



The Impact of Learning Organizations on Employee Performance with an Emphasis on Network Communication Approach

El impacto de las organizaciones de aprendizaje en el rendimiento de los empleados con énfasis en el enfoque de la comunicación en red

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ARTICLE INFO

Keywords:

Learning Organizations,
Network Communication Approach,
Employee Performance

Palabras clave:

Organizaciones de aprendizaje,
Enfoque de comunicación en red,
Rendimiento de los empleados

ABSTRACT

In this study, an attempt was made to gain knowledge about the impact of learning organizations on employee performance, emphasizing the network communication approach in Esfahan Steel Company. We used a questionnaire to collect the research data. The study's statistical population included all managers and (staff) employees of Esfahan Steel Company, whose number is 300 people. The stratified random sampling was done in this study. The sample size was estimated to be 118 people. Besides, three questionnaires were employed for data collection in this survey that experts confirmed its validity, and Cronbach's alpha confirmed its reliability. The SPSS and the Smart PLS software were used to analyze the data. According to the results achieved from the statistical analysis, learning organizations impact employee performance. Moreover, learning organizations influence the network communication approach. The network communication approach affects the performance of the organization's employees. Small and medium-sized production companies in the Steel industry can use the findings of this research to Achieve continuous improvement of individual and organizational performance through learning organizations and network communication.

RESUMEN

En este estudio se ha intentado conocer el impacto de las organizaciones de aprendizaje en el rendimiento de los empleados, haciendo hincapié en el enfoque de la comunicación en red en la empresa Esfahan Steel. Se ha utilizado un cuestionario para recoger los datos. La población estadística del estudio incluyó a todos los directivos y empleados (de plantilla) de la Esfahan Steel Company, esto es, 300 personas. En este estudio se realizó un muestreo aleatorio estratificado. El tamaño de la muestra se estimó en 118 personas. Además, se emplearon tres cuestionarios para la obtención de los datos, cuya validez fue confirmada por expertos y el alfa de Cronbach confirmó su fiabilidad. Para el análisis de los datos se utilizó el software SPSS y el Smart PLS. Según los resultados obtenidos, las organizaciones de aprendizaje influyen en el rendimiento de los empleados. Además, las organizaciones que aprenden influyen en el enfoque de comunicación en red. El enfoque de comunicación en red influye en el rendimiento de los empleados de la organización. Las pequeñas y medianas empresas productoras de la industria siderúrgica pueden utilizar los resultados de esta investigación para lograr una mejora continua del rendimiento individual y organizativo mediante la organización de aprendizajes y la comunicación en red.

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1. Introduction

Knowledge organization achieves capabilities that can build extraordinary power from a limited resource (Jensen, 2005). These organizations are faced with new challenges. Nowadays, the competitive conditions and environment of organizations have become more complex and varying more than before. This space is changing rapidly so that this speed is far more than the rate of responsiveness and adaptability for most organizations. Continuous changes in knowledge have also created a new state of imbalance for organizations. The endless flow of knowledge puts markets continually changing, which requires organizations for ongoing changes (Davis & Daley, 2008). To put it simply, learning organizations can be called knowledge-creating organizations; the organizations in which the creation of new knowledge and awareness, innovations, and initiatives is not a specialized and specific task, but a kind of universal behavior, i.e., the way all members of the organization act on it. In other words, the knowledge-creating organization is an organization in which each person is a creative and knowledge-making human being. In this organization, thinking, collective discussion, and the discovery of new ideas and thoughts are encouraged, and innovators are nurtured (Wang & Rafiq, 2009).

A quick review of the learning organization literature indicates that many researchers of the learning organization, in their own studies, have been ambiguous in the definition of the learning organization. Moreover, most studies conducted in this domain are theoretical rather than empirical and systematic (Anna, 2009). In conjunction with the definition of such organizations, there is no clear and practical definition (Senge, 1994). Learning organization is an organization in which organizational reconstruction is continuously promoted by creating a set of core processes, in which a positive attitude for learning, adaptation, and change is strengthened, and individuals are viewed as a natural resource and vital credibility of the organization (Ting, 2012). According to Richard Pettinger (2007), a learning organization is a general term, which refers to approaches and strategies to improve effectiveness (García-Morales et al., 2007).

Finally, in accordance with the comprehensive definition of Peter Senge (1994), "A learning organization is a place where individuals continually enhance their capacities to create the results they seek; a place where new and broad patterns of thinking are nurtured, and collective ideas are promoted, and people are constantly learning how to learn together". The learning organization provides the possibility of the flow of practical and useful learning by creating a group-oriented, team-oriented, and flexible structure. The result of this learning will be the creation of knowledge, its increase and, thus, growth, the development of better and more successful adaptation to the changing environment. The learning organization is the place where organizational learning flows. There are two essential and intertwined elements of learning and knowledge in this organization; that is, learning leads to the creation of new knowledge, and re-learning of new knowledge will result in the creation of new knowledge.

Knowledge Management (KM) with an organizational learning approach is facilitating the process of creating and sharing knowledge, coupled with providing a positive work environment and an effective rewards system (Kock, 2007). Additionally, organizations that have developed a strong learning culture are efficient in the creation, acquisition, and transfer of knowledge, as well as in the modification of behavior to reflect new knowledge. In a learning organization, the organization learns shifts and transforms its actions over time. A learning organization is an organization whose practices are improved and amended through better awareness and understanding. We can claim to be a learning organization that can change and improves the range of its potential behavior through the communication process (Shieh, 2011). Organizations are learning and knowledge-creating when they gain inferences from their history and experiences and practically put them as a guide for their behavior. In a learning organization, organizational learning occurs that is the process of finding errors and mistakes and fixing them. Overall, we can consider a learning organization as an organization with skills in creating, acquiring, and transferring knowledge and acts to change and correct its behavior with the help of newly gained knowledge. In this definition of the learning organization, knowledge creation and innovation and creativity constitute its fundamental pillars. However, creating and acquiring knowledge alone is not enough to consider a learning organization. Still, that knowledge must be employed in its behavior and performances, and the improvement and modification of its activities must be possible with the help of them (Senge, 1994). Today, the growth and development of organizations will depend on solving the future problems of organizations in a variety of personnel, technical, financial, economic dimensions, customers, and stakeholders.

Solving organizational issues does not merely mean solving today's problems of the organization, but today's matters are typically imposed on the management of the organization (Ting, 2012). Successful managers recognize the future dilemmas of the organization and solve them. Solving organizational problem not only requires systematic follow-up of different problem-solving processes, but also relies on the ability, cooperation, and creativity of employees. The development of science and technology and the arrival of new goods and products are significant to the extent that non-dynamic organizations, without creativity and innovation, are very

quickly out of the competition and lose the opportunity of competition and presence with competitors and turn to be closed organizations. Lack of problem-solving ability by managers and employees causes the organization to lag behind and remove it from the market competition. In order to prevent organizations from becoming a closed organization, it is necessary to strengthen knowledge-based organizations and learning organizations so that this becomes an organizational culture (Song, 2015). Knowledge is the food of the learning organization, and the nutrients enable the knowledge of the organization to grow (Santos-Vijande et al., 2012).

Unfortunately, no study has been yet conducted in this field in Iran, and one of the main concerns of Iranian organizations, especially the Iranian steel industry, is to become a learning organization through the application of knowledge management in that companies considering the explanation of the policy and prism of learning organizations in the company. On the other hand, the examples of the significance of the role and importance of human resources in enterprises from transformation and metamorphosis of its name in recent years are quite evident, e.g., labor force, human resources, human capital. The relative differentiation of organizations and enterprises from each other is due to the distinction between their human capitals. The challenges for large firms on the application of human resources are based on knowledge. The first challenge for large firms is the inadequate supply of an efficient workforce in accordance with the needs of business firms.

Besides, the gap between the teachings of universities, professional institutions, schools, etc. with practical concepts in the working disciplines of business enterprises is another challenge that engages firms. Moreover, the lack of knowledge of human resource units of some large business enterprises from the real needs of human resources of the organization, due to the lack of information, documentation, and relevant analysis in the field of human resources planning (chart needs, needs for development plans, needs arising from job rotation, job profiles, etc.), can become a significant challenge for organizations. Of course, changes in the culture and attitude of the new generation towards the phenomenon of career and organizational commitment affect the creation of such challenges. However, insufficient use of intelligent and modern approaches of human resources supply and evaluation of newly hired employees is also problematic in some cases. Inadequacy of the effectiveness of human resource development processes resulting from training, career management, participation, relocation, etc. leads to problems in the development of the organization. Environmental change has forced organizations to continually look for the best solutions and procedures for adaptation to their environment, and thus achieve a competitive advantage.

The only solution for future organizations in the face of transformations is that they turn themselves into a learning organization. One of the primary ways of becoming a learning organization is to apply knowledge management in the organization. KM accelerates organizational learning by simplifying the process of knowledge creation and sharing, coupled with providing positive work environments and an effective rewards system, and helps the organization to adapt to today's rapid-fire changes and to survive successfully consistent with the changes (Trott, 2008).

The role of learning organizations on network communication and employee performance has increasingly attracted the attention of scientists and managers of advanced organizations; nevertheless, few empirical studies have dealt with the existence and nature of the relationship between learning organizations and these factors. Moreover, in encountering a turbulent external environment, the knowledge-based nature of employees contributes to the organization to cope with the complexity and changes that are increasing rapidly. In such a situation, companies with learning capacity can quickly respond to challenges, develop new products, and gain better sales opportunities than companies without organizational learning (Tsao & Lien, 2013). According to the abovementioned cases, this study examines the impact of learning organizations on employee performance with a network communication approach. By carrying out this investigation, the researcher helps Iranian experts to know the conceptual boundaries of becoming a learning organization to upgrade the performance of employees.

2. Theoretical Framework and Development of Hypotheses

2.1. Learning organization and employee performance

Learning organization is one of the most exciting management theories proposed by Peter Senge in the 90s. Peter Senge (1994) describes the learning organization as the continual development of the organization's capabilities for creating its future. The learning organization is an aspiration, a path, and away, not a goal (Saunders et al, 2009). Senge who coined the idea of a learning organization defines it as an organization in which people are continually enhancing their abilities to achieve the desired results, where the new pattern of thinking is growing, collective and group ideas are promoting, and people are learning together how to learn.

According to Pettinger (2007), a learning organization is a general term, which refers to approaches and strategies that are designed to improve organizational effectiveness. He believes that learning organizations insist on developing the abilities, capacities, and quality of their employees and increasing their skills, attitudes, and behavior's (Song, 2015). Leal-Millán et al. (2016) specifically emphasize the role of knowledge management as a facilitator of organizational learning and point out its interaction with organizational learning. In other studies, the discussion of knowledge management with a focus on organizational learning, collective (team), and individual learning as significant factors in the implementation of the learning organization model in organizations is emphasized (Lee, 2012; Mumford et al., 2012).

A learning organization is an organization that has the ability for the recruitment and survival fundamentally and continuously (Mohebzadegan et al, 2014) or an organization that helps to promote organizational learning by creating structures and developing strategies (Dodgson et al, 2003). Balsam et al. (2002) express the difference between the terms of organizational learning and learning organization in this way.

In discussing learning organizations, we focus on what (systems, principles, and characteristics of organizations that learn) are. Still, in organizational learning, attention is paid to how learning occurs in the organization. Organizational learning is just one aspect of a learning organization. Hurley (2002) believes a learning organization is an organization in which learning flows consistently and persistently to achieve continuous modification and improvement, and the organization has the power, capacity, and capability of its own transformation. Contrary to previous theories that have more focused on the conceptual and abstract aspects of the learning organization, the theory of Marsick and Watkins (1990) states seven key attributes and dimensions as the dimensions of a learning organization, which largely contributes to the measurability of this theory and can be regarded as an essential step in organizational research. Olsen and Eikebrokk (2009) explicitly state the importance of organizational learning in improving organizational performance.

On the other hand, just as organizational learning can be effective in improving the performance of the organization, it seems that it itself needs an appropriate organizational mechanism to crystallize in the best way; This mechanism is the learning organization. Organizational learning has several consequences and affects different variables. Some previous studies have described the positive effects of organizational learning on its performance (Ellinger et al., 2002). The effect of organizational learning on the ability to accept and cope with change, the organizational commitment of employees, and their professional competence has been confirmed (Chaston et al., 2001). Accordingly, the first hypothesis of the research will be as follows:

H1: Learning organizations have a positive effect on employee performance.

2.2. Learning organization and network communication

A learning organization is an organization that acquires and manages all the intellectual power, knowledge, and experience of the organization to make changes and continuous improvement for development. In another definition, the learning organization is known as the full involvement of employees in the process of change that is done with their cooperation and collective responsibility, and this leads to a leap towards common values or principles (Aslam et al., 2014).

Information technology is one of the most important and effective enablers in learning organizations (Hajimohammadi et al., 2019). So that it can be claimed that even in the presence of other enablers, without information technology, the realization of the learning organization will be incomplete or impossible. Ganjinia et al. (2014) proposed that learning organization allowed organizational members to constantly expanding their abilities, creating satisfactory results, being able to cultivate new-style thinking, fulfilling the shared vision, and constantly learning to learn together to lay the foundation for success.

A communication network is a set of organizations, whether large or small companies, government agencies, research institutes, etc., that cooperate with each other to achieve common goals. Usually, each of the member companies in a communication network is responsible for part of the value chain in the production of an innovative and high-risk product so that all members of the network benefit from the value created in a shared manner. Thus, by joining communication networks, organizations can benefit from each other's complementary resources and competencies (Rampersad et al., 2010). To support networked learning, the used technology plays an important role.

Communication technology is changing rapidly, and new tools offer new ways of interaction. Advanced technologies such as social software tools facilitate communication and collaboration as well as knowledge building and sharing. Communication within social networks is based on self-direction which also might enhance learning in the workplace. Our main hypothesis is that networked learning will enhance the employee's performance

more effectively than traditional learning sequences (Veen & Vrakking, 2006). Accordingly, the second hypothesis of the research will be as follows:

H2: Learning organizations have a positive effect on Network communication.

2.3. Network communications and employee performance

A network is a collection of companies with limited memberships and complementary competencies that trust and collaborate with each other to achieve a common goal, which is product and process development. Overall, the typical components of all the definitions provided for networks are as follows (De Noni, 2018). Every organization has a formal communication network, in which ideas and information flow along the lines of command in the company's organizational structure (Dessler, 2013).

Effective communication is critical to the success of an organization because organizations are becoming more complex, both in structure and technology, Economic and Market conditions are forcing greater efficiency and quality in manufacturing and services, government legislation requires managers to interpret the changing implications for policies and practices in their own organizations and employees are expecting more from their employers, not just wages, but also greater personal and job satisfaction (McMillan, 2007). Papa (1990) concludes in his research that three network factors (diversity, size, and activity) are significant predictors of the speed with which employees increased their productivity ratings.

According to social networks theory, an employee's network ties play an important role in affecting access to important resources that in turn serve as a key mechanism contributing positively to job performance. Individuals who have many network ties or connections would have more interactions with others in the network to gain access to resources (Zhang & Venkatesh, 2013). Accordingly, the third hypothesis of the research will be as follows:

H3: Network communication has a positive effect on employee performance.

2.4. The mediating role of Network communication in the relationship between Learning organizations and employee performance

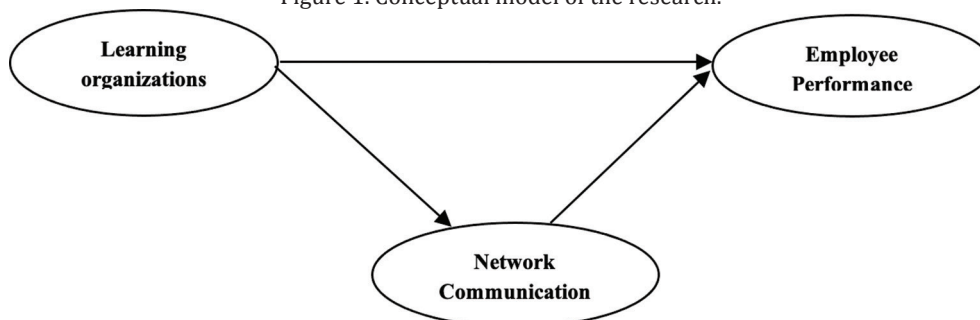
When organizations increase the extent of verticalness, in addition to the offline (i.e., face-to-face) workplace communication networks, employees are more likely to interact with each other virtually and form online communication networks (Koh et al., 2007) that are characterized by weaker ties, democratization and equalization, and a larger network of contacts (Boase et al., 2006).

Networks communication can lead to engaged employees, Employee engagement is a vital concept because today's organizations expect their employees to work proactively, collaborate with others, take responsibility for their own professional development, and be committed to high-performance standards, which means that organizations need engaged employees (Bakker & Demerouti, 2008; Bakker & Schaufeli, 2008). Although little empirical research has been conducted to examine the direct relationship between learning organization culture and employee engagement, many human performance models describing the determinants of performance (Bichelmeyer & Horvitz, 2006). Accordingly, the fourth hypothesis of the research will be as follows:

H4: Learning organizations through Network communication has a positive and significant effect on employee performance.

According to the main purpose of the research and the hypotheses, the conceptual model of the research, is shown in Figure 1.

Figure 1. Conceptual model of the research.



3. Methodology

This study is applied research because it seeks to develop applied knowledge in a specific field. At the same time, this research is a survey based on the data collection method because the research data are collected through the distribution of the questionnaire and in terms of the correlation method because it examines the relationships of the variables. The statistical population of this study includes all managers and employees of Esfahan Steel Company, whose number is 300 persons.

Stratified random sampling is done in this study. Because the number of employees is known, the limited community formula is adopted to measure the number of samples. The population intended in this study is the total (staff) employees and managers, and a stratified random sampling method is used as well. The total sample size formula (Cochran's formula) will be employed to determine the sample size. According to a population of 300 people, a sample size of 118 people was obtained. To collect data, library studies were carried out for collecting information about the theoretical basis of research, and questionnaires were used for collecting field information. The present research questionnaire consisted of 21 questions. The questionnaire consisted of a combination of three questionnaires: The Learning Organizations Questionnaire for Atak and Erturgut (2010), the Employee Performance Questionnaire for Wallace and De Chernatony (2009), and the Network Communications Questionnaire for De Noni et al. (2018). In fact, a questionnaire containing 21 questions was distributed among the statistical sample members.

The items applied in the research questionnaire are illustrated in Table 1.

In this questionnaire, the Five-point Likert scale was used. Cronbach's alpha coefficient was used to calculate the reliability of the questionnaires. The results of this test are shown in Table 2.

Table 1. Scales and items.

Scales	Items
Learning organizations	Employees are trying to acquire new knowledge
	Employees learn from each other
	Knowledge is usually exchanged between employees or the manager and employees
	Knowledge sharing among employees is easy
	Employees frequently share their knowledge with each other
	Organizational knowledge is reflected in the work of employees
	Employees seek to improve their competencies
Network Communications	Communication network members have an understanding of their mission and tasks
	Communication network members are involved in collective identification and work planning
	Communication network members have a clear understanding of mutual benefits
	Communication network members trust each other
	The communication network seeks to maximize member participation
	The goal of the communication network is transparent to all members
Employee Performance	Employees perform defined actions on time
	Employees perform daily activities according to a defined schedule
	Employees cooperate well with others in carrying out work activities
	Employees are coordinated with their superiors in performing their duties
	Employees tend to accept job responsibilities
	Employees are committed to their job descriptions
	Employees follow their job duties
	Employees respect the ethical principles of the organization

Table 2. Results of Cronbach's alpha test.

Components	Items	Cronbach's alpha coefficients
Learning Organizations	7	0.80
Employee Performance	8	0.86
Network Communications	6	0.79

The result showed that Cronbach's alpha coefficients of all components were higher than 0.7 and reliability was confirmed. This research, it is used to analyze the data and test the research hypotheses and determine the effect of independent and intermediate variables on the dependent variable of structural equation modeling in Smart PLS.3 software. We used the partial least squares structural equation modeling (PLS-SEM) method in this study for analysis of the data, fitting the conceptual model of the research, and testing the hypotheses. PLS is a variance-based approach, which needs fewer conditions compared to similar structural equation techniques such as Lisrel and Amos (Liljander et al., 2009). The PLS modeling is performed in two steps. In the first step, the measurement model is examined through validation and reliability analyzes and confirmatory factor loads analysis. In the second stage, the structural model is evaluated by estimating the path between the variables and determining the fit indices of the model.

4. Results

4.1. The evaluation results of the measurement model

The measurement model test includes checking the reliability (internal consistency) and validity (discriminant validity) of research constructs and instruments. To evaluate the reliability of constructs, Fornell and Larcker (1981) propose three criteria, which include: 1- Reliability of any of the items, 2- Composite reliability of any of the constructs, and 3- average variance extracted. Regarding the reliability of each of the items, the factor loading of 0.6 and more of each item in the confirmatory factor analysis indicates the suitability of each item in the construct. Besides, the factor loadings of items should be at least at the significance level of 0.01 (Gefen & Straub, 2005).

The Bootstrapping test (with 300 subsamples) was exploited to calculate t-statistic for determining the significance of factor loadings. To check the composite reliability of each construct, Dillon-Goldstein (ρ_c) coefficient was used. The acceptable values of ρ_c must be 0.7 or higher. The third criterion for checking the reliability is the average variance extracted (Fornell & Larcker, 1981). Fornell and Larcker recommend AVE values of 0.50 and higher. This means that the construct explains about 50% or more of the variance of its markers. In Table 3, factor loadings, ρ_c , and AVE of the research variables are provided. The values in this table represent adequate and appropriate reliability of the constructs.

The Fornell-Larcker (1981) and Heterotrait-Monotrait ratio of correlations (HTMT) methods was used to assess the divergent validity of the research structures. According to the results of Table 4 and 5, the divergent validity of the research structures is confirmed since the square of the average variance extracted for each structure higher than the correlation obtained between the structures, also based on the results of HTMT method, the obtained values were <0.85 , which indicates the confirmation of divergent validity. These results indicate the appropriate internal stability for the measurement model and report the fit of the model. As a result, the measurement model is confirmed.

4.2. The results of evaluating the structural model fit

In this study, partial least squares structural equation modelling (PLS-SEM) was adopted to test the measurement model and research hypotheses. For data analysis, SMARTPLS software was used to test the model.

4.2.1. The criterion of T-value significance coefficients

The value of t greater than the value of 1.96 indicates the accuracy of the relationship between the structures, and thereby, confirms the research hypotheses at the level of 95%. Figure 2 shows the t values for the

Table 3. Measurement Model Test Results.

	Item	Factor loadings	Cronbach's alpha	CR	pc	AVE
Learning organizations	L01	0.614	0.827	0.869	0.840	0.541
	L02	0.552				
	L03	0.502				
	L04	0.823				
	L05	0.789				
	L06	0.886				
	L07	0.803				
Employee performance	EP1	0.657	0.886	0.910	0.875	0.562
	EP2	0.579				
	EP3	0.802				
	EP4	0.851				
	EP5	0.819				
	EP6	0.756				
	EP7	0.746				
	EP8	0.750				
Network Communications	NC1	0.686	0.781	0.792	0.803	0.522
	NC2	0.834				
	NC3	0.901				
	NC4	0.572				
	NC5	0.661				
	NC6	0.655				

Table 4. The results of divergent validity evaluation of structures.

	Learning organizations	Employee performance	Network communications
Learning organizations	0.735		
Employee performance	0.580	0.749	
Network communications	0.568	0.658	0.722

Table 5. Test of Discriminant Validity: Heterotrait-Monotrait ratio of correlations (HTMT).

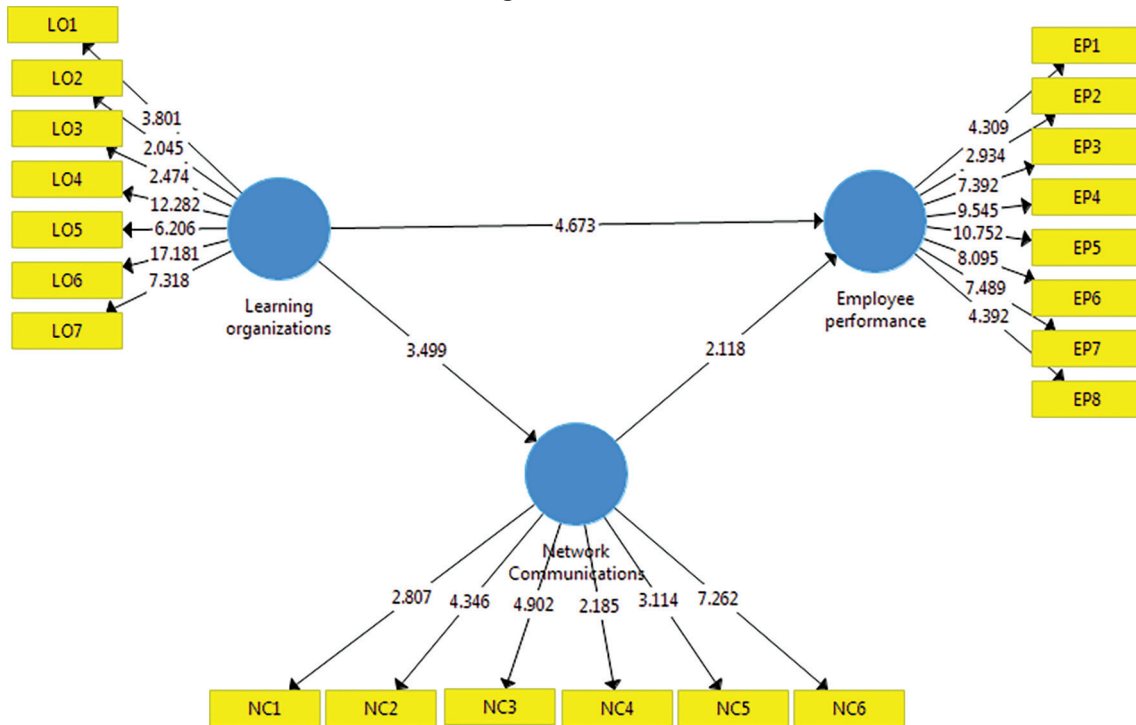
No	Factors	1	2	3
1	Learning organizations	0.612		
2	Employee performance	0.573	0.676	
3	Network communications	0.558	0.661	0.519

evaluation of the structural part of the model. Since all numbers on the paths are higher than 1.96, the paths are significant, the research structural model is fit, and also the research hypotheses are confirmed.

4.2.2. The R Squares criterion

The second necessary criterion for examining the fit of the structural model is to evaluate the coefficients of determination (R^2) related to the endogenous (dependent) variables of the model. The values of this coefficient can be seen in Figure 3. According to the values obtained for the variables of Employee performance and

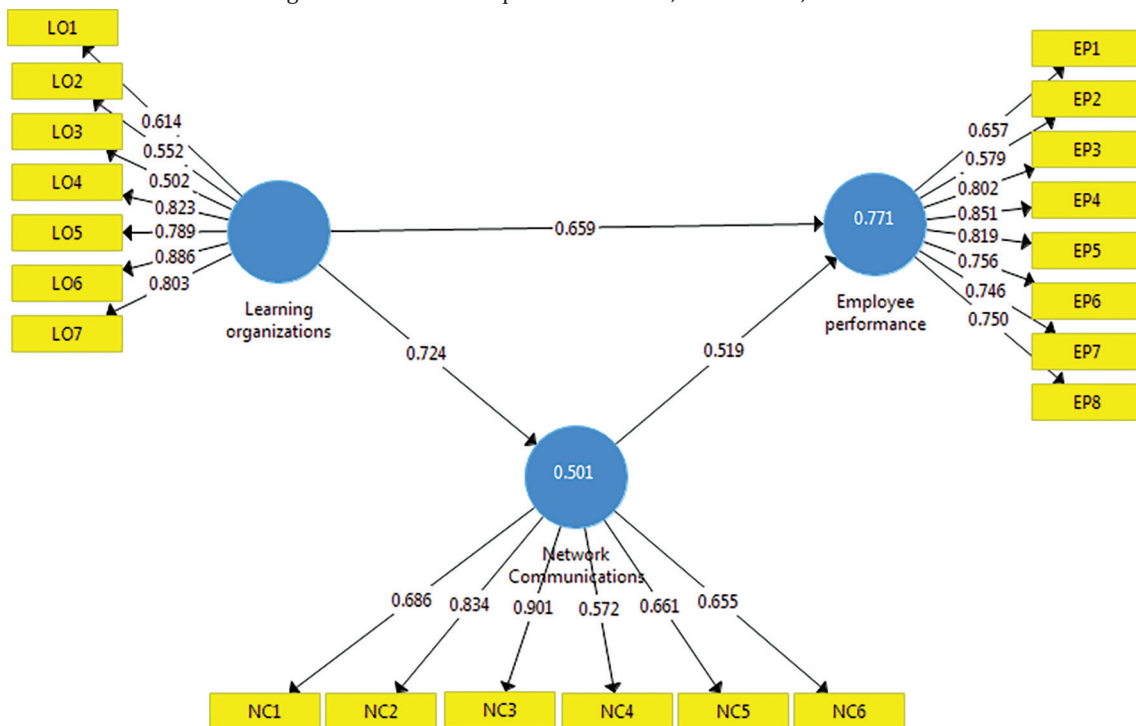
Figure 2. T-Values.



Network communications equal to 0.771 and 0.501, respectively, the goodness of the fit of the structural model is confirmed by considering three criteria values.

The conceptual model proposed through the structural equation modelling was evaluated. According to the research hypotheses, the partial least squares (PLS) technique was used to estimate the model. Moreover, the bootstrapping method (with 200 subsamples) was utilized to calculate the T-statistic values for determining the significance of path coefficients.

Figure 3. The values of path coefficients, factor loads, and R².



4.2.3. The Q² criterion

This criterion determines the predictive power of the model and models that have an acceptable structural part fit should be able to predict the indices related to the model structures inside the model. Hensler et al. (2009), regarding the intensity of the model’s predictive power for endogenous structures, set the values of 0.02, 0.15 and 0.35 as weak, medium, and strong, respectively. Q² values for the mediating and dependent variables of the research model, namely network communication and employee performance, were 0.322 and 0.289, respectively, which indicates that the predictive power of the model is strong and the structural fit of the structural model of the research is appropriate.

4.2.4. The f² criterion

Using the impact size criterion, it is possible to determine which of the independent variables has the greatest impact on the dependent variable. The values of 0.02, 0.15 and 0.35, respectively, indicate the size of the weak, medium, and strong impact of one structure on another (Hair et al., 2016). The value of this criterion is calculated using the following equation.

$$f^2 = (R^2_{\text{included}} - R^2_{\text{excluded}}) / (1 - R^2_{\text{included}})$$

The results of the measure of the impact of Learning organizations and network communication on employee performance are reported in Table 6.

According to the values obtained from Table 6, it can be concluded that the effect of learning organizations and network communication on employee performance is moderate and strong.

Table 6. Results Impact size criterion f².

Independent variable	Effect size	Effect intensity
Learning organizations	0.331	Strong
Network communication	0.234	Moderate

4.3. The results of testing the research hypotheses

The first to third research hypotheses in this section are tested by examining the coefficients of importance (t-values) of each path as well as the path coefficients. If the significant coefficients of each path are greater than 1.96, the corresponding path is significant at the 95% confidence level and the corresponding hypothesis is confirmed. Sobel and VAF tests were also used to test the fourth hypothesis.

One of the most widely used tests to measure the significance of the mediation effect of one variable in the relationship between two other variables is the Sobel test. The Z- Value is obtained through the following formula, which if this value is greater than 1.96, at the 95% confidence level, the significance of the mediating effect of a variable can be confirmed. In this formula (a is equal to the value of the path coefficient between the independent variable and the mediator); (b is equal to the value of the path coefficient between the mediator and dependent variables), (S_a is standard error of independent and mediator variable path) and (S_b is standard error of intermediate and dependent variable path), and (c is value of the path coefficient between the independent and dependent variables).

$$Z - \text{Value} = \frac{a * b}{\sqrt{(b^2 * s_a^2) + (a^2 * s_b^2) + (s_a^2 * s_b^2)}}$$

$$Z - \text{Value} = 0.724 \times 0.519 / ((0.269 \times 0.0645) + (0.524 \times 0.1030) + (0.0645 \times 0.1030)) = 4.823$$

After confirming the significance of the direct effect (Step one) and indirect effect (Step two), testing the strength of the mediating construct is the last step. This method of assessment can be done using variance accounted for by VAF (Hair et al., 2016).

$$VAF = \frac{a \times b}{(a \times b) + c}$$

$$VAF = 0.724 \times 0.519 / ((0.724 \times 0.519) + 0.659) = 0.363$$

The test results of the hypotheses are reported in Tables 7 and 8.

Table 7. The result of testing the first to third hypotheses.

Hypothesis	Path	Path coefficient	t-value	Test result
H1	LO →EP	0.659	4.673	supported
H2	LO →NC	0.724	3.499	supported
H3	NC →EP	0.519	2.118	supported

Table 8. The result of testing the fourth hypothesis.

Hypothesis	Path	Path coefficient	Z-value	Test result
H4	LO →NC →EP	0.363	4.823	supported

Based on the values obtained from Tables 7 and 8, one can conclude that the Learning organizations have a positive and significant effect on the Employee performance as well as the Network communications. And in the relationship between learning organizations and employee performance, the network communication variable plays a mediating role.

5. Discussion and Conclusions

The learning organization provides the possibility of the flow of practical and useful learning by creating a group-oriented, team-oriented, and flexible structure. The result of this learning will be the creation of knowledge, its increase and, thus, growth, the development of better and more successful adaptation to the changing environment. The learning organization is the place where organizational learning flows. The purpose of this study was to investigate the impact of learning organizations on employee performance with respect to the mediating role of network communication. After collecting and analyzing data, the results showed that learning organizations have a positive and significant effect on employee performance. The network communication variable plays a mediating role. In the following, we will analyze the obtained results.

5.1. Analysis of hypothesis test results

5.1.1. First Hypothesis: Learning organizations have a positive effect on employee performance

Concerning the results presented in Table 7, the path coefficient for this relation is calculated to be 0.659. The value of t for this parameter (according to the rule of 1% error in the rejection of the null hypothesis for values above 1.96 in each model parameter), is calculated above 1.96 ($t = 4.673$). Therefore, it can be said that learning organizations affect employee performance. This hypothesis is consistent with the study of Hoon Song et al. (2014) and Adam et al. (2020), entitled Investigating the impact of learning organization on organizational performance through network communication. The results revealed that the learning organization directly affects organizational performance. According to the confirmation of the first hypothesis, it is suggested to the company managers that: Managers can employ learning organizations as an essential resource for talent retention, which can lead to significant benefits for retaining employees and continuing innovation.

5.1.2. Second Hypothesis: Learning organizations have a positive effect on Network communication

Concerning the results presented in Table 7, the path coefficient for this relation is calculated to be 0.724. The value of t for this parameter (according to the rule of 1% error in the rejection of the null hypothesis for values above 1.96 in each model parameter), is calculated above 1.96 ($t = 3.499$). Therefore, it can be concluded that the null hypothesis is rejected with 99% confidence. Given the significance of this coefficient, it can be said that learning organizations affect network communication approach. This hypothesis is in line with research Mitić et al. (2017) entitled investigating the Impact of Learning Organization on Organizational Communication. The results demonstrated that a learning organization have an impact on corporate communication. According to the confirmation of the second hypothesis, it is suggested to the company managers that: Efficient, motivated, and creative workforces are recruited and retained. Besides, employee measurement and improvement systems

and organizational excellence models (including Balanced Scorecard (BS), European Foundation for Quality Management (EFQM), and 360-degree feedback) are deployed, and education and training of employees and their level of competence are paid attention so that human capital for the employment of people in specific positions is developed.

5.1.3. Third Hypothesis: Network communications have a positive effect on employee performance

Concerning the results provided in Table 7, the path coefficient for this relation is calculated to be 0.519. The value of t for this parameter (according to the rule of 1% error in the rejection of the null hypothesis for values above 1.96 in each model parameter), is calculated above 1.96 ($t = 2.118$). Thus, it can be concluded that the null hypothesis is rejected with 99% confidence. Given the significance of this coefficient, it can be said that the network communication approach affects employee performance. This hypothesis is consistent with the research Chen and Wei (2020) and Susskind et al. (2018) entitled Investigating the Impact of Organizational Performance on Network Communications. The results indicated that organizational performance affects network communication. According to the confirmation of the third hypothesis, it is suggested to the company managers that: Create organizational learning based on structural knowledge in management, and also appropriate investment in holding on-the-job training, employees should be operationally acquainted with the new structures of deploying information systems.

5.1.4. Fourth Hypothesis: Learning organizations through Network communication has a positive and significant effect on employee performance

Concerning the results provided in Table 8, the path coefficient for this relation is calculated to be 0.363. The value of Z for this parameter (according to the rule of 1% error in the rejection of the null hypothesis for values above 1.96 in each model parameter), is calculated above 1.96 ($Z = 4.823$). The results of testing the fourth hypothesis of the research showed that the Network communication variable plays a mediating role in the relationship between learning organizations and employee performance and learning organizations predicts 0.573 of changes related to the employee performance through the Network communication. Accordingly, it is recommended that managers of the Different industries and in particular Esfahan Steel Company Pay special attention to the role of communication between employees as well as internal communication in the organization and especially communication in the form of network, and in the medium- and short-term plans to create such effective communication to achieve higher performance of employees than Be through the components of learning organizations.

5.2. The research limitations and some suggestions for future research

The present study faced some limitations during the implementation process like other research. Since the present research is an exploratory study, the research findings are limited to the sample size, and thus, the results may change in the case of changes in the sample size. Besides, different opinions about the research topic among the members of the statistical population can somewhat affect the research results. The study population Isfahan Steel Company in Iran. Accordingly, the results obtained are specific to this company and cannot be generalized to all organizations and companies. It is suggested that researchers will use and implement the subject of this study in other organizations and manufacturing and service companies in future research. As the impact of Learning organizations on the employee performance in the in the Esfahan Steel Company was examined here, given the importance of increasing the efficiency and effectiveness of employees in Isfahan Steel Company in achieving organizational efficiency, it is suggested that researchers will examine the impact of Learning organizations on the Organizational productivity in future research. We considered the Network communication variable as a mediating variable in this study. Accordingly, it is suggested that researchers in future research will examine the mediating role of other variables, including knowledge management and organizational learning.

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