

## Original Article

## A human resource auditing model with the approach of functional and macro level strategies in hospitals

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### Abstract

**Background:** The aim of this study was presenting a human resource auditing model strategies in hospitals affiliated to social security organization.

**Methods:** This study was conducted using a qualitative method. The statistical population of the study included audit and human resources elites in hospitals affiliated with social security in Kerman, ten of them were selected using purposeful (non-probabilistic) sampling method. During the study and survey of experts, 106 indicators for the implementation of functional and macro level strategies were identified and were placed in the form of 15 concepts. The content validity index of the questionnaire was confirmed with a value of larger than 0.79. The developed questionnaire was submitted to 10 human resources experts. Kappa coefficient index has been used to determine the reliability, Fuzzy Delphi technique and cognitive mapping method are used to analyze the data of this study. The data in the final cross-matrix questionnaire were used as input data for the Ucinet and NetDraw system to design the pattern.

**Results:** 106 Indicators were determined under 15 categories including mental, psychological, physical and scientific skills, interaction, allocation, organization, supervision, thinking, professional, cognitive, individual, interpersonal, strategic and managerial. It was individual skills. Management skills were identified as a focal node called the ego with nodes directly connected to the alter.

**Conclusion:** The results of the present study can be used by managers to the rules, goals and macro policies of related organizations.

**Keywords:** Hospitals; Iran; Management Audit; Workforce.

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### Introduction

Human resource auditing means systematic review of analysis, job design, recruitment, training, performance appraisal, employee and manager rewards following the principles of the trade union, and discussing and solving them (1). The results of auditing are used to identify the strengths and weaknesses of human resources and improve the current situation (2). It aims to

increase the competitive advantage of the organization by ensuring the effectiveness of human resources (3).

According to Negi & Chaubey, human resources auditing is an important tool that can be useful in motivating employees to think constructively, identify positive aspects, organizational shortcomings, and make suggestions for improvement (4).

According to Ishrat & Habib (2), it is used to make the organization more efficient in

using human resources. Bakhshizadeh Borj & Sasanian (5), and Hercus & Oades (6) argue that human resource auditing helps to achieve the goals of the organization by retaining the best employees. According to Ukil, lack of human resource auditing in the organization causes problems in making the necessary reforms to grow, develop and improve the activities of the organization, inefficiency, and finally the phenomenon of organizational death (7).

Regarding the functional level of strategies of the organization, which refer to the orientations of the organization, it should be noted that the goal of strategic planning is to guide and determine the orientation of the whole organization (8).

Functional units in an organization include marketing, budget and financial functions, human resources, and research and development. At the functional level of an organization, the roles of making all decisions related to workforce management, service compensation, employment have been allocated to human resource managers. At the task level, the decisions made by employees are often considered technical decisions and address how different tasks affect different levels of strategy in the organization's management. A task strategy deals with a constraint program that defines the objectives of each task, it is a strategy that defines the daily tasks of employees and moves the organization in the right direction, and is the most important level of strategy in management, because without task strategies, your organization quickly loses its traction and becomes "grounded" while competitors overtake you. (9).

Because the lack of human resource auditing in hospitals affiliated to social security organization, this study aimed to design a human resource auditing model with the approach of functional level strategies in hospitals affiliated to social security organization in Kerman.

## **Methods**

The present study was conducted using a qualitative method. The statistical population of the study included people who were expert in the area of auditing and human resource processes in hospitals affiliated to social security organization in Kerman. Ten of them were selected using purposeful (non-probabilistic) sampling method.

Reviewing the research literature and background and survey of experts, 106 indicators related to the abilities and skills required - to implement functional and macro level strategies were identified in the form of 15 concepts. The concepts included 1- Intellectual and mental abilities 2- Mental and psychological abilities 3- Physical abilities 4- Scientific abilities 5- Interaction skills 6- Allocation skills 7- Organization skills 8- Monitoring skills 9- Thinking skills 10- Job and professional skills 11- Cognitive skills 12- Individual skills 13- Interpersonal skills 14- Strategic skills 15- Management skills. Using the content validity method, the degree of relevance of the indicators included in the questionnaire was determined by measuring the desired characteristics with a four-point Likert scale ranging from completely relevant, relevant but needs revision, need for fundamental revision, and completely irrelevant.

The opinions of 5 human resources experts and specialists in this area were collected and since the ratio of the number of experts who selected the options of "completely relevant" and "relevant but needs revision" on all 106 indicators collected to the total number of experts (CVI) was greater than 0.79, all indicators were valid and acceptable in terms of content validity. Thus, in the next steps, the designed questionnaire was given to 10 human resources experts and specialists. Using a 14x14 cross-sectional matrix, the effect of categories or concepts related to abilities and skills on each other is shown with different intensity effects (No effect=0, low

effect=1, moderate effect= 2 and high effect=3). The input data of Ucinet and NetDraw software were provided to design a model of auditing the abilities and skills to implement the functional and macro level strategies of the Social Security Organization. The mentioned matrix was provided to 10 human resource experts. The final matrix was obtained using the mode or frequency method. Then, the final audit model was extracted using the mentioned software. To analyze the data, it used cognitive mapping method in which a network of components and relationships in the form of a diagram is displayed was used (10).

In this study, to answer the **first question of the research** (What are the desirable human resources abilities and skills to implement the functional and macro strategies of the Social Security Organization?), using the research background and interviewing human resources experts and using content analysis and open, axial and selective coding techniques, the desirable abilities and skills to implement the functional and macro level strategies of the Social Security Organization were obtained. A total of 106 indicators were classified into 15 categories or concepts as follows:

*Intellectual and mental abilities including the indicators* of 1- IQ or cognitive intelligence 2- Talent 3- Logical reasoning power 4- Will power 5- Memory power 6- Perception power 7- Problem solving

*Mental and psychological abilities including the indicators* of 1- Effective communication with others 2- Self-confidence 3- Judgment and decision making 4- Personal growth

*Physical abilities including the indicators* of 1- Physical strength and physical characteristics appropriate to the job duties 2- Maintaining and promoting physical abilities

*Scientific abilities including the indicators* of 1- Knowledge resulting in skills 2- Informal education

*Interaction skills including the indicators* of 1- Socialization process, recognizing organizational standards and adaptation 2- Creativity 3- Interaction skills or mutual communication, in accordance with organizational customs and laws 4- Social intelligence 5- Leadership 6- Social attractiveness and approval 7- Skills of changing and adapting values in accordance with organizational values

*Allocation skills including the indicators* of 1- Planning of affairs 2- Financial budgeting 3- Time budgeting 4- Skill of allocating other organizational resources

*Organizing skills including the indicators* of 1- Time management 2- Planning skills 3- Ability to organize resources 4- Skills of teamwork and cooperation with others 5- Determining goals and ways to achieve them 6- Ability to delegate works to other people in the organization 7 - Skills to increase efficiency, effectiveness and productivity 8- Skills to perceive priorities 9- Clear communication skills (determining standard) 10- Self-care skills

*Monitoring skills including the indicators* of 1- Ability to search and use information 2- Determining criteria or standards 3- performance appraisal 4- Identifying barriers in performing tasks and implementing strategy 5- Detecting deviations 6- Performing corrective

*Thinking skills including the indicators* of 1- Objective thinking 2- Abstract thinking 3- Critical thinking 4- Synthetic thinking 5- Analytical thinking 6- Logical thinking 7- Systemic thinking 8- Strategic thinking

10- *Job and professional skills including the indicators* of 1- Cognitive flexibility 2- Negotiation 3- Attention to servicing 4- Emotional intelligence 5- Management of people 6- Technical skills 7- Innovation 8- Lack of one-dimensionality and creating a certificate of multiple skills 9- Professional independence 10- Professional commitment 11- Professional ethics

*Cognitive skills including the indicators* of 1- Self-awareness 2- Perceptual skills 3-

Focus 4- Identifying of environmental and organizational factors 5- Knowledge of interpersonal relationship

*Individual skills including the indicators of* 1- Problem analysis 2- Responsiveness and rhetorical skills 3- Oral communication skills 4- Written communication skills 5- Establishing balance 6- Ability to organize 7- Charisma and influencing others 8- Self-motivating skills 9- Estimating skills 10- Ability to use required computer hardware and software.

*Interpersonal skills including the indicators of* 1- Human skills 2- Conflict management 3- Emotion management and skills to cope with negative emotions 4- Participation and trust 5- Delegation 6- Social support 7- Persuasion skills

*Strategic skills including the indicators of* 1- Ability to understand the goals, policies and strategy of the organization 2- Ability to understand the role and responsibilities in the implementation of the strategy 3- Strategic human resource planning skills 4- Human resource empowerment skills 5- Skills to turn strategy into action plan 6 - Skills of identifying human resource processes 7- Skills of creating coordination and integration between human resource operational processes and organizational strategies 8- Skills of process analysis 9- Skills of process monitoring and control 10- Skills of redesigning processes 11- Skills of discovering talents and abilities 12- Skills of identifying, creating and maintaining strategic value for the customer 13- Individual development planning 14- Strategic risk management 15- Educational needs assessment 16- Strategic human resource management 17- Skill of developing and using a balanced scorecard to appraise performance 18- Ability to recognize and understand human resources as mental capital

*Management skills including the indicators of* 1- Knowledge management 2- Strategic management and leadership 3- Talent

management 4- Information management 5- Customer relationship management

**To answer the second question** of the research (What is the priority of the human resources ability and skills in the Social Security Organization to implement the functional and macro strategies of the organization?), Using the abilities and skills listed in the first stage and the research 5-point Likert, a questionnaire entitled “Prioritization of desirable abilities and skills for the implementation of functional and macro strategies of the Social Security Organization” was designed and provided to 10 human resources experts. At this stage, the using single-stage fuzzy Delphi technique and triangular fuzzy numbers and finally the formula of center of gravity, the indicators were screened and prioritized. Out of 106 obtained indices, the following 11 indicators were removed:

1-Physical strength and physical characteristics appropriate to job duties 2- Maintaining and promoting physical abilities from the category of physical abilities 3- Informal education from the category of scientific abilities 4- Social attractiveness and approval from the category of interaction skills 5- Financial budgeting 6- The skill of allocating other organizational resources from the category of allocation skills 7- Self-care skills from the category of organizing skills 8- Determining criteria or standards from the category of monitoring skills 9- Strategic thinking from the category of thinking skills 10- Paying attention to servicing from the category of job and professional skills 11- Strategic risk management from the category of strategic skills

**To answer the third question** of the research (What are the gaps between the current situation and the desired abilities and skills to implement the functional and macro strategies of the Social Security Organization and what are the practical solutions to fill these gaps?), 95 indicators were approved and prioritized in the second stage in the form of a five-point Likert



questionnaire entitled “comparing the current and desirable status of abilities and skills for the implementation of functional and macro strategies of the Social Security Organization. Then, it was provided to 10 human resource experts.

**To answer the fourth research question** (What is the human resource auditing model of the Social Security Organization using the cognitive mapping method?), Using a 14x14 cross-sectional matrix, the effect of categories or concepts related to abilities and skills on each other is shown with different intensity effects (No effect=0, low effect=1, moderate effect= 2 and high effect=3), the input data of Ucinet and NetDraw software were provided to design a model of auditing the abilities and skills to implement the functional and macro level strategies in the Social Security Organization. The matrix was provided to 10 human resources experts and the final matrix was obtained using the mode or

frequency method. Using the mentioned software, the final auditing model was extracted.

**Results**

The results of the analysis of connections between nodes in Figure 1 are as follows:

- The effect of different nodes on thinking skills: 1- Intellectual and mental abilities have high effect 2- Mental and psychological abilities have moderate effect 3- Scientific abilities have high effect 4- Interaction skills have moderate effect 5- Allocation skills have low effect 6- Organizing skills have high effect 7- Monitoring skills have low effect 8- Job and professional skills have moderate effect 9- Cognitive skills have moderate effect 10- Individual skills have high effect 11- Interpersonal skills have moderate effect 12- Strategic skills have high effect 13- Management skills have moderate effect.

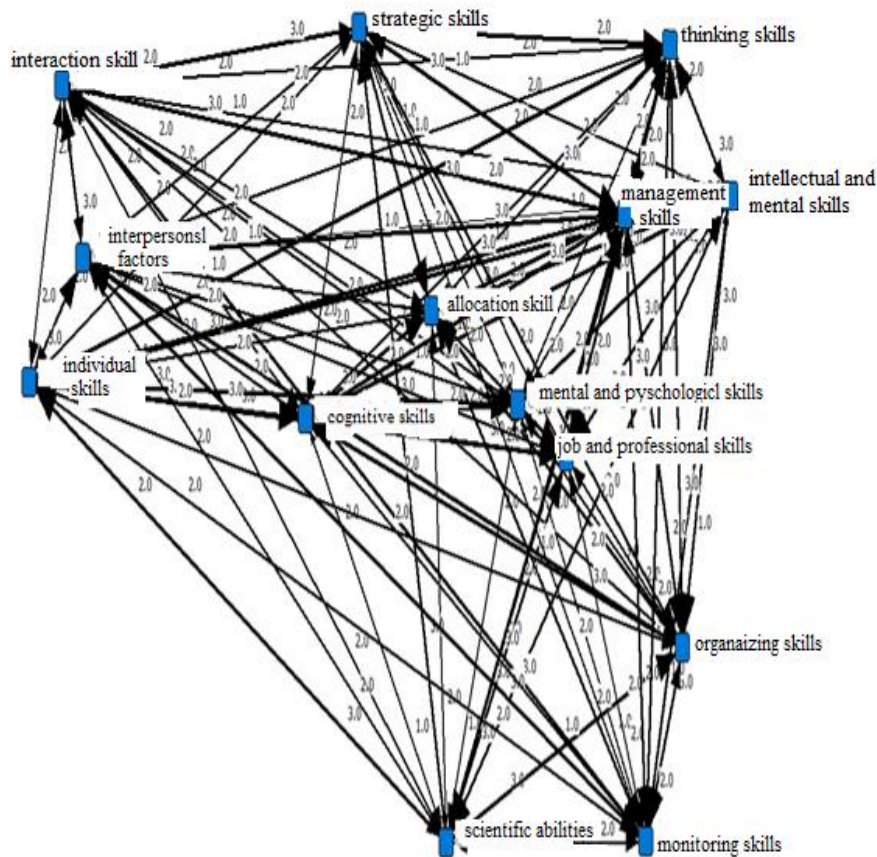


Figure 1. NetDraw software output

The effect of different nodes on intellectual and mental abilities: 1- Mental and psychological abilities have moderate effect 2- Scientific abilities have high effect 3- Interaction skills have low effect 4- Allocation skills have moderate effect 5- Organizing skills have low effect 6- Monitoring skills have low effect 7. Thinking skills have moderate effect 8- Job and professional skills have moderate effect 9- Cognitive skills have low effect 10- Individual skills have high effect 11- Interpersonal skills have low effect 12- Strategic skills have low effect 13- Management skills have low effect.

The effect of different nodes on management skills: 1- Intellectual and mental abilities have moderate effect 2- Mental and psychological abilities have moderate effect 3- Scientific abilities have high effect 4- Interaction skills have high effect 5- Allocation skills have moderate effect 6- Organizing skills have moderate effect 7- Monitoring skills have moderate effect 8- Thinking skills have high effect 9- Job and professional skills have high effect 10- Cognitive skills have moderate effect 11- Individual Skills have high effect 12- Interpersonal skills have moderate effect 13- Strategic skills have high effect.

The effect of different nodes on organizing skills: 1- Intellectual and mental abilities have high effect 2- Mental and emotional abilities have moderate effect 3- Scientific abilities have high effect 4- Interaction skills have moderate effect 5- Allocation skills have moderate effect 6- Monitoring skills have moderate effect 7- Thinking skills have moderate effect 8- Job and professional skills have moderate effect 9- Cognitive skills have moderate effect 10- Individual skills have moderate effect 11- Interpersonal skills have moderate effect 12- Strategic skills have high effect 13- Management skills have high effect.

The effect of different nodes on job and professional skills: 1- Intellectual and mental abilities have high effect 2- Mental and psychological abilities have high effect

3- Scientific abilities have high effect 4- Interaction skills have moderate effect 5- Allocation skills have moderate effect 6- Organizing skills have moderate effect 7- Monitoring skills have moderate effect 8- Thinking skills have moderate effect 9- Cognitive skills have high effect 10- Individual skills have high effect 11- Interpersonal skills have moderate effect 12- Strategic skills have low effect 13- Management skills have high effect.

The effect of different nodes on mental and psychological abilities: 1- Intellectual and mental abilities have high effect 2- Scientific abilities have low effect 3- interaction skills have moderate effect 4- Allocation skills have low effect 5- organizing skills have moderate effect 6- Monitoring skills have low effect 7- Thinking skills have moderate effect 8- Professional skills have low effect 9- Cognitive skills have moderate effect 10- Individual skills have high effect 11- Interpersonal Skills have moderate effect 12- Strategic skills have low effect 13. Management skills have low effect.

The effect of different nodes on allocation skills: 1- Intellectual and mental abilities have high effect 2- Mental and psychological abilities have moderate effect 3- Scientific abilities have moderate effect 4- Interaction skills have moderate effect 5- Organizing skills have high effect 6- Monitoring skills have moderate effect 7. Thinking skills have moderate effect 8- Job and professional skills have moderate effect 9- Cognitive skills have high effect 10- Individual skills have moderate effect 11- Interpersonal skills have moderate effect 12- Strategic skills have high effect 13- Management skills have high effect.

The effect of different nodes on cognitive skills: 1- Intellectual and mental abilities of high effect 2- Mental and psychological abilities of moderate effect 3- Scientific abilities of low effect 4- Moderate effect interaction skills 5- Low effect allocation skills 6- Organizing skills High Effect 7- Low Effect Monitoring Skills 8- Moderate

Effect Thinking Skills 9- Moderate Effect  
Job and Professional Skills 10- High Effect  
Individual Skills 11- Moderate Effect  
Interpersonal Skills 12- Moderate Effect  
Strategic Skills 13- High Effect  
Management Skills.

The effect of different nodes on monitoring skills: 1- Intellectual and mental abilities have high effect 2- Mental and psychological abilities have moderate effect 3- Scientific abilities have moderate effect 4- Interaction skills have low effect 5- allocation skills have low effect 6- Organizing skills have high effect 7- Thinking skills have high effect 8- Job and professional skills have moderate effect 9- Cognitive Skills have moderate effect 10- Individual Skills have moderate effect 11- Interpersonal skills have high effect 12- Strategic skills have moderate effect 13- Management Skills have high effect.

The effect of different nodes on scientific abilities: 1- Intellectual and mental abilities have high effect 2- Mental and psychological abilities have moderate effect 3- interaction skills have low effect 4- Allocation skills have low effect – 5- Organizing skills have moderate effect 6- Monitoring skills have moderate effect 7- Thinking skills have high effect 8- Job and professional skills have low effect 9- Cognitive skills have moderate effect 10- Individual skills have moderate effect 11- Individual skills have moderate effect 12- Strategic skills have low effect 13- Management skills have moderate effect.

The effect of different nodes on individual skills: Intellectual and mental abilities have high effect 2- Mental and psychological abilities have high effect 3- Scientific abilities have high effect 4- Interaction skills have moderate effect 5- Allocation skills have moderate effect 6- Organizing skills have moderate effect 7- Monitoring skills have moderate effect 8- Thinking skills have moderate effect 9- Job and professional skills have high effect 10- Cognitive skills have high effect 11- Interpersonal skills have moderate effect

12- Strategic skills have moderate effect  
13- Management skills have high effect.

The effect of different nodes on interpersonal skills: 1- Intellectual and mental abilities have low effect 2- Mental and psychological abilities have moderate effect 3- Scientific abilities have moderate effect 4- Interaction skills have moderate effect 5- Allocation skills have moderate effect 6- Organizing skills have high effect 7- Monitoring Skills have high effect 8- Thinking skills have moderate effect 9- Job and professional skills have moderate effect 10- Cognitive skills have moderate effect 11- Individual skills have high effect 12- Strategic skills have moderate effect 13- Management skills. Have high effect

The effect of different nodes on interaction skills: 1- Intellectual and mental abilities have moderate effect 2- Mental and psychological abilities have moderate effect 3- Scientific abilities have moderate effect 4- Allocation skills have moderate effect 5- Organizing skills have moderate effect 6- Monitoring skills have high effect 7. Thinking skills have moderate effect 8- Job and professional skills have moderate effect 9- Cognitive skills have moderate effect 10- Individual skills have moderate effect 11- Interpersonal skills have high effect 12- Strategic skills have high effect 13- Management skills have moderate effect.

The effect of different nodes on strategic skills: 1- Intellectual and mental abilities have moderate effect 2- Mental and psychological abilities have moderate effect 3- Scientific abilities have high effect 4- Interaction skills have moderate effect 5- Allocation Skills have moderate effect 6- Organizing skills have moderate effect 7- Monitoring skills have moderate effect 8- Thinking skills have moderate effect 9- Job and professional skills have moderate effect 10- Cognitive Skills have moderate effect 11- Individual skills have moderate effect 12- Interpersonal skills have moderate effect 13- Management skills have high effect Figure 2.



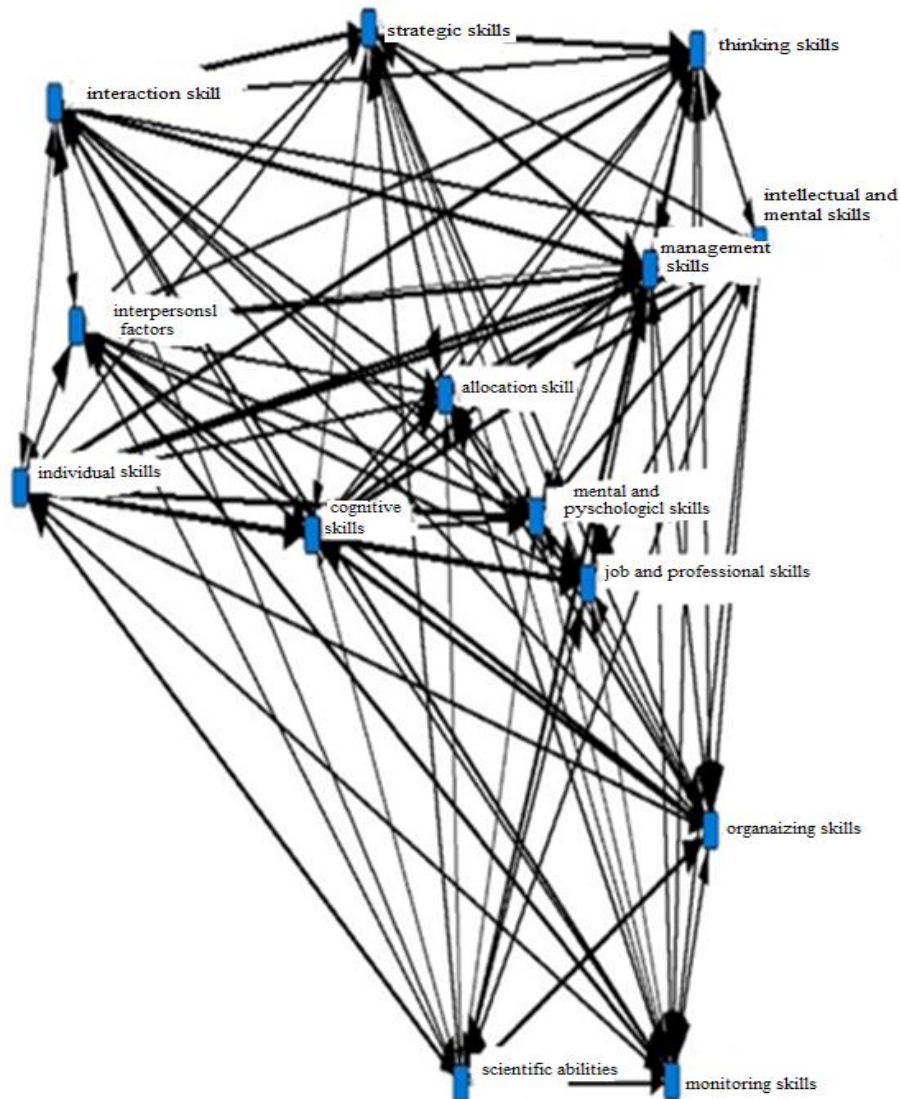


Figure 2. The final model of auditing abilities and skills to implement strategies using cognitive mapping method

The following results were obtained from the map analysis:

There is a relationship and interaction between all concepts, therefore, all concepts affect each other.

Management skills and individual skills, as a focal or core node (has high actor prestige or node popularity), form an ego network with nodes that are directly connected to it and it is called Alter or dependent nodes.

Management skills have direct relationship with other nodes or concepts.

Individual skills have a direct relationship with all nodes except job and professional skills and intellectual and mental abilities.

Thinking skills have a direct relationship with skills other than scientific abilities. The relationship between thinking skills and scientific abilities is indirectly mediated by mental and psychological abilities, job and professional skills and management skills.

Intellectual and mental abilities have a direct relationship with other nodes except individual skills, interpersonal skills and allocation skills and are related to the three mentioned skills mediated by management skills.

Organizational skills have a direct relationship with all nodes except allocation skills, but they have indirect



relationship with mental and psychological abilities and job and professional skills.

Monitoring skills have a direct relationship with other nodes.

Scientific abilities have a direct relationship with all nodes, except for thinking skills, which are indirectly related to them through mediating role of mental and psychological abilities, job and professional skills and management skills.

Job and professional skills have a direct relationship with all nodes, except individual skills and allocation skills. They are indirectly related to individual skills and allocation skills through cognitive skills and to allocation skills through mental and psychological abilities.

Psychological abilities have a direct relationship with other nodes.

Allocation skills have a direct relationship with all nodes. It is indirectly related to organizing skills through mental and psychological abilities.

Cognitive skills have a direct relationship with other nodes.

Strategic skills have a direct relationship with other nodes.

Interpersonal skills are indirectly related to other nodes except intellectual and mental abilities that are related to them through management skills.

The interaction skill has a direct relationship with other nodes.

Intellectual and mental abilities have the greatest effect on other nodes compared to other nodes.

Allocation skills have the least effect on other nodes compared to other nodes.

## Discussion

Based on the results of the present study, the links were weighted towards management and individual skills, and management skills as a focal node called ego with nodes connected to it directly

called Alter, including thinking skills, mental abilities, organization, monitoring, scientific abilities, psychological abilities, professional abilities, allocation, strategic, cognitive, individual, interpersonal, and interaction formed an ego network. In a study conducted by Naser Abadi, the measurement of information about human resources, the costs of selection and recruitment and training and separation of human resources are considered and in the audit of human resources, issues such as the level of replacement or rotation and the degree of absenteeism and employee relationships are considered (11). Based on Soltani & Ebrahimi research, applying organizational resources to achieve organizational goals is used to compare the performed activities or desired activities (12). Bahrami & Fardi Azar, stated that organizational climate of human resources area affects the motivation and ethics and job satisfaction of staff (13). Kiarie, stated that employees have the right skills and knowledge to achieve the goals of the organization (14).

Task management systems have been around for some time and with the growing market share of smartphones and tablets, they have been introduced in everyday life. However, the adoption of such systems within healthcare settings is lagging behind. The medical staff in a hospital could benefit from a specialized task management system, considering their high workload covering different patients. Time is a valuable resource in healthcare settings and caregivers respond to this time pressure by attempting to work as efficiently as possible by establishing a routine and prioritizing their work tasks. These strategies also cause nurses to lose the flexibility to respond to events and people as any non-scheduled event is perceived as a disruption or something to be prevented (15).

However, by organizing work per patient or task staff also use different criteria to prioritize tasks, e.g., the complexity of the

task or the consequences of a task for the patient, the nurse and other tasks (16).

Continuously monitoring their task load and assessing the priorities of these tasks is a tiresome job. When overloaded with work, nurses also attempt to delegate the work better amongst themselves (17). However, efficient delegation and re-assignment of tasks is often hindered by the social context. Today, caregivers have to decide for themselves who would be most qualified or able to take over the task and have to locate and contact his person themselves to hand over the task. Assigning tasks to other staff members personally can be a hassle, as different problems can occur. For example, it is not always possible to find or reach a personable to perform the task. Keeping the workload balanced is hard as well if there is no general overview of the division of tasks.

Unfortunately, in many organizations, lack of appropriate tools for controlling and auditing human resources results in some problems such as lack of a clear plan, lack of alignment and consistency between human resource strategies and macro strategies of the organization, increased error and duplications in works since managers and employees are immature, the inability of the organization to retain qualified workforces and dependency of organization life on the heroic people and their excessive activity (5).

Human resource auditing and its relationship with the progress and success of the organization and the internal integration of functional strategies in the area of human resources with each other and vertical integration of human resource strategies with macro level strategies of the organization are crucial issues. Social Security Organization plays the vital role in the progress and development of organization and its efficient activity is the basis of development. Given what was stated, it is important to design a model for auditing human resources in Social Security Organization and identify the

problems in the human resources department of this organization and other insurance organizations.

### ***Conclusion***

Since human resources are the most valuable assets of the organization, effective use and auditing of human resources is a tool for evaluating the personnel activities of an organization. The results of the present study can be used by managers in the area of designing a human resource auditing model with the approach of functional and macro strategies of to adapt human resource performance to the rules, goals and macro policies of related organizations.

### ***Author's contribution***

Somayeh Poursoltani Zarandi and Malikeh Beheshtifar developed the study concept and design. Amin Nikpour acquired the data. Somayeh Poursoltani Zarandi and Malikeh Beheshtifar analyzed and interpreted the data, and wrote the first draft of the manuscript. All authors contributed to the intellectual content, manuscript editing and read and approved the final manuscript.

### ***Informed consent***

Questionnaires were filled with the participants' satisfaction and written consent was obtained from the participants in this study.

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### ***Conflict of interest***

The authors declare that they have no conflict of interests.

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