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Professional Commitment in the Relationship between Professional Competence and Job Performance in Oil Industry

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ABSTRACT

This study examines professional commitment in the relationship between professional competence and job performance in the Iranian oil industry. The main task of management is to guide people to the most effective performance in organizational situations. One of the most vital issues in any organization is its job performance. Since human capital is the most important asset of any organization, taking advantage of employees who have acceptable job performance and behave in accordance with the goals of the organization and the expectations of the manager is essential for any organization that is concerned with effectiveness and improvement. Job performance refers to the achievement of organizational goals that have consequences such as increasing long-term profitability, growth rate and income, job satisfaction, employee productivity and improving the quality of services and products. Organizations are trapped in an atmosphere of constant change and transformation. This changing environment has led organizations to constantly seek to change their trends and, most importantly, to define new expectations for their employees. Nowadays, if employees act only within the formal and specified requirements of their job and only in accordance with what is written in the description of their organizational duties, then organizations can slowly move towards achieving the goals and optimal effectiveness. On the other hand, since the performance of individuals in the organization is considered as an important variable in increasing the effectiveness and productivity of the organization, the presence of qualified and qualified experts is essential to promote the success and efficiency of the organization

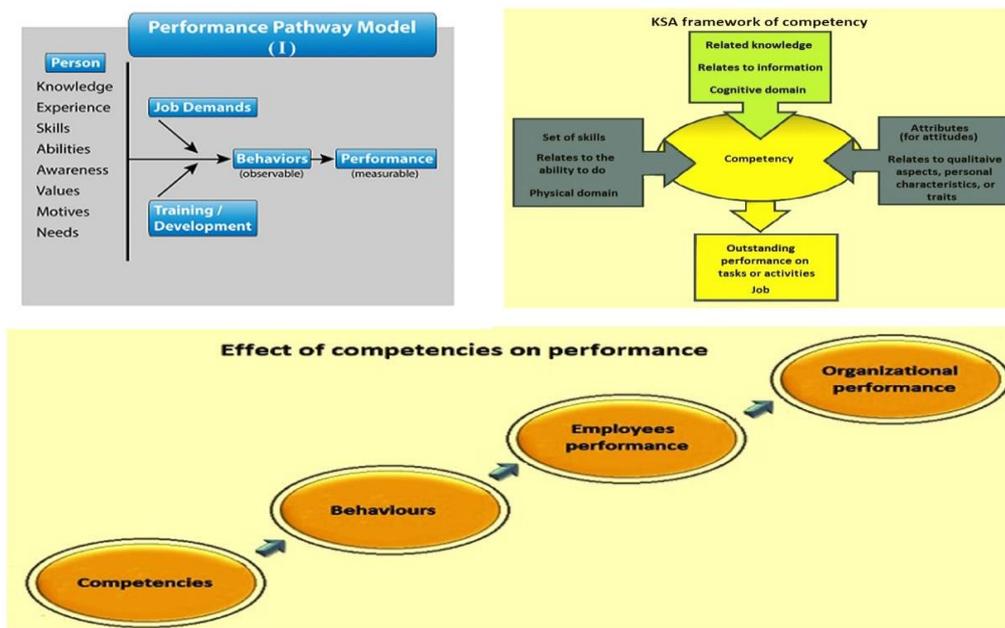
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GRAPHICAL ABSTRACT


Introduction

It is clear that senior executives of some specific companies believe that activity-based managerial competencies play a greater role in organizational success than technical performance capabilities [1]. For example, Gash's (2013) study on six major UK retail companies showed that while their management did not consider marketing skills and knowledge as an important criterion in attracting graduates, it did provide job seekers with transferable skills such as initiatives [2-4]. Such cases, which were seen as an important principle, are in fact a claim. Interestingly, marketing graduates hired by six companies reported that they had worked before their jobs, assuming that technical marketing was crucial to securing graduates' status instead of transferable personal skills. Graduates worked for some time in sample companies, but were surprised at how little they were able to use the skills and abilities they had learned in their degree courses [5-8].

Boyatzis (1982) and Clamp (1980) describe job competence as "the basic characteristic of a person that leads to effective or superior performance in a job." In this regard, Bratton (1998) stated: "[Personal] competence is defined as the knowledge, skill, attribute, motivation, attitude, value, or other personal characteristics necessary to perform a task." [9-13].

Spencer and Spencer (1993) defined competence as "the underlying characteristic of an individual that is incidentally associated with effective and superior performance or the criteria referred to in a job or position" [14-18]. In other words, competencies include a set of characteristics, behaviors, and skills necessary for successful job performance. In fact, the advantage of using the term competence is that one does not have to distinguish between the three; all of these are defined by the word competence [19-24]. However, one of the most important abilities of a manager is the power and skill in listening to stakeholders. He should be able to show appropriate feedback on his wishes and

behaviors by listening effectively to his subordinates. In addition, a manager must have the ability to manage himself in the field of learning and be able to control and manage himself in the field of learning development. In other word, the manager must develop spontaneous learning skills [25]. Emotional skills are especially important for managers in terms of controlling emotions and feelings in special situations. Based on existing studies, problem solving skills, interpersonal skills, leadership skills, expressive and oral skills especially speaking skills, flexibility in behaviors and actions, ability to work in a team, independence Behavioral, personality, technical skills, hard-working and diligent, with a zealous spirit and behavior, ability in team management and goal-oriented and having other goals are the characteristics of a successful manager [26-30]. Professional competence is in fact an integral part of the performance of various employees, including education experts, and in fact reflects the areas of knowledge, attitude and skills of the individual and allows him, according to Qarlaghi, to be more effective in his profession [31-35]. Therefore, considering the important role that education experts have in performing educational activities and facilitating these activities, they should have the necessary competencies to perform their duties in order to be able to perform better and more effectively [36-39]. The importance of employees' professional competencies and their tremendous impact on organizational effectiveness has caused organizations to try in various ways to improve and provide the necessary conditions for their maximum occurrence [40-43]. In fact, it shows the professional competence of a mature human being who is fully prepared for the job. Thus, competence can be considered a behavioral dimension that affects job performance [44-46]. Accordingly, it seems that professional competence is like an umbrella that encompasses

anything that directly or indirectly affects job performance [47-50].

Factors to consider

Job attachment, job satisfaction, organizational and professional commitment are among the important factors to be considered. Therefore, professional commitment is one of the variables that can be a mediator between professional competence and employee performance and have positive effects on their job performance. Therefore, it can be said that successful organizations are able to attract, nurture the best people with the best capabilities and competencies. Studies have shown that using their services in the best organizational positions by increasing the professional competence and professional commitment of employees, the organization has progressed in terms of work and will bring high productivity, while in the face of low or no professional competence and professional commitment of employees their job performance will reduce and finally, the performance of the organization will be affected [51-53].

In fact, organizations arrive at their effectiveness by giving importance to the competence and professional commitment of their employees [54]. Universities, as educational and service-oriented organizations, are no exception to this rule. In other words, achieving purely educational goals depends on the optimal use of human, financial and equipment resources, while the dynamism of the university system depends on various factors, including having qualified employees, high professional commitment and commitment to their work in a dynamic and dynamic environment. They will do their best to make this scientific-cultural organization more efficient and better. Therefore, the professional competence and commitment of all university staff, especially education experts, is very important due to their important role in advancing the educational situation of the university and will prepare the ground for

improving performance and achieving efficiency [55-57]. Therefore, based on previous studies if the job performance of university education experts is not at an appropriate level, and also if their job performance is not strengthened, their ability to tolerate, compete and adapt to change will decrease, the organization will consequently move towards inefficiency and burnout [58].

Professional competence

There are various definitions of competency in the existing literature. All definitions are the same, and in all cases, they emphasize job roles and responsibilities. Professional competence is defined as a set of interrelated knowledge, characteristics, attitudes, and skills that have a significant impact on a person's job and are correlated with individual performance at work that can be assessed and improved by accepted standards and developed. Professional competence is a systemic approach to employees that encompasses all of those attributes, characteristics, skills, and attitudes regarding effectiveness in performing tasks and responsibilities [59-61]. In determining professional competencies, performance has a special importance and position, and performance appraisal is one of the basic components of establishing meritocracy in organizations, which is done for two purposes:

- A) Identifying qualified people and maintaining or enhancing them;
- B) Identifying the improper and correcting or removing them.

Professional competencies are factors that contribute to a high level of individual performance and consequently organizational effectiveness. In most definitions, professional competence has four dimensions: Characteristics, skills including perceptual, human and technical skills, knowledge and attitude. In this study, these dimensions were considered as the main components of professional competence.

Professional commitment

In general, it can be said that professional commitment means identifying the profession, which includes commitment to the profession and its dedication and acceptance of professional goals and ethics [62]. Lachman and Arania (1986) considered the theory of professional commitment as identification of profession and attachment to profession. Professional commitment is described by three characteristics:

- A) Belief in and acceptance of professional goals and values;
- B) The desire to try hard based on one's own beliefs; and,
- C) The desire to keep members committed to a profession as a psychological relationship, between the person and the profession he is engaged in which is more of an emotional basis [63].

Another aspect is the professional commitment mentally point of view, which expresses a kind of desire, need and obligation to work in a particular profession and includes three dimensions:

- A) Emotional commitment, which refers to the degree of emotional attachment and belonging to do a particular job and imitation of the employee;
- B) Continuous commitment, which is based on the benefits of working and the costs of leaving work; and,
- C) Normative commitment, in which the committed person considers continuing to work in his profession as his duty, obligation and responsibility in his profession.

Job performance

Job performance is one of the influential components in organizations that forms an important part of organizational studies. It is a concept that includes both the concept of activity to do work and the result of work [64]. There are different perspectives on job performance. Ratman defines job performance as a multidimensional structure that reflects how

employees perform in the job, the amount of initiative and problem-solving measures, and the methods of using their available resources and using time and energy to perform job tasks [65].

According to Memarbashi I et al., job performance is actually a set of behaviors that people express themselves about the job, or in other words, the amount of product and efficiency that results from the employment of the person in his job, including services, training and production. Job performance is the same as the performance of individuals according to legal duties and is the result of human resources activities in terms of performing the tasks assigned to them and the amount of effort and success of the employee in performing job duties and expected behavioral tasks [66-68].

Professional competence is a set of competencies, knowledge, skills and attitudes that are acquired by the individual in proportion to each job or profession in the educational and experimental processes in educational, work and community environments, and the system of professional competence is set. Competency standards are among the coherent processes for the implementation of policies, guidelines, in order to validate the competence of the manpower profession [69-71]. Vocational competence improves workers' general vocational training. Vocational competencies go beyond updating and expanding technical and general knowledge. Today, the world of work demands general vocational training. Therefore, a professional competence must also be a social competence. Qualifications should include both basic skills such as basic knowledge to work as a citizen, communication, reading and writing, comprehension of texts, occupational safety, human rights as well as specific skills required for occupational careers, including managerial skills [72]. In general, competency can be considered a set of knowledge, skills and attitudes that enable employees to effectively

perform their job-related activities according to the expected standards [73-75].

Implementation of professional competence system aims at creating a suitable platform for the development and promotion of professional competencies and evaluation of human resources capabilities for continuous improvement at various levels and gaining job qualifications.

Competence is the combination of a set of characteristics required to perform intelligently in specific situations. The emerging world of work requires a set of new general skills for sustainable employment. For years, it was thought that anyone with more technical knowledge or skills would have more career advancement. But today, studies have shown that non-technical skills are more important than technical skills to achieve a high level of employment. In achieving career success, the largest share is allocated to non-technical skills [76]. Acquiring technical competencies for a particular job requires a set of general or non-technical skills. Acquiring these skills is therefore essential for the skillful performance of any knowledgeable worker in a cluster of occupations.

Of course, the extent and level of these skills may vary from one professional group to another. These skills are independent of the department and form the basis of technical skills. In addition, they add to personal characteristics and once again combine with specific job skills and can optimize people's productivity [77]. Despite the changing socio-economic perspective of the present age, no single list of general (non-technical) skills can be considered for a job or department, but the learner's mastery of a set of skills and the skills needed for employment in the 21st century is essential.

Achieving this goal requires the use of appropriate methods of education, integration of models and the formation of skills in accordance with the systems and educational institutions, at all levels of education. Acquiring general skills

will therefore be a flexible passport in the workplace to move from one job to another and a permit to enter any of the conditions and environments within the requirements of the 21st century. The most important challenge of job preparation programs is to establish the methods for assessing the expected competencies. It is difficult to document a change in human behavior at best, and it can rarely be attributed to a specific program.

General skills are transferable skills that are essential for most people to acquire at different levels of employment [78]. Today, the concept of general skills for employability is commonly used in policy and research. According to the Australian Chamber of Commerce (ACCI), general skills for employability are skills such as flexibility, adaptability and self-management that industry and commerce are interested in and require. Mejumdar (2009) suggested the following basic general skills for the survival of the knowledge worker in the world of competitive knowledge-based economy:

Critical thinking and problem-solving skills: Skilled workforce need to develop critical thinking skills to define problems in complex, overlapping, and ambiguous areas, and using the tools and experts available to search, they should formulate, analyze, use interpretation, categorization of opinions, find alternatives and choose the best solution.

Creative thinking skills: Skilled workforce need to develop creative thinking to generate new ideas while solving problems and discovering new principles, processes and products. The role of recognition and designing skills will be very important.

Information management skills: Skilled workforce need to develop their capacity to acquire, place, search and find information for effective decision making. They need to evaluate information and know how to relate to it and use it.

Communication skills: The skilled workforce need to develop their communication skills in a variety of media, for a variety of audiences, using communication tools, especially Internet communications.

Teamwork skills: Skilled workforce need teamwork to solve complex problems, create complex tools, and provide services and products. Cooperation, coordination and teamwork will be the key to success.

Technology-based application of skills: It involves the capacity to apply technology, especially the use of sensory and motor skills in computer technology in the age of knowledge.

Self-directed learning skills: Rapid changes in technology require self-identification and prescribing of educational needs. Knowledgeable workers must manage their movement in the career paths to continue learning new skills. Learning to learn and lifelong learning is a key factor in continuing to live in this age.

Intercultural comprehension skills: In the age of globalization, knowledgeable workers must be able to work in a multicultural society. They must have intercultural perceptions in order to work effectively in a team.

In the study by Skans, a set of skills, competencies and personality traits have been identified and defined as the characteristics that young people need for successful competition in the workplace, which are reflected in assessment of non-technical employability competencies since the publication of the Skans report. Many job preparations programs have incorporated the findings of this report into their planning and implementation activities [79-82].

However, the most important challenge of job preparation programs is to link tools and methods of measurement with expected changes in the skills and competencies of young people. Program presenters are always asked to more accurately document the effects of the program. However, a change in human behavior, a desirable increase or an unintended decrease in

skill, is difficult to document at best and can rarely be attributed to specific programs.

In another study, many interviewees believed that they did not have sufficient access to guidelines for assessing general skills and suggested that they did not have the resources to develop such guidelines. As a result, they rely on the information in the training package, which is generally inadequate for the general skills assessment guidelines in the first versions of the training package. In the absence of formal guidelines for assessing general skills, the assessment process will be based on a general understanding of the individual. While Sterling provides a meaningful framework that introduces key and general skills for learning and assessment, these skills are not directly assessed. Because they are completely embedded in the training package. Assessment requirements for each module are designed to provide assessment of relevant general skills without the need for direct attention to them in written information.

When non-technical competencies in the competency unit are defined as separate units or performance criteria within the competency, the general strategy for someone who has not acquired these competencies is to give them more time to acquire them and re-evaluate them. The problem arises when general skills are not clearly identified in the training package. In such cases, the assessment focuses on the acquisition of professional competence and the general competence is neglected. If the performance criteria for general competencies are not specified in the training package, the evaluators may not want to measure anything outside the criterion to ensure validity.

The most important factors in measuring general skills are the fundamental aspects in any type of assessment. Examples of important aspects are: Giving learners a range of opportunities to demonstrate competence, clearly articulating the evidence needed, and assessment processes with clear feedback on the quality of learner

performance, using holistic assessment, instrument benchmarking and accreditation. Evidence provided by the learner is recommended.

It should be noted that the presentation and assessment of general skills is associated with major limitations and is not very certain. Due to the lack of a clear definition and written guide within the training package and curriculum, as well as the limited access of executive agents to the work environment, the accuracy of the evaluation results is not very reliable.

General skills must be defined as measurable constructs in order to be able to assess them. In a study, in order to provide an appropriate framework for teachers' professional competencies, they examined the inconsistencies between pre-service teacher general training qualifications and in-service teacher qualifications, and teachers' competencies in six main categories. They categorized intellectual ability, value system, interpersonal skills, managerial ability, professional abilities, and personality traits. Custer et al. (2005), in their research on the required competencies of teachers and educators, have divided the competencies of teachers into five main categories including specialized knowledge, communication, organization, education and behavioral competence [81]. Mahazani et al. (2010) approached development of experience-based competencies of coaches and masters of technical and vocational education in Malaysia, and presented the framework of professional competencies of coaches in three dimensions of technical competencies, humanities and educational competencies [82].

Salehi Omran and Rahmani Ghahdarjani (2012) reported that the preparation and adjustment of skills focusing on the competencies of technical and vocational education programs is one of the most important challenges for educational and curriculum planners [83-85]. Key competencies such as problem-solving skills, computer skills,

having strategic thinking, English language skills, and always have a special place in the work and employment sectors. According to the theoretical issues studied and the findings of the research background related to the research topic, this researcher seeks to provide a conceptual model of professional competence in large steel companies.

Attempts were made to identify the competencies needed by these employees in order to achieve a suitable job position with each person. In this regard, the research questions were designed as follows:

1. What are the components of the professional qualifications of the employees of large steel companies?
2. What is the professional competence of the employees of large steel companies in terms of components and elements?
3. What is the conceptual model of professional competence of employees of large steel companies?

Fuzzy sets

The theory of fuzzy sets was developed by professor Zadeh in 1965 to solve the problems of fuzzy phenomena in the real world, such as uncertain, inaccurate and ambiguous situations. This theory is superior to the classical set theory in measuring the ambiguity of concepts related to human mental judgments. The fuzzy set of this reference set is described by the membership function, which returns any member in a real number. Values are called membership degree functions. The largest value of the function has the strongest degree of membership in the set.

Linguistic variables

A linguistic/verbal variable is a variable whose values are expressed in linguistic terms. The concept of linguistic variables can be very useful in dealing with very complex or poorly defined situations in order to be described by traditional quantitative terms. Values of linguistic variables are words or sentences that exist in natural

language, and in general, their values can be formed using adverbs. A language variable is a variable whose values are words or sentences of a natural or artificial language. For example, if we represent the age of people with numbers like 20, 30, 40, etc., the age variable will be a normal variable, but if we take the values that age takes with words like teenager, very young, young, old, old and very old then the age variable is a language variable. In this study, linguistic variables have been used to determine the intensity of the effect of elements on one another and to identify the weights of the importance of the indicators in the network analysis process technique and the fuzzy ranking of options in the Victor technique.

Fuzzy interpretive structural modeling

The interpretive structural modeling approach was first proposed by Warfield (1974) and used as a tool to analyze complex systems. This method analyzes these systems by identifying the underlying interactive relationships between the components and specific parts of the system and creating a hierarchical structure of the relationships between these components. In the analytical structural modeling approach or method, graph theory is used to introduce and present the units related to the system as well as the interactive relationships between these units. In addition, other methods and theories such as matrix operation theory or machine computation are used to establish an interpretable structural model. In the conventional method of interpretive structural modeling, the implicit relationships between the units of the system under study were considered by assuming the existence of binary relationships (zeros and ones) between these units and components. Such an assumption simply ignored the strength of the implicit relationships between the units of the system, only examining the existence of the relationship regardless of its intensity, and also influenced the experts' judgments about the relationships between these units because they

were purely binary. And there was no intermediate state. Interpretive structural modeling presented in the form of fuzzy linguistic criteria has enhanced the logic and rationality of the method and made the process of determining the implicit relationships between system units closer to environmental realities. In the fuzzy interpretive structural modeling method, the implicit relationships between system units can be determined through fuzzy linguistic variables. In this research, triangular fuzzy numbers were used in interpretive structural modeling method because triangular fuzzy numbers are able to deal more effectively with the opinions and mental judgments of experts. The steps of the fuzzy interpretive structural modeling method are as follows:

Step 1: Identifying the indicators, criteria and factors considered in the research.

Step 2: Determining the intensity and strength of the implicit relationships between the factors.

This power of relationships is achieved through pairwise comparisons between two factors. The process of determining the intensity of power and the intensity of relationships is based on the opinions and mental judgments of experts and the fuzzy language scales introduced in Table 1.

Experts use **Table 1** to compare the intensity of the relationship between the two factors. The output of this step is the matrix of the intensity of the relationships between the factors.

Table 1. Verbal scales for pairwise comparisons

Verbal expressions	Verbal values
Completely related	(0.75,1,1)
strongly related	(0.5,0.75,1)
Relatively related	(0.25,0.5,0.75)
Poorly related	(0.01,0.25,0.5)
Irrelevant	(0.01,0.01,0.01)

$$D = \begin{bmatrix} & p_1 & p_2 & \dots & p_n \\ p_1 & - & \tilde{d}_{12} & \dots & \tilde{d}_{1n} \\ p_2 & \tilde{d}_{21} & - & \dots & \tilde{d}_{2n} \\ \vdots & \vdots & \vdots & - & \vdots \\ p_n & \tilde{d}_{n1} & \tilde{d}_{n2} & \dots & - \end{bmatrix}$$

Fig. 1. Judgment matrix

The point about this matrix is that the elements on its original diameter, that is, the comparison of the strength of the relationship between an element and itself, are indeterminate and cannot be calculated. Of course, in some cases, the unrelated option is also used and the fuzzy value related to this option is included in these data. The output of this step is shown in **Fig. 1**.

Step 3: Gathering the opinions of experts and forming a judgment matrix; after the matrices of pairwise comparisons are formed, the merger matrix or the judgment matrix is formed. In order to aggregate the opinions of experts, the formula of geometric mean is used and thus the geometric mean of the corresponding elements of the matrices of pairwise comparisons is calculated and placed under an integrated or aggregate matrix. The geometric mean for fuzzy numbers is given by the following equation:

$$Y = \max_{1 \leq i \leq n} \sum_{j=1}^n u_{ij}$$

In the above formulas, K represents the number of experts.

Defuzzification of the normalized judgment matrix; in this step, the normalized judgment matrix of experts' opinions is formed using formula and its implementation on each of the biphasic devices.

$$m = \frac{a + 2b + c}{4}$$

Threshold calculation; after diffusing all the fuzzy numbers in the normalized matrix and obtaining the diffused matrix, a threshold is obtained through the arithmetic mean of all the elements and elements in the matrix.

$$C = \frac{\sum_{i=1}^n \sum_{j=1}^n a_{ij}}{n}$$

Halil Mick Mac

Mick Mac's approach based on matrix multiplication properties has been proposed. This method is used to calculate the influence and dependence of each factor. The purpose of this analysis is to plot the infiltration power-dependency factor from the final availability matrix and analyze it. At this stage, the factors are classified into four groups; the first group includes autonomous agents that have weak influence and dependence. These factors are somewhat different from the others and have little correlation. The second group includes dependent factors that have weak penetration but high dependence. The third group includes linking factors. These factors have high penetration power and high dependence. In fact, any action on these factors causes a change on other factors. The fourth group also includes infiltrating factors. These factors are high penetration but low dependence. Factors belonging to this category have significant effects on other factors.

The following are the steps of this analysis:

Step 1: Calculating the influence and dependence of each factor. The penetration power of each factor can be obtained through the sum of the elements of each row of the final availability matrix. The power of dependence or influence of an agent can also be obtained through the sum of the columnar elements related to that agent. These items can be studied based on the following formulas:

$$DR_{P_i} = \sum_{j=1}^n a_{ij}$$

$$DE_{P_j} = \sum_{i=1}^n a_{ij}$$

Step 2: Categorizing the factors into the four categories introduced above. Factors based on their power of influence and power of dependence can be divided into four categories: Autonomous, dependent, link and influence.

- Autonomous factors: Influence and power are weakly dependent.
- Dependent factors: These factors have weak influence and strong dependency.
- Linking factors: These factors have strong influence and dependency.
- Infiltration factors: These factors have strong penetration power and weak dependence power.

Formation of the availability matrix

The accessibility matrix consists of two matrices, initial accessibility and final accessibility. The initial availability matrix is the result of completing the structural self-interaction matrix based on the values 0 and 1 in all the elements of this matrix based on the letters placed. The final availability matrix is also the result of applying the law of transferability. According to this law, if A is related to B and B or Jim is related, then A will also be related to Jim. First, the initial availability matrix is formed using a structural self-interaction matrix.

In order to convert this matrix to a final availability matrix, the law of transferability must be implemented on each component. The matrix is the result of the final availability matrix. Starred elements refer to the added relationships resulting from the law of transferability.

Table 2. Initial availability matrix

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14
C1	1	1	0	1	0	0	0	0	0	0	0	0	0	0
C2	0	1	0	1	1	0	0	0	0	1	0	0	0	0
C3	0	1	1	1	1	0	0	0	0	0	0	0	0	0
C4	1	0	0	1	1	0	0	0	0	0	0	1	0	0
C5	1	0	0	1	1	0	0	0	0	1	0	1	0	0
C6	0	1	0	1	1	1	1	0	0	1	0	1	0	0
C7	0	1	0	1	1	1	1	0	0	0	0	1	0	0
C8	1	0	1	1	1	1	1	1	1	1	0	1	0	0
C9	1	0	1	1	1	1	0	0	1	0	0	1	0	0
C10	0	1	0	1	1	0	0	0	0	1	1	1	0	0
C11	1	0	0	1	1	0	0	0	0	1	1	1	0	0
C12	1	0	0	1	0	0	0	0	0	0	0	1	0	0
C13	0	1	1	0	0	0	0	0	0	0	0	0	1	0
C14	0	0	0	0	0	0	0	1	1	0	0	1	0	1

Table 3. Final availability matrix

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14
C1	1	1	0	1	1*	0	0	0	0	1*	0	1*	0	0
C2	1*	1	0	1	1	0	0	0	0	1	0	1*	0	0
C3	1*	1	1	1	1	0	0	0	0	1*	0	1*	0	0
C4	1	1*	0	1	1	0	0	0	0	1*	0	1	0	0
C5	1	1*	0	1	1	0	0	0	0	1	1*	1	0	0
C6	1*	1	0	1	1	1	1	0	1*	1	1*	1	0	0
C7	1*	1	0	1	1	1	1	0	1*	1*	0	1	0	0
C8	1	1*	1	1	1	1	1	1	1	1	1*	1	1*	1*
C9	1	1*	1	1	1	1	1*	1*	1	1*	0	1	1*	1*
C10	1*	1	0	1	1	0	0	0	1*	1	1	1	0	0
C11	1	1*	0	1	1	0	0	1*	1*	1	1	1	1*	1*
C12	1	1*	0	1	1*	0	0	1*	1*	0	0	1	1*	1*
C13	0	1	1	1*	1*	0	0	0	0	1*	0	0	1	0
C14	1*	0	1*	1*	1*	1*	1*	1	1	1*	0	1	1*	1

Table 4. Final availability matrix

	C1	C2	C3	C4	C5	C6	C7
C1	1	1	0	1	1*	0	0
C2	1*	1	0	1	1	0	0
C3	1*	1	1	1	1	0	0
C4	1	1*	0	1	1	0	0
C5	1	1*	0	1	1	0	0
C6	1*	1	0	1	1	1	1
C7	1*	1	0	1	1	1	1

Table 5. Calculations related to the first round

Factors	Availability set	Introduction Collection	Joint collection	Level
C1	1,2,4,5,10,12,20,21	1,2,3,4,5,6,7,8,9,10,11,12,14,15, 16,17,18,19,22	1,2,4,5,10,12	-
C2	1,2,4,5,10,12,16,17,20,21	1,2,3,4,5,6,7,8,9,10,11,12,13,17, 19	1,2,4,5,10,12,17	-
C3	1,2,3,4,5,10,12,20,21	3,8,9,13,14,15,16,17,19,22	3	-
C4	1,2,4,5,10,12,17,20,21	1,2,3,4,5,6,7,8,9,10,11,12,13,14, 15,16,17,18,19,22	1,2,4,5,10,17	-
C5	1,2,4,5,10,11,12,16,17,20,21	1,2,3,4,5,6,7,8,9,10,11,12,13,14, 15,16,17,19,22	1,2,4,5,10,11,12,16,17	-
C6	1,2,4,5,6,7,9,10,11,12,15,16,17,18, 20,21	6,7,8,9,14,15,16,17,22	6,7,9,15,16,17	-
C7	1,2,4,5,6,7,9,10,12,15,16,17,18,20, 21	7,8,9,10,14,17,22	7,9,10,17	-

Conclusion

If we examine the human resource systems of organizations, it becomes clear that in most cases there is no necessary connection between its various subsystems such as training, performance appraisal, recruitment and communication, and this is due to the inefficiency of the system. Sporadic activities in human resource management do not lead the organization to its desired results. One of the best and most appropriate approaches for integrating human resource management activities is to apply the professional competency approach. In general, in this research, the following steps have been taken to use the relevant documents: Searching and accessing to documents and information sources, reviewing the validity of information sources, classifying and prioritizing information sources, understanding the documents and sources, analyzing information resources and extracting data and required information, final exploitation and analysis of information resources and using them in answering research questions.

The purpose of this study was to provide a conceptual model of professional competence of

employees of large steel companies. Professional competencies are a set of knowledge, skills and abilities in a particular job that allow a person to succeed in performing tasks. The findings of the present study indicate that the professional competencies of corporate employees include the competencies of knowledge, skills, attitudes, characteristics and motivation. The research findings are in line with the results of previous research. On the other hand, according to the ranking, it was found that the skill competence is in a higher priority than other competencies. In this regard, there is a need for more investment in practical and specialized topics, as well as more follow-up in specialized areas of work. However, this competence is easier to achieve due to the fact that it is one of the obvious competencies. The main purpose of developing management knowledge has been the efforts of managers to better manage organizations. For this purpose, various concepts have been introduced into the body of managed knowledge. What is important here is that one-dimensional approaches have not been able to bring managers closer to their goal. The concept of job competence is no exception.

More than half a century has passed since the introduction of this concept, but organizations have not succeeded in implementing this concept. In other words, despite the recommendation of many researchers on competency-based management, the challenges appropriate to each job, in the next stage of evaluating and measuring the competencies of each job and in the final stage of implementing competencies in various HR processes are the main challenges of competency-based management. What becomes even more challenging in the meantime is that there is no clear definition of professionalism. Professionalism is a creative work that solves unstructured problems that require knowledge. There are three key differences between an internship and other jobs. First, the main activity in the profession is thinking. Expertise creates added value for the activity and includes the activities of analyzing problems, making decisions and applying the results in other situations. Second, the kind of thinking that exists in cognition is not a step-by-step linear mental work. Work knowledge must be creative and non-linear in thought. Third, it uses knowledge skills to produce more knowledge.

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