the productivity of the human force in the Water and Wastewater Department of Tehran, Distinct 2, so that the productivity indices can be reinforced. Since applicable research aims to acquire the necessary knowledge to discover tools to meet a requirement, this research presents solutions to organizations' problems. According to the related research, this research investigates the relationship between self-management and human force productivity in the Water and Waterhouse Department of Tehran, Distinct 2, as a new case in the self-management area.

4 Self-Management

Self-management describes when employees manage their behaviour, are responsible for their decisions, and make appropriate decisions without external control. However, they may be less attractive [2]. Bandura [16] has considered self-management in social learning theory and mentioned that people can control their behavior if they control their environment and its reflection in their mind. Self-management strategies help employees build their workplace and increase their self-motivation. Moreover, it develops behavior that facilitates performance standards [2, 17]. Self-management strategies include behavioral, constructive thought patterns, and natural reward strategies.

The behavioral strategy emphasizes raising consciousness and managing main and sometimes unpleasant behaviors. This strategy includes self-monitoring, arranging personal goals, self-motivation, self-answering, self-rewarding, and self-training. Through self-monitoring, the person concludes which behavior needs modification or elimination.

Setting challenging goals encourages and guides people towards working. Corrective answering and real or abstract self-rewarding positively affect employees' motivation compared to self-criticism. Finally, training the desired behavior before actualizing it enables the employees to prevent mistakes and modify them if they occur [18].

Natural reward is related to positive experiences concerning doing a task and its process. Doing a task successfully is motivational and is considered a reward. People must consider a task a pleasant and helpful act since this vision creates a sense of ability, competition, and self-control, finally leading to performance improvement [18].

Constructive thought pattern strategy is related to intellectual patterns, which are innately constructive. These patterns are collectible and repeatable. People can adopt constructive or destructive patterns, which influence their behavior, feelings, and reactions. For example, people may change their thought patterns due to searching for other opportunities when they should consider problems as obstacles. These people use optimistic thought patterns to create opportunities through which they can face problems. This fact prevents them from reaching their final goals.

People tend to develop optimistic or pessimistic thoughts. When problems arise, an optimistic person believes that they can solve them, and a pessimistic person believes that these problems are not tolerable and cause conflict. Non-constructive thoughts are inefficient, and people must confront them. These thoughts are the result of prejudgment created by problematic and stressful events. Therefore, people must change their ineffective thoughts into constructive ones through self-evaluation. This process replaces illogical beliefs with logical ones.

Moreover, self-speech increases direct self-efficiency. Even in times of change or problems, people can move from negative self-speech to positive self-speech and develop more positive beliefs. According to evidence, a positive impression may increase a person's success. Subjective impression is a process through which people symbolically imagine virtual behavior similar to a real sample. People who use subjective impressions can imagine the results of their tasks before implementing them, increase their self-confidence, and improve their future performance [18].

5 Productivity of the Human Force

The productivity of the human force is the ratio of the outputs of goods, services, or their monetary value to the input work or the amount of work that a production requires to be produced [19].

5.1 Environment

The environment refers to external factors that can influence performance despite all abilities, clarity, support, and motivation for the job. The critical elements of environmental factors include competition, changes in market conditions, governmental bylaws, provisions, etc. [20]. Workplace conditions refer to physical conditions, equipment, and tools. Understanding and appreciation are judgments about a person's cooperation, which reflect work performance, personal sacrifice, and eagerness.

5.2 Ability or Readiness to Work

The term ability refers to people's knowledge and skills in fulfilling a duty successfully, which include knowledge, experience, and abilities related to the duty.

5.3 Motivation

People usually follow duties that include rewards. Rewards may be tangible or intangible. Performance feedback, recognition, or mollification are all part of motivation.

5.4 Evaluation (Training and Performance Feedback)

Evaluation refers to both daily performance feedback and occasional investigations. If people are unaware of their performance problems, improvement is unrealistic.

6 Method

This section describes the methodology and analyzes the gathered data from a statistical viewpoint. A normality test is conducted to determine whether or not a parametric/nonparametric measure can be employed. In addition, all paired relations are explored using Pearson and Spearman correlation tests applied for appropriate conditions. For more explanation, samples X_i and Y_i (i=1,2,. . . ,n) from different populations are considered. The Pearson correlation coefficient can be calculated.

$$\rho_{X,Y} = \frac{\sum_{i=1}^{n} \left(X_i - \bar{X}\right)\left(Y_i - \bar{Y}\right)}{\sqrt{\sum_{i=1}^{n} \left(X_i - \bar{X}\right)^2 \sum_{i=1}^{n} \left(Y_i - \bar{Y}\right)^2}} \tag{1}$$

Accordingly, if Xr_i and Yr_i denote the ranked samples obtained from the ranking X_i and Y_i, Spearman correlation measure can be defined.

$$\rho_{X,Y} = \frac{\sum_{i=1}^{n} \left(Xr_i - \overline{Xr}\right)\left(Yr_i - \overline{Yr}\right)}{\sqrt{\sum_{i=1}^{n} \left(Xr_i - \overline{Xr}\right)^2 \sum_{i=1}^{n} \left(Yr_i - \overline{Yr}\right)^2}} \tag{2}$$

This study is applicable in terms of its nature, aim, and descriptiveness in data collection. In addition, since the relationship between the variables of self-management and the productivity of the human force is studied in this study, it is correlational. All data is gathered in the Water and Wastewater Department of Tehran, District 2, to establish the statistical population, including all employees and managers of this district. Among the 227 individual samples, 119 were selected as sample sizes through Cochran's formula. A questionnaire is designed to collect the data. The questionnaire for this study was developed by researchers and distributed among personnel in the Water and Wastewater Department of Tehran, District 2. To collect data from the statistical population and test the hypotheses, two questionnaires on self-management and the productivity of the human force are applied. Moreover, the collected data is categorized through SPSS, and its findings are analyzed in different tables. Finally, this research is the first to study the relationship between self-management and the productivity of the human force.

The first experiment is a normality test on data using the Kolmogorov-Smirnov approach. In this regard, the null and alternative hypotheses are as follows:

H_0: The data distribution has no significant difference from the normal distribution.

H_1: The variable distribution has a significant difference from the normal distribution.

If the P-value is less than 0.05, then H_0 will be rejected, implying that the data distribution is abnormal. A value of 0.05 is usually called a significant level. However, if the P-value of the test is more than 0.05, H_0 will be accepted, and the data distribution has no significant difference from the normal distribution. Using parametric/nonparametric methods, the Kolmogorov-Smirnov test determines that a parametric test can be employed if data are normally distributed.

The correlational analysis of a statistical test is used to determine the type and degree of a relationship between two quantitative variables. The correlation coefficient is used to determine the correlation between two variables and indicates the intensity and type of the direct or inverse relationship if this coefficient is between -1 and 1. If there is no relationship between two variables, the coefficient is 0. The Pearson correlation coefficient is a parametric method for normally distributed or large-scale data. According to the Pearson-Spearman test, the sig value for all variables is less than 0.05. Thus, there is a significant relationship between dependent and independent variables, and all hypotheses are confirmed.

The Spearman coefficient test is applied to study the relationship between the dimensions of self-management and the productivity of the human force. In the Spearman coefficient test, the significance level is used to examine the significance of a relationship. This section analyzes the research hypotheses.

If the significance level of the results is less than 0.05, it can be concluded that there is a significant relationship between the variables. If the significance level is greater than 0.05, H_0 will be confirmed. Thus, there is no relationship between variables. If the significance level is equal to 0.000, the hypothesis can be confirmed at a confidence level of 99%. If it is more than zero or smaller than 0.05, the hypothesis can be confirmed at a confidence level of 95%. Several researchers have confirmed the validity of standard questionnaires, the main measuring tools in this research, so the authors have not focused on validation.

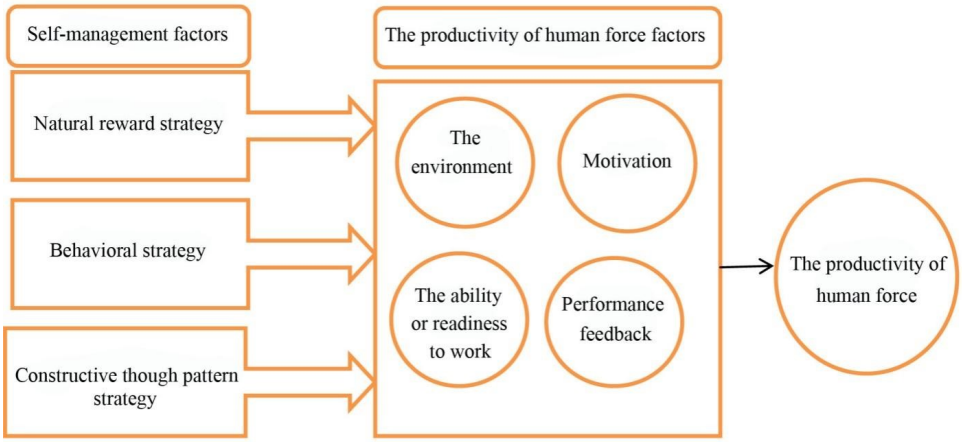

Figure 1. The conceptual model

Different methods are applied to calculate the reliability coefficient, including test-retest, parallel, split-halves, Kuder-Richardson, and Cronbach's alpha. The employed SPSS software can calculate the validity of the measuring tool based on Cronbach's alpha. The closer the estimated percentage is to 100, the more valid the questionnaire can be. Accordingly, the reliability of self-management and productivity in the human force questionnaire is equal to 0.879 and 0.906, respectively. These values affirm that the questionnaires are highly correlational and show high reliability. Figure 1 illustrates the conceptual model.

6.1 Research Hypotheses

According to the experts' ideas and after analyzing the questionnaires, the hypotheses are extracted as follows to be tested to see if any relation is meaningful for each case.

The main hypothesis is that self-management affects the productivity of the human force.

In addition, the secondary hypotheses are as follows:

•Behavioral strategy affects the ability or readiness to work in the human force.
•Natural reward strategy affects the human force's ability or readiness to work.
•Constructive thought pattern strategy affects the ability or readiness to work in human forces.
•Behavioral strategy affects the environment.
•Natural reward strategy affects the environment.
•Constructive thought pattern strategy affects the environment.
•Behavioral strategy affects motivation.
•Natural reward strategy affects motivation.
•Constructive thought pattern strategy affects motivation.
•Behavioral strategy affects the performance feedback of the human force.
•Natural reward strategy affects the performance feedback of the human force.
•Constructive thought pattern strategy affects the performance feedback of human forces.

The mentioned hypotheses are tested below.

6.2 Data Analysis

In the first step of the data analysis, Table 1 demonstrates data information regarding the sample size and genders. In this regard, the sample size equals 119, including 37 females and 82 males.

Table 2 shows the data distribution in terms of education. According to this table, 21 participants (17.6%) have a diploma degree, 15 participants (12.6%) have a diploma, 19 participants (16%) have an associate degree, 52 participants (43.7%) have a B.A./BSc, and the remaining 12 (10.1%) have M.A./MSc and higher degrees.

Table 1. The frequency distribution of the gender variable

Gender	**Frequency**	**Percentage** (%)
Female	37	31.1
Male	82	68.9
Total	119	100

Table 2. The frequency distribution of the education variable

Education	**Frequency**	**Percentage (%)**
Under diploma	21	17.6
Diploma	51	12.6
Associate degree	19	16
B.A./BSc	52	43.7
MA/MSc and higher	12	10.1
Total	**119**	**100**

In this stage, the normality of the data distribution should be determined to investigate the questions and other analyses. As mentioned before, the Kolmogorov-Smirnov test is employed. Table 3 outlines the test's result, establishing the null hypothesis based on the normality assumption. In contrast, the alternative one is based on a non-normal distribution.

According to the results, the significance levels of the normality test for variables of constructive thought pattern (0.293), behavioral pattern (0.555), natural reward pattern (0.084), self-management (0.702), employees' ability (0.119), environment (0.069), feedback (0.071) and productivity (0.611) are greater than 0.05 (sig$>$ 0.05 and α- 0.05),

implying that H_0 is not rejected. It has a confidence level of 95%, so the distribution of the variables is normal. The significance level of the normality test for motivation (0.012) is less than 0.05 (sig$<$ 0.05 and α- 0.05). Thus, H_0 is rejected. It has a 95% confidence level, and the distribution of this variable is not normal.

In addition, Table 4 outlines the results of the correlation test between the two variables. A significance level is reported in each case, with values less than 0.05 affirming the correlation between variables.

Table 3. The normality of the variable distribution

Variable	The Most Extreme Differences			K.S Statistic	Significance Level
	Absolute Value	Positive	Negative		
Constructive thought pattern	0.09	0.065	-0.09	0.979	0.293
Behavioral pattern	0.073	0.062	-0.073	0.793	0.555
Natural reward pattern	0.115	0.115	-0.086	1.258	0.084
Self-management	0.065	0.047	-0.065	0.705	0.702
Employees' ability	0.109	0.079	-0.109	1.188	0.119
Motivation	0.147	0.147	-0.099	1.602	0.012
Environment	0.119	0.108	-0.119	1.298	0.069
Feedback	0.118	0.118	-0.087	1.292	0.071
Productivity	0.07	0.07	-0.068	0.759	0.611

Table 4. The hypotheses of the research

Variable		Correlation Coefficient	Significance Level	Test Type	Result
The ability or readiness to contribute to the human force	Behavioral strategy	0.428	0.000	Pearson	Confirmed
	Natural reward strategy	0.311	0.000	Pearson	Confirmed
	Constructive thought pattern strategy	0.505	0.000	Pearson	Confirmed
The environment	Behavioral strategy	0.21	0.022	Pearson	Confirmed
	Natural reward strategy	0.139	0.133	Pearson	Rejected
	Constructive thought pattern strategy	0.195	0.033	Pearson	Confirmed
Motivation	Behavioral strategy	0.601	0.000	Pearson	Confirmed
	Natural reward strategy	0.143	0.120	Spearman	Rejected
	Constructive thought pattern strategy	0.543	0.000	Spearman	Confirmed
Performance feedback from the human force	Behavioral strategy	0.471	0.000	Pearson	Confirmed
	Natural reward strategy	0.607	0.000	Pearson	Confirmed
	Constructive thought pattern strategy	0.221	0.012	Pearson	Confirmed
The productivity of the human force	Self-management	0.628	0.000	Pearson	Confirmed

7 Discussion and Conclusions

Generally, this research is one of the first studies examining the effects of self-management on the productivity of the human force. In this study, a positive relationship was found between self-management and the productivity of the human force. Thus, self-management is a promising method for employees, allowing them to manage themselves without direct control. The results of this study affirm that self-management significantly enhances the productivity of the human force. These studies suggest that training people to improve self-management can enhance the quality of their work. Therefore, organizations should invest in self-management to promote themselves. The human force's productivity is vital for organizations' survival in a competitive environment. As mentioned before, self-management is one of the main factors in distributed leadership. Due to the complexity of processes, especially at group and organizational levels, self-management is necessary for organizations searching for the productivity of the human force. This research suggests that to train the productivity of the human force, employees need to adopt three strategies of behavior, natural reward, and constructive thought.

Therefore, managers should allow their employees to manage their emotions, which will enhance their natural reward system and boost their productivity. After breaking the monotony of employees' everyday lives, they can use job rotation, thereby improving their constructive thought patterns and work ability. Finally, a think tank can be provided to enhance the relationships between employees and improve the behavioral strategy and environment.

The motivational process is an exciting route for future research to explain the relationship between self-management and employees' working interactions. Some characteristics of appropriate workplaces include enriched job resources, high challenging demands, low disincentive demands [21], and good challenging demands [22]. Podsakoff et al. [23] refer to disincentive demands as "good" demands because they hinder personal growth and limit access to people. It appears that self-managing people increase their job resources, create daily challenges, and reduce disincentive demands whenever possible to directly control their workplace. This fact is true on busy days since Petrou et al. [24] found out that employees make some changes in their workplace on busy days.

This research aims to study the effect of self-management on the human force's productivity. In this regard, the Morgan sampling technique was used to sample 119 people from the Water and Wastewater Department of Tehran, District 2, and data was collected using a questionnaire. A statistical analysis was conducted on the gathered data to reveal if the hypotheses were meaningful. Following the numerical results by SPPSS software, Cronbach's alpha in the self-management questionnaire and the productivity of the human force questionnaire were equal to 0.879 and 0.906, respectively. The additional experiments demonstrate a normal distribution of constructive thought patterns, behavioral patterns, natural reward patterns, self-management, employee ability, environment, feedback, and productivity. Also, self-management has the greatest effect on the productivity of the human force. Among the factors of self-management and the productivity of the human force, the strategy of natural reward has the smallest effect on workplace conditions.

Data Availability

The data used to support the research findings are available from the corresponding author upon request.

Conflicts of Interest

The authors declare no conflict of interest.

References

[1] A. Rezaian, "Self-management," *Manage. Knowl. Q.*, vol. 22, pp. 64–73, 1993.

[2] C. C. Manz and H. P. Sims Jr, "Self-management as a substitute for leadership: A social learning theory perspective," *Acad. Manage. Rev.*, vol. 5, no. 3, pp. 361–367, 1980. https://doi.org/10.5465/amr.1980.4288845

[3] S. Stavru, "A critical examination of recent industrial surveys on agile method usage," *J. Syst. Softw.*, vol. 94, pp. 87–97, 2014. https://doi.org/10.1016/j.jss.2014.03.041

[4] H. Bagherzadeh Valami and R. Raeinojehdehi, "Ranking units in Data Envelopment Analysis with fuzzy data," *J. Intell. Fuzzy Syst.*, vol. 30, no. 5, pp. 2505–2516, 2016. https://doi.org/10.3233/IFS-151756

[5] F. M. Sobhani and S. E. Najafi, "Determining the increased numerical value of customer satisfaction, which has been impacted by latent and observed factors in after-sales service in the automotive industry, based on System Dynamics Method. (A case study in car manufacturer)," *J. Eng. Res.*, vol. 11, no. 2B, 2023.

[6] M. Shirvani Moghaddam, E. Najafi, and M. Khalaj, "Expanding the two-stage network series model with independent input and output in each stage and solving it by minimizing the loss in the network and using it in improving the supply chain and presenting the modified model," *J. New Res. Math.*, 2023. https://doi.org/10.30495/jnrm.2023.70870.2356

[7] R. Rasi Nojehdehi, H. Bagherzadeh Valami, and S. E. Najafi, "Classifications of linking activities based on their inefficiencies in Network DEA," *Int. J. Res. Ind. Eng.*, vol. 12, no. 2, pp. 165–176, 2023. https://doi.org/10.22105/riej.2022.360989.1335

[8] P. Shafaei Gholami, P. Nassiri, R. Yarahmadi, A. Hamidi, and R. Mirkazemi, "Assessment of Health Safety and Environment Management System function in contracting companies of one of the petro-chemistry industries in Iran, a case study," *Safety Sci.*, vol. 77, pp. 42–47, 2015. https://doi.org/10.1016/j.ssci.2015.03.004

[9] R. Rasinojehdehi and H. B. Valami, "A comprehensive neutrosophic model for evaluating the efficiency of airlines based on SBM model of network DEA," *Decis. Mak. Appl. Manage. Eng.*, vol. 6, no. 2, pp. 880–906, 2023. https://doi.org/10.31181/dma622023729

[10] S. M. Alvani, *General Management*. Iran: Ney Publications, 2006.

[11] A. Azadeh, N. Alizadeh Bonab, V. Salehi, and M. Zarrin, "A unique algorithm for the assessment and improvement of job satisfaction by resilience engineering: Hazardous labs," *Int. J. Ind. Ergon.*, vol. 49, pp. 68–77, 2015. https://doi.org/10.1016/j.ergon.2015.06.002

[12] K. Tajeddini, "Exploring the antecedents of effectiveness and efficiency," *Int. J. Hosp. Manag.*, vol. 49, pp. 125–135, 2015. https://doi.org/10.1016/j.ijhm.2015.06.007

[13] M. G. Shirangi and A. A. Emerick, "An improved TSVD-based Levenberg–Marquardt algorithm for history matching and comparison with Gauss–Newton," *J. Pet. Sci. Eng.*, vol. 143, pp. 258–271, 2016. https://doi.org/10.1016/j.petrol.2016.02.026

[14] N. Bloom and J. Van Reenen, "Human resource management and productivity," *Handb. Labor Econ.*, vol. 4, pp. 1697–1767, 2011. https://doi.org/10.1016/S0169-7218(11)02417-8

[15] D. Yildiz, A. Beskese, and F. T. Bozbura, "A hybrid decision-support model for self-managed career," *Kybernetes*, vol. 44, no. 4, pp. 555–575, 2015. https://doi.org/10.1108/K-12-2014-0289

[16] A. Bandura, *Social Learning Theory*. New Jersey, US: Prentice-Hall, 1976.

[17] K. Breevaart, A. B. Bakker, and E. Demerouti, "Daily self-management and employee work engagement," *J. Vocat. Behav.*, vol. 84, no. 1, pp. 31–38, 2014. https://doi.org/10.1016/j.jvb.2013.11.002

[18] A. Mollahosseini and B. Barkhordar, "An investigation of the relationship between employees' self-management skills and innovation in organizations of Kerman Province," *J. Humanit. Soc. Sci.*, vol. 7, no. 27, pp. 105–120, 2008.

[19] S. Taheri, *Productivity and Analysis in Organizations*. Iran: Tehran: Hastan publication (In Persian), 2011.

[20] K. Keenan, *How to Develop Motivation in Employees*. Iran: Ghadyani Publications, 2008.

[21] A. B. Bakker, E. Demerouti, and A. Sanz-Vergel, "Job demands–resources theory: Ten years later," *Annu. Rev. Organ. Psychol. Organ. Behav.*, vol. 10, pp. 25–53, 2023. https://doi.org/10.1146/annurev-orgpsych-120920-053933

[22] M. A. Cavanaugh, W. R. Boswell, M. V. Roehling, and J. W. Boudreau, "An empirical examination of self-reported work stress among U.S. managers," *J. Appl. Psychol.*, vol. 85, no. 1, pp. 65–74, 2000. https://doi.org/10.1037/0021-9010.85.1.65

[23] N. P. Podsakoff, J. A. LePine, and M. A. LePine, "Differential challenge stressor-hindrance stressor relationships with job attitudes, turnover intentions, turnover, and withdrawal behavior: A meta-analysis," *J. Appl. Psychol.*, vol. 92, no. 2, pp. 438–454, 2007. https://doi.org/10.1037/0021-9010.92.2.438

[24] P. Petrou, E. Demerouti, M. C. Peeters, W. B. Schaufeli, and J. Hetland, "Crafting a job on a daily basis: Contextual correlates and the link to work engagement," *J. Organ. Behav.*, vol. 33, no. 8, pp. 1120–1141, 2012. 10.1002/job.1783