



A Talent Management Model for Active Knowledge-Based Companies in the Agricultural Sector of Guilan Province (Case of Rasht City)

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Abstract

The present study aims at providing a model for talent management in active knowledge-based companies in the agricultural domain of Guilan Province. The study was an applied and descriptive study with a mixed research method. An in-depth semi-structured interview with 30 experts was used in the qualitative part, and theoretical foundations and a research background study were applied for the qualitative data collection. To collect data in the quantitative part, a survey was used in which data were collected with a researcher-made questionnaire. The target population consisted of 150 intermediate managers, supervisors, and deputies of knowledge-based organizations in Rasht, of which 108 participants were selected via purposeful sampling method. The sample size was determined via the table of Krejcie and Morgan. SPSS19 software and Smart PLS3 software were employed to analyze the data. The results show that the dimensions identified in the field of talent management in the knowledge-based companies include internal talent identification, external talent identification, socialization (making socialized), development, and talent retention. Two components identified for internal talent identification include identification and selection of talented employees. Three factors of transformational leadership, organizational culture, and employer brand are identified as the underlying and effective factors of talent management in knowledge-based agricultural companies in Rasht city. The transformational leadership style has the greatest impact on talent management, and the employer brand is in the next rank of effectiveness on talent management.

Keywords:

Talent management, knowledge-based companies, agriculture section, Rasht City

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INTRODUCTION

Knowledge-based companies are private or cooperative institutions that aim to combine science and wealth, develop knowledge-based economics, realize scientific and economic goals, and commercialize research and development results in high technology domains with high value-added (Safae et al., 2017). More precisely, these companies are an intermediary link between ideas and technology that can lead ideas towards achieving technology. However, they have unique features that challenge their executives for human resource management. Knowledge-based companies have a largely different ratio of expert forces to total employees than the other companies. In light of this feature, we can easily understand that this seemingly good advantage can serve as a double-edged sword. Preserving talented experts in an organization requires sound management of talented experts. Most importantly, the main issue is the coordination between tasks and responsibilities among talented employees (Jafari Posteki et al., 2017).

Since agriculture has long been the main occupation of Guilan inhabitants and has played an important role in the economic and social progress of this region, the promotion and development of the agricultural sector is of particular importance for improving the economic conditions of the inhabitants of this province. Knowledge-based agricultural domain and the acquisition of modern and new knowledge in the field of agriculture can bolster the productivity and profitability in this domain. Therefore, given that knowledge-based agricultural companies can play an important role in economic and social development and sustainable growth in society (Jahanshiri & Walker, 2015), it is highly important to conduct an interdisciplinary research study on this domain, especially on how to manage these companies to achieve further growth and development and also to realize the knowledge-based economy.

Achievement to knowledge-based economies with particular attention to knowl-

edge-based companies has been discussed for several years (Khilji & Keilson, 2014). By their nature, the performance of knowledge societies leads to a profound change and improvement in their economy (Filipović et al., 2013). Consistent with the expert opinion and despite the growing number of knowledge-based economies, the needs of these companies have not yet been fully taken into account, and experts consider a high-risk business situation for them. On the other hand, any organization wishes to achieve the desired goals and successfully carry out its duties (Galabova & Ahonen, 2011). To this end, organizations must apply all resources, materials, techniques, technologies, capital, and practices effectively. The key to achieving these goals is human resources, especially talented people. Therefore, organizations need to pay more attention to them (Horvathova & Durdova, 2010).

Knowledge-based organizations have found that if they can attract and employ talented people, they can take benefit from this competitive advantage. In fact, organizations today compete with each other through talented human capital. Their ability to attract talented forces is crucial in the face of the "war on talents" in which organizations always seek to trap the best and most intelligent personnel of other organizations (Dries et al., 2013). Management style in today's organizations has been transformed from traditional mode. Consequently, solutions that were previously recommended to solve organizational problems may not be applicable today because the nature of today's organizations has shifted to the centrality of knowledge and intellectual and human property, and this requires a different attitude and solution compared to the past (Yasha, 2018). This is especially true for knowledge-based companies as it can be said that the formation and survival of these companies are tied to the issues of knowledge and knowledge capital (Rahman Seresht & Zabihi Jamkhaneh, 2016).

This fundamental change in the nature of

organizations requires a change in the viewpoints and attitudes of the organizations' managers towards their respective organization and its phenomena (Neumann & Tomé, 2011). This means that for each organization, there is a need for a unique management model to improve the productivity and maintain the capital of the organization, especially human resources because the growing number of companies has made it difficult to compete for recruiting human resources, and in the absence of proper management of talents, these companies will face an increase in different closure activities, despite the specific ideas and innovations of these companies due to a lack of appropriate conditions for cooperation and participation (Jyoti & Rani, 2014). For example, the number of knowledge-based companies has increased from 55 in 2013 to 3,000 in 2016. Also in 2013, 2145 people were employed in these companies, which reached 86,255 people in 2016, showing a clear growing trend (Pahlavani, 2017). This large number of employees has created a managerial challenge for managers, who are struggling with juvenile ideas and knowledge. In sum, keeping talented forces is of critical challenges in the management of human resources in the current century because the retention of talented and skilled employees is an important factor to maintain a competitive advantage for the organization (Cappelli, 2014).

How to keep employees is an everlasting question as the loss of an employee means the loss of money to employ and train a new employee. On the other hand, employees receive the latest technical information, and thus, companies are at risk of losing their confidential information and transferring them to competitors, so they need appropriate talent management (Govaerts et al., 2011). Despite the important role of knowledge-based organizations in developing the agricultural domain and the importance of having a talent management model appropriate to the conditions of these companies, the research background in this field is weak.

Therefore, the present study aimed at introducing a model of effective talent management in active knowledge-based companies in the agricultural domain of Guilan Province. It is an attempt to answer the main question as to how the talent management model is in active knowledge-based companies in the agricultural domain of Guilan Province.

REVIEW OF LITERATURE

Talent Management

Talent management is a human resource management issue that focuses on recruitment, development, and maintenance issues and is defined as the attempt to ensure that the right person is in the right occupation (Van Zyl et al., 2017). Talent Management is a tool for improving the process of employing and educating employees in order to attain the skills and abilities needed to meet organizational needs (Alziari, 2017). Talent management is a simple way to predict the organization's needs for human capital, and then, it creates a program to achieve them. Therefore, companies and organizations must attract, educate, and develop, and also protect and maintain their own talents. They have to ensure that there is a precise capacity to increase efficiency in the present and future (Cappelli, 2014).

Talent Management is a collection of human resource activities, including employment, selection, development, and succession (Hartmann et al., 2010). These activities are strategic and futuristic and focus on the overall goals of the organization (Mwila & Turay, 2018). The goal of talent management is to ensure the supply and satisfaction of the desired level of talents to allow fitting the right people with the right occupations at the right time based on strategic organizational goals (Atan & Stapf, 2017). Strategic talent management refers to processes and activities that include systematically identifying key positions, which help retain the organization's sustainability and competitive advantage, contribute to the development of potential talents, and ensure high-performance for the

development of distinct human resources, filling these positions with competent members, and ensuring their continued commitment to the organization (Collings & Mellahi, 2009). The introduction of talent management means that organizations and companies should take several important steps to improve decision-making processes in production and management. Given that today's businesses face a lot of uncertainties, a completely new approach to talent management should be adopted. Talent management is essential for the development of people's talents to increase the productivity of businesses and organizations (Butter et al., 2015).

Knowledge-based Agriculture

According to Druker (1988), the term *knowledge-based organization* is a collection of experts and critics that guides and organizes their performance through feedback from colleagues, managers, and clients. The structure of such an organization is based on knowledge, not hierarchy (Adriaenssen et al., 2017). Knowledge-based companies use new knowledge and creativity in the process of agricultural production in the agricultural field (Hess & Bacigalupo, 2010). Today, the role of science and technology in promoting agricultural development has been widely considered. Most agricultural development policies are based on organizing knowledge and technology flows arising from research and innovation in this area (Hosseini & Sharifzadeh, 2014).

The status of knowledge and technology in the agricultural sector can be divided into four categories: (i) the period of using modified seeds, animal fertilizer and performance lower than unit area; (ii) the period of presenting and accepting new inputs including fertilizer, modified seeds, and high-performance irrigation methods; (iii) the period of creating motivation for balanced and optimal consumption of fertilizers and other inputs to balance production levels in the long run and to reduce pressures on resources; (iv)

the period of a better use of knowledge, skills, and information needed to optimize input consumption to achieve both productivity and sustainability, simultaneously (Maghabl et al., 2016). The development of information, knowledge, and different technologies in the agricultural sector can lead to significant changes in improving production efficiency and bioefficiency. Knowledge of agriculture plays an important role in the production of qualified and healthy agricultural products, the profitability and productivity of production, the empowerment of activists in the agricultural domain, and the promotion of the human capital index (Agwu et al., 2008).

Talent Management Models

Any organization should necessarily try to accurately identify the current status of its talent management process and to recognize its strengths and weaknesses so as to reinforce its strengths and solve its weaknesses. By optimizing the talent management system, the organization should try to maximize its potential and talent capacity. Thus, studying the types of talents and identifying them will not be possible without regarding the processes and models available in this area. So, talent management models operate as a strategic tool and a roadmap for effective implementation of talent management system in an organization (Rahmatinia, 2016). Therefore, the purpose of this study is to help managers of organizations ensure that through the creation of a talent pool, they can access qualitative and efficient forces whenever they want to avoid facing with critical conditions, all of which are possible through effective implementation of talent management in their organization by reviewing and presenting numerous talent management models.

Nopasand Aseel et al. (2014) studied the relationship between talent management and organizational performance. In this study, the main dimensions of talent management are talent recruitment, talent retention, and the management of career pathway develop-

ment. The results revealed a significant relationship between talent management and service quality and innovation in providing services. Furthermore, the necessary steps for the retention of the talents in the organization have the most positive effect on the quality of the services provided, and recruiting top talents in an organization has the most positive effect on increasing the potential of innovation in the organization.

In an investigation of talent management in the context of agriculture science, [Sobhani et al. \(2016\)](#) enumerated some aspects such as recruitment, employment, training, and retention as the processes of talent management in knowledge-based agricultural companies. They also identified organizational factors such as leadership style and management and human factors like human capital as the most important initial steps of talent management.

[Chegeni and Salavati \(2016\)](#) argue that management dimensions such as employing, developing and retaining talents, exploiting talents, and identifying and separating the staff influence the organizational performance of Jihad Agriculture.

[Fallah Haghighi and Mirtorabi \(2017\)](#) presented a model that identifies the problems of knowledge-based agricultural companies. Their research findings were presented in four conceptual frameworks and 22 codes. The main themes included the lack of confidence in the products of knowledge-based agricultural companies, the shortage of facilities and support for knowledge-based agricultural companies, the weakness of administrative and legal structure in establishing knowledge-based agricultural companies, political immaturity, and lack of supportive rules in the domain of agricultural research.

[Vnoučková et al. \(2016\)](#) consider planning for talented labor force, employment, training, performance management, substitution program, and reward as the dimensions of talent management in the agricultural sector. They suggest that management back-up,

strategic development, and leadership style are the factors for key and talented staff development.

[Okoro \(2016\)](#) examined various talents in England. She identified leadership, culture, and process as the initials of talent management. The results indicated that viewpoint, communication, and change creation are the dimensions of leadership, comprehensiveness, flexibility, solving the limits as indices of processes, cultural intelligence, emotional intelligence, investors' culture, and culture's indices. Also, to make clear the pathways of progress, challenging opportunities and talent development are the indices of growth and development opportunity. [Jyoti and Rani \(2014\)](#) studied talent management techniques, their effective factors, and consequences in India. The results indicate that talent management methods include talent identification, succession planning, talent development, and talent retention. Prerequisites of talent management include business strategy, senior management commitment, employer brand, and employees' engagement in the work.

METHODOLOGY

The present research is an applied study in terms of objective and a descriptive study in terms of the research design. Also, it is cross-sectional in terms of time and a mixed methods study in terms of the nature of data.

In the qualitative part, the components and parameters of the talent management were identified by a phenomenological approach and in-depth interviews with experts, and in the quantitative parts, the prototype of research was tested using data from the questionnaire. In the qualitative part of the research, the population consisted of experts including directors, top managers, and senior managers of the knowledge-based companies in the agricultural sector of Guilan Province. The inclusion criteria for the experts were having an academic degree such as a master's degree or higher and having at least 15 years of relevant work experience. In

this section, 30 experts were selected through snowball sampling in order to identify the dimensions and factors of talent management and its influential factors.

The quantitative part of the population included middle managers, supervisors, and deputies of the aforementioned companies whose selection criteria were having a bachelor's degree or higher and having at least 15 years of relevant work experience. They amounted to about 150 people, and accordingly, the sample size was determined to be 108 individuals using the Krejcie and Morgan table. In this section, 115 questionnaires were administered and finally, 110 questionnaires were collected. Experts' opinions were used in the research design model.

The research model was tested from the viewpoints of middle managers, supervisors, and deputies. To select the sample size, at first 30 experts were selected using the snowball sampling method to design the conceptual model of the research and to extract the components and indices of the talent management model for the knowledge-based agricultural companies in Rasht. They answered the questions of the researcher in an open and unstructured interview. In the next step, the methodology was done based on the views of the 110 individuals of the sample size, among middle managers, supervisors, and deputies of the knowledge-based organizations. These individuals were selected through purposeful sampling to answer the questionnaire and provide quantitative data.

To collect data for the formulation of the theoretical foundation and to identify the main dimensions and components of talent management in knowledge-based companies and the factors affecting them to build the research model in the field study, the library method and the Colaizzi method were applied, respectively. The Colaizzi method consists of seven steps, including:

- First, the participants' description was read to get an overview of the whole.
- Then, manifests, sentences, and phrases

were extracted.

- Meanings and concepts were formulated from manifests and important phrases.

- Formulated meanings were conceptualized and codified.

- Meanings and concepts were formulated and placed within the subject categories and clusters.

- Key clusters and themes were obtained and the basic structure of the model was designed.

- Finally, for validation, the participants evaluated the results of the analysis. "Are the findings similar to the experiences they have had?"

Then, the research questionnaire was designed and validated based on the initial model. In the qualitative part, a semi-structured in-depth interview with experts and also the theoretical foundations and research background study were used for qualitative data collection and also required data collection, respectively. To collect data in the quantitative part, a field study was used. The questionnaire consists of two sections. In the first section, demographic information including age, gender, work experience, and the level of education of respondents was investigated. The second section contained specific items as to the research variables. In the research questionnaire, 30, 15, 6, and 12 items were considered for talent management, employer brand, organizational culture, and transformational leadership style, respectively. The 5-point Likert scale was used to measure the items. [Table 1](#) shows Cronbach's alpha coefficient for the whole questionnaire and each of the variables in 20 questionnaires. Given that the calculated alpha for variables and the whole questionnaire was greater than 0.87, it could be concluded that the research questionnaire had sufficient and necessary reliability.

Table 1
Cronbach's Alpha Coefficient

Variable	Cronbach's alpha coefficient
Talent Management	0.92
Employer Brand	0.90
Organizational Culture	0.89
Transformational Leadership Style	0.87
Total Questionnaire	0.95

The research findings were analyzed in two quantitative and qualitative sections. In the qualitative section in that experts were interviewed to design the research model, some questions were asked, some of which are presented below as examples:

What strategies are used to attract, identify, and select talented employees in your organization?

What strategies are used to develop talented employees in your organization?

What strategies are used to retain talented employees in your organization?

What factors affect your talent management strategies in your organization?

In the qualitative section, the procedure provided by Colaizzi (1978) was applied to analyze the data collected from the in-depth interviews of the descriptive phenomenology. This approach has seven stages. In the quantitative section, data were analyzed by descriptive and inferential statistics.

RESULTS

The results of the qualitative analysis of the data, which were extracted by the Colaizzi method based on open codifying, axial and selective coding are presented in Table 2.

In the quantitative section, the factors identified in the qualitative section were formulated in the form of a Structural Equation Model (SEM) and tested. At first, to analyze the qualitative data and distribution of data, the Kolmogorov-Smirnov test was used. Therefore, to construct a quantitative model, the SEM with PLS software was used.

In the next step, an SEM was used to test the

research model in the population. Figure 1 shows the confirmatory factor analysis model in the case of estimating standard coefficients mode. In this figure, the coefficients are divided into two categories. The first category is called measurement equations, which show the relationship between obvious variables and hidden variables, which are called factor loadings. The second group is the structural equation that shows the relationship between hidden variables, which are called path coefficients. Based on Figure 1, it can be concluded that in the studied population of the present study, five elements including internal talent identification, external talent identification, socialization, development, and retention constituted the confirmed aspects of talent management.

According to the results of SEM, among these factors, talent retention with a path coefficient of 0.84 and talent development with a path coefficient of 0.79 were ranked at the highest levels of importance, respectively. Subsequently, internal talent identification, external talent identification, and socialization with path coefficients 0.75, 0.75, and 0.74 are ranked, respectively. Identifying talented employees and selecting talented employees were considered the indices of internal talent identification. The attraction and selection of external talents were identified as the indices of external talent identification. Appropriateness of a person to job and referrals and also, education and career were confirmed as the socialization indices and also talent development separately. Service compensation and immaterial moti-

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Table 2
Concepts, Main and Sub Themes for Talent Management Model

Axis of Study	Main Themes	Sub-themes	Concepts (Basic Themes)
Talent Management Process	Internal talent Identification	Identification of talented employees	Identifying the needs of the organization and identifying the employees that can respond to the needs of the organization; Familiarity with key employees features;
		Selection of talented employees	Selection of talented employees through assessment of their performance and work experience; Selection of talented employees based on their knowledge, abilities, and skills;
	External talent identification	Attracting external talents	Searching for volunteers outside the organization; introducing qualified individuals outside the organization by experts;
		Selection of external talents	Employing volunteers based on academic abilities and work experience; Selecting talented volunteers based on personality and ethics;
	Socialization (Making socialized)	Appropriateness of a person to Job	Being sure about enjoying job requirements by knowledge, abilities, talents, and skills; Paying attention to the spiritual and personality needs of talents by job requirements;
		Referrals	The necessity to understand the culture of the organization by talents; The necessity for being aware of the talents about working conditions;
	Development	Education	Creating learning opportunities for talents before starting work; Planning to improve the level of knowledge, skills, and abilities of talents in service;
		Career pathway	Identifying individuals 'desires to choose career pathways; Planning for job promotion opportunities;
	Retention	Services compensation	Designing a direct service compensation system; Designing an Indirect Service Compensation System;
		Immaterial motivation	Providing psychological needs of talents; Providing positive feedback;
Underlying and Effective Factors	Employer brand	Interest value	Creating a creative and innovative work environment; Creating challenging businesses;
		Economic value	Planning for the job promotion of talents; Paying salary and benefits higher than average level;
		Social value	Creating a pleasant working environment; Encouraging friendly relationships at working environment;
		Development value	Creating self-esteem in talents;
		Applied value	Creating an opportunity to apply knowledge and expertise; Creating an opportunity for the exchange of knowledge and expertise among talents;
	Organizational culture	Adhocracy culture	Designing a flexible organizational structure; Authority decentralization and delegation;- Encouraging risk taking in the implementation of new ideas' domain;
		Participatory culture	promoting team and group working and cooperative spirit;
	Transformational leadership	Idealistic prestige	The charismatic power of the employer;
		Inspirational motivation	Planning to increase the working motivation of talent; Planning to increase the working commitment of talent;
		Mental persuasion	Encouraging talents to dynamic thinking and brainstorming; Encouraging talents to identify problems and solve them;
	Individual consideration	Employer's attention to individual talent needs;	

vation were considered the indices of talent retention. Service compensation and immaterial motivation with a factor loading of 0.87 were considered the most important indices. Similarly, three factors including employer brand, organizational culture, and transformational leadership were also identified as the factors affecting talent management. Transformational leadership with a path coefficient of 0.765 and also, employer brand and organizational culture with path coefficients of 0.75 and 0.72 were ranked at the highest levels of importance, respectively. The dimensions of the employer brand are in-

terest value, economic value, social value, development value, and applied value. Also, the adhocracy culture and participatory culture were identified as the dimensions of organizational culture and idealistic prestige, inspirational motivation, mental persuasion, and participatory culture were also considered the dimensions of transformational leadership. Among these factors, the transformational leadership style had the greatest impact on talent management, and the employer brand was ranked next in terms of the impact on talent management.

Table 3
The Kolmogorov-Smirnov Test

Variable	p-value	Kolmogorov Z statistic	Result
Employer Brand	0.45	0.86	Normal
Organizational Culture	0.86	0.89	Normal
Transformational Leadership	0.89	1.71	Normal
Talent Management	0.037	2.23	Abnormal

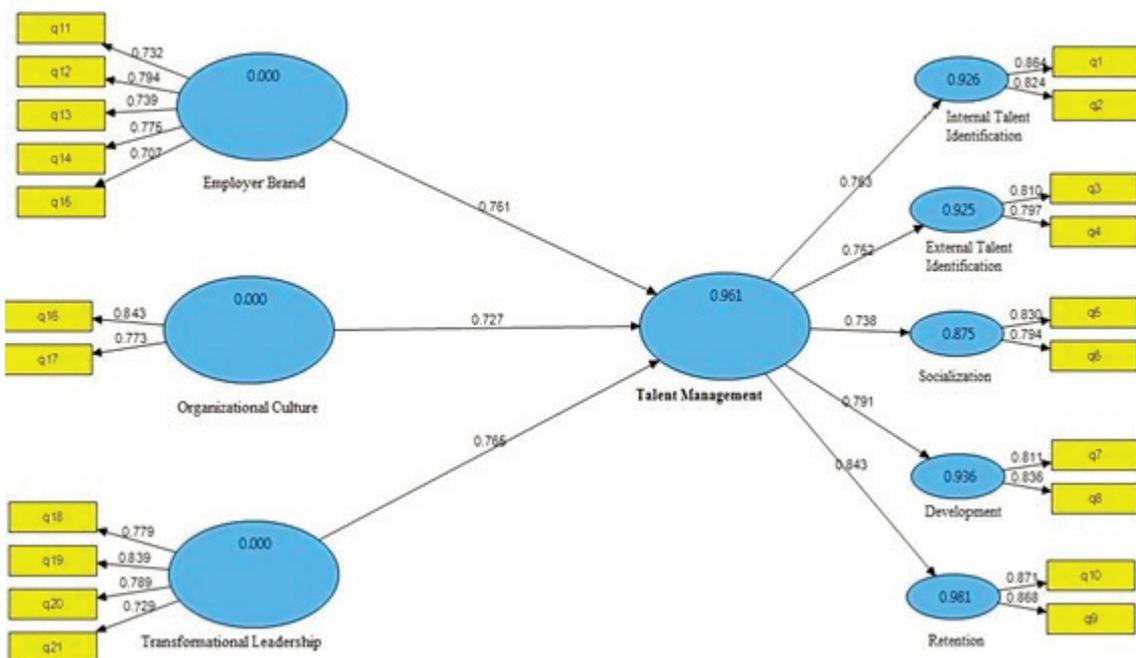


Figure 1. The research model in estimating standard coefficients mode

Based on the confirmatory factor analysis model in significance mode, pathways whose absolute value coefficients are greater than 1.96 are significant. Since the model of this research was tested at the 95 percent confidence level and given that the coefficients of all the pathways in the confirmatory factor analysis model were greater than 1.96 in the significance mode, it can be concluded that all the relationships in the research model are significant.

Factor loadings are calculated by calculating the correlation between the indices of a structure with that structure that shows a value of 0.5 and indicates that the variance between the structure and its indices is

greater than the variance of the measurement error of that structure and its reliability is acceptable. If the factor loading is less than 0.5 for an index, it should then be excluded from the model.

Factor loadings of more than 0.7 are more acceptable (Hair et al., 2010). In this study, according to Table 4, the factor loading for all indices is greater than 0.7. Also, considering that at the 95 percent confidence level, the t-value of the factor loadings of each index is greater than 1.96, it indicates the significance of the factor loadings. Therefore, it can be concluded that the research measurement model is appropriate in terms of factor loadings.

The general criterion of GOF was used to

Table 4
Factor Loading Coefficients of the Measurement Model

Codes	Indices	Factor loading	p-value
q1	Identification of talented employees	0.86	29.5
q2	Selection of talented employees	0.82	19
q3	Attracting external talents	0.81	20.1
q4	Selection of external talents	0.80	7.7
q5	Appropriateness of a person to Job	0.83	23
q6	Referrals	0.79	9.15
q7	Education	0.81	21.17
q8	Career pathway	0.84	25.7
q9	Service compensation	0.87	35.1
q10	Immaterial motivation	0.87	37.4
q11	Interestvalue	0.73	8.3
q12	Economic value	0.79	21.2
q13	Social value	0.74	7.6
q 14	Development value	0.77	7.5
q15	Applied value	0.71	6.8
q16	Adhocracy culture	0.84	8.2
q17	Participatory culture	0.77	4.7
q18	Idealistic prestige	0.78	9.7
q19	Inspirational motivation	0.84	18.7
q20	Mental persuasion	0.79	8.4
q21	Individual consideration	0.73	6.4

measure the goodness of fit of the whole model. Wetzels et al. (2009) introduced the GOF of 0.01, 0.25, and 0.36 for weak, moderate, and strong fit, respectively. The GOF in

this study is 0.83, so it can be said that the general fit of the research model is strong. The following formula was used to calculate this criterion:

Table 5
AVE and R² Indices

Structure	AVE	R ²
Talent Management	0.68	0.961
Internal Talent Identification	0.66	0.926
External Talent Identification	0.71	0.925
Socialization	0.70	0.875
Development	0.77	0.936
Retention	0.67	0.981
Employer Brand	0.69	-----
Organizational Culture	0.88	-----
Transformational Leadership	0.76	-----
Mean	0.74	0.935

DISCUSSION

In methodology, the the matic analysis of the data was used to answer the question “What are the dimensions, components, and indices of talent management in knowledge-based companies in the agricultural sector of Guilan Province?” Five elements were identified as the dimensions of talent management in the studied knowledge-based companies. The identified dimensions of talent management in the knowledge-based companies include internal talent identification, external talent identification, socialization (making socialized), development, and talent retention. The two components identified for internal talent identification include the identification of talented employees and the selection of talented employees. The recruitment of external talents and the selection of external talents were also identified as the components of external talent identification. Two components including referrals and appropriateness of a person to the job were identified as the components of socialization (making socialized). The components of talent development include education and career development (career pathway development). The identified components of talent retention are service compensation and immaterial motivation.

So, it can be concluded that in the knowl-

edge-based companies of the agricultural sector in Guilan Province, implementing effective talent management strategies generally consists of five sections. In these types of companies, talent identification is done internally and externally, and these two methods are used complementarily. If there are talented employees within an organization whose promotion to more sensitive and important positions and whose recruitment can make further development of the organization possible, senior company officials identify them and after evaluating them, they decide on their selection and promotion to higher posts. Also, knowledge-based companies try to find out more talented forces from outside the organization and to take advantage of new ideas and thoughts. An organization can successfully act in recruiting talented individuals outside the organization by searching for talented individuals at top universities and declarations or their introduction by trusted talents and experts. After recruiting talented volunteers, they are evaluated based on their scientific abilities and work experience and their personality and ethical characteristics, the most talented individuals are chosen. According to the results in the quantitative modeling section, internal and external talent identification are almost equally important for the effective talent

management process. Therefore, it can be concluded that if talented employees and volunteers are properly identified and recruited, their selection will be made with greater ease and confidence.

After using the talents, it turns into socialization and making socialized. At this stage, referrals are carried out and the talents become familiar with the organization's culture, conditions, working hours, and colleagues. Also, authorities in using talents should be fully confident in the suitability of the skills and abilities of the talents to the needs of the job. At this level, talents are employed in a situation where the needs of the job are met by their abilities and skills, and the mental and personality needs of the talents are also provided by job requirements. According to the results of this study, among the indicators of socialization in knowledge-based companies, the appropriacy of occupation with the employees is more important than the referrals.

Talent development is another talent management strategy that plays an important role in the growth and development of talented personnel. According to the results of the study, in knowledge-based companies the development of talents is of great importance because the development of talents improves their knowledge, skills, and abilities and thus, improves their performance and increases the productivity of talents.

Companies in this part help them educate, making them familiar with better ways to do things through creating learning opportunities for talents before they begin to work. Another way to develop talent is the career pathway (progress in career pathway). In this regard, authorities in talent development in knowledge-based companies in the agricultural sector of Guilan Province are working to identify individuals' desires in choosing career pathways and planning to create job opportunities. The results indicate that in knowledge-based companies, career pathway is more important than education among the indices of talent development. Hence, it

can be concluded that for talented individuals, planning for job progress has great importance and makes more motivation to do the job. In knowledge-based companies, talent retention is the most important level in talent management because the loss of talent imposes a heavy cost on companies, it will be very difficult to replace talent for companies and it will be very difficult for companies to replace talents. In knowledge-based companies, given that knowledge and creativity of talented individuals are the basis of activities, retention of talented personnel is much more valuable than recruitment of new talents because the organization has spent on educating employees and they are also familiar with some of the company's important and confidential information.

With the exit of talents and their recruitment by rival companies, knowledge-based companies not only lose creativity and new ideas but they may also be at the risk of disclosure of confidential information to competitors, and thus, their ability to compete and survive face serious problems. At this level, knowledge-based companies design a system for effective service compensation and consider immaterial motivation to retain talents in the organization and prevent them from leaving their jobs. Immaterial motivations and service compensation system are considered the most important indices of talent management models in knowledge-based companies although motivational and immaterial encouragers seem somewhat more important than the system of material service compensation. Thus, for talented employees, internal rewards are more important than external rewards, but external rewards are also important and should not be overlooked. To this end, companies use a variety of methods such as paying salaries in accordance with talent's abilities, unemployment, medical and supplementary insurance, welfare benefits, encouragements and material and immaterial rewards, formal appreciation of talents, positive feedback to talents, and creating job security. According to the results of this study,

to answer the question as to "what are the underlying and effective factors in talent management in knowledge-based companies of the agricultural sector in Guilan Province?", three factors of transformational leadership, organizational culture, and employer brand were identified as the underlying and effective factors in talent management in the agricultural sector of Guilan Province.

Moreover, interest value, economic value, social value, development value, and applied value were identified as the dimensions of the employer brand. Idealistic prestige, inspirational motivation, mental persuasion, and individual consideration and also, adhocracy culture and participatory culture were considered the dimensions of transformational leadership and the dimensions of organizational culture. Based on the SEM of the research, it can be concluded that the transformational leadership style has the greatest impact on talent management in knowledge-based companies. Among the dimensions of the transformational leadership style, the mental persuasion, and also, idealistic prestige, inspirational motivation, mental persuasion, and individual consideration are of the highest importance and priority and also, of the next priorities, respectively.

Therefore, it can be believed that in knowledge-based companies, transformational leaders who influence their followers and inspire them to try for the achievement of the organization's goals play a very important role in enhancing the performance of talented employees and increasing their efficiency and effectiveness. Also, transformational leaders help in increasing productivity and promoting their performance by creating a sense of respect, honesty, commitment, loyalty, and accountability in talented employees. In this situation, the most important factor is the stimulation and mental persuasion of talented employees to create creative ideas in them and find innovative solutions by them. Also, identifying the talented employees by the employer and influencing them through the values and

leadership beliefs are also important dimensions of transformational leadership that affect the process of effective talent management in knowledge-based companies. Motivating talented employees by the employer through creating a situation for the contribution of talent to the future viewpoints of the organization increases their commitment, and so, it is important to run an effective talent management process. Also, individual consideration is another factor in the implementation of effective talent management in knowledge-based companies. That is, the employer should pay attention to the needs of the employees and address the concerns, needs, and welfare of the subordinates.

The results of the study show that the employer brand can play an important role in an effective talent management process in knowledge-based companies. Since the employer brand makes the employer different from competitors and causes gaining competitive advantage for the company, knowledge-based companies can attract talented employees through branding for themselves and retain them by showing more commitment, satisfaction, and loyalty. Among the dimensions of the employer brand, interest value is considered the most important component. Development value, social value, economic value, and applied value are in the next ranks, respectively. Given the important role of interest value, it can be concluded that in knowledge-based companies, authorities need to encourage the creativity of talented employees and use their creativity to innovate new products and services and apply them into challenging and exciting jobs to create an effective talent management system. The development value is another factor that is in the second level of importance.

The authorities of the knowledge-based companies can contribute to the better implementation of the talent management process by transferring the work experiences to the talented employees and fostering self-esteem and developmental skills in them. Since the social value is ranked third in terms

of importance, this value should also be considered in designing an effective talent management system. In this regard, authorities should provide a friendly and pleasant work environment for talented employees and create a job promotion situation in them. To create an effective talent management system, the economic value should not be ignored. Talented employees should be sure that they have the appropriate salary and benefits higher than the average level.

Ultimately, knowledge-based companies should afford an opportunity for talented employees to be able to apply their knowledge and skills to work and transfer their expertise and knowledge to their colleagues. This can be done by having an effective talent management system in place. Based on the results of this research, another factor that contributes to creating an effective talent management system in knowledge-based companies is organizational culture. Hence, it can be concluded that organizational values also affect the proper management of talents, such as recruiting, socializing, and retaining employees. The results of the SEM show that there are two types of cultures in knowledge-based companies. Between the dimensions of organizational culture, adhocracy culture has the greatest role in creating effective talent management and participatory culture is in the next ranking.

In the adhocracy culture, power and authorization are distributed at different levels and emphasize on risk-taking, creativity, and innovation. This type of culture can be attractive to talented employees and provide the necessary motivation for them to work in the company. Also, the participatory culture is another factor that creates an effective talent management system for knowledge-based companies. Creating a flexible working environment, the spirit of teamwork, and necessary and sufficient devolution to talented employees can attract them to the organization and encourage them to continue to work with the organization and not to leave the job.

Regarding the identification of the dimen-

sions of talent management such as recruitment, employment, training, job development trend, and talent preservation, the results of the present study are in agreement with the results reported by [Nopasand Aseel et al. \(2014\)](#), [Sobhani et al. \(2016\)](#), [Chegeni and Salavati \(2016\)](#), and [Vnoučková et al. \(2016\)](#). Similarly, with regards to the employer brand, the results are in line with the findings of [Jyoti and Rani \(2016\)](#) and [Vnoučková et al. \(2016\)](#).

CONCLUSION

Based on the results of this study, in the context of talent identification from inside the company, it is suggested to the authorities and senior managers in the knowledge-based companies of the agricultural sector in Guilan Province to select the talented employees based on the evaluation of managers about the quality of their performance and effort, a review of career history, and their measure of accountability, as well as an evaluation of their ability to learn new skills. Also, for the successful implementation of the talent identification strategy outside the company, it is first recommended to use public recalls in mass media to recruit talents. Also, internal experts and elites can be asked to introduce their talented and endorsed individuals to the company.

Recruitment through the Elite Foundation and the search among students and elite graduates of prestigious universities is another way of recruiting talented individuals from outside the company. After attracting the talents, it is suggested that the talents are subjected to job knowledge testing, psychological testing, personality testing, and professional and behavioral interviews. Considering that socialization is also one of the other talent management strategies in knowledge-based companies, it is suggested that socialization be used before applying the talents. In this setting, it is advisable that employees be occupied in positions which are consistent with their education, knowledge, skills, and abilities and also in positions which

are appropriate to their personality characteristics and spirit by conducting the necessary examinations and referring to the job description and taking the characteristics of the talented personnel into account.

In the meantime, it is better to provide a program in which talented employees are fully familiarized with the organizational values and norms, organizational environment, working conditions, and colleagues' conditions as well as working hours before they start working. For the successful retention of talented employees in the company, it is important to pay lots of attention to encouragements and immaterial motivation. In this regard, the formal appreciation of talents in intermittent periods, providing positive feedback to talented employees in the field of job performance with the aim of increasing job motivation, and creating job security for talents can be considered useful strategies. Material rewards are also very important at this level. Consequently, it is suggested to design an effective service compensation system, such as paying salary and benefits appropriate to talents abilities, by taking into account the unemployment, medical and supplementary insurance, and suitable welfare facilities for talented personnel, and providing encouragements and cash rewards to talented personnel, thereby increasing the probability of employee retention in the organization. Bearing in mind that the development of talented personnel is considered an important level in talent management, it is recommended to employers, authorities and knowledge-based companies to pay attention to educating and developing career pathways for talents for the further promotion of their capabilities.

The attention of authorities to creating opportunities for job promotion of talents and planning for the professional enrichment of talented employees is a useful tool for developing career pathways of the talents. It is suggested to employers and authorities of knowledge-based companies to provide necessary education with the help of coaches and during work. Job rotation is also an im-

portant educational method that can be used to improve the skills and abilities of talents. Conducting educational programs for familiarizing the talented personnel with new tools and methods and transferring modern knowledge to them before starting working can also play an important role in educating these employees. So, according to the results of this study, the strengthening of the transformational leadership style by employers can lead to successful talent management. To strengthen the transformational leadership style in the company, it is suggested that employers encourage the employees to foster new thinking and use new work methods. They should also teach them to look at problems from different perspectives to find a creative solution. It is desirable for employers to be strong and confident in decision making and actions, treat talented employees ethically and prove to their subordinates in their performance that they prefer the interests of the organization over their own interests.

In addition, employers are advised to develop a sense of optimism about the company's future successes among employees and use polling from talented employees to outline the future viewpoints because they will have a greater motivation to achieve success through participating in the codification of the company's viewpoints. It is recommended that employers pay attention to the needs, problems, and concerns of the talented employees and help develop their strengths and remove their weaknesses. Another factor that creates effective talent management is the employer brand. It is suggested that employers and authorities of knowledge-based companies make successful talent management strategies with their branding for themselves. To become nominated and brand among competitors, it is suggested to employers and authorities of knowledge-based companies to be creative and innovative and use the creativity of employees to create added value, an exciting and creative work environment, and self-confidence in employ-

ees and transfer their experiences to them. Meanwhile, creating a pleasant and happy working environment, friendly relationship between the employer and employees, and encouraging them to have good and friendly relationships with each other can help the employer to become a brand. It is worthwhile for employers to provide salaries higher than average, opportunities for development, job promotion, and motivational service compensation packages for talented employees.

Creating opportunities for talented employees to use their knowledge at the workplace and share their knowledge with others can lead to making an employer a brand. Employers and authorities of knowledge-based companies are advised to create an effective talent management system by focusing on the creation of organizational, adhocracy and participatory culture. Designing a flexible organizational structure that is capable of adapting to changing situations, not concentrating power at the highest levels of the organization, sufficient devolution to talented employees, and encouraging them to creativity, innovation, and risk-taking are among the ways of creating an adhocracy culture in knowledge-based organizations that can lead to creating an effective talent management system. The strategies for creating participatory culture are creating teamwork opportunities, promoting the spirit of teamwork, and encouraging employees to work together as family members.

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