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RESEARCH PAPER

The Functions of Human Resources' Recruitment and Supply at Universities in Transition From the Fourth Generation Based on the Meta-Synthesis Method

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Abstract
The present study aimed at presenting the elements and characteristics of human resources' supply and recruitment at fourth generation universities, through a mixed method and the meta-synthesis approach. The qualitative part included all related scientific works (212 retrieved works). Adopting Sandelowski and Barroso's (2007) method, the initial screening availed 52 works, and after the second screening based on CASP, 39 documents were finally entered into meta-synthesis coding. The conceptual modeling and opinion polling stages included 12 experts and managers in the field of human resource management. Main categories' reliability was 0.64 based on Kappa formula. The relative content validity coefficients for the categories of recruitment based on value creation for internal capacities, value increase for external talents, and cyberspace of recruitment were 1, 1, and 0.66, respectively; all greater than the minimum value (0.79). In the quantitative process that was based on descriptive and documentary methods, the analytical model of the study was proposed using the opinions of experts and evaluation of CVI-CVR. The findings confirmed the study model with 3 sub-categories, 9 concepts, and 76 codes. Finally, we maintain that the recruitment function at fourth generation universities of Iran, in accordance with the indicators of the proposed model, should be one of the priorities of the application of recruitment in the human resource management process at claimed fourth generation universities our country.

Keywords: university human resources' recruitment and supply, fourth generation universities, value creation, value increase, technology-driven.

Introduction

Human resources are a key component in all organizations; the better the human resource performance is, the better the organizations' overall performance will be. Therefore, an organization must have good employees to complete required tasks (Andry et al., 2020). Through these unique resources, it can maintain its survival at the face of weird and continuous environmental changes. Therefore, despite the profound environmental changes, it can be acknowledged that all management processes (including human resources) need to be renewed, because human resources and factors related to the management of this comprehensive system in any given organization are influential elements that enhance the

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innovation of the comprehensive HRM system. Hence, it is of great importance to pay attention to the demands of human resources as active employees (Tajeddini et al., 2020).

The social goal of human resource management is for organizations to be socially and ethically responsible for the needs and challenges of society by minimizing their negative impacts. The organizations produce output for certain groups in society. Educational organizations are expected to improve the quality of society and help solving social problems. The implementation of social goals in the field of education, especially universities, is of significant socio-cultural and economic importance (Sukawati et al., 2020). Therefore, units of human resources at universities must protect a large amount of data and information that are sufficiently collected and provided for related practitioners (Nawaz, 2020). Universities are among the organizations that should have scientific, up-to-date, and knowledgeable practitioners. They are also among the organizations with the highest number of job application inquiries. The high volume of requests as well as the need to recruit and retain the best human resources indicate the need for a proportionate recruitment process (Mossadegh et al., 2016). In this regard, the stance to the recruitment and employment of human resources has changed significantly during the last decade in all types of organizations. Some of these changes have taken place gradually while others have undergone a swift transformation. It can be said that the function of recruitment has passed its gloomy era and has adopted new aspects in the form of strategies like emphasis on evaluating the skills of internal and external talents and even video interviews due to generation change. At universities, the reactive and random recruitment trend has been replaced by an active and concentrated one. Therefore, the importance of the recruitment process for human resources department is to prevent hiring wrong people who may cost so much for organization. Apart from the offered salaries and benefits, the process of employing an inappropriate and ineffective employee may contribute to bigger losses based on wrong decisions and activities (KA, 2020). Recruitment can be viewed as consisting of a few key processes including search and communication, evaluation and decision-making, and persuasion. That is, recruitment activities include actions taken by organizations to announce their open positions to potential applicants, search for eligible candidates, and persuade them to submit applications, evaluate whether they possess required qualities and make decisions on selecting them or not, and persuade appropriate ones to accept a job offer (Acikgoz, 2019). A distinction can be made between types of recruitment efforts in terms of the targets of these activities. Specifically, while some recruitment practices are aimed at attracting individuals who are looking for jobs (i.e., active job-seekers), others target individuals who are currently employed by other organizations or are not interested in joining the workforce but would potentially be open to job opportunities if offered (i.e., passive job-seekers) (Usmani, 2020).

The importance and position of the recruitment process as the basis of human resource management is more than other related human resource management processes (Bagheri et al., 2020) such that it might be claimed that an organization like Google spends more than 187 hours for recruiting a specific employee in order to select the right and appropriate manpower (Tahmasebi et al., 2012). If an organization has the competitive advantage of recruiting and supplying effective and qualified human resources, and adheres to a certain standard, in addition to studying the nature and required characteristics of each job, it tries to collect and report sufficient information about them and eliminate inadequacies and shortcomings that arise in the quality of work life of employees (Teymouri et al., 2018). Therefore, in order to have qualified personnel at university, special attention should be paid to the effective factors in recruiting talented people. In this regard, today a new generation of universities – i.e., fourth generation universities that have been recently added to the terminology and literature of the higher education system – are gaining attention, for they prioritize influence and value

creation for academic human resources among their goals (Beygirizi et al., 2018). Fourth generation universities are universities that have educational, research, entrepreneurship, and soft technology-based missions (Jin, 2011), meaning that in addition to having the functions of the previous three generations of universities, they also have plans for scientific queries, human resources, and soft technologies (Pawlowski, 2009).

However, it seems that Iran's universities are at least two generations behind the new paradigms that govern the world's leading universities. One of the prominent obstacles facing Iranian universities' system regards the selection and recruitment of appropriate manpower based on due indices according to generation change. As previous studies have shown, such seriousness involves more training and recruitment of human resources. Hence, the functions of the human resource management system should be taken into account more seriously in future research (Tajeddini et al., 2020). Concerning the recruitment of right and talented human resources, the creation and introduction of organizational brand along with the manifestation of organizational unique features related to human resources and thinking manner become more important. Introducing internal and external development capabilities to talented individuals and helping new employees understand the point that promotion is based on competencies are among the foremost important factors in recruitment at universities. As such, considering the change in today's generations of university, universities must put aside the traditional recruitment processes and incline towards benefiting from new, emerging, and creative strategies like online and cyber space-based ones. However, in Iran's academic systems, the level of attention paid to generational differences and conflicts arisen from the perspective of parents about the next generation, from the perspective of managers about the behavior of young employees and, of course, from the perspective of the next generation towards previous managers and generations, is unfortunately neglected and ambiguous to some extent. The first generation of universities are based on education, the second generation ones are based on critical research and educational achievements, while the third generation ones aim at teaching, research, and making use of knowledge. In contrast, the fourth generation universities are defined with the aim of influencing each of the goals of previous academic generations. What distinguishes different generations of universities refers to fundamental changes in a set of interwoven features.

However, it must be acknowledged that the claim of changing the generation of human resources at universities requires fundamental changes in the concept of the university itself. For this reason, care must be taken not to abuse the concept of generation. In other words, when it is said that the fifth generation university is on the way, and when the focus is on details, we see that new ways of attracting students and human resources and establishing a field (into which a new generation of universities is entering) are being considered. Therefore, in general, due to the special structure of universities, the function of attracting human resources, like its other three functions, requires features and dimensions in line with the functions of the fourth generation universities with homogeneous and customized properties based on Iran's higher education policies and indices.

Considering the change in university generations, the problem in the process of the recruitment of human resources in Iran's universities is that unfortunately the necessities of recruiting competent individuals with employment requirements at a fourth generation university do not exist in the Iran's higher education system. People are not recruited based on future-oriented outlook, IT literacy, and foreign language proficiency, which are the most obvious characteristics of new employees. In order to identify, recruit, and supply outstanding, creative, talented, motivated, and committed human resources that own general and specialized competencies in educational and training jobs, the Ministry of Science, Research and Technology as well as the universities and higher education centers of Iran are

obliged to recruit and supply required human resources in educational, training and research professions within the framework of the competencies mentioned in general policies of transformation in the higher education system, the text of Fundamental Transformation of Higher Education, and the terms and conditions approved by the Higher Education Council in line with due attention to the conditions of internal recruitment (within the university), recruitment from foreign labor market (recruitment of external talents), and recruitment through cyberspace.

Therefore, the present study intends to consider the theoretical and experimental gaps in the existing models of recruitment in previous generations of universities in Iran. In addition, considering that the theories and frameworks of the process of human resources recruitment at fourth generation universities are not explained locally and based on Iran's general policies of higher education and that the previous studies lack coherence and do not have a general and systematic view, the dimensions and components of the function of human resource recruitment at effective universities are explained in the form of an analytical model. In addition, the question regarding the dimensions, components, and local characteristics of the function of human resource recruitment at fourth generation universities is answered.

Materials and Methods

This study was a descriptive-analytical document analysis that was conducted at macro level. Considering that the required data for this research was obtained through studying and reviewing the upstream documents and interviewing the experts via evaluating the extracted codes and indicators, it can be considered a survey-analytical and a mixed-methods study that entailed two quantitative and qualitative modes. In the first stage, which was based on qualitative method, the researcher extracted the factors (dimensions), concepts (components), and codes (indicators) of recruitment and supply of human resources at fourth generation universities via the meta-synthesis method through systematic review of the existing literature.

With the growth of research in various fields of science and the scientific community facing an explosion of information, scholars have practically concluded that knowing and mastering all aspects of a field and being up-to-date in the same field is not possible to a large extent. Therefore, conducting combined research that places the essence of research on a particular subject in a systematic and scientific way for researchers has become increasingly widespread. There are several methods for researching and understanding reality and social phenomena in the field of humanities and management. Meta-synthesis is one of the most efficient qualitative methods suitable for management studies. In this study, since many indicators were effective concerning four functions of human resource management at fourth generation universities and their study was not possible through quantitative research, the mixed method of meta-synthesis was proposed and used. Meta-synthesis is a way to build knowledge and interpret the results of previous related studies. The method is used to integrate several studies to create new findings and interpret the results. It does not mean an integrated review of the theoretical literature or analysis of identified study data; rather, it focuses on analyzing and interpreting the qualitative findings of previous studies on a particular subject. The use of meta-synthesis contributes to specific result that is larger than the set of its parts (Naderi et al., 2020). Due to the cross-sectional nature of the meta-synthesis method, in order to achieve a new perceptual and conceptual level and concerning the time consuming process of data collection and interview time, it is impossible to use a large sample size and number of experts (respondents). As such, according to Lawshe's decision making table, the minimum value of validity for the sample in the present study was 12 experts; the

relative content validity coefficient to accept the validity of the content of each item was determined as 0.56. The statistical population of the research in the qualitative section included all scientific works related to the basics of recruitment and supply of human resources and fourth generation universities. This included 304 works retrieved in the period of 2000 to 2019 for English language resources and 2001 to 2019 for Persian language resources. Based on the criterion of critical assessment skills, these works went through a screening process, and 71 works were selected for further review and analysis. The statistical population was made up of people with common traits. Therefore, the statistical population of the research in the quantitative section, interviews, and survey included 12 experts in the field of human resource management and managers related to the same field. Hence, the population was identified with the help of supervisors, advisors, high officials, and current and former officials of Iran's university system, as well as through their works, writings and studies. Based on the seven-dimension method of Sandelowski and Barroso (2007), which includes the following detailed steps, the researchers entered the meta-synthesis process and presented each of the implementation steps of the meta- synthesis method according to the previous studies as follow.

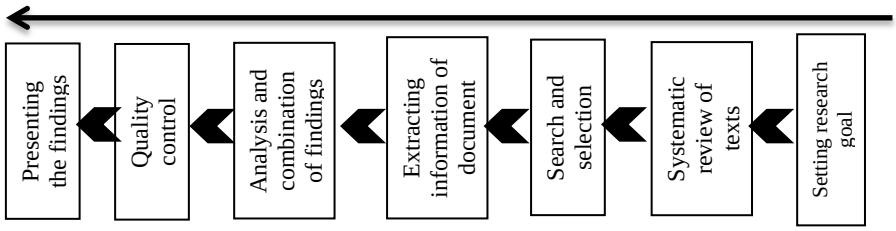

Figure 1. Seven Steps of Meta- Synthesis (Sandelowski & Barroso, 2007)

Step 1: In this step of the present research, first the basic questions were proposed. Then, by answering them, the scope of work was determined.

Table 1. Study Parameters and Questions

Parameters	Research questions
The nature of the work (what): the parameter intends to identify the elements and concepts in the body of related literature related to fourth generation universities.	What are the features and elements of the functions of the recruitment and supply of human resources at fourth generation universities?
What community (who): the parameter elaborates on various works such as papers, documents, books, and theses approved to include explanations and identification of factors and items related to human resources' recruitment and supply at fourth generation universities.	What are the factors and concepts related to the recruitment and supply of human resources at fourth generation universities?
The way to administer the method (how): the parameter deals with subject matter of works, identification of the nature of works, note taking, key points and analysis of concepts, and the categorization of identified concepts and factors to be utilized in the process of coding the indexes.	What are the appropriate indexes for the recruitment and supply of new generation of human resources at fourth generation universities?
Time period (when): the parameter consists of all existing works during 2000 to 2019 for English resources and 2001 to 2019 for Persian resources.	How the process of recruitment and supply of human resources have evolved at universities in transition to fourth generation?

Generally, the qualitative findings of the three types of studies (in the form of three clusters) were considered: qualitative-experimental studies (including interviews and

documents), quantitative-experimental studies, and theoretical studies (including theoretical papers and related books).

Step 2 (systematic review of texts): In this step, eligible studies were selected to be entered into the meta-synthesis. In addition, the inclusion and exclusion criteria were determined. Therefore, in order to extract appropriate papers from the mentioned sources using specific keywords, some certain criteria were attributed. In the present study, the criteria for the acceptance and non-acceptance of documents and papers were determined according to Table 2 below.

Table 2. Criteria for the Acceptance and Non-Acceptance of Papers in the Second Step

Criteria	Acceptance criterion	Non-acceptance criterion
Language of studies	English and Persian	Non-English and non-Persian
Publication time period for English studies	Published studies from 2000 to 2019	Published studies before 2000
Publication time period for Persian studies	Published studies from 2001 to 2019	Published studies before 2001
Credibility of studies	Published papers in technical and upstream journals	Personal comments and private weblogs
Topics of studies	Models, tools, and concepts of recruitment and supply of human resources at universities	topics not relevant to the mentioned issues

Step 3 (selecting appropriate papers through measurement validity assessment): This step included searching for and selecting appropriate papers concerning the topic in question. At the beginning of the researchers' search process, it was determined whether the collected documents were in line with the research topic and questions. In order to achieve such a goal, certain criteria for acceptance and non-acceptance were considered, and based on them a series of different studies were reviewed and reconsidered several times. In each review, a number of papers and documents were excluded and, as a result, they were not analyzed in the meta-synthesis process. Criteria for the acceptance or non-acceptance of papers and documents were determined according to Table 3 below.

Table 3. Criteria for Acceptance and Non-Acceptance of Papers in the Third Step

Criteria	Acceptance criterion	Non-acceptance criterion
Topics of papers	Relevant topics to current study	Non-relevant topics to current study
The quality of abstract	Relevant abstracts to the current study	Non-relevant abstracts to the current study
The quality of text	Relevant text to the current study	Non-relevant text to the current study
The quality of methodology	Evaluating the CASP tool with scores higher than 25%	Evaluating the CASP tool with scores lower than 25%

Figure 2 shows the algorithm used to refine the works and select the appropriate final samples. Thus, after extensive search, about 212 documents and papers related to the subject were initially studied. In terms of title and abstract, 19 and 48 documents, and in terms of content and relevance of the methodology, 43 and 50 documents were screened, respectively. Finally, 52 initially screened documents entered the meta-synthesis stage for review and analysis. After examining the appropriateness of the papers and documents based on predetermined parameters, the researchers needed to evaluate the quality of the retrieved documents. Critical assessment is a key element in a systematic review that evaluates studies to determine the best documents for a particular case (Crowe & Sheppard, 2011). Hence, in the present study, the Critical Assessment Skills Program was used to obtain the validity and reliability of the papers and documents used in the meta-synthesis method.

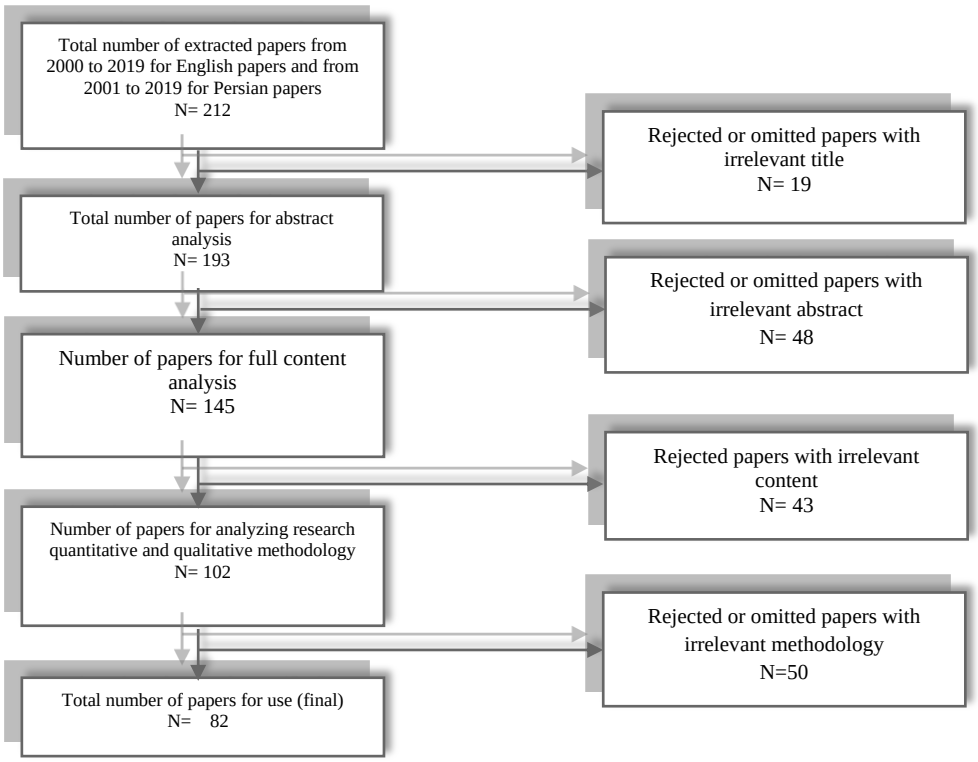

Figure 2. Selection of the Appropriate Documents' Algorithm for Analysis

The scoring is ranked as poor (0 to 10), average (11 to 20), good (21 to 30), very good (31 to 40), and excellent (40 to 50). Following the initial screening process that led to the selection of 52 documents, the second step that adopted CASP-based filtration disclosed 13 documents with scores less than 25% (poor). These were not entered into the coding and validation stage of the proposed research conceptual model and were excluded. Thus, 39 documents were labeled and entered into indexing and coding in meta-synthesis process. After identifying the appropriate documents based on CASP, the next step was the final filtration and printing of the documents to extract the required information.

Step 4 (extracting the information from documents): In this stage of meta-synthesis method, the final texts and documents were examined through content analysis method. Then, in order to provide the qualitative goal of meta-synthesis, which is a systematic and partial composition and interpretation of the works, an attempt was made to perform this stage of the study with enough patience and accuracy to provide a proper basis for the next steps of the research. As such, FRevP code was attributed to Persian review papers, FResP code for Persian scientific and research papers, EP code for English papers, CP code for conference papers, Th code for dissertations, and UD code for upstream documents.

Step 5 (analysis and composition of qualitative findings): In this step, first certain codes were considered for all the factors extracted from the previous studies, and then by considering the main category of each of these codes, they were classified into the relevant concepts. In this way, the factors, dimensions, and indicators of the research were identified such that 79 codes from pivotal coding were extracted. Among these, according to the values of content validity index, the values of 3 codes were calculated to be less than 0.79, and so they were omitted consequently. Tables 4 and 5 demonstrate the results of the related coding.

Due to the large volume of coded categories, concepts, and indexes, only the central coding table related to the function of recruitment and supply of human resources at fourth generation universities based on the cyberspace is included in the present article.

Table 4. Pivotal Coding of the Function of Recruitment and Supply of Human Resources at Fourth Generation Universities Based on Cyberspace Parameter

Main factor	Sub-factors	Concept	Code/Index	Resources for extracted indexes	Document code
Recruitment and supply of human resources at fourth generation universities	**Recruitment through cyberspace**	**Expanding the ability to the recruitment of elites**	Extraversion orientation and interaction with individuals and applicants outside the university at home and abroad, and creating a space for the employment of elites, especially in research centers and recruitment of foreign professors for educational and research cooperation	Madani et al. (2018) Strategic Transformation Plan of Tarbiat Modares University 2016-2025	FResP8 UD4
			Creating social connections and contacting experienced and specialized human resources and job seekers in cyberspace at any time (via email, etc.) and recruiting faculty members, students, and professional staff by passing the national borders	Madani et al. (2018) Ghurchian & Ahmadi Rezaei (2014)	FResP8 FResP2
			Ability to hold short-term English language courses online to provide the right staff for the units in the shortest time and at the lowest cost	Madani et al. (2018)	FResP8
			Creating a competitive recruitment space and conducting the required interviews and tests through computer in the virtual and electronic space of the university	Ghurchian & Ahmadi Rezaei (2014)	FResP2
		Creating a suitable space for developing an online recruitment system	Developing the opportunity to record personal, scientific, and professional records and professional abilities of the applicants in addition to increasing the index of local and international elite recruitment	Goodarzvand Chegini (2018)	FRevP3
			Creating control software features by sending electronic messages such as e-mails or text messages to refer the applicant to his/her personal page	Mirzaei et al. (2017)	FResP36
			Creating the ability to analyze the received information and the complete list of ready-to-serve forces to create scientific freedom and an intellectual atmosphere in the university center	Ghurchian & Ahmadi Rezaei (2014)	FResP2
			Creating a space on the university website for conducting initial team interviews online and recruiting the most qualified professors and researchers worldwide	Ghurchian & Ahmadi Rezaei (2014)	FResP2
			Updating job description and university website, and giving usernames and passwords to applicants so that they could know the results of the interview and the process of their recruitment	Khoury & Analoui (2004)	EP14

Table 5. The Frequency of Extracted Codes From Meta-Synthesis

Main and sub-factors	Document code	Frequency
Recruitment and supply at fourth generation universities	FResP34- FResP1-FResP18-FResP49- UD1- FResP38- FRevP3- FResP48- FResP39- FResP36- FResP45- Th1- FRevP2- EP12- FResP45 - FRevP6- FResP13 - FResP31- FRevP3- EP2- FResP8- Th4- FresP14- UD7-UD2- FResP41- FResP32- UD3 -CP1- UD10- EP13- UD4- FResP4- FResP17-FResP37-FResP15-EP14-Th3- FResP18.	39
Value creation for external talents	EP12- FResP45- FResP49- FRevP6-FResP2-FResP13-FResP45 - FResP31- FRevP3- EP2- FResP8- Th4 -FresP14-UD7-UD2- FResP41- FResP32- UD3 -CP1- UD10- EP13- UD4- FResP4- FResP17-FResP37- FResP15-EP14-Th3- FResP18.	29
Value creation for internal talents	FResP34 -FResP1-FResP18-FResP49- UD1- FResP38- FRevP3- FResP 48- FResP39- FResP 48- FResP36- FResP45- Th1- FRevP2- FResP32.	15
Web environment	FResP2- FRevP3 -FResP36- FResP8- UD4- EP14	6

Step 6 (controlling extracted codes to maintain quality control or determine the reliability of research results): To control extracted concepts, a comparison was made between a researcher's point of view and an expert's opinion. The Kappa Index fluctuates between 0 and 1. The closer the scale is to 1, the greater the agreement between the evaluators. However, when the kappa value is closer to 0, there is less agreement between the two raters (Mohaqar et al., 2013). To achieve this, a number of selected texts were made available to one of the members of the experts' group and the results were evaluated by the Kappa Index. Thus, in addition to the researcher who has done the initial coding, another researcher encoded the same text that the researcher had coded before, without knowing previous codes. If the codes expressed by two researchers are close, it meant there was a high agreement between the coders, and the reliability could be approved. Cohen's Kappa coefficient was used to evaluate the reliability of this method for nominal data. This index shows the degree of agreement of the two evaluators on a two-state attribution. It is usually stated that values greater than 0.7 in the index are suitable for this purpose. In some sources, the values between 0.4 to 0.6 indicate moderate agreement, values between 0.6 to 0.8 indicate significant agreement, and values above 0.8 indicate excellent agreement between the two evaluators (Mohaqar et al., 2013). In order to calculate the reliability of the extracted codes from meta-synthesis method, at first 8 papers on the subject were provided to the expert coder. It is noteworthy that previously 40 codes had been extracted by the researcher from these 8 papers.

The researcher attributed 40 codes and the expert coder attributed 32 concepts for the related factor, among which 28 were common concepts and 4 codes/ concepts were non-common ones. Therefore, in calculating the kappa value according to the tables 6 and 7, the value of Kappa index for the factor of human resource recruitment based on value creation, value increase, and technology-based measurements was 0.7. According to the status table of Kappa index, this is a valid value.

Table 6. The Status of Converting Codes into Concepts by the Researcher and the Expert Coder

Researcher's opinion			Status of conversion of codes into concepts by the researcher and the expert coder	
Total	No	Yes		
32	B=4	A=28	Yes	Expert's opinion
-	D=8	C=4	No	
-	12	40	Total	

$$\frac{\text{Number of agreements}}{\text{Number of possible agreements}} = \text{Agreement value} \quad \frac{28}{40} = 0.7 \quad \text{Calculating the Kappa value} \tag{1}$$

Table 7. Agreed Value Expressed by Two Coders

	Amount	Meaningful number
Agreed Kappa value	28	0.000
Number of credible ones	40	0.000

Step 7 (rendering the findings): In this stage, findings from the meta-synthesis, resulting from the previous stages, in the form of grouping dimensions, components and indicators extracted from the literature related to recruitment and supply of human resources at fourth generation universities were presented in the form of research model which was transferred to the final stage to determine related content validity.

Results and Discussion

In the final stage of the present study, in spite of existing limitations such as the narrow bulk of conducted research in the domain of human resource recruitment at fourth generation universities, very narrow bulk of research concerning the fourth generation universities especially at national and local levels, and also the time-consuming process of filling in the research questionnaire for its numerous concepts and extracted codes, the researchers could analyze the findings by examining and redesigning the subject variables after summarizing the extracted indicators of recruitment and supply of human resources at fourth generation universities. This was done through the distribution of a questionnaire. In the second stage, in which a quantitative method was used, the initial research model – benefiting from survey and coding methods, taking into account the conditions of fourth generation universities in Iran, and the upstream documents – was customized, localized, and surveyed by human resource management and humanities experts. Hence, the present study had two questionnaires (containing codes or indicators derived from meta-synthesis) that collected data for the purpose of surveying the opinions of the academic and organizational experts in order to localize and complete the initial model extracted from meta-synthesis and also in order to test the research model. Thus, the first category of resources used in the research, in the form of upstream documents, included statistics, charts, and citation texts related to Iran's 20-Year Vision text, Comprehensive Scientific Map of Iran, macro educational policies, general policies of the Fifth and Sixth Development Plans, Strategic Document of the Discourse of Developing Iran's Education, Research, and Technology System, the Civil Service Law of government employees, etc. The second category of resources used in the study included books, research papers, internet resources, organizations, research institutes, and related universities. The data collection tool in the present study, as mentioned before, was the formation of a panel of experts in several stages as follow.

Step 1 (the survey of specialists and experts in line with questionnaire number one): In this step, in order to comment on the model obtained through meta-synthesis, questionnaire number one was developed and distributed among 12 academic experts related to human resource management, as they were the eligible experts for the purpose of the study. This questionnaire contained factors, concepts, and codes derived from the meta-synthesis with a range of three options (necessary, useful but unnecessary, unnecessary) to measure content validity (CVR).

Step 2 (the modification of the initial research model): After the expertise test in the first step, the model's logical validity was measured. After considering the points and issues mentioned by the experts, the required modifications were made to the initial research model.

Step 3 (experts' survey in relation to the second questionnaire): The second questionnaire of the research included questions through which the researchers intended to measure the codes or indicators of recruitment and supply of human resources at fourth generation

universities. In this questionnaire, experts were asked to comment on the relevance of each phrase attributed to each code in questions with a four-choice spectrum for content validity (CVI) among the codes provided in the text of the questionnaire. Therefore, phrases and items were suggested according to the information extracted from the text of the papers. Questionnaire number two was distributed among 12 academic experts related to the field of human resource management. The researchers also used the logical validity method (face validity and content validity) to determine the validity of the items and questions of the questionnaire. It should be noted that in order to determine the validity of the meta-synthesis method as well as to calculate the validity of the selected studies and the coding process, the researchers used the CASP method. Kappa method was also used to determine the validity of the meta-synthesis method and to calculate the reliability of the extracted codes in the present study. In order to determine the validity of the survey method (i.e., the validity of items and questions of questionnaires 1 and 2), as mentioned above, in the present study, the researchers used the logical validity method (face validity and content validity).

A) Determining the face validity: In the present study, to evaluate the face validity, questionnaires 1 and 2 were provided to the experts and after receiving their comments, they were modified. At the same time, the use of ambiguous terms was avoided as much as possible. In addition, considering the instructions to fill in the questionnaire, the researchers tried to avoid the occurrence of vague points in the codes and indicators while attaching a brief but comprehensive definition of the criteria to the appendix of the questionnaire form.

B) Determining the validity of content: In the present study, to determine the validity of content in the quantitative part, two questionnaires containing the main factors and sub-factors, concepts and codes of recruitment and supply of human resources at fourth generation universities were provided to experts. Then, the comments of the members of the panel of experts were collected. Next, proportionate amendments were made to the preliminary model of research according to Table 8. In order to evaluate the quantitative content validity in the present study, the two relative coefficients of content validity (for questionnaire number one, which contained items related to factors and concepts derived from meta-synthesis) and content validity index (for questionnaire number two, which was related to the meta-synthesis survey of the validity of the extracted codes) were used.

C) Calculating the relative content validity coefficient: in order to determine related coefficient, experts were asked to review each item based on three spectrums of "necessary," "useful but not necessary," and "unnecessary." Then each of the answers was calculated based on the following Equation:

$$\mathrm{CVR} = \frac{n_{E-}\frac{N}{2}}{\frac{N}{2}} \quad \text{Calculating the Relative Content Validity Coefficient} \tag{2}$$

In this equation, n_E is the number of experts who chose the "necessary" option, and N is the total number of experts. If the calculated value was greater than the value of Lawshe table, the validity of the content of that item was accepted. According to the decision Lawshe table, the minimum value of validity for the sample in the present study (which consisted of 12 experts) was 0.56 for the relative content validity coefficient.

It must be said that due to the large volume of coded indexes, only the values of the relative coefficient of content validity for subcategories and concepts were presented in this paper.

Table 8. The Values of Relative Content Validity Coefficient for Each of the Sub-Factors of the Recruitment and Supply of Human Resources at Fourth Generation Universities

Range	Necessary	Useful but not necessary	Unnecessary	Sample size	Value of CVR	The least value of validity	Result
Factor							
Recruitment based on value creation for internal talents	12	*	*	12	1	0.56	Approved
Recruitment based on value creation for external talents	12	*	*	12	1	0.56	Approved
Recruitment through cyberspace	10	2	*	12	0.66	0.56	Approved

D) Calculating the content validity index: Concerning the calculation of content validity index, the members of the panel of experts commented on designing items regarding the relevance of each factor or item. The CVI for each code was then obtained by dividing the number of responses in rank 1 (fully related) and 2 (related but need to be reviewed) by the total number of respondents. The average CVI was defined as the CVI scale. The acceptance of each factor or item was based on the following criteria:

- If the CVI score was less than 0.70, the item was unacceptable and should be removed.
- If the CVI score was between 0.70 and 0.79, the item was questionable and needed to be corrected and revised.
- If the CVI score was higher than 0.79, the item was deemed appropriate.

For most items (concepts), the obtained content validity values were greater than 0.79. The content validity of all items (concepts) is presented in Table 9 below, and the research model and modified indexes are illustrated in Figure 3. See also Appendix for the values of content validity index for each of the codes of recruitment and supply of human resources at fourth generation universities.

Table 9. Calculating the Content Validity Index for Each Concept

Range	Fully related	Related but needs revision	Needs serious revision	Not related	Sample size	Value of CVR	The least value of validity	Result
Concept								
Recruitment based on value addition to external talents								
University branding	10	1	1	*	12	0.79	0.83	Approved
University values and culture	11	1	*	*	12	0.79	1	Approved
University condition and environment	7	3	1	1	12	0.79	0.83	Approved
Research and study atmosphere	8	2	2	*	12	0.79	0.83	Approved
Key values and pivotal competencies	10	1	1	*	12	0.79	0.83	Approved
Recruitment based on value creation for external talents								
Occupational valuing	10	*	2	*	12	0.79	0.83	Approved
Structural valuing	11	*	1	*	12	0.79	0.91	Approved
Recruitment in cyber space								
Expanding the ability for recruiting elites	10	2	*	*	12	0.79	1	Approved
Online recruitment system	11	1	*	*	12	0.79	1	Approved

After ensuring the items and codes extracted from meta-synthesis and testing and measuring them through content validity as well as providing the necessary corrections by experts, the research model and modified indicators is presented as follows (Figure 3).

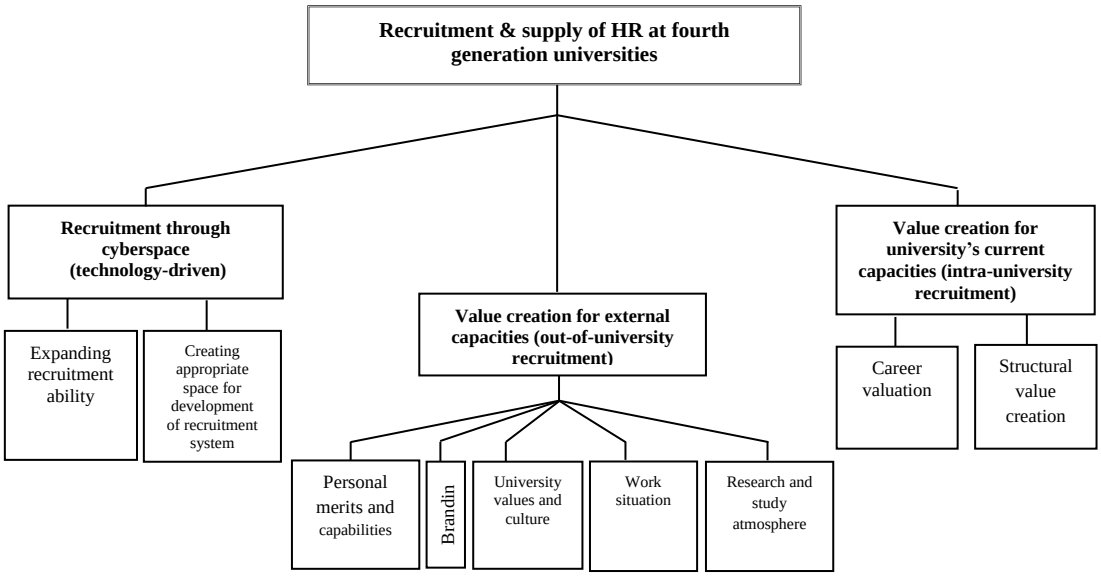

Figure 3. Research Conceptual Model

Conclusion

In the present study, based on the analysis conducted by the meta-synthesis method on 39 final selected documents, the identified components of the main factor of recruitment and supply of human resources at fourth generation universities including 3 sub-factors, 9 concepts, and 76 codes or indexes were classified on the basis of the proposed model of the process of recruitment and supply of human resources at fourth generation universities.

The general results of the present study show that the factors of value creation for external talents, value increase of internal capacities, and the state of being technology-driven are the elements and features of the function of recruitment and supply of human resources at the fourth generation universities in Iran.

A) Value creation for external talents: According to the frequency of extracted categories in meta-synthesis (Table 5), this category of recruitment has the highest frequency among the others. According to the proposed conceptual model (Figure 3), out-of-university recruitment policy was identified with five concepts and 41 indicators, each of which, according to the opinions and ratings of experts, play an important role in recruitment and supply of human resources at fourth generation universities in Iran. According to the opinions of the panel of experts, among the five concepts of recruitment, value creation for external talents is a concept that has an important and fully related role regarding the value-creating function for external talents at fourth generation universities. This concept, among other proposed indices, puts emphasis on two indicators of kinship intentions and the involvement of capitalists in the recruitment process at universities. In addition, it is related to the index of attracting capable staff regardless of orders and other issues such as having acquaintances and high-ranking people in organizations and public agencies with due attention to out-of-university recruitment of human resources at fourth-generation universities. Contrary to the results of the present study, in the study conducted by Taghizadeh Yazdi et al. (2018), university culture and values do not play significant roles in recruitment and retaining

talents at the University of Tehran. The concepts of branding, key values and core competencies, research atmosphere, and university conditions and environment are among the items that play a significant role in the application of human resource recruitment, value creation policy, and recruitment from out-of-university scientific talents at fourth generation universities, respectively.

It seems that attention to the concept of brand and reputation of the university by considering important indicators such as prestige and reputation of the group and field, being a model in the university network, the existence of potential to attract local and international students and their professional training in dynamic and active courses, offering special admission advantages to associate faculty members and higher ranks in prestigious foreign institutions, and the degree of reputation and credibility of the university among other universities and scientific centers are other items playing role in value creation for out-of-the university talents at the fourth generation universities. On the other hand, the government's adoption of a tax discount program to encourage industries to better communicate and collaborate with universities is a factor that is not very important from the perspective of experts in strengthening or realizing the branding of fourth generation universities. According to the results of the studies conducted by Tahmasebi et al. (2012) and Taghizadeh et al. (2018), branding is a concept that is very important in recruiting and retaining scientific talents at University of Tehran.

The concept of key values and personal competencies can be effective considering the indicators such as attracting and nurturing knowledgeable staff to develop knowledge-based products, good morale and related issues to beliefs and ethics, the level of knowledge and knowledge-oriented individuals, the use of significant research grants along with high quality scientific articles, the appreciation of creativity and commitment of staff in the new work environment, special and meaningful attention to the publication of articles in journals related to the field of specialization, writing and translating books, being executor or collaborator in research projects, paying attention to the art of establishing direct relationship between the process of promotion, employment, recruitment, and scientific quality at global level, and paying special attention to the applicant's educational, research, and work resume. This in turn can be useful and effective in recruiting and creating value for external capacities at fourth generation universities.

The concept of research atmosphere with important indicators such as changing university's inclination towards quality in scientific research with a focus on professors in the process of recruitment, validating success, research records and successful teaching and membership in the elite foundation, the existence of resources, facilities, and support for research and the amount of opportunities for professional and scientific development is another item that can play a significant role in value creation for external talents at fourth generation universities. However, the index of research-oriented courses and encouraging professors and students to conduct research and the formation of research groups cannot be considered as indicators related to the value creation for external talents from the perspective of experts. Contrary to the results of the studies conducted by Bamdad Sufi and Emamat (2018) and Tahmasebi et al. (2012), Deghati et al. (2017) believe that the concepts of research atmosphere and university conditions and environment are among the most important factors in attracting human resources to the University of Medical Sciences. According to the findings and views of experts, in the present study it is believed that the concept of university conditions and environment with indicators such as the quality of work and educational environment of the faculties and university, the geographical location of the university, the competence of the management team and administrative staff of colleges and university, noble students studying PhD, and the policy of employing new workers but not replacing

them play an important role in attracting and creating value for the external talents at fourth-generation generation universities.

The results and findings of this part of the research is in accordance with Iranian legal documents such as the text of the Regulations for the Promotion of Faculty Members, the 2008 Decree, and the text of the Administrative and Employment Regulations of the Faculty Members of Universities and Institutes of Higher Education and Research, approved by the Minister of Science, Research and Technology.

B) Increasing the value of internal capacities (current values): According to the frequency of the extracted factors from Meta-synthesis (Table 5), this category of recruitment has the second frequency among the three extracted categories. According to the proposed conceptual model (Figure 3), intra-university recruitment policy was identified with a total of two concepts and 26 indicators, each of which, according to the opinions and ratings of the panel of the experts, playing an important role in recruiting and supplying human resources at fourth generation universities in Iran, respectively. In this category, the concept of structural value creation plays more significant role than job valuation. According to the findings of the present study, it can be acknowledged that the concept of structural value creation for the function of recruiting and increasing the value of internal talents at fourth generation universities can be presented in the form of indicators such as creating hybridization in the work system, using internal and external rewards as a mechanisms to encourage and motivate employees, creating reflectivity in the administrative structure, the amount of human resource management budget used to attract faculty members, offering membership fees to new professors in scientific societies and participating in budget scientific conferences as an initial grant, the formation of an employment group by the dean of the faculty including professors of different orientations of a faculty and under the guidance of a successful manager. On the other hand, according to the opinions of the panel of experts, the index of using career guides containing cases of university identity to promote the native and Iranian identity of the university's human resources cannot be considered as a completely relevant index in increasing the value of internal talents at fourth generation universities. Because the basis for recruiting current employees is the complete mastery of all organizational charts and career guidelines, there is no need to re-recognize and waste time and money.

In the present study, the concept of job valuation in the category of recruitment based on value creation for internal talents at fourth generation universities was discussed. The indicators included the evaluation of innovative and merit-based compensation systems based on individual performance and work efficiency, creating value for career advancement, development, and learning opportunities, the appropriateness of working culture in order to create academic value, the challenging nature of work and tasks, prioritizing the recruitment of current English-speaking staff to interact with international students, evaluating the production of high level research works, the value attributed by the university to patents, and competition value creation based on the payment system. It seems that if a university is considered to be in the transition to fourth generation, benefiting from such indicators in its internal recruitment in relation to its occupational system, the internal recruitment process is valuable and noteworthy, and can realize the transition successfully based on current experience and talents. It is worth noting that the results of this part of the research are in accordance with the set of rules and regulations of the Ministry of Science, Research and Technology in the form of higher education evaluation indicators approved at the 550th session, 17/11/2014, Supreme Council of the Cultural Revolution, Law of the Fifth Five-Year Development Plan of the Islamic Republic of Iran (2011-2015), the text of the Strategic

Discourse on the Development of the Education, Research, and Technology System of Iran ratified in September 2015, the Executive Instructions for Hiring and Employing Non-Faculty Human Resources of Universities (2012), and the Strategic Transformation Plan of Tarbiat Modares University (2016-2025).

C) Recruitment in cyberspace: According to the proposed conceptual model (Figure 3), this category was identified with a total of 9 indicators that play important role in the process of recruitment and supply of human resources at fourth generation universities. The concept of creating a suitable environment for the development of the online recruitment system by having the indicators of creating the opportunity to record personal, scientific, and professional information and professional abilities of the applicant, increasing the recruitment index of local and international elites, creating control software facilities by sending electronic messages such as e-mails or text messages to refer the applicant to their personal page, creating the capability to analyze received information and a complete list of ready-to-serve forces to create scientific freedom, passionate intellectual atmosphere in the university center, creating a space on the university website for conducting initial online team interviews and attracting the most qualified professors and researchers worldwide, updating the job description and university website, and giving a username and password to applicants to know the results of their interview and the process of their recruitment, is a factor that at the first place plays a significant role compared to other concepts in the success of attracting talents through cyberspace at fourth generation universities. The concept of expanding the ability to attract elites by having indicators such as extraversion and interaction with individuals and applicants outside the university at home and abroad, creating space for elite employment, especially in research centers and recruiting foreign professors for educational and research cooperation, establishing social links and contacting experienced and specialized human resources and job seekers in cyberspace at any time (via email, etc.), recruiting faculty members, students, and professional staff by stepping beyond the national borders, ability to hold short-term online English language courses to provide the appropriate staff units in the shortest time and at the lowest cost, creating a competitive recruitment atmosphere and conducting the required interviews and tests via computer in the virtual and electronic space of the university plays a major role in implementing the virtual recruitment of elites at fourth generation universities. This category of research is in line with the Strategic Transformation Plan of Tarbiat Modares University (2016-2025). According to the above-mentioned issues, the category of recruitment and supply of human resources at fourth generation universities was conceptualized with the concepts of value creation and value-added human resources inside and outside the university, respectively. However, the researchers were not satisfied with this and were looking for new concepts in order to recruit human resources at fourth generation universities through studying upstream documents and up-to-date papers to be able to present another concept for recruitment and supply of human resources at fourth generation universities. According to the goals of the Comprehensive Scientific Plan of Iran to nurturing job talents and creating a career future to meet the needs of society, the goals of the science and technology system and innovation in Iran were realized correspondingly. Moreover, according to the text of the Regulations for the Promotion of the Faculty Members of Iran (ratified in 2008) and Articles 16 and 17 of the text of the Administrative and Employment Regulations of the Faculty Members of Universities and Institutions of Higher Education and Affiliated Research (approved by the Ministery of Science, Research, and Technology), if needed by the institution, the recruitment of foreign nationalities is unimpeded after observing

the required legal processes. In addition, according to the priorities of Tarbiat Modares University Strategic Transformation Plan (2016-2025), extraversion and active international presence in cyberspace and appropriate investment as well as attracting foreign professors for educational and research cooperation through technology development and electronically are among the priorities of this university. Furthermore, it seems that today the concept of recruitment in cyberspace is elaborated on in the discussions related to electronic human resource management systems. Nowadays, due to the current need for experienced manpower, we must be in contact with job seekers at all times and constantly check their information and scientific and professional backgrounds so that whenever any of the units of the organization announces the need for manpower, human resource managers can provide the appropriate manpower in the shortest time and at the lowest cost. For this purpose, it is necessary for human resource management to create a space on the organization's website to attract the required personnel and allow people to record their personal, scientific, and professional profile and job capabilities and to be able to update their information.

In terms of practical suggestions for the model presented in the present study, it can be said that the new generations of academics – at the spotlight of current literature related to the Iran's context - do not prove to be sufficiently justifiable. The underestimated use of concepts not only has no place in international literature, but also show up to be void if they are scrutinized carefully.

The need for reforming our conceptualizations of different generations of universities along with explaining the growth and functions of HRM process does not mean that we can talk about fourth-generation, fifth-generation, or even higher generations of universities. It is sometimes said that the fifth generation university is on its way, and when we go into details, we see that the new ways of attracting students or establishing a study field have been considered as entering into a new generation of universities. Sometimes high statistics does not mean progress, and any change at the university is not an example of generational change. Nor can it be argued that the growing role of cyberspace in education and international communication is the entry into a new generation of universities. More specifically, if it happens that all classes to be held virtually and the best faculty members from around the world to be hired purely virtually to teach and guide student research, one cannot claim entry into a new generation of universities yet. The claim of generational change in the university requires fundamental changes in the concept of the university, which is accompanied by attention to generational change and adaptation of each of the four functions of the comprehensive HRM system, especially the function of supply and recruitment of human resource and wealth creation. For this reason, care must be taken not to misuse the concept of generation. Therefore, the present study, based on the above-mentioned issues, was conducted in order to propose a practical goal to present and create a new and customized method of the process of supply and recruitment of human resources at universities in Iran, aiming at establishing the fourth generation universities, to change the way of human resource management at universities through upstream documents.

Referring to previous studies, it was concluded that despite conducting various studies in universities to present the characteristics of the fourth generation and third millennium universities, a systematic model for determining the elements and characteristics of HRM at the fourth generation universities has not been designed. In order to reach the action stage, Iran's higher education needs to determine its general functions in the context of the fourth generation of human resource management indicators. Therefore, the proposed model in the present study can be used to apply the function of supply and recruitment of human resources at universities that claim to be of the fourth generation in Iran.

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Appendix

Calculating the Content Validity Index for Each Code

Range	Fully related	Related but needs revision	Needs serious revision	Not related	Sample size	Value of CVR	The least value of validity	Result
Code								
Recruitment and supply of human resources at fourth generation universities – Value creation for internal talents – Occupational valuing								
Valuation of innovative and merit-based compensation system based on individual performance and work efficiency	11	*	1	*	۱۲	0.91	0.79	Approved
Creating value for career advancement, development and learning opportunities	7	3	1	1	12	0.83	0.79	Approved
The appropriateness of work culture in order to create academic value	10	*	2	*	12	0.83	0.79	Approved
Challenging nature of work and tasks	8	2	2	*	12	0.83	0.79	Approved
Prioritizing the recruitment of current English-speaking staff to engage with international students	6	5	*	1	12	0.91	0.79	Approved
Valuation of the production of high level research works	10	1	*	1	12	0.91	0.79	Approved
The rate of value attributed by the university to patents	9	1	2	*	12	0.83	0.79	Approved
Competitive value creation based on payment system	12	*	*	*	12	1	0.79	Approved
Recruitment and supply of human resources at fourth generation universities – Value creation for internal talents – Structural valuing								
Creating new methods of teaching analysis at the university	8	2	2	*	12	0.83	0.79	Approved
Forming an employment group by the dean of the faculty consisting of professors of different orientations in the same faculty and under the guidance of a principal	10	*	2	*	12	0.83	0.79	Approved
Strengthening the scientific spirit in order to strengthen the scientific ability of professors	9	2	1	*	12	0.91	0.79	Approved
Purchasing equipment and supplies of the research group (existence of equipment updating policies in colleges)	8	2	*	2	12	0.83	0.79	Approved
Providing membership right to new professors in scientific societies and participation in budget scientific conferences as an initial grant	11	*	1	*	12	0.91	0.79	Approved
Organizing different teaching methods and providing them to students	9	1	1	1	12	0.83	0.79	Approved
Using occupational guides containing cases of university identity recognition to promote the native and Iranian identity of the university human resources	8	1	1	1	12	1	0.79	Rejected
Creating a quality monitoring system and supporting young professors in the recruitment, promotion and employment phase	10	1	1	*	12	0.91	0.79	Approved
The amount of human resource management budget used to attract faculty members	9	1	1	1	12	0.83	0.79	Approved
Holding general and technical exams in line with acquiring the general competencies and supplying competent human resources (faculty members and staff)	10	1	1	*	12	0.91	0.79	Approved

Attracting, promoting, and motivating energetic staff	7	4	*	1	12	0.91	0.79	Approved
Creating hybridization in the work system (in order to eliminate the tensions between employees' unity and independence in order to motivate the creation of hybrid organizational forms (linked)	11	1	*	*	12	1	0.79	Approved
Developing special financial and recruitment criteria to make the university's financial and administrative system more agile (existence of financial attraction policies in colleges)	7	3	1	1	12	0.83	0.79	Approved
Attracting unique talents among current employees	7	4	1	*	12	0.91	0.79	Approved
Using internal and external rewards as a mechanism to encourage and motivate employees	11	1	*	*	12	1	0.79	Approved
The quality of the university education system as well as the rules and organizational process	8	3	*	1	12	0.83	0.79	Approved
Strengthening cooperation with academic and business networks	7	3	1	1	12	0.83	0.79	Approved
Creating reflectivity in the administrative structure (permanent renovation of the internal structures of the university in terms of its relationship with industry and governmental changes)	10	1	1	*	12	0.91	0.79	Approved
Providing the opportunity for employees to learn and gain experience	7	3	1	1	12	0.83	0.79	Approved
Recruitment and supply of human resources at fourth generation universities – Value creation for external talents – University branding								
The reputation of the university among other universities and scientific centers	۹	1	1	1	12	0.83	0.79	Approved
The reputation of the university among commercial organizations	7	3	1	1	12	0.83	0.79	Approved
Bestowing the privilege of participating in the call of other institutions with the consent of the institution of origin and the relevant ministry	7	3	*	2	12	0.83	0.79	Approved
Scholarship and career index as well as financial and welfare benefits during the study period	8	2	*	2	12	0.83	0.79	Approved
Existence of potential to attract local and international active students and their professional training in different stages	10	2	*	*	12	1	0.79	Approved
Prestige and reputation of the group and field, and being a model in the university network	11	*	1	*	12	0.91	0.79	Approved
Establising self-governing campuses under the brand of the university	9	1	2	*	12	0.83	0.79	Approved
Providing special recruitment advantages to associate faculty members and senior staff in prestigious foreign institutions	9	2	1	*	12	0.91	0.79	Approved
Having important and international awards by faculty members (such as Nobel prize, Ever-Lasting Name prize, etc.)	7	3	2	*	12	0.83	0.79	Approved
The value of scientific and academic freedoms	9	1	1	1	12	0.83	0.79	Approved
Adoption of tax reduction program by the government to encourage industries to better communicate and cooperate with universities (preparation of a resolution by the government for the university to cooperate with government ministries and institutions)	6	3	1	2	12	0.75	0.79	Rejected

Recruitment and supply of human resources at fourth generation universities – Value creation for external talents – University values and culture								
The degree of scientific mobility and dynamism of faculty members	9	2	1	*	12	0.91	0.79	Approved
Lack of kinship interference and the involvement of capitalism in the recruitment process at the university	12	*	*	*	12	1	0.79	Approved
Involvement of faculty members in university and faculty decision-making processes	9	1	1	1	12	0.83	0.79	Approved
Recruitment of strong staff regardless of recommendations and other issues such as having acquaintances with high-ranking people in public organizations and institutes	12	*	*	*	12	1	0.79	Approved
Having a specifically defined system for the process of recruiting human resources or acting according to the defined organizational system and culture of the university	8	2	1	1	12	0.83	0.79	Approved
The degree of transparency in the mission, performance and strategy of the university	9	1	1	1	12	0.83	0.79	Approved
Appropriateness of the provisions of contracts and recruitment for different parts, taking into account the announcement of needs by the units and performing expert work and needs assessment by related managers and officials	9	1	1	1	12	0.83	0.79	Approved
The degree of university's innovation and development driven basis	8	2	1	1	12	0.83	0.79	Approved
Recruitment and supply of human resources at fourth generation universities – Value creation for external talents – University conditions and environment								
Geographical location of the university and colleges	10	*	*	2	12	0.83	0.79	Approved
Providing opportunities to recruit elite students studying doctorate	8	2	1	1	12	0.83	0.79	Approved
The policy of employing new labor force and non-replacement	8	2	1	1	12	0.83	0.79	Approved
Quality of work and educational environment at office, faculty, and university	10	1	1	*	12	0.91	0.79	Approved
Competency of the management team and administrative staff of the faculty and university	9	2	1	*	12	0.91	0.79	Approved
Recruitment and supply of human resources at fourth generation universities – Value creation for external talents – Research and study atmosphere								
Changing the mentality of the university towards quality in scientific research with a focus on professors in the recruitment process	10	2	*	*	12	1	0.79	Approved
Valuing achievements and successful research and teaching backgrounds, membership in the Iran's National Elites Foundation, and fluency in English	10	1	1	*	12	0.91	0.79	Approved
Existence of resources, facilities and support for research	10	1	1	*	12	0.91	0.79	Approved
Research-oriented courses and encouraging professors and students to do research and form research groups	6	2	*	4	12	0.66	0.79	Rejected
The amount of opportunities for professional, scientific, and research development	10	1	1	*	12	0.91	0.79	Approved
Research and pedagogical programs	6	4	2	*	12	0.83	0.79	Approved

Recruitment and supply of human resources at fourth generation universities – Value creation for external talents – Key values and pivotal merits								
Selecting the right people according to the needs of the departments and introducing them to the dean of the faculty for recruitment	12	*	*	*	12	1	0.79	Approved
Special and meaningful attention to the publication of articles in journals related to the specialized field, writing and translating books, conducting or collaborating in research projects (increasing the quality and strategizing the research in the university)	11	1	*	*	12	1	0.79	Approved
Valuing the creativity and commitment of staff in the new work environment	11	*	1	*	12	0.91	0.79	Approved
Attracting and nurturing knowledgeable employees to develop knowledge products	12	*	*	*	12	1	0.79	Approved
The art of creating a direct connection between the process of promotion, application, recruitment, and scientific quality at the global level	11	1	*	*	12	1	0.79	Approved
Good morals and doctrine in moral issues	12	*	*	*	12	1	0.79	Approved
Use of significant research grants with high quality scientific papers	12	*	*	*	12	1	0.79	Approved
Employing nationals of other countries if necessary, after observing legal procedures	9	1	1	1	12	0.83	0.79	Approved
Disclosure of efficiency evaluation system with global standards	10	1	1	*	12	0.91	0.79	Approved
Checking the appropriateness of the team work spirit of individuals	10	1	1	*	12	0.91	0.79	Approved
Having special privileges (patent, work efficiency)	9	2	1	*	12	0.91	0.79	Approved
The added value of the applicant's excellent educational, research, and vocational resume	11	*	1	*	12	0.91	0.79	Approved
The level of individuals' knowledge and knowledge-oriented inclinations	12	*	*	*	12	1	0.79	Approved
Recruitment and supply of human resources at fourth generation universities – Recruitment through cyberspace - Expanding the ability to recruitment of elites								
Having extravert orientation and interaction with individuals and applicants outside the university at home and abroad, and creating a space for the employment of elites, especially in research centers, and recruitment of foreign professors for educational and research cooperation	9	1	1	1	12	0.83	0.79	Approved
Creating social connections, contacting experienced and specialized human resources and job seekers in cyberspace at any time (via email, etc.), and recruiting faculty members, students, and professional staff by passing the national borders	10	1	1	*	12	0.91	0.79	Approved
Having the ability to hold short-term English language courses online to provide the right staff for the units in the shortest time and at the lowest cost	11	*	1	*	12	0.91	0.79	Approved
Creating a competitive recruitment space and conducting the required interviews and tests through computer in the virtual and electronic space of the university	9	1	1	1	12	0.83	0.79	Approved

Recruitment and supply of human resources at fourth generation universities –Recruitment through cyberspace – Creating suitable space for developing an online recruitment system								
Developing the opportunity to record personal, scientific, and professional records and professional abilities of the applicants in addition to increasing the index of local and international elite recruitment	8	2	1	1	12	0.83	0.79	Approved
Creating control software features by sending electronic messages such as e-mails or text messages to refer the applicant to his/her personal page	7	٤	1	*	12	0.91	0.79	Approved
Creating the ability to analyze the received information and the complete list of ready-to-serve forces to create scientific freedom and an intellectual atmosphere in the university center	9	2	1	*	12	0.91	0.79	Approved
Creating a space on the university website for conducting initial team interviews online and recruiting the most qualified professors and researchers worldwide	11	*	1	*	12	0.91	0.79	Approved
Updating job description and university website, and giving username and password to applicants to know the results of the interview and the process of their recruitment	6	4	1	1	12	0.83	0.79	Approved