

## Designing Model of the Human Resources Supply Chain (Thematic Analysis Method)

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### Abstract

Human resource was the fundamental capitals and the source of transformation and innovation in organizations. One of the most crucial ways for attracting and retaining human resource was to create a productive process and supply chain. The human resource supply chain was an integrated approach to planning, locating and controlling human resource in different businesses, from human resource's suppliers to replacing them in relevant jobs. According to the lack of supply chain of human resource in organizations, the importance of this issue was clear to everybody. After considering the sources extracted from databases, 136 sources were obtained as samples. In this research, the design of the supply chain human resource model was done by the qualitative research method of thematic analysis, and by studying the theoretical foundations and thematic literature. The process of thematic analysis was done manually and using MAXQDA software. The results of this research show that the human resource supply chains could be summed up in six main themes of organizational needs assessment, human resource planning, recruitment and selection, human resource improvement, performance evaluation, and human resource management. By integrating these themes with the components of the supply chain, the supply chain of human resources derived from theoretical literature can be achieve. Based on the theoretical foundations of the supply chain and human resources management, the following model was present. For the amount of credibility of the human resources supply chain pattern, a model derived from theoretical literature among seven experts in the field of human resources was presented and using the Delphi technique to present the final pattern of the chain Provision of human resources.

**Keywords:** Human resources supply chain; Thematic analysis; Talent management; Human resources.



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### 1. Introduction

Human beings play an important role in the framework of their group and organizational activities (Liker, 2004). Human Resources Management (HRM) is a key element in the management of the organization and is a guarantor of this issues that the right people and in the right time executed the organization's programs and have the highest level of work quality. Such a role is the same as human resource planning and the core of the organization's HRM (Khoong, 1996). According to recent studies, the growth and development of organizations depends on the selection and proper management of human capital, resulting in human resources Similarly to other findings from an organization, it will be the property of that organization, and the way it is introduced, the quality of its training, its maintenance and its replacement directly affects the organization's productivity (Cappelli, 2008). Developed countries will undergo a fundamental transformation in the next ten years, according to global estimations, about 50% of senior executives will retire, and organizations will face a scarcity of skilled human resource (Wolff *et al.*, 2009).

The shortage of efficient and effective staff in the supply chain management of human resource is the result of a shortage of labor force and economic crisis as well as a lack of knowledge, skills, and expertise (Hartmann *et al.*, 2010) and the war to attract prone people (Chambers *et al.*, 1998). The ignorance of the importance of skilled and expert labor is one of the most important reasons for the failure of large organizations (Aquino and Draper, 2008). The results of the increased competition and globalization of organizations are the rise of "job opportunities without borders" (Goffnett *et al.*, 2012). The most basic solution to these challenges is the importance of the strategic role of HR managers and the acceptance of the human resource supply chain management in the organization (Sweeney, 2013).

By considering the theoretical literature in the field of human resource, it can be seen that there is a lot of scientific information and findings, but these texts have a lot of dispersion. Therefore, the need for a supply chain of

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human resources in the organization in a coherent and flexible way is fully prehensible. Most organizations use traditional management practices and procedural discontinuities to provide their own expert and efficient human resource. In other words, a set of HRM activities, in the form of a system of related and interconnected processes, the flow of information throughout this, the process has not been described and this will lead to an increase in the cost of human resource in the organization.

The importance of this research is to enable organizations, by estimating the required human resource, finding appropriate human resource from the inside or outside of the market, and optimally replacing the talents in each sector, assessing its workforce, and adopting appropriate measures in to increase the profitability of human resources in the foreseeable future. Consequently, we will focus on the design of the human resource supply chains in this research. The importance of maintaining of human resource in the organization is the need for a scientific and applied model for providing expert human resources that will make this research essential.

## 2. Literature Review

Most organizations, unconsciously, use two types of supply chain processes (Paulraj and Chen, 2004). The domestic supply chain, which includes a set of activities occurring within the organization. This kind of supply chain is unusual for large organizations with a high degree of vertical process integrity, while the external supply chain in the organization is more focused on responding to the outside needs of the organization (Handfield and Nichols, 2002).

The inconsistency and lack of knowledge about the human resource supply chain process have brought significant challenges to human resource professionals, intermediate and industrial executives. On the other hand, due to the increasing competition of organizations, to increase and maintain efficiency and effectiveness, the attention of human resources managers should be drawn to this issue (Allen et al., 2013).

The main components of the human resource supply chain are inside and outside the organization individuals, and effective information communication is one of the most important components of these elements. In the first step, human resource planning is required so that the organization considering this, it estimates the number of human resource required and, in order to meet the demand, supplies its own power through domestic or foreign supply, and in the next step, using the available human resource and the proper selection of future employees, build the foundation of a successful organization (Allen et al., 2013).

The term human resource supply chain brings an image of human resource, which, along a chain, comes from human resource suppliers to the organization, cultivated with the upgrading of human resources, promoted and rewarded to retire or maintain (Menon, 2012). Certainly, this flow exists in the supply chain of human resources, but the important thing is to enable the flow of information of the human resource in both directions of the chain.

Table-1. Comparison of the Three Concepts

considered concepts dimensions of consideration	Talent management	Successor Management	Human resource Supply Chain Management
Definition	A Systemic Approach for the Implementation of Human Resources Management (Lois and Hochman, 2006)	A plan that develops the organizational successor positions. (Wall and Ainar, 2008)	Human resource supply chain management in the organization involves the integrated process of information flow, human resource, training, development, and maintenance of human resource to reduce costs (Mutsuddi, 2012)
Looking at the environment	Interior environment of the organization	Interior environment of the organization	Interior and exterior environment of the organization
Outsourcing human resource	Very pale	It does not exist at all	highlighted
Type of Activity	Linear activity	Fairly linear	Process activity

Talent management in the human resource supply chain is introduced as a sustainable competitive advantage by improving the performance of this chain and as a subset of human resource supply chain (Barnes and Liao, 2012).

Planning for the supply of human resource required that every organization recognize the recognition of the capabilities, capacities and characteristics of the educational system, as well as the recognition of the capabilities of centers inside and outside the country.

We can consider three sources of supply in the human resource supply chain. The first level of the labor market and industry plays the main role in supplying human resource. At this level, the organization manages its required labor market out of work organization and Industry. The job market is defined briefly as a geographic area, local, religious, national, and international, in which an employer usually hires a particular employee. The labor market is a subset of labor force, where supply and demand for people with specific skills are interrelated (Harvey et al., 2013).

As long as a market organization does not monopolize its services, it will have to compete for selling its products to other companies by offering similar products or services. As long as the organization only has specific market skills they will not have to work with other companies to attract the right people with the talents that they need to produce their goods or services (Goffnett et al., 2012).

The level of competition in the labor market affects the way that attraction is implemented. Strong competition for employees is the result of an intensive approach to recruiting and employing, moderate competition has given a more uncompromising approach. In addition, measures taken by competitive labor market institutions often indicate that a particular employer recruits and employ recruiting activities in order to remain competitive in the skills market (Cappelli, 2008).

The second level is the specific resources of human resources, such as universities, job search and Internet agencies, which at this level are more absorbed forces have at least university education, and the third and last level, each person with his skill and talent can be hired in the organization. The effective communication between these three levels and the sharing of key information between these levels is very important in the success of HRM (Harrison *et al.*, 2007). However, research has shown that the outcome of an effective recruiting process is directly related to the organization's performance (Armstrong, 2009); however, most organizations lack an efficient model in this regard.

The internal process of a supply chain involves identifying the customer's need, receiving the raw input from the supplier, planning production, production, output control and delivery to the customer. In the field of human resources, this may include identifying managers' job needs by using resumes screening, selection, interviewing, and control. In the middle phase of the supply chain, the supply chain should be tailored to suit the skills and abilities of the applicants in order to achieve the highest productivity through appropriate training and delivery. In both types of supply chain, the goal is to reduce shortcomings and errors and reduce costs.

With the difference that customer and recipient of goods and services in the supply chain are interior or exterior people of the organization, they are the customer of the organization in the human resource supply chain (Whalley and Zhang, 2007). In fact, the main objective of the human resource supply chain in the organization is to achieve goals and generate profits for the organization (Cappelli, 2008).

On the other hand, the goal of each supply chain is to maximize the overall value. The value that a supply chain generates is the difference between the value that creates the final product for the customer and the costs that the supply chain has incurred to meet the customer's demands. For most commercial supply chains, this value is linked to "Supply chain profitability", meaning the difference between the customer's revenue and the total cost of supply across the supply chain (Teimouri, 2014).

The term supply human resource chain brings an image of the human resource, along a chain that comes from human resource suppliers to the organization and is cultivated with the upgrading of human resources, promoted, rewarded, and retired or kept up to date (Menon, 2012).

The role of human resources manager in to supply chain of human resources that like a strategic manager in the supply chain of goods, which is constantly exploring the whole process and implementing a way to reduce costs. In addition, as we move towards globalization, human resource management is directed toward human resource supply chain management (Indranil, 2012).

It can be clearly acknowledged that HRM can influence organizational performance through strategic management of knowledge, skills, and ability of individuals (Huselid, 1995). As a result, another key element of human resource management is to ensure that prestigious, knowledgeable and motivated employees, regardless of geographical location, are in the right position (Stank *et al.*, 2011). HRM will change in terms of skills, knowledge, and capabilities required, and the HR manager will play a strategic role (Ellinger and Ellinger, 2014).

One of the components of human resource management is human resource training, which is highly regarded in the supply chain of human resources. Learning is the process of transferring information, attitudes and skills from one person or group to another person or group to change their cognitive, attitude, and skill structures (Sadri and Seyed, 2004).

Learning is a term that covers a wide range of activities. The purpose of teaching employees is to make every effort to improve the level of knowledge, technical and professional skills, as well as to create the desired behavior in an organization's staff and prepare them for their duties and responsibilities. Staff training has a broad and steady meaning, and it does not just mean internships or practical training in a particular field, but its scope is so broad that it begins with learning from a simple profession and a complete focus on the subject and highly sophisticated techniques, instructors in management, and affairs in governmental, industrial, and commercial organizations, as well as how to deal with human, economic, social, and cultural issues (David *et al.*, 2013).

The transition pattern is one of the newest models in the literature to evaluate the effectiveness of in-service training. The basic assumption in this model is that the level of effectiveness of education should be measured based on the transfer of learning from the training to the actual work environment, so the factors affecting the degree of application of training in the real environment that are evaluated by effective factors for the transfer the learning items. In this model, knowledge is shared by the behaviors involved in the exchange of information and the provision of assistance to individuals (Connelly and Kelloway, 2013).

In the field of human resource maintenance in the human resource supply chain, there is also a completely separate research effort. Today, effective managers, in addition to releasing themselves from limited thinking, are trying to think in more environments than their own organization, and in addition to their organizational responsibilities, social responsibilities are also thought to be sensitive to around events of them, and exploit events as close as possible to the benefit of the organization and its staffs. In this direction and with this attitude, which group of employees in organizations can be helpful for managers? What kind of employees are trying to win and achieve the goals of managers? How can managers, after recruiting and attracting employees, keep those with special qualifications and competencies and use their services for long time for the purposes of the organization (Vaillancourt, 2016).

Many executives honestly acknowledge that they do not really know how to keep them in the organization, despite being aware of the importance of having smart employees in the organization. Indeed, they admit that they have not experienced an accurate way of identifying, retaining, and focusing on these staffers (Yadav and Akhilesh, 2015).

Compassionate and intelligent staff are in fact the red and valuable blood of organizations that, if identified and strengthened, they are the heart of the organization Médecins Sans Frontières (2015), and in the absence of identifying and detecting or shortcomings in their right to organize loses their strength every day. Prominent administrators sometimes attempt to reengineer organizations to discover the scientific ways of keeping intelligent employees up and by refining methods and procedures to identify and keep this group of employees step by step. In the supply chain of the human resources, this section is fully maintained and deployed (Connelly and Kelloway, 2013).

In the past, most developed countries set up economic development programs with the primary objective of accelerating product growth and raising standards to the extent possible. Thus, the programs, in the framework of a general set of techniques, are intended to transform the general objectives into practical, objective, and reasonable. Sometimes human was considered in development plans as a factor of production (Mouly et al., 1998).

In today's world, organizations realize that they need the best human resource to succeed in a complex global economy as well as survival in a competitive business environment. While understanding the need of optimal HR recruitment, development, and maintenance organizations have found that these resources are critical for managing the best results. In the past (the 1960s-1970s), human resource management was delegated to the departmental staff as a subsidiary responsibility, while today human resource management is considered to be a much more serious task as an organization's responsible for all departments. Undoubtedly, the present age is the era of organizations, and the custodians of these organizations are human beings; those who themselves, by virtue of having the greatest source of power, that is, thinking, can create the excellence, movement, and growth of organizations. In recent years, in Iranian organizations, the topic of development of human resources has been considered in a variety of formats, such as identification and development of talents, succession, future managers, shadow managers, etc (Dr Sullivan, 2011).

Studies have shown that the human resource supply chain has begun in recent years. Many researches have focused on skill, knowledge and ability, human resource development, and the effect of human resource management on performance, the training, and maintenance of human resource in isolation. However, they have not paid attention to all aspects in an integrated model.

Table-2. Comparison of human resource Supply Chain Models

Research name	Authors (years)	methodology	results	Reference points Formation of the model	analysis
Supply Chain Management	Kumari and Javed (2013)	Mixed Method (quantitative-qualitative) GT and scrolling	Using the supply chain thinking, he has come up with a model for internal recruitment of human resource.	Education Telework	Deep attention to the recruitment and recruitment of human resources has been organized by the teleworkers and has not been addressed to other types of human resources.
Human Resources Development Chain Model	Mohammad and Shaifi (2007)	Qualitative (Case Study)	The training of the skills and expertise of each occupation is considered as the core of the chain and this chain demands the level of skill that is required for the job and the satisfied and empowered human resource as the supply of this chain is expressed. The best way to empower and develop human resources is based on the needs of the industry at the university.	Education Skill	Not considering the lack of compatibility between industry and university in the real world -The organization's interaction with a shortage of specialized and interested workforce. -Reduced competition among global staff

<b>Chain model Supply performance Human Resource Unit</b>	<a href="#">Indranil (2011)</a>	Review of the study	To effectively manage people, it is necessary to identify talents that are suited to the strategic goals and needs of the organization. The existence of technology (ERP, HCMS, etc.) plays a key role in creating a supply chain effect for effective management of individuals in organizations. The organization must be accountable both to the domestic process and to play a responsible role in society.	Exterior environment Organization needs	This paper discusses only the theoretical possibility of designing a supply chain management model for individuals. The topics discussed for service and computer organizations that can be generalized (these organizations have been studied and discussed)
<b>human resource Supply Chain: Modeling Talent Flow and Human Capital (Navy)</b>	<a href="#">Allen et al. (2013)</a>	Mixed Method (quantitative-qualitative) GT and scrolling	Successful management of human capital talent is the main objective of the Navy, and we can achieve improved performance by controlling and restoring human capital to the organization.	Individual performance Human capital return	This model is used only in the Navy with its own specific features. In this research, more attention is paid on the performance of the individual in assessing the needs of the organization.
<b>Supply chain talent</b>	<a href="#">Rameshwar and Angappa (2015)</a>	Quantitative research method (hierarchical regression analysis)	This theoretical framework integrates two independent flows of knowledge and skills required by supply chain specialists, and how knowledge and skills together can create talent supply capabilities in managers.	Knowledge Skill Look inside the organization	This study only considers a limited number of talent variables in supply chain formation. No attention has been paid to HR policies and policies. The results of this research can be generalized only for organizations in the Indian culture.

### 3. Method

In this research, due to the adoption of a multilateral approach to the design of human resource supply chain and trying to understand how to explain the phenomenon in the real context, the following qualitative paradigm is inevitable. In this research, thematic analysis is used. Thematic analysis is a method for recognizing, analyzing and reporting patterns in qualitative data. This method is a process for analyzing textual data and converts diverse, distributed data into rich and detailed data. Thematic analysis is not just a qualitative method but also a process that can be used in most qualitative methods. In general, thematic analysis is a method for seeing the text; the perception of the apparently unrelated information; the analysis of qualitative information; the systematic observation of the person, the interaction, the group, the position, organization or culture; the conversion of the qualitative data to quantitative data.

The stages of the process of analyzing the subject and finding the main themes in this research were as follows:

### 3.1. Getting to know the Data

The study and mastery of all data was done at this stage; this step forms the backbone of the next steps. In this step, there are good ideas about coding and patterns.

### 3.2. Creating Primary Code and Coding

In this step, codes used to divide text data into understandable and usable parts such as clause, phrase, word, or other criteria that are necessary for specific analysis, and the results in the first column of Table 4 refer to "visible and obvious" Brought. In this section, the codes in the encoding framework were tried to have a well-defined and defined boundary in such a way that they would not be varied or repetitive. In addition, the codes should be limited to the scope of the research and focused on the subject, in order to avoid coding each sentence from the original text. This is an interpretive step, but until this stage is completed, you cannot enter the next stage.

### 3.3. Searching and Recognizing Topics

In this step, which focuses on the analysis at a larger level than the codes, different codes are arranged in the form of the themes, and all the coding data associated with each of the themes are known and collected. At this stage, the code is analyzed and the way of combining and integrating different codes to form the basic content is considered. At this point, a set of codes was not allocated to any topic or some of the codes were ignored. By reviewing and refining the subjects, we tried to make the themes sufficiently specific, separate and non-repetitive, and sufficiently large, to include a set of ideas in parts of the text. This reduces the data to a set of acceptable and controllable content that provides an abstract and summary of the original text.

Sampling method in this research is a purposeful sampling of the text. In the determination of the sample size, the theoretical saturation is assisted and the data analysis method is through three-step coding. The validation of these coding will be done in two ways, a comparative validation between manual encoding and the coding of the MAXQDA software and the Lincoln and Guba credentials.

By studying and reviewing the literature and theoretical foundations in the human resource supply chain and using three stages coding in the implementation of the research method, the analysis of the subject as achieved to 213 codes (subject). In the second stage, these themes were categorized into homogeneous classes at the stage of compilation of the report, the analysis and compilation of the final report of the research took place. The purpose of writing the analysis of the subject is to convey the complete and complex statement of the data in such a way that the reader is convinced of the credibility and competence of the researcher's analysis. It is important that the analysis provide a concise, coherent, logical, non-repeat, and interesting source of data in the form of topics. The report should provide sufficient and adequate evidence about the content contained in the data, and provide sufficient data for each topic. The output of the MAXQDA software can be seen in the graph below, as well as the model derived from the themes that follow.

Table-3. An Example of Open Coding

Themed code	contents	Text
C-2	The number of employees and the time	According to Robbins and DeCenzo, human resource planning is a process through which the organization determines how many employees it needs to achieve its goals, with what expertise and skills, and time (Saadat, 2016)
C-4	Supply Human Resources	The human resources supply chain in the organization includes the integrated process of human resources supply, training, development and maintenance of human resources (Mutsuddi, 2012)
C-5	Education	
C-6	Development	
C-7	Preservation	
C-65	Designing a job commensurate with the strategic goals of the organization	
C-76	Job analysis	In the process of job analysis, a full description of the work to be done and the relationship between that job and other occupations is determined, then the amount of knowledge, skills and abilities that the volunteer must work (David <i>et al.</i> , 1994)
C-95	Human Resources Management Development	In general, three important areas of human resource development include human resource management, career path development, and quality improvement (Dr Sullivan, 2011)
C-96	Develop a career path	
C-97	quality improvement	
C-158	Responsibility in the job	Responsiveness in the type of activity and decision-making forces the organization to move toward value creation (Wagner,

		2013)
C-182	Payment based on performance	The most obvious way to measure performance is based on some of the observed outputs from employees or organizations. But the organization can also pay based on actions that do not show output (Ian Larkin, 2012)
C-201	Build competency	Sustainable sustainable competitive advantage is to build decent people in the organization (Harrison <i>et al.</i> , 2007)

Table-4. Axial coding

Code	Contents	The main theme
C-20	Attracting strength with the skill and potential of future training	<b>Recruitment and selection (Human Resource supplier)</b>
C-28	Domestic labor market	
C-29	Foreign labor market	
C-30	Marketplace for the development of power within the organization	
C-34	Specified for low category posts	
C-37	Attracting trusted people	
C-38	The organization's rapid response to environmental changes	
C-39	The domestic labor market is suited to a complex organization and requires a specialist force	
C-42	The vital force and core of the organization	
C-43	Low-power force from outside	
C-44	Provide specialized staff	
C-45	Continuous recruitment	
C-46	Alternate workflow	
C-47	Permanent search of superior force	
C-48	Attitude of the individual The crucial point in recruiting	
C-49	Branding organization	
C-50	Choice based on strength	
C-51	Force-based choice	
C-52	Selection based on the proportion of organizational and force objectives	
C-54	Hiring from recruiting institutions	
C-55	Universities	
C-56	Professional organizations	
C-57	Applicants	
C-59	Inclusive and discrete selection methods	
C-60	Interview Recruitment Method	
C-61	writing test	
C-62	Scene Testing	
C-82	Employee selection using descriptions of tasks and qualification conditions	
C-133	Identify and attract the most efficient	
C-139	Standard employment pattern	
C-152	Comprehensive psychological test	
C-169	Staff assessment centers	
C-171	Sample work done for an employee	
C-179	Attracting Organizational Successor	
C-184	Recruiting	
C-189	Review the organization's needs	
C-195	Human Resources Investment	
C-197	Reduced custody costs	
C-201	Build competency	
C-208	Increased horizontal displacement of human resource	
C-1	Empowering removes the administrator	<b>Human Resource Improvement (Employed engineering)</b>
C-5	Education	
C-6	Human Resource Development	
C-31	Nurturing managers apart from raising a low-level employee	
C-84	Need for development and training in the organization	
C-85	Technical training	
C-86	Behavioral training	
C-87	Problem solving training (behavioral)	
C-88	Low-cost and simple in-service training	
C-89	For complex teaching skills outside the organization	
C-90	Problem-solving and behavioral education outside the organization	

C-91	Development		
C-92	Individual and professional growth		
C-93	Focus on future performance		
C-97	improves quality development		
C-134	Update individual knowledge		
C-138	Human resource Improvement of Human Resources		
C-142	Permanent eligibility		
C-143	Reduce conflicts and organizational conflict		
C-155	Education Respect for Cultural Diversity		
C-159	Problem solving training (technical)		
C-163	In service (knowing the crates)		
C-167	Earn skills for future organization activities		
C-168	Adaptation of training with internal organization changes		
C-173	Increased performance improvement		
C-178	Creating skill balance and expertise		
C-192	Adequate knowledge of the components of work		
C-100	Fired staff ineffective		<b>Performance evaluation (Human Resource consumer)</b>
C-110	Performance is the duty of completeness		
C-111	Task function		
C-112	Citizenship function		
C-115	Behavioral Criteria Actions and Actions		
C-116	Performance appraisal of employee decision making criteria		
C-117	Evaluation to understand the shortcomings of individuals		
C-118	Evaluating the measurement of education		
C-119	Evaluation of information about the performance of individuals		
C-120	Evaluation and allocation of rewards		
C-121	Performance management is the main basis for improving the organization's performance		
C-122	Performance Management The Strategic Success of Organizations		
C-123	System of compensation of services		
C-124	System of Compensating Services Affecting Employees' Behavior		
C-126	Includes financial and non-financial services		
C-127	Any value created for employees		
C-135	Decreasing the abandonment of trained human resources		
C-141	Focus on merit-centered		
C-146	Increasing job satisfaction in human resource		
C-147	The motivator for improving performance		
C-154	Evaluating income-generating activities		
C-157	Organizational Justice		
C-161	Procedural justice		
C-164	Guided by human behavior to improve the organization's effectiveness		
C-170	Fixed wage payment		
C-182	Payment based on performance		
C-2	the number of employees and the time	<b>Human resource planning (Occupational engineering) Human resource planning (Occupational engineering)</b>	
C-3	Checking supply and demand balance		
C-4	Supply Human Resources		
C-13	Supply of labor from the labor market, universities and institutions-individual visits		
C-21	Estimating Organization Need for Human Resources		
C-22	human resource planning		
C-23	Hard Planning (Quantitative Analysis)		
C-25	Supplying power through retaining and absorbing power		
C-26	Controlling the flow of people entering the organization		
C-27	The decision to hire from outside or breeding in		
C-128	Outsourcing human resource planning		
C-76	Job analysis		
C-77	Job responsibilities, relationship with other occupations and individual abilities		
C-63	Job design		
C-64	How to perform job tasks and factors affecting your job		
C-65	Designing a job commensurate with the strategic goals of the organization		



C-79	Starting point of human resource management	
C-130	The Model of Compliance of the Modern Organization with Changes	
C-131	Describe job tasks based on successful capabilities	
C-132	Simultaneous use of competence model and analysis	
C-80	Occupation requirements	
C-81	Minimum features of job vacancies	
C-72	Preparing employees for change and increasing productivity	
C-73	career path	
C-18	Succession	
C-19	Identifying and preparing talents for the future of the job	
C-96	Developing a career path	
C-98	Transferring and relocation	
C-102	Displacement or in weak or capable staff	
C-103	Moving low middle class staff	
C-104	Continuously destructive replacement	
C-10	Realizing the goals and producing profits	
C-11	Creating value	
C-35	Reducing the cost of monitoring	
C-36	Increased human resource efficiency	
C-41	Controlling the price of power	
C-53	Power Additive	
C-94	Development reduces risk	
C-101	Creating a distinction requires the dismissal of weak employees	
C-24	Soft planning )Proportionality between organizational goals and employee behavior(	
C-40	The stability of organizational culture	
C-83	Socializing people before and after entering the organization	
C-129	Establishing appropriate relationships between employees	
C-9	Dynamic and continuous flow of information	
C-14	3rd level job market supplier, universities, referrals	
C-66	Redesign job	
C-67	Redesign job	
C-68	Career development	
C-69	Occupational enrichment	
C-136	Few human resources required	
C-144	Coordination of goals and values	
C-149	Design job professionally	
C-150	Design jobs with managerial mentality	
C-156	Importance of the job	
C-158	Responsibility in the job	
C-162	Creativity in the job	
C-175	Simplify the instructions	
C-176	Mental health in the job	
C-181	Ergonomics in the job	
C-185	Job complexity	
C-187	Self-actualization	
C-188	Integrated control	
C-190	Human Resources Management Specialization	
C-191	Setting up strategic networks	
C-194	A distinctive structure	
C-196	Organizational flexibility	
C-199	Reengineering the absorption process	
C-202	Improving the recruitment process	
C-203	Organizational relationship with the outside world	
C-205	Procedural flexibility	
C-207	Organizational information management	
C-212	The current flow of information across all sectors	
C-213	Creating a competitive advantage to attract	
C-7	Preserving Human resource	<b>Maintenance of human resources (Feedback)</b>
C-15	talent management	
C-16	Each talent is in its proper position	
C-74	Provide medical and psychiatric help	

C-75	Effectiveness of job rotation in employee readiness		
C-32	Create a permanent job		
C-33	Power dependence on the organization		
C-58	Fit between work and person		
C-99	Maintain effective staff		
C-105	Supply staff demands		
C-106	Study the reasons for quitting and creating a solution		
C-107	Prediction of Job Abandonment with Job Satisfaction		
C-108	Employee retention by strengthening dependency		
C-109	Balance of work and life preserves the employee		
C-125	Compensation for services leads to recruiting and retaining power		
C-137	welfare Services		
C-145	Health and hygiene		
C-151	Additional insurance coverage		
C-160	Promotion		
C-172	Facilities for sports facilities		
C-177	Payment for commuting		
C-180	Housing and housing		
C-211	Loan facility		
C-140	Select the type of input test		<b>Organizational Needs Assessment (Human Resource Distributor)</b>
C-148	Estimated Number of Human Resources Required		
C-153	Provide required list checklist		
C-165	Identifying the required skills		
C-166	Collecting current posts information		
C-174	Compilation of competencies		
C-183	Identifying the attitudes required for any activity		
C-186	Level of learning to do any activity		
C-193	Studying and identifying the required training standards		
C-198	Choosing a recruitment route (institutes, universities, etc.)		
C-200	Conduct meetings with current business experts		
C-204	Estimates for Human Resources		
C-206	Corresponding to human resource suppliers		
C-209	Extracting Human Resources Timetable		
C-210	Determining the purpose of providing human resources		

Table-5. Selective coding (comparative)

Codes	The main theme	Basic theme	Abundance
C-1-140	Human Resources Supply Chain / Organizational Needs Assessment	Selecting the type of input test	2
C-1-148	Human Resources Supply Chain / Organizational Needs Assessment	Estimating the Number of Human Resources Required	5
C-1-153	Human Resources Supply Chain / Organizational Needs Assessment	Providing the required list checklist	3
C-1-165	Human Resources Supply Chain / Organizational Needs Assessment	Identifying the required skills	4
C-1-166	Human Resources Supply Chain / Organizational Needs Assessment	Collecting the current posts information	5
C-1-174	Human Resources Supply Chain / Organizational Needs Assessment	Compilation of competencies	10
C-1-183	Human Resources Supply Chain / Organizational Needs Assessment	Identifying the attitudes required for any activity	6
C-1-186	Human Resources Supply Chain / Organizational Needs Assessment	Level of learning to do any activity	3
C-1-193	Human Resources Supply Chain / Organizational Needs Assessment	Studying and identifying the required training standards	4
C-1-198	Human Resources Supply Chain / Organizational Needs Assessment	Choosing a recruitment route (institutes, universities, etc.)	4
C-1-200	Human Resources Supply Chain / Organizational Needs Assessment	Conduct meetings with current business experts	1
C-1-204	Human Resources Supply Chain / Organizational Needs Assessment	Estimating for Human Resources	3
C-1-206	Human Resources Supply Chain / Organizational Needs Assessment	Corresponding to human resource suppliers	5

C-1-209	Human Resources Supply Chain / Organizational Needs Assessment	Extracting Human Resources Timetable	2
C-1-210	Human Resources Supply Chain / Organizational Needs Assessment	Determining the purpose of providing human resources	4
C-2-2	Human Resources Supply Chain / Organizational Needs Assessment	What number of employees, at what time?	2
C-2-3	Human Resources Supply Chain / Organizational Needs Assessment	considering the supply and demand balance	2
C-2-4	Human Resources Supply Chain / Organizational Needs Assessment	Supply Human Resources	88
C-2-13	Human Resources Supply Chain / Organizational Needs Assessment	Supply of labor from the labor market, universities and institutions-individual visits	4
C-2-21	Human Resources Supply Chain / Organizational Needs Assessment	Estimating Organization Need for Human Resources	8
C-2-22	Human Resources Supply Chain / Organizational Needs Assessment	human resource planning	3
C-2-23	Human Resources Supply Chain / Organizational Needs Assessment	Hard Planning (Quantitative Analysis)	5
C-2-25	Human Resources Supply Chain / Organizational Needs Assessment	Supplying power through retaining and absorbing power	2
C-2-26	Human Resources Supply Chain / Organizational Needs Assessment	Control the flow of people entering the organization	2
C-2-27	Human Resources Supply Chain / Organizational Needs Assessment	The decision to hire from outside or breeding in	3
C-2-128	Human Resources Supply Chain / Organizational Needs Assessment	Outsourcing human resource planning	4
C-2-76	Human Resources Supply Chain / Organizational Needs Assessment	Job analysis	1
C-2-77	Human Resources Supply Chain / Organizational Needs Assessment	Job responsibilities, relationship with other occupations and individual abilities	3
C-2-63	Human Resources Supply Chain / Organizational Needs Assessment	Job design	5
C-2-64	Human Resources Supply Chain / Organizational Needs Assessment	How to perform job tasks and factors affecting your job	4
C-2-65	Human Resources Supply Chain / Organizational Needs Assessment	Designing a job commensurate with the strategic goals of the organization	1
C-2-79	Human Resources Supply Chain / Organizational Needs Assessment	Starting point of human resource management	3
C-2-130	Human Resources Supply Chain / Organizational Needs Assessment	The Model of Compliance of the Modern Organization with Changes	7
C-2-131	Human Resources Supply Chain / Organizational Needs Assessment	Describe job tasks based on successful capabilities	4
C-2-132	Human Resources Supply Chain / Organizational Needs Assessment	Simultaneous use of competence model and analysis	9
C-2-80	Human Resources Supply Chain / Organizational Needs Assessment	Occupation requirements	4
C-2-81	Human Resources Supply Chain / Organizational Needs Assessment	Minimum features of job vacancies	2
C-2-72	Human Resources Supply Chain / Organizational Needs Assessment	Preparing employees for change and increasing productivity	2
C-2-73	Human Resources Supply Chain / Organizational Needs Assessment	career way	4
C-2-18	Human Resources Supply Chain / Organizational Needs Assessment	Succession	3
C-2-19	Human Resources Supply Chain / Organizational Needs Assessment	Identify and prepare talents for the future of the job	6
C-2-96	Human Resources Supply Chain / Organizational Needs Assessment	Develop a career path	3
C-2-98	Human Resources Supply Chain / Organizational Needs Assessment	Transfer and relocation	4
C-2-102	Human Resources Supply Chain / Organizational Needs Assessment	Displacement or in weak or capable staff	1

<b>C-2-103</b>	Human Resources Supply Chain / Organizational Needs Assessment	Moving low middle class staff	1
<b>C-2-104</b>	Human Resources Supply Chain / Organizational Needs Assessment	Continuously destructive replacement	2
<b>C-2-10</b>	Human Resources Supply Chain / Organizational Needs Assessment	Realizing the goals and producing profits	2
<b>C-2-11</b>	Human Resources Supply Chain / Organizational Needs Assessment	Create value	1
<b>C-2-35</b>	Human Resources Supply Chain / Organizational Needs Assessment	Reduce the cost of monitoring	3
<b>C-2-36</b>	Human Resources Supply Chain / Organizational Needs Assessment	Increased human resource efficiency	9
<b>C-2-41</b>	Human Resources Supply Chain / Organizational Needs Assessment	Controlling the price of power	4
<b>C-2-53</b>	Human Resources Supply Chain / Organizational Needs Assessment	Power Additive	5
<b>C-2-94</b>	Human Resources Supply Chain / Organizational Needs Assessment	Development reduces risk	4
<b>C-2-101</b>	Human Resources Supply Chain / Organizational Needs Assessment	Creating a distinction requires the dismissal of weak employees	1
<b>C-2-24</b>	Human Resources Supply Chain / Organizational Needs Assessment	Soft planning (fit between organizational goals and employee behavior)	2
<b>C-2-40</b>	Human Resources Supply Chain / Organizational Needs Assessment	The stability of organizational culture	3
<b>C-2-83</b>	Human Resources Supply Chain / Organizational Needs Assessment	Socializing people before and after entering the organization	2
<b>C-2-129</b>	Human Resources Supply Chain / Organizational Needs Assessment	Establishing appropriate relationships between employees	2
<b>C-2-9</b>	Human Resources Supply Chain / Organizational Needs Assessment	Dynamic and continuous flow of information	3
<b>C-2-14</b>	Human Resources Supply Chain / Organizational Needs Assessment	3rd level job market supplier, universities, referrals	6
<b>C-2-66</b>	Human Resources Supply Chain / Organizational Needs Assessment	Redesign job	4
<b>C-2-67</b>	Human Resources Supply Chain / Organizational Needs Assessment	workflow	9
<b>C-2-68</b>	Human Resources Supply Chain / Organizational Needs Assessment	Career development	7
<b>C-2-69</b>	Human Resources Supply Chain / Organizational Needs Assessment	Occupational enrichment	8
<b>C-2-136</b>	Human Resources Supply Chain / Organizational Needs Assessment	Few human resources required	6
<b>C-2-144</b>	Human Resources Supply Chain / Organizational Needs Assessment	Coordination of goals and values	4
<b>C-2-149</b>	Human Resources Supply Chain / Organizational Needs Assessment	Design job professionally	2
<b>C-2-150</b>	Human Resources Supply Chain / Organizational Needs Assessment	Design jobs with managerial mentality	1
<b>C-2-156</b>	Human Resources Supply Chain / Organizational Needs Assessment	Importance of job	5
<b>C-2-158</b>	Human Resources Supply Chain / Organizational Needs Assessment	Responsibility in the job	3
<b>C-2-162</b>	Human Resources Supply Chain / Organizational Needs Assessment	Creativity in the job	2
<b>C-2-175</b>	Human Resources Supply Chain / Organizational Needs Assessment	Simplify the instructions	2
<b>C-2-176</b>	Human Resources Supply Chain / Organizational Needs Assessment	Mental health in the job	1
<b>C-2-181</b>	Human Resources Supply Chain / Organizational Needs Assessment	Ergonomics in the job	1
<b>C-2-185</b>	Human Resources Supply Chain / Organizational Needs Assessment	Job complexity	4
<b>C-2-187</b>	Human Resources Supply Chain / Organizational Needs Assessment	Self-actualization	2

	Organizational Needs Assessment		
<b>C-2-188</b>	Human Resources Supply Chain / Organizational Needs Assessment	Integrated control	1
<b>C-2-190</b>	Human Resources Supply Chain / Organizational Needs Assessment	Human Resources Management Specialization	5
<b>C-2-191</b>	Human Resources Supply Chain / Organizational Needs Assessment	Setting up strategic networks	1
<b>C-2-194</b>	Human Resources Supply Chain / Organizational Needs Assessment	A distinctive structure	1
<b>C-2-196</b>	Human Resources Supply Chain / Organizational Needs Assessment	Organizational flexibility	2
<b>C-2-199</b>	Human Resources Supply Chain / Organizational Needs Assessment	Reengineering the absorption process	4
<b>C-2-202</b>	Human Resources Supply Chain / Organizational Needs Assessment	Improve the recruitment process	2
<b>C-2-203</b>	Human Resources Supply Chain / Organizational Needs Assessment	Organizational relationship with the outside world	1
<b>C-2-205</b>	Human Resources Supply Chain / Organizational Needs Assessment	Procedural flexibility	1
<b>C-2-207</b>	Human Resources Supply Chain / Organizational Needs Assessment	Organizational information management	2
<b>C-2-212</b>	Human Resources Supply Chain / Organizational Needs Assessment	The current flow of information across all sectors	2
<b>C-2-213</b>	Human Resources Supply Chain / Organizational Needs Assessment	Create a competitive advantage to attract	3
<b>C-3-20</b>	Human Resources Supply Chain / Organizational Needs Assessment	Attracting strength with the skill and potential of future training	2
<b>C-3-28</b>	Human Resources Supply Chain / Organizational Needs Assessment	Domestic labor market	6
<b>C-3-29</b>	Human Resources Supply Chain / Organizational Needs Assessment	Foreign labor market	5
<b>C-3-30</b>	Human Resources Supply Chain / Organizational Needs Assessment	Marketplace for the development of power within the organization	4
<b>C-3-34</b>	Human Resources Supply Chain / Organizational Needs Assessment	Specified for low category posts	2
<b>C-3-37</b>	Human Resources Supply Chain / Organizational Needs Assessment	Attracting trusted people	9
<b>C-3-38</b>	Human Resources Supply Chain / Organizational Needs Assessment	The organization's rapid response to environmental changes	4
<b>C-3-39</b>	Human Resources Supply Chain / Organizational Needs Assessment	The domestic labor market is suited to a complex organization and requires a specialist force	6
<b>C-3-42</b>	Human Resources Supply Chain / Organizational Needs Assessment	The vital force and core of the organization	7
<b>C-3-43</b>	Human Resources Supply Chain / Organizational Needs Assessment	Low-power force from outside	2
<b>C-3-44</b>	Human Resources Supply Chain / Organizational Needs Assessment	Provide specialized staff from within	8
<b>C-3-45</b>	Human Resources Supply Chain / Organizational Needs Assessment	Continuous recruitment	2
<b>C-3-46</b>	Human Resources Supply Chain / Organizational Needs Assessment	Alternate workflow	1
<b>C-3-47</b>	Human Resources Supply Chain / Organizational Needs Assessment	Permanent search of superior force	5
<b>C-3-48</b>	Human Resources Supply Chain / Organizational Needs Assessment	Attitude of the individual The crucial point in recruiting	2
<b>C-3-49</b>	Human Resources Supply Chain / Organizational Needs Assessment	Branding organization	4
<b>C-3-50</b>	Human Resources Supply Chain / Organizational Needs Assessment	Choice based on strength	3
<b>C-3-51</b>	Human Resources Supply Chain / Organizational Needs Assessment	Force-based choice	3
<b>C-3-52</b>	Human Resources Supply Chain / Organizational Needs Assessment	Selection based on the proportion of organizational and force objectives	5

<b>C-3-54</b>	Human Resources Supply Chain / Organizational Needs Assessment	Selection based on the proportion of organizational and force objectives	4
<b>C-3-55</b>	Human Resources Supply Chain / Organizational Needs Assessment	Universities	2
<b>C-3-56</b>	Human Resources Supply Chain / Organizational Needs Assessment	Professional organizations	1
<b>C-3-57</b>	Human Resources Supply Chain / Organizational Needs Assessment	Applicants	1
<b>C-3-59</b>	Human Resources Supply Chain / Organizational Needs Assessment	Inclusive and discrete selection methods	2
<b>C-3-60</b>	Human Resources Supply Chain / Organizational Needs Assessment	Interview Recruitment Method	3
<b>C-3-61</b>	Human Resources Supply Chain / Organizational Needs Assessment	Interview Recruitment Method	1
<b>C-4-1</b>	Human Resources Supply Chain / Organizational Needs Assessment	Empowering removes the administrator	4
<b>C-4-5</b>	Human Resources Supply Chain / Organizational Needs Assessment	Education	12
<b>C-4-6</b>	Human Resources Supply Chain / Organizational Needs Assessment	Human Resource Development	15
<b>C-4-31</b>	Human Resources Supply Chain / Organizational Needs Assessment	Nurturing managers apart from raising a low-level employee	5
<b>C-4-84</b>	Human Resources Supply Chain / Organizational Needs Assessment	Need for development and training in the organization	11
<b>C-4-85</b>	Human Resources Supply Chain / Human Resource Improvement	Technical training	6
<b>C-4-86</b>	Human Resources Supply Chain / Human Resource Improvement	Behavioral training	4
<b>C-4-87</b>	Human Resources Supply Chain / Human Resource Improvement	Problem solving training (behavioral(	2
<b>C-4-88</b>	Human Resources Supply Chain / Human Resource Improvement	Low-cost and simple in-service training	1
<b>C-4-89</b>	Human Resources Supply Chain / Human Resource Improvement	For complex teaching skills outside the organization	3
<b>C-4-90</b>	Human Resources Supply Chain / Human Resource Improvement	Problem-solving and behavioral education outside the organization	6
<b>C-4-91</b>	Human Resources Supply Chain / Human Resource Improvement	Development	5
<b>C-4-92</b>	Human Resources Supply Chain / Human Resource Improvement	Individual and professional growth	4
<b>C-4-93</b>	Human Resources Supply Chain / Human Resource Improvement	Focus on future performance	5
<b>C-4-97</b>	Human Resources Supply Chain / Human Resource Improvement	Development improves quality	4
<b>C-4-134</b>	Human Resources Supply Chain / Human Resource Improvement	Update individual knowledge	3
<b>C-4-138</b>	Human Resources Supply Chain / Human Resource Improvement	Human resource Improvement of Human Resources	8
<b>C-4-142</b>	Human Resources Supply Chain / Human Resource Improvement	Permanent eligibility	9
<b>C-4-143</b>	Human Resources Supply Chain / Human Resource Improvement	Reduce conflicts and organizational conflict	4
<b>C-4-155</b>	Human Resources Supply Chain / Human Resource Improvement	Educate Respect for Cultural Diversity	2
<b>C-4-159</b>	Human Resources Supply Chain / Human Resource Improvement	Problem solving training (technical(	4
<b>C-4-163</b>	Human Resources Supply Chain / Human Resource Improvement	In service (knowing the crates(	2
<b>C-4-167</b>	Human Resources Supply Chain / Human Resource Improvement	Earn skills for future organization activities	4
<b>C-4-168</b>	Human Resources Supply Chain / Human Resource Improvement	Adaptation training with internal organization changes	1
<b>C-4-173</b>	Human Resources Supply Chain / Human Resource Improvement	Increased performance improvement	6

C-4-178	Human Resources Supply Chain / Human Resource Improvement	Creating skill balance and expertise	2
C--1005	Human Resources Supply Chain / Performance Evaluation	Fired staff ineffective	2
C-5-110	Human Resources Supply Chain / Performance Evaluation	Performance is the duty of completeness	1
C--1115	Human Resources Supply Chain / Performance Evaluation	Task function	4
C-5-112	Human Resources Supply Chain / Performance Evaluation	Citizenship function	3
C-115	Human Resources Supply Chain / Performance Evaluation	Behavioral Criteria Actions and Actions	1
C-5-116	Human Resources Supply Chain / Performance Evaluation	Performance appraisal of employee decision making criteria	6
C-5-117	Human Resources Supply Chain / Performance Evaluation	Evaluation to understand the shortcomings of individuals	2
C-5-118	Human Resources Supply Chain / Performance Evaluation	Evaluating the measurement of education	5
C-5-119	Human Resources Supply Chain / Performance Evaluation	Evaluation of information about the performance of individuals	7
C-5-120	Human Resources Supply Chain / Performance Evaluation	Evaluation and allocation of rewards System of Compensating Services Affecting Employees' Behavior	6
C-5-121	Human Resources Supply Chain / Performance Evaluation	Performance management is the main basis for improving the organization's performance	8
C-5-122	Human Resources Supply Chain / Performance Evaluation	Success of Organizations	4
C-5-123	Human Resources Supply Chain / Performance Evaluation	System of compensation of services	9
C-5-124	Human Resources Supply Chain / Performance Evaluation	Performance Management	10
C-5-126	Human Resources Supply Chain / Performance Evaluation	Includes financial and non-financial services	3
C-5-127	Human Resources Supply Chain / Performance Evaluation	Any value created for employees	4
C-5-135	Human Resources Supply Chain / Performance Evaluation	Reduction of the desertion of human resource	2
C-5-141	Human Resources Supply Chain / Performance Evaluation	Focus on merit-centered	6
C-5-146	Human Resources Supply Chain / Performance Evaluation	Increasing job satisfaction in human resource	4
C-5-147	Human Resources Supply Chain / Performance Evaluation	The motivator for improving performance	4
C-5-154	Human Resources Supply Chain / Performance Evaluation	Evaluating income-generating activities	2
C-5-157	Human Resources Supply Chain / Performance Evaluation	Organizational Justice	3
C-5-161	Human Resources Supply Chain / Performance Evaluation	Procedural justice	3
C-5-164	Human Resources Supply Chain / Performance Evaluation	Guided by human behavior to improve the organization's effectiveness	4
C-5-170	Human Resources Supply Chain / Performance Evaluation	Fixed wage payment	1
C-5-182	Human Resources Supply Chain / Performance Evaluation	Payment based on performance	1
C-6-7	Human Supply Chain / Holding & Human resource Maintenance	Preserving Human resource	11
C-6-15	Human Supply Chain / Holding & Human resource Maintenance	talent management	9
C-6-16	Human Supply Chain / Holding & Human resource Maintenance	Each talent is in its proper position	6
C-6-74	Human Supply Chain / Holding &	Provide medical and psychiatric help	1

	Human resource Maintenance		
C-6-75	Human Supply Chain / Holding & Human resource Maintenance	Effectiveness of job rotation in employee readiness	2
C-6-32	Human Supply Chain / Holding & Human resource Maintenance	Create a permanent job	5
C-6-33	Human Supply Chain / Holding & Human resource Maintenance	Power dependence on the organization	6
C-6-58	Human Supply Chain / Holding & Human resource Maintenance	Fit between work and person	8
C-6-99	Human Supply Chain / Holding & Human resource Maintenance	Maintain effective staff	9
C-6-105	Human Supply Chain / Holding & Human resource Maintenance	Supply staff demands	4
C-6-106	Human Supply Chain / Holding & Human resource Maintenance	Study the reasons for quitting and creating a solution	4
C-6-107	Human Supply Chain / Holding & Human resource Maintenance	Prediction of Job Abandonment with Job Satisfaction	2
C-6-108	Human Supply Chain / Holding & Human resource Maintenance	Employee retention by strengthening dependency	1
C-6-109	Human Supply Chain / Holding & Human resource Maintenance	Balance of work and life preserves the employee	5
C-6-125	Human Supply Chain / Holding & Human resource Maintenance	Compensation for services leads to recruiting and retaining power	3
C-6-137	Human Supply Chain / Holding & Human resource Maintenance	welfare Services	1
C-6-145	Human Supply Chain / Holding & Human resource Maintenance	Health and hygiene	1
C-6-151	Human Supply Chain / Holding & Human resource Maintenance	Additional insurance coverage	1
C-6-160	Human Supply Chain / Holding & Human resource Maintenance	Promotion	1
C-6-172	Human Supply Chain / Holding & Human resource Maintenance	Facilities for sports facilities	1
C-6-177	Human Supply Chain / Holding & Human resource Maintenance	Payment for commuting	1
C-6-180	Human Supply Chain / Holding & Human resource Maintenance	Housing and housing	1
C-6-211	Human Supply Chain / Holding & Human resource Maintenance	Loan facility	1

Based on the theoretical foundations of the supply chain and HRM, the following initial model was presented. For the level of credibility of the human resources supply chain pattern, a model derived from theoretical literature was present among seven experts in the field of human resources.

After collecting data and reviewing the notes and opinions of the experts, implementation of the Delphi technique has led to changes in the supply chain pattern. According to experts, the organization needs to provide information on the human resources needed, such as the type of manpower needed, the skills and specialist indicators needed, and that is, from the distributor's section and the feedback section (performance evaluation results), nutrition he does. On the other hand, the upgrading and distribution of human resources are generally carry out simultaneously; as a result, the distributor's box will placed in parallel with the Box for the upgrading of human resources. As for the flow of information, since it is from the distributor to the supplier, then the flash is place from the distributor to the supplier of the human resources. The next item was about human resources recycling. First, human resource recruitment does not have a scientific concept and should be eliminated, and if more human resources are available, it is essential that they be trained in the new job and position, as a result of re-use of human resources to the human resource improvement box.

#### 4. Findings

By the relevant topics in the theoretical literature of the supply chain, all the codes that were extract from the theoretical literature were 213 codes. In three stages of coding, we conclude that there are six main themes in the supply chain of supply of human resources, including organizational needs, Human resource planning, recruitment and recruitment of personnel, human resource development, performance appraisal and human resource management. Based on these themes, the following pattern is present. On the other hand, by a careful study of the human resources supply chain research literature, we can achieve this by providing a scientifically validated supply chain that integrates all components of the supply chain to the present. In the table below, supply chain models in the



field of human resources on one side of the matrix and components of the supply chain on the other side of the matrix are the evidence of this claim.

**Table-6.** Comparison matrix of supply chain components with supply chain human resource models

Main components of the supply chain		Human Supply Chain Models				
		Human capital supply chain management	Human Resources Development Chain Model	Supply chain model of HR unit function	Human Resource Supply Chain: Modeling Talent Flow and Human Capital	Supply chain talent
Supplier: (Materials, information, Human resource, finance, knowledge)	Direct (initial) strategic	*	-	*	-	*
	Direct (primary) non-strategic	-	*	-	-	-
	Indirect (secondary) strategic	*	-	*	-	-
	Indirect (secondary) non-strategic	-	-	-	-	-
Producer	Internal	*	*	*	*	*
	Outsourcing	-	*	-	-	-
Distributor	Direct	*	*	*	*	*
	indirect	-	-	-	-	-
Consumer	Primary consumer	*	*	*	*	*
	Secondary consumer	-	-	-	-	-
Foreign causes: (Financial institutions, international regulations, government regulations and competition, technology, ecology and environment)		-	*	*	*	-
Feedback (Reengineering) inventory, quality, cost, demand		*	*	*	*	-
Support (planning and coordination)		*	*	*	*	*

By reviewing the theoretical literature of the human resources supply chain, human resource planning and the main supply chain activities, what will happen to each of these activities in the supply chain and what does the HR department do? Based on the initial model of supply chain for human resource and supply chain visibility, we can outline the main supply chain activities with the main components of the supply chain of human resources as shown in the table below.

**Table-7.** Comparison Matrix of Supply Chain Components with Human Resources Unit Tasks

The main components of the supply chain are human resources		Main activities of the supply chain				
		Sourcing	Planning	Production (activity)	Move to the next step	Back to the previous step
Human Resources Supplier	Direct supplier of strategic human resources	Inside the organization (Specialist Attraction)	Long-term and committed	promotion based on merit and expertise, successor	Perfect person with organization's needs	--
	Direct supplier of non-strategic human resources	Out of organization (Attractive general practitioner)	Short-term	Training and matching skills and expertise with the desired job	Perfect person with organization's needs	--
	Indirect strategic human resource supplier	Contractor companies (Job rotation)	Long-term	Socializing people	Perfect person with organization's needs	--
	Indirect supplier of non-strategic human resources	Attracting general practitioner from contractors (outside the organization)	Short-term	Matching the skill and expertise with the desired job	Perfect person with organization's needs	--

<b>Human Resource Improvement</b>	Inside the organization (Before and during the process)		Acquire knowledge and recognition of the skills, abilities and expertise required by the organization	Planning for the training and development of human resources at individual, social and occupational levels	Training needed skills, developing individual capabilities, learning organization and individual, socializing individuals	Professional and person fits the job	Expertise and Skills Indicators
	Outsourcing	Processes	Gather information and process indicators	Coordinate and adjust the type and amount of process	Design and implementation of the process based on the work plan	Process	Determine the exact type and factors involved in the process
		Tasks	Gathering information and indicators of tasks	Coordinate and schedule scheduling tasks	Design and implementation of tasks based on the work plan	Doing tasks	Determine the exact type and factors involved in performing tasks
		Experts	Organization and Job Needs	Placing the expert in the desired position	Training and socializing specialist	Professional and fit person	Individual and specialized indexes
<b>Distributor of human Resource</b>	Direct distributor of human resources (centralized)		Gather information to design an enterprise-specific job	Job placement in a good job	Determine the qualifications	Employing the right occupation	Competencies, job qualifications, job characteristics
	Indirect distributor of human resources (decentralized and organized by local experts)		Researching required occupations, required characteristics, required expertise	Categorize and prioritize important information	Clarify the scope of responsibilities and responsibilities	Provide accurate and timely information to the worker	--
<b>Human Resources Consumer</b>	Primary consumer of human resources (self-organization)		Choosing a specialist and committed person with a job	Coordination for timely tasks	Doing Tasks	Reengineering job or work	Performance Report
	Secondary consumer human resources (other organizations)		Specialist and committed person	Marketing for other organizations	Doing Tasks	Feedback to the organization	Performance Report
<b>Feedback (reengineering)</b>			Get feedback from the manager and human resources colleagues	Reward System, Salary and Training	performance evaluation	Assignment of human resources	Human resource reuse, human resource recuperation, end-of-service

#### 4.1. Sourcing

*Human Resources Supplier:* All sources of resource selection decisions made at this stage to supply the required human resources from existing resources (as defined earlier).

*Human Resources Improvement:* Includes the process of selecting among the sources that are in the process of updating the information extracted from the staff for training and development in the engineering field.

*Human Resource Distributor:* Includes a selection process among the sources for updating information extracted from the Human Resource Unit for occupational engineering.

*Human Resources Consumer:* Actions that involve selecting professionals and jobseekers in that organization or organization.

*Feedback and Reengineering:* In this area, the main emphasis is on receiving feedback on the performance of the individual job manager by the manager.

#### 4.2. Planning

*Human Resources Supplier:* a set of targeted actions that have sought out in various ways to provide needed human resources.

*Human Resource Improvement:* At this stage, all forecasts are from needs assessment to assessment of human resources education and training programs. (Design of the process of human resource development)

*Human Resource Distributor:* human resource planning to determine the likely options for getting the desired post.

*Human Resources Consumer:* Determine the career path (pathway for career progression) of the job manager at or outside the organization.

*Feedback and Reengineering:* The existence of an integrated information system for the job manager and available to the immediate job manager.

### **4.3. Production (Activity)**

*Human Resources Supplier:* This part of the chain is amid at providing the appropriate human resources for the organization and covering all activities required to provide human resources.

*Human Resource Improvement:* Implementing training programs, developing and improving the recruits are one of the most important activities of this sector in the supply chain of human resources.

*Human Resource Distributor:* How to determine the framework of authority and responsibilities of individuals by proper job analysis and appropriate person in the right position? The answer to this question lies in the proper conduct of this activity.

*Human Resources Consumer:* Using the expertise and skills of a person perfected by this organization or other organizations and that his or her abilities are used by this organization?

*Feedback and Reengineering:* Performance evaluation done according to a clear and precise structure in this section.

### **4.4. Move to the Next Step**

*Human Resources Supplier:* What is the best option for an empty seat? The priority of the transfer activity in the field of human resources is relate to this question.

*Human Resource Improvement:* What needs to done in the area of improvement to get the right conditions for the proper performance of tasks and processes?

*Human Resource Distributor:* The right place for each job is centralized or decentralized for the purpose of this division.

*Human Resources Consumer:* Announcement of the results of the evaluation of the performance of the job attendant to receive a salary. (Next steps)

*Feedback and Reengineering:* Compensation for service and determining the status of the workforce are determine by the feedback given in this activity.

### **4.5. Back to the Previous Step**

*Human Resources Supplier:* We are not back at this stage.

*Human Resources Improvement:* Information flow Indicators of job satisfaction (general and specialized indexes of this occupation) to continuously review the job suitability model to the HR unit.

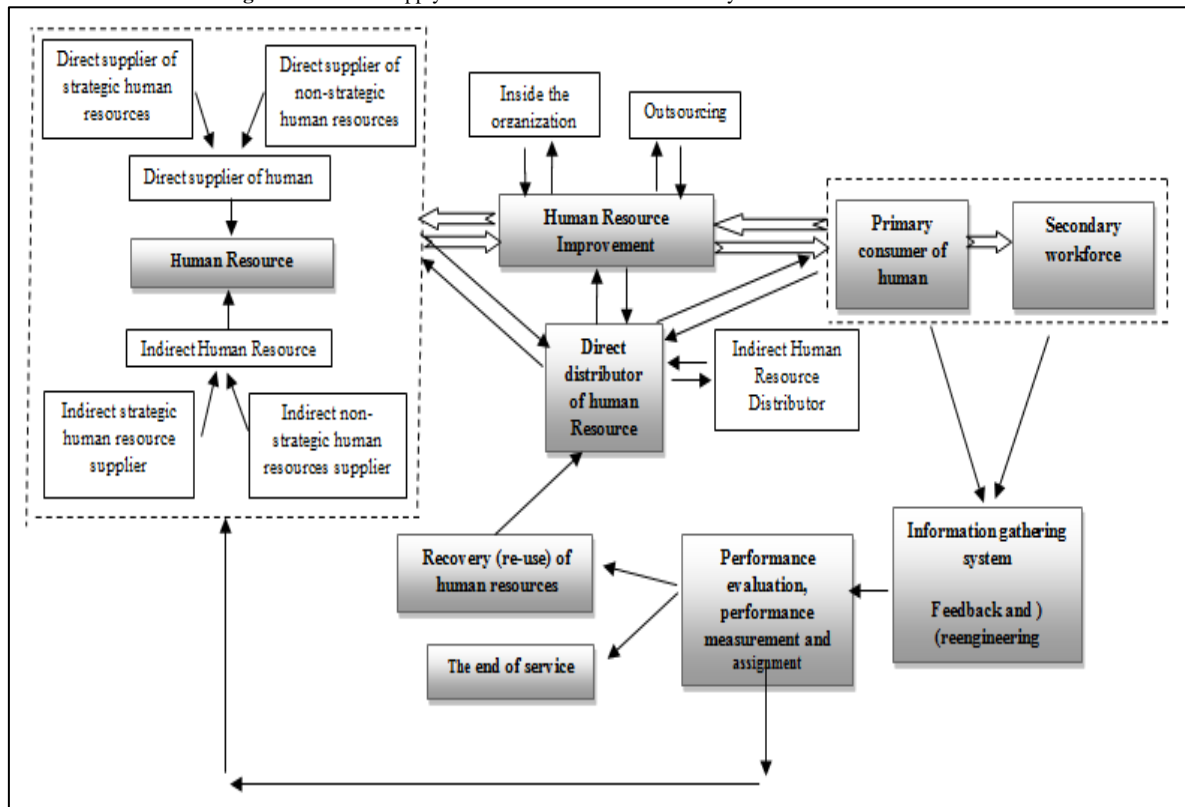
*Human Resource Distributor:* Determine the conditions for obtaining a decent and decentralized occupation.

*Human Resource Consumer:* feedback on the results of the evaluation of the performance of the job manager for review and modification to the engineering and occupational stages.

*Feedback and Reengineering:* The results of expert feedback are use because of the career progression of other organizations, and the individual is assignee a task.

Given that, it is important for the supply chain to be optimal, all its components and aspects must taken into account, and, while we are dealing with the strategic asset of the organization, the human resources is very important. Consequently, there is a scientific vacuum in this field and there is no evolved human supply chain in research. Based on the theoretical foundations of the supply chain and human resources management, the following model is presented below.

Figure-1. Human Supply Chain Pattern Based on the Analysis of Theoretical Literature



Definition of the main components of the human resource supply chain

#### 4.6. Human Resource Supplier

Based on completed supply chain models, human resource suppliers are divided into two main categories. Direct suppliers and indirect suppliers, each of these direct and indirect suppliers, are divided into two strategic and non-strategic categories. Direct strategic suppliers are the suppliers that are directly involved in the complex, specialized, and long-term process of workforce processing. For example, these suppliers are the same as providing human resources within the organization. Such as Upgrading based on merit, skill, service record, job rotation and displacement.

Non-strategic direct suppliers, human resource suppliers from the outside of the organization for routine and non-specialized processes that come from universities (researcher), human resource agencies, independent contractors, employment placement, educational interface agencies, Internet websites, associations Local networks and networks enter the organization. Of course, some of the above examples may be different from the two categories of suppliers, but their own differentiation depends on the circumstances of the job and the organization.

Indirect strategic suppliers are the suppliers that are indirectly involved in attracting the strategic human resources of the organization. Examples of these are human resources suppliers are universities (specialist training and training), audit organizations, and reagents. Non-strategic indirect suppliers, such as service companies (cleaners, chefs, software and printers, etc.), receive the list of job seekers and exhibition organizers work indirectly to provide non-strategic human resources.

#### 4.7. Human Resource Improvement

Improvement of human resource includes empowerment, training and development of human resources, increase the level of skill, knowledge, adaptability with internal and external changes, increase efficiency and effectiveness, fostering creativity and innovation, reducing tension and organizational violation, creating and enhancing motivation, and coaching and mentoring. In the human resource supply chain, human resource development operations use both ways to develop the effective human resources. The first step is to improve the internal organization through pre-process activities and in the process of developing human resources. The second way is to improve human resource through outsourcing. The organization manages human resource by assigning processes, tasks, components, and specialist personnel to external contractors. Examples of such contractors are in-service training, research and development, and service affairs.

#### 4.8. Distribution of Human Resource

In the supply chain, there are two types of direct and indirect distribution companies. The direct distributor is the same unit of personnel and human resources that directly deals with the position of the person in the desired job. The indirect distributor is the unit for job appraisal and job appraisal requirements, which introduces the main indexes for placement of the person in the desired job into the unit of labor. The main indicators of the proper distribution of the individual in the organization are: time (the hours that human resource is required to perform its duties), talent (the set of skills, abilities and genius that the human resource needs to perform in his duties) and energy (amount of

passion, concentration and attachment of human resources during tasks). The indirect distributor helps to complete the supply chain by providing accurate information to the direct distributor.

#### 4.9. Human Resource Consumer

In the supply chain, human resources are the human resource of self-organization human resources and will be the secondary consumer of clients.

#### 4.10. Collecting Information System (Feedback and Re-Engineering)

In the human resource supply chain, such as the reverse supply chain, returning the output, evaluating and re-engineering the process to the quality of inventory, estimate the cost of supplying new goods, and the number of inventories for mining, reuse or recycling. In the human resource supply chain, by measuring people through performance appraisal and assessing the human resources supply process, we will find out how many human resources should be removed from the chain, how many to enter, how many and how many to be reused.

#### 4.11. Support (Planning and Coordination) in the Human Resource Supply Chain

In the human resource supply chain, such as the supply chain, there is a need for inter-functional, between-functional, and inter-organizational coordination and in the absence of such an alignment, the components of the supply chain of the human resources cannot support each other and ultimately achieve the desired output.

### 5. Discussion and Conclusions

This world is the world of organizations, and the custodians of these organizations are human beings; people who are in the body of the organization of the soul, move it and administer it. Organizations not only have no meaning without human resources, but their management is a vital and strategic factor in the survival of the organization. On this basis, human resources are the most valuable source of today's organizations because they are shaped by organizational decisions, solve problems and problems of the organization and make them more effective (Wolff *et al.*, 2009). Considering the importance of information, awareness, and rationale as competitive advantage, and the turbulent situation of selecting and organizing human resources in society and the need to pay attention to it in order to increase the power of the labor force in the field of optimal task fulfillment, a new review on human resources and methods of absorption inside and outside the country is an indispensable necessity. Although human resource management has a direct effect on the performance of the organization and the supply chain, but the studies on linkage and integration are very limited (Honestin and Adult, 2013). A changed look at HRM and turning it into a human resource supply chain is a paradigm shift (Dischinger *et al.*, 2006).

In the factories and industries, the supply chain is used to preserve and supply goods and to improve the level of excellence. Now that we are dealing with the most strategic and valuable inventory of the organization, human resource, we must achieve this goal in order to have a model for the maintenance of this capital. In this paper, we review the literature on the supply of human resource, supply chain, and integrate these two concepts into the design of the supply chain of human capital. During the research, we used the research method of theme or theme analysis, and by studying library resources, notes and documents in this field, we finally focused on the supply chain of human resources.

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