
**Identification of the components of human resources development in Iran
meteorological organization, and presenting the model**

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Abstract

The present study aims at the identification of the components of human resources development in Iran Meteorological Organization and presenting the related model. The method of application in the present study is of combined research type. The qualitative part of the research is a content analysis while interviewing the experts of the field. This part of the research aims at extracting the components of "Human Resources Development in Governmental Organizations". In the quantitative section, the method of application is of descriptive and measuring type. In the qualitative part, the population under the study consists of all studying documents related to human resources development as well as an interviewing seven academic experts of human resources development section in governmental organizations. In the quantitative part, the population under the study consists of all managers and employees of Tehran's Meteorological Organization. In compiling data of the qualitative part, the researchers applied MAXQDA12 Software for identification and categorization of topics. Among 174 open codes, 39 codes have been recognized finalized, and 14 items have been defined. For compiling data in the quantitative part, questionnaires have been designed based upon identified topics of the qualitative section. The created questionnaires based upon such model have been executed on 196 managers and employees of Meteorological Organization. Consistency of the questionnaire has been recognized as 0.8. Findings of the PLS structural equations on compiled data indicate that the model enjoys a functional fitness ($\alpha=0.879$, $CR=0.845$, $AVE=0.674$, $R^2=0.693$). Results of execution of the research suggest that human resources development in the sample organization of research shows a grade so close to the average possible point in various dimensions such as doctrinal, political, social, economic and entrepreneurship. It is true while it was expected that the examined organization enjoys a robust entrepreneurship, doctrinal, political, and social dimensions.

Keywords: Human Resources Development; Iran Meteorological Organization; Content Analysis Method; Structural Equations Technique

Resumo

O presente estudo tem como objetivo identificar os componentes do desenvolvimento de recursos humanos na Organização Meteorológica do Irã e apresentar o modelo relacionado. O método de aplicação no presente estudo é do tipo de pesquisa combinada. A parte qualitativa da pesquisa é uma análise de conteúdo ao entrevistar os especialistas da área. Esta parte da pesquisa tem como objetivo extrair os componentes do "Desenvolvimento de Recursos Humanos em Organizações Governamentais". Na seção quantitativa, o método de aplicação é do tipo descritivo e de medição. Na parte qualitativa, a população estudada consiste em todos os documentos de estudo relacionados ao desenvolvimento de recursos humanos, além de entrevistar sete especialistas acadêmicos da seção de desenvolvimento de recursos humanos em organizações governamentais. Na parte quantitativa, a população estudada é composta por todos os gerentes e funcionários da Organização Meteorológica de Teerã. Ao compilar dados da parte qualitativa, os pesquisadores aplicaram o MAXQDA12 Software para identificação e categorização de tópicos. Entre 174 códigos abertos, 39 códigos foram reconhecidos finalizados e 14 itens foram definidos. Para compilar dados na parte quantitativa, foram elaborados questionários com base nos tópicos identificados da seção qualitativa. Os questionários criados com base nesse modelo foram executados em 196 gerentes e funcionários da Organização

Meteorológica. A consistência do questionário foi reconhecida como 0,8. Os resultados das equações estruturais do PLS nos dados compilados indicam que o modelo possui uma aptidão funcional ($\alpha = 0,879$, $CR = 0,845$, $AVE = 0,674$, $R^2 = 0,693$). Os resultados da execução da pesquisa sugerem que o desenvolvimento de recursos humanos na organização da amostra mostra uma nota tão próxima do ponto médio possível em várias dimensões, como doutrinária, política, social, econômica e empreendedora. É verdade que se esperava que a organização examinada desfrutasse de um empreendedorismo robusto, dimensões doutrinária, política e social.

Palavras-chaves: Desenvolvimento de recursos humanos; Organização Meteorológica do Irã; Método de Análise de Conteúdo; Técnica de Equações Estruturais

1. Introduction

Scholars and experts of human resources development have always encountered the question whether the success in the field and achieving its desired objectives lies more in paying attention to the structure of developing these resources, or one must pay attention to human resources as responding potentiality (1). In an implicit examination of this challenging subject, Akhtov says: "... it is the time for employees who know how to work and think and improve their work (and are allowed to take steps) to enter the field" (2). Akhtov's saying points to the prominence of both potentiality and structure of human resources. Human resources development is a kind of behavioral science or practical social knowledge which is mainly related to the function of humans in organizations, their efforts for achieving potential capabilities as well as the promotion of performance through learning.

Based on various philosophical and theoretical basics, the activities in an organization aimed at achieving desired objectives such as motivation, learning, performance, the ability for changing, improving knowledge, skills, and competencies (3). Human resources development arises from the interaction of three components of human, organization, and learning (4); however, the question is: "What are the desired factors which must join to one another to develop human resources?". The answer to this question is of prominence because it seems that none of the factors involved in human resources development solely realizes the development of these human resources. Therefore, the desired conditions for human resources development can arise from joining all of the inter-organizational factors with a nativist vision supporting the organization. The prominence of human resources development for developing a country has been discussed broadly by prominent and renowned scholars throughout the world. Human resources are not capitals. They are neither incomes, or material resources form the final bases of a given nation's wealth. Money and natural resources are influential factors on the

production; however, human beings are active factors who compile wealth. The exploitation of material resources, building social, economic, and political organizations as well as national development is accomplished through the application of human resources; (5) Human resources managers must play more crucial roles in organizations, besides taking steps considering all traditional measurements for human resources (such as analyzing and designing jobs, evaluation of employment, employment, planning human resources, selection, socialization, designing compensating system for incurred damages, human resources development, disciplinary, security and health care). Through the distribution of various tasks and responsibilities for human resources managers in two forms of short-term and long-term assignments for all individuals and processes, one can suppose four crucial and essential roles for human resources managers:

- A) **Strategic Partner and Champion of Changes:** It is better for human resources managers to consider themselves as a strategic partner for an organization and direct the organization's measurements and tasks aligning with its objectives and strategies. Through the application of effective measures and considerations, managers should decrease employees' resistance against changes.
- B) **A supporter of Employees:** Human resources managers must prepare an environment where employees feel comfortable and secure to have the required motivation for working.
- C) **The Developing Role for Human Resources Development:** Human resources managers must provide a proper ground for growth, learning, and developing all employees and managers skills. They must pursue and execute development plans for team-work and personal promotion and development.
- D) **Productive Specialized Role:** Human resources managers must play their role as professional experts in various fields such as selection, education, employment, evaluation of performance with required efficiency, and competency (6).

Regarding the fact that human resources are the most important strategic resources for a modern organization, and each is considered unique with his personality and personal requirements, investment in human resources must be the most crucial investment in organizations, although it can be the riskiest investment. From another perspective, human resources indicate the intellectual capital of organizations. From a new economic viewpoint, only people who possess all aspects of human resources related to motivation can acquire the maximum knowledge (7).

Considering the fast development of technology, development, and promotion processes are occurring very fast. A nation is more developed when it enjoys the belief in upgrading its science and technology, and establishes its organizations based upon this essential element. It must believe that investment in human resources is the only way for attracting people, especially young people in the modern era; whether the products are based on production or services. Due to this fact, organizations try to exploit their human resources by developing them, and it would eventually lead to the optimal performance of individuals for achieving personal objectives as well as organizational goals. Human resources are the most prominent inputs for the production system. Its more powerful impacts would be considered as the essential factors in recognition of identity for modern organizations and the determination of its future prominence as well (8).

Investigation of the literature of research in the field of factors influencing on the development of an organization and management indicates scholars and intellects' attention to this challenging subject. Different approaches have been suggested for responding and comprehending the degree of influence by these factors (12-9). Scholars and intellects working in the field of human resources development are no exception to the rule and have been searching for understanding these factors (1, 14, 13, 2). For a better understanding of paying attention to factors influencing human resources development, we must examine the impediments of human resources development. According to Torkan's findings (150), the most critical barriers for human resources development is lack of efficient management in an organization as well as professional immaturity of employees and lack of organizational productivity, consequently lack of organizational elevation. In the 3rd millennium, competent managers and ethical and professional maturity for employees are integral components of an organization.

On the other hand, there are numerous models in the field of human resources development; however, the existing models lack specific orientation. General human resources development, which lack of each type of direction is not sufficient for fulfilling costumers' requirements (16). Based on advisability theory, human resources management must be aligned with an organization's advisability. Besides, the existing models in introducing sub-criteria are inflicted with generalizing, and it leads to the fact that human resources managers become uncertain and bewildered about planning, evaluating, and controlling. Regarding the fact that human resources management plays a crucial role in realizing human resources development

as well as organizational promotion and productivity (17), lack of a comprehensive model of human resources development in organizations would result in managers wrong decisions. Consequently, it would lead to underdevelopment and deficiencies in organizations. Besides, the nature of activities in governmental organizations is different from private ones. Hence, human resources development is probably different in private organizations compared to their conventional counterparts. It is a fact while human resources development in governmental organizations has not been taken into account yet. And more conducted researches in this field have focused on private sectors and organizations. It has led to more problems and challenges in governmental organizations for elevation, promotion, and productivity of organizations comparing to private organizations (18).

In the present study, while applying a phenomenological approach, we seek to identify factors influencing on human resources development in Iran Meteorological Organization. Through presenting a kind of interactive model, based on critical factors impacting on human resources development, we can provide a proper ground for designing powerful strategies for human resources development. The present research is aligned with conducted studies by scholars mentioned briefly as follows:

Doayi et al. (19) in a paper under the title of “Understanding the Effectiveness of Productivity and Organizational Justice from the Behavioral Indices”, indicate the effects of productivity and organizational justice on behavioral indices. For achieving such goal, a conceptual model is used to define the relationship between organizational justice, its various dimensions (procedural truth, interactive justice, and distributive justice), and behavioral indices (organizational commitment and organizational citizenship behavior). Khorasani et al. (20), in an article named “Validity of Improving Model of Education and Iran’s Human Resources Development”, express that the main objective of the article is to indicate the validity of improving the model of education and Iran’s human resources development.

The research findings indicate the optimal validity indices for improving education and development. Division of the model into three sections; empowering components, procedures, and results have also been supported. Ehsanian et al. (21), in an article under the title of “Identification and Priority of Indices and Factors Creating Qualitative Human Resources in University Organizations”, examine the identification of indices and their priority and various factors creating the best quality of human resources in universities. T findings for inferring

analyzing of the test, say that among six factors, the cultural-ethical factor, as well as material and physical factors, are ranked as the first and second factors, respectively.

Mir Kamali et. al. (22), in an article titled “Explaining the Role of Improving Strategies for Human Resources on Employees Organizational Commitment (Case Study: SAIPA Automaker company’s Employees)”, express that they aim at defining improving strategies roles of human resources for organizational commitment of SAIPA Automaker company’s employees. Research findings indicate that the condition of improving strategies for human resources has no difference in various sections of the company, but an organizational commitment of employees is security and health management section is different from human resources management.

Ezzabadi (23), in a paper named “Employing Fuzzy Logic and AHP to EFQM Model for Improving the Performance: Case Study”, expresses that the present study is based on the European Quality Model. Research findings indicate that entrepreneurship and professional knowledge have a meaningful influence on the performance of employees. Terouhid (24), in an article called “Each Individual’s Capabilities: Strategic Capability for Organizational Improvement of Construction Companies,” says that he applies the improving organizational model of European Foundation. Based on findings arising from studying, the model of development and training human resources are the most prominent factors for empowering and enhancing organizational capabilities. In human resources management, the critical factor is the organization’s individuals’ capabilities, which can play a vital role in improving an organization.

Hashemya (25), in his article under the title of “Explanation of Empowering Model for Human Resources and Organizational Improvement among Employees of Emergency Section of Hospitals in University of Gilan”, explains that the research aims at the examination of the relationship between empowering human resources and organizational improvement. Research findings indicate that there is a meaningful and positive relationship between human resources and empowerment.

2. Research Method

The research method applied in this research is the mixed method. The qualitative section of the study is the content analysis of documents in hand which was used for extracting components of “Human Resources Development”. In the quantitative section, the method of

application is descriptive and measuring one. According to Creswell & Plano Clark (26), though all research approaches possess fundamental philosophical assumptions for guiding a researcher, however, combining data can present a better comprehension of the subject and provide us with a complete image. Based on this, when a research method, whether a quantitative or qualitative one, is not sufficient for investigation of a research topic, we preferably apply mixed research methods. In the present research, by employing Qual–Quant method, we firstly identified human resources development’s dimensions, indices, and factors in the framework of qualitative approach and content analysis through reviewing various researches and sources as well as interviewing seven academic experts in this field (Table No. 1). Then by applying the test construction method, we designed, validate, and evaluate the criteria for human resources development. Following this, we assessed and evaluated the current status of human resources development in Iran Meteorological Organization in the eyes of the organization’s employees and managers based on descriptive-measuring approach. The following table provides the characteristics of academic experts for doing the interview.

Table 1: Characteristics of 7 Skillful Academic Experts of the Field of Higher Education

Row	Gender	Academic Position	University of Education
1	Male	Professor	Islamic Azad University, West Tehran Branch
2	Male	Professor	Kharazmi University
3	Male	Associate Professor	Seminary, school of theology
4	Male	Professor	Tarbiat Modares University
5	Male	Assistant Professor	Shahid Beheshti University
6	Male	Associate Professor	University of Tehran
7	Female	Assistant Professor	Islamic Azad University, West Tehran Branch

Source: The Author’s Findings

The population of study in quantitative section consists of senior managers (level 2 & 1), manager, assistant directors, Iran Meteorological Organization’s experts and consultants working in the second half of 2018. The total Statistical population consists of more than 400 individuals throughout Iran. Among them, about 50 percent of them dwell in Tehran, and the remaining 50 percent lives in the capitals of provinces. 5/10 percent were assistant directors; 4/08 percent were managers; 0/51 percent were senior managers of level 18; 9/1 percent were senior managers of level 86; 42/2 percent were experts, and 38/27 percent were senior consultants. Due to limited Statistical population, for determination of the sample capacity, we applied Cochran Formula. The sample consists of 196 individuals (49 percent of people).

Applied tools for collecting data include the researcher's made questionnaire. The specialized questionnaire for professors was created in several phases. These phases are as follows:

- 1 – Identification of studying resources and experts in the field of the university system
- 2 – Interviewing seven academic experts in the field of the university system
- 3 – Extracting topics of “Human Resources Development” out of interviews by applying Open Coding method
- 4 - Extracting items of “Human Resources Development” out of studying documents by using Open Coding method
- 5 – Comparing content analysis findings of interviews and reviewing documents
- 6 – Designing the model of “Human Resources Development” and its topics
- 7 – Designing 39 questions for items of “Human Resources Development.”
- 8 – Content validity for 39 questions
- 9 – Preliminary enforcing of the designed questionnaire for 30 professors
- 10 – Obtaining validity and preliminary consistency
- 11 – Final execution for 196 employees and managers
- 12 – Obtaining final consistency and validity indices from acquired data and fitness of the model

Responding to questions was based on the five-point Likert Scale. The questionnaire for “Human Resources Development” has five items of “Strongly Agree, Agree, Sometimes, Disagree, Strongly Disagree”. Based on the features and conditions of human resources development in their workplace, professors could also select items 1, 2, 3, 4, or 5. For preliminary execution, 30 professors of Azad and Public Universities were chosen for completing the questionnaire. The applied method for consistency of tools was based on Cronbach's α employing SPSS Software as well as Structural Equation by applying PLS Software.

For the reliability of the questionnaire, we used obtained indicators of the first performance, and final production. From the viewpoint of professors, “the human resource development” questionnaire has fourteen items: doctrinal, legal, social, political, cultural, economic, technological, entrepreneurship, public health, general knowledge, organizational knowledge, professional knowledge, decision-making skills, and communicational skill. This questionnaire has 39 questions. The introductory reliability of this questionnaire is equal to 82%. The initial performance results showed the authenticity of the tools. Then each university's questionnaires completed by sample group separately. The deadline for answering

was unlimited, but it usually took 20-30 minutes to complete and submit the questionnaires. The questionnaires implementation was carried out in the spring of 1397. The total reliability of questionnaire was 87%. The validity of the questionnaire was used to determine the content validity and structural validity of the structural equation. Content validity of the questionnaire was confirmed by five experts from the higher educational center with higher education and academic level. The results of structural authentication are also given in the findings section.

To analyze the data, in the qualitative section, thematic analysis was used with MAXQDA12 software. Interviews were held between Farvardin and Khordad 1397. The average interview time was 45 minutes. After transcription of interviews, for data analysis, data analysis and thematic analysis were done at the same time. So, after interviews the text of tapes was prepared. Then a copy of the extracted code was sent to the interviewer and confirmed. To be aware, data retrieved several times. Initial codes identified and primary classes were formed. These classes merged and formed the foundations.

To ensure the accuracy of the gathered data, there was a long and deep conflict of data. Besides, two other researchers contributed to data analysis except for the foremost researchers. Researchers read manuscripts for coding and classification. Participants were referred again to increase confirmation. Having the maximum variety in extended sampling and visits was another way to increase the credibility of data. From the same initial interviews, codes and subclasses were formed, and then data cuts continued in all analytical fields until the foundations emerged. Interviews continued until theoretical saturation stage. Qualitative content analysis was done with the MAXQDA12 software.

At first, all terms that have definitions, features, or concepts related to the idea of human resource development, openly were chosen from the text of sample interviews. Of these, seven interviews were content analyzed by open coding. The sample text of the selected terms contained vital concepts. Each category of similar key concepts was placed in the same group. Then according to the meaning that was taken from each key concept, one class was chosen. This method is called the category of thematic analysis. In this way, after the first study of the interviews, the materials come to mind that it can be set as hypotheses. Recording units in this analysis, the concepts of phrases, the text unit, and the entire text of each interview was appropriate for these concepts. The human resource development categories were extracted by this method, and its questionnaire was made based on these categories in Iran Meteorological Organization.

Regarding quantitative research, the choices coded from number one to five by SPSS software. After data entering,

The questions numbering, which was vice Versa recorded on the contrary. Each Item had a total mark and 14 marks for subtests of questionnaire. To measure the proposed measurement pattern, the method of the structural equation was used. For the measurement of each human resource development categories in Iran Meteorological Organization, the descriptive statistics were used. For the hypothesis test in this research, the structural equations modeling analysis were used (SEM). There are two approaches for estimating of SEM parameters. The method based on covariance, and variance (CBSEM.SEM-PLS) which acquired great privileges during the last decades and so that some social science researchers believe this approach as the term of SEM. For this kind of analysis, we can use different tools that the most current of them is LEYZERL JOORSKAG program. One of the estimate methods is Maximum Meretricious(ML), or Unweight Least Squared(ULS). The PLS which developed by Herman Vold is adapted with tiny samples. Last studies bolded the difference between two approaches that can be used as guidance. At first, there is no need for a hypothesis about distribution or observed reference measurement scale in PLS. Instead, CBSEM needs standard data and distance scale variable, and PLS is compatible with small sample size. While CBSEM typically requires at least 200 views to avoid collusive and non -convergent solutions. Secondly, the use of CBSEM approach is more appropriate in the case of strong theoretical background and the purpose of studying development and testing. PLS is a candidate for predictive casual analysis. Where exploring complex issues (that is a model with a large number of variables, representations, and relationships) and the prior theoretical knowledge is scarce. Third, PLS can almost work with an unlimited number of compound reference.

In contrast, CBSEM, when using compound measures, may lead to implicit co-variance from zero among some representations or equivalent models. Besides, because all block variables are considered as linear combinations of their descriptions, PLS does not allow the indeterminate operating factors that sometimes occur in the context of CBSEM. The researchers for correct usage of CBSEM and PLS-SEM should apprehend the goals of each approach and choose the suitable method based on it. Moreover, both approaches should consider something like appropriate usage and interpretation of reflective and compound criterions. So, a reasonable judge is necessary for the best strategy by researchers.

In this study, to avoid approach limitations based on covariances about distributive properties, measurement level, sample volume, and model complication(33-35), the

component-based approach was used(PLS). So, the proposed model and hypotheses were evaluated by PLS. Software used is PLSsmart2, and the level of the coefficient of measurement and structural models, determined through the automatic re-sampling process. (with 500 repetitions for standard errors estimation and test hypotheses.

3. Research Findings

Qualitative Section Findings (Content Analysis)

In the qualitative section, the researcher decided to identify the practical factors on human resource development by thematic analysis technique. After the selection of the books and articles, 181 initial codes extracted based on content analysis of articles, books, and 7 interviews of scientific elites, and experts .the codes were multiple reviewed and merged several times based on similarity, and finally 39components, and 14 main categories with titles: doctrinal, legal, social, political, cultural, economic, technological, entrepreneurship, public health, general knowledge, organizational knowledge, professional knowledge, decision-making skills and communication skill obtained(table 2). For example, the first scientific elite says in his interview: necessary skills which all human beings need for encountering people in social science and human relationships like human resource management inside and outside of the organization is called public communication which means dealing with people which is considered as an essential skill. The skill of communication inside and outside of the organization. This sentence is located on the first interview, code (8), and means the communicative skills.

Resources: Research Findings by the Author

Row	Research history	Main components	Category description	Number of indicators
1	Saatchi(1387) Khaki(1388) Khorasani(1395) Ravand(1396) Hashemia(2016)	Doctrinal	Adherence to religious principles and values. Adherence to ethical principles and values.	2
2	Saatchi(1387) Bordbar(1392) Ehsanian(1395) Mollamohammadi(2016)	Political	Adherence to political system of country adherence to constitution, having political knowledge and insights.	3
3	Alwani (2001)Khaki (2009)Musikhani (2010)Ehsanian (2016)Molla mohammadi (2016)	Economic	General Economic Knowledge Islamic Economic Knowledge and Insight.	2

4	Agdasi (1996) Taheri (2008) Hosseini (2011) Molla mohammadi (2016)	Social	Social Accountability Social Compatibility Social Attachment	3
5	Saatchi (2008) Khaki (2009) Khorasani (2016) Ravand (2017) Hashemia (2016)	Technology	Technology Science Application of Information Technology	2
6	Musa khani (2010) Ravand (2017)	Legal	Acquaintance with Public Laws and Regulation Acquaintance with Job and Organization Laws and Regulation	2
7	Aqdasi (1996) Bordbar (2013)	Cultural	Commitment to Professional Ethics Enjoying Cultural Identity Having Altruism	4
8	Alwani (2001) Khaki (2009) Bordbari (2013)	Entrepreneurship	Enjoying Innovation and Creativity Enjoying Strategic Thinking	2
9	Khaki (2009) Ravand (2017)	Public Health	Performing and Paying Attention to Personal Health Methods and Principles Performing and Paying Attention to Public Health Methods and Principles Paying Attention to Industrial Security and Work Health Care.	3
10	Saatchi (2008) Khaki (2009) Farshadfar (2009) Ehsanian (2016) Farahmand (2002)	Communicative Skills	Having Listening, Watching. Speaking, Writing Skills and Enjoying Inter-personal Communicative Skills	5
11	Agha golzadeh (2006) Taheri (2008) Khorasani (2016) Hashemima	Decision-Making Skills	Ability to Analyze and Recognize the Roots of Various Issues and Problems Ability to Reckoning Possible Methods Ability to Choose Appropriate Solutions Acquaintance with Models and Academic Bases of Decision- Making	4
12	Saatchi (2008) Khaki (2009) Molla mohammadi (2016)	Public Knowledge	Acquaintance with Political, Economic, Social, Cultural and Regional Issues	2

			Acquaintance with Political, Economic, Social, Cultural and Global Issues	
13	Khaki (2009) Alwani (2001) Khorasani (2016)	Occupational Knowledge	Sufficient Recognition of Occupational Contents † Sufficient Recognition of Occupying Job Positions	2
14	Alwani (2001) Saatchi (2008) Khaki (2009) Daneshgar (2011) Mohammadian (2012))Bordbar (2013) Ehsanian (2016))Hashemima (2016)	Organizational Knowledge	Knowing the Existential Philosophy of Organization‡ Knowing Strategic Objectives and Organization's Operations‡ Knowing Strategic Planning and Operations	3

For assessing the factor structure of topics of “Human Resources Development”, we applied structural equations and PLS software; for assessing the current status of human resources development and its component, we also applied descriptive statistical indices. The findings have been presented, respectively.

PLS model is interpreted and assessed in two phases:

- A) Narrative Assessment and Consistency of Measuring Model related to the relationship between observed variables and corresponding latent variable
- B) Assessment of Structural Model for the examination of the relationship between latent variables with each other (36 – 37)

The sequence of these two phases ensures the validity of the measuring criterion for factors (38) This process firstly examines measuring models assessment. PLS estimations assess narration and consistency of measuring models based on reflective and mixed external presented criteria. When we obtain sufficient documents and witnesses based upon the consistency and narration of measuring models, then we can assess the structural model (internal) (39). In the conceptual model of the research, all factors and agents possess reflective measuring models meaning the direction of relations is from factors towards the indicators.

For assessment of consistency measuring model, the measuring tool has been measured in two parts. The first part is the consistency of each reflective indicator and corresponding factor even though it is shown with the number of loads. Then, mixed consistency (cr) of all reflective indicators with relevant factor is used for the determination of internal correlation of measuring tool. Appropriate consistency quantity for each factor with its corresponding factor

and mixed consistency is at least 7% (39). Considering the different consistency of indicators, we must assess each indicator’s consistency separately. Researchers believe that a latent variable must explain a considerable part of each indicator’s dispersion (Normally at least 50%). Therefore, the absolute value of correlation between one factor and each of its witnessed variables (means the absolute value of standardized output loads) must be more than 7% ($5/0 \approx \sqrt{\cdot}$). As it is shown in Table 3, the total value of the factor load for each indicator of reflective factors is more than 7%. Therefore, indicators consistency is approved.

Table 3. Summary of Research Statistical Analyzing Findings

Row	Main Concepts	Cronbach's alpha	Mixed Consistency	AVE	R2
		Load	Load		
1	Doctrinal	0.793	0.844	0.549	0.693
2	Political	0.826	0.897	0.631	
3	Economic	0.784	0.836	0.706	
4	Social	0.847	0.877	0.598	
5	Technology	0.806	0.849	0.631	
6	Legal	0.781	0.799	0.592	
7	Cultural	0.852	0.854	0.648	
8	Entrepreneurship	0.744	0.782	0.573	
9	Public Health	0.754	0.784	0.554	
10	Communicative Skills	0.803	0.899	0.615	
11	Decision-Making Skills	0.763	0.842	0.547	
12	General Knowledge	0.831	0.897	0.643	
13	Organizational Knowledge	0.874	0.890	0.678	
14	Occupational Knowledge	0.854	0.886	0.653	
15	Sum	0.879	0.845	0.674	

Source: Research Findings of the Author

For narrative confirmation of measuring tool, we applied a convergent narrative index because factors’ indicators must have a medial correlation with one another. Fornell and Larcker criterion for this narration is increasing extracted variances average (AVE) from 0/5 means that a latent variable can averagely determine more than half of its indicators’ dispersion (39). Findings indicate that AVE for latent variables with the reflective model is more than 0/5. Therefore, we can say that convergent narration of measuring models is optimal. Findings arising from PLS output in Table 5 indicate that AVE is more than the criterion (0/5).

Assessment of Structural Equations Model

For the assessment of structural equations model, the present study applies (R²) Coefficient of Determination. The crucial criterion for assessment of endogenous latent variables is (R²) Coefficient of Determination. In this phase, based on findings, Coefficient of Determination for latent variables possessing several predictive variables is at an acceptable level.

The coefficient has been employed for the present study, and its quantity for confirming an assumption on Level 5% must be 1/96 at least; in 1% Level, the least amount is 2/58, and in Level of 0/001 it must be 3/32 at least. For obtaining statistical T, we also applied the Bootstrap Test with the frequency of 500. Findings of the Path Coefficient for research hypotheses have been shown in Table 6. Considering acquired results, variables of assumptions 11, 2, 13, and 12 have the most meaningful influence. The sum of direct and indirect impacts of a specific latent variable on another variable must be assessed and interpreted; not only its direct impact, even be of a significant influence, but indirect impact must be assessed.

Consequently, based on obtained findings, all acquired Path Coefficients and total influences confirm the conceptual model of research; however, the extent of influence on variables is not equal. According to Table 4, in analyzing variables, we must say that Occupational Knowledge has the most powerful impact on human resource development, and Technology has the weakest impact on human resources development. According to Tables, structural equations outcomes, concepts of professional knowledge, public health, decision-making skills, and economic factors are priorities of PLS analyses.

Hypotheses Testing

For hypotheses testing (Table 4), we employed meaningfulness of path coefficients. Each of these coefficients in PLS model can be considered as a standardized Beta Coefficient in regressions of minimum normal squares. The path coefficient indicates direct influence of a factor on another factor, and the coefficient has been employed for the present study, and its quantity for confirming an assumption on Level 5% must be 1/96 at least; in 1% Level, the least amount is 2/58, and in Level of 0/001 it must be 3/32 at least. For obtaining statistical T, we also applied Bootstrap Test with the frequency of 500. Findings of the Path Coefficient for research hypotheses have been shown in Table 6. Considering acquired findings, variables of

assumptions 11, 2, 13 and 12 have the most meaningful influence. The sum of direct and indirect influences of a specific latent variable on another variable must be assessed and interpreted; not only its direct influence, even be of a very meaningful influence, but indirect influence must be assessed. Consequently, based on obtained findings, all acquired Path Coefficients and total influences confirm the conceptual model of research, however the extent of impact on variables is not equal. According to Table 4, in analyzing variables, we must say that Occupational Knowledge has the most powerful impact on human resource development, and Technology has the weakest impact on human resources development. According to Tables, structural equations outcomes, concepts of occupational knowledge, public health, decision-making skills and economic factors are priorities of PLS analyses.

Table 4. Summary of Inferring Statistical Findings of the Research

Row	Hypotheses	Path Coefficient	α	Statistic T	Conclusion
1	Doctrinal Humanistic ← Resources development	0.430	0.000	5.033	Confirmed
2	Political Human Resources Development	0.448	0.000	5.435	Confirmed
3	Economic (Human Resources Development)	0.513	0.000	5.155	Confirmed
4	Social, (Human Resources Development)	0.425	0.000	5.890	Confirmed
5	Technology (Human Resources Development)	0.333	0.000	3.373	Confirmed
6	Legal (Human Resources Development)	0.490	0.000	4.722	Confirmed
7	Cultural (Human Resources Development)	0.443	0.000	4.606	Confirmed
8	Entrepreneurship (Human Resources Development)	0.395	0.000	3.664	Confirmed
9	Public Health (Human Resources Development)	0.536	0.000	5.007	Confirmed
10	Communicative Skills (Human Resources Development)	0.443	0.000	4.084	Confirmed
11	Decision-Making Skills (Human Resources Development)	0.510	0.000	6.759	Confirmed
12	Public Knowledge (Human Resources Development)	0.346	0.000	4.23	Confirmed
13	Organizational Knowledge (Human Resources Development)	0.429	0.000	4.248	Confirmed
14	Occupational Knowledge (Human Resources Development)	0.829	0.000	22.190	Confirmed

Source: Research Findings of the Author

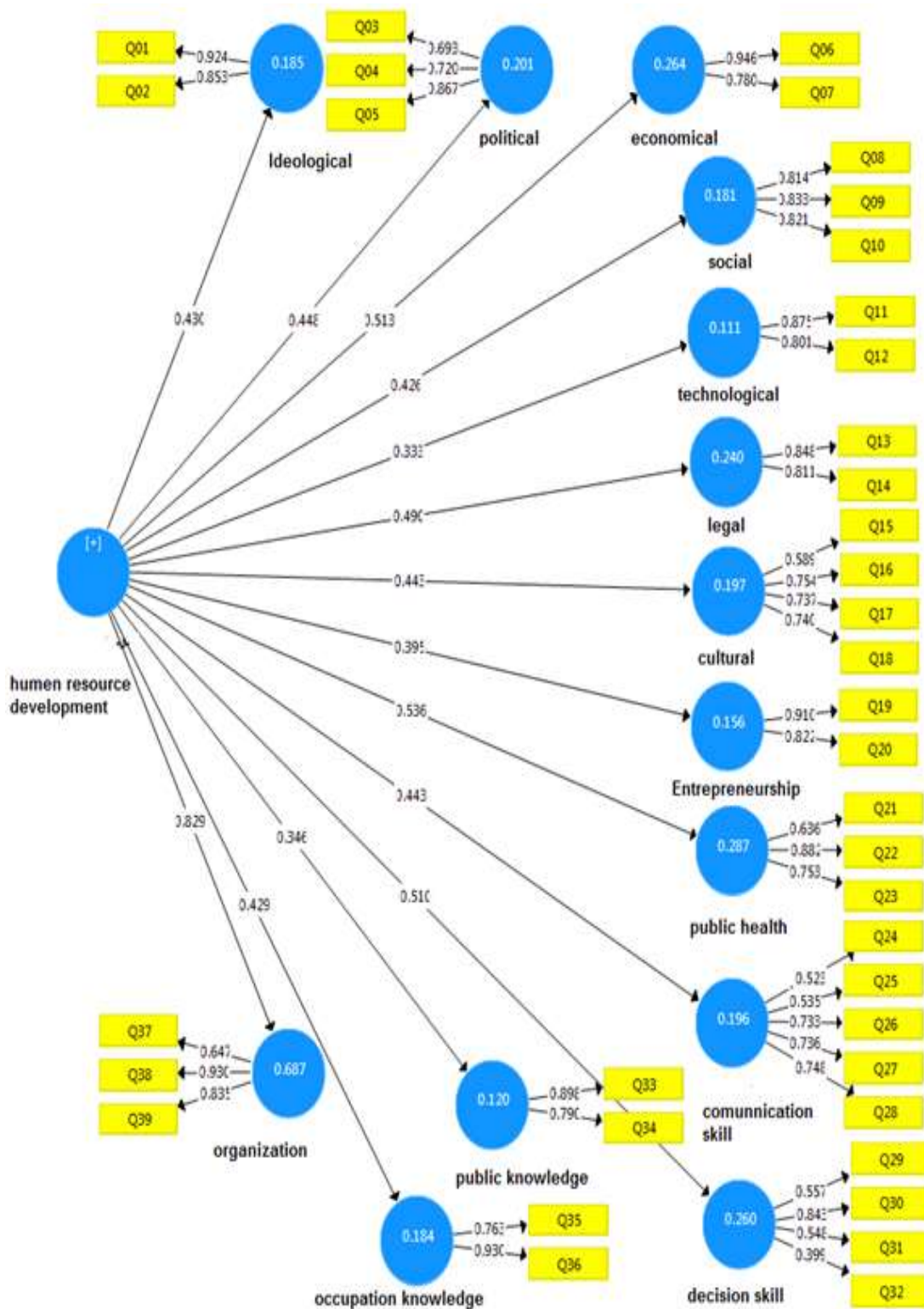


Figure 1 – External Model of Minimum Trivial Squares (Human Resources Development) /

Source: Research Findings of the Author

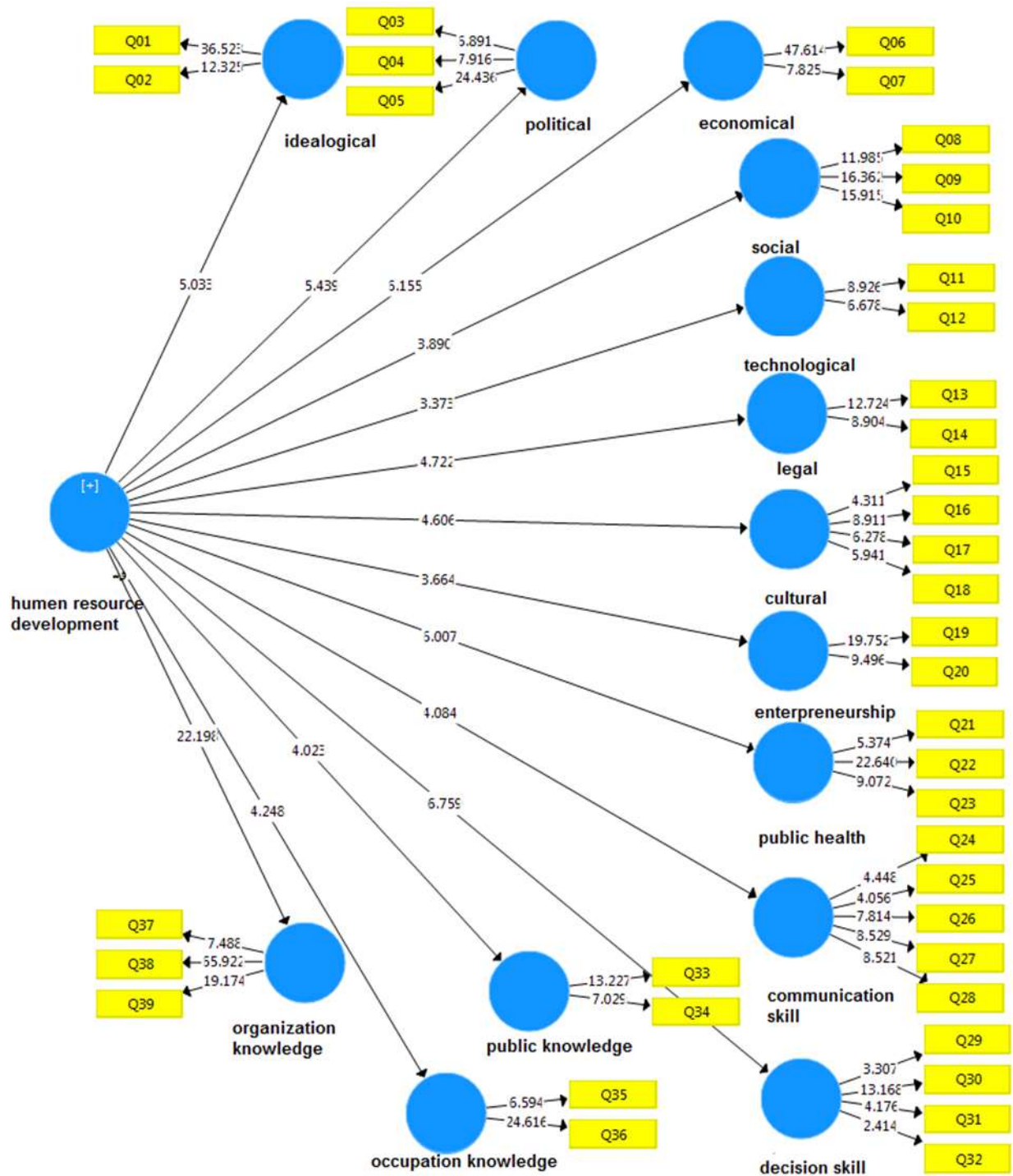


Figure 2 – Sample Statistic t-value with Research Model of Bootstrap Technique (Human Resources Development)

Source: Research Findings of the Author

The findings of T-test meaningfulness for each item has been computed much more than 2, and it indicates the prominence and factor weight of considerable quantity for each item.

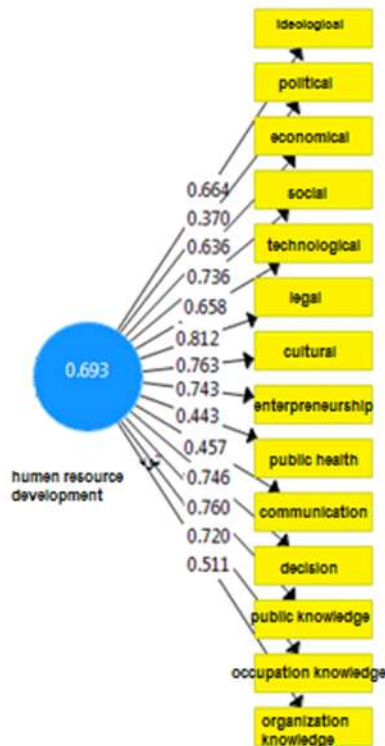


Figure 3 – Assessment of Current Status for Topics of Human Resources Development in Iran Meteorological Organization

Therefore according to structural equation findings, we can say 14-factor model of “Human Resources Development” enjoys a good fitness. In this stage, topics of human resources development in Iran Meteorological Organization was assessed by tools and instruments made by the researcher. Table 6 explains the average and standard deviation of Iran Meteorological Organization’s opinions.

Table 6: Average, Standard Deviation of Topics of Human Resources Development in Iran Meteorological Organization

Variables	Number	Average	Median	Mode	Standard Deviation	Variance	Scope of Changes	Minimum	Maximum
Doctrinal	196	3.369	3.500	3.500	0.736	0.541	4.000	1.000	5.000
Political	196	3.380	3.400	3.200	0.707	0.500	4.000	1.000	5.000
Economic	196	3.397	3.500	3.500	0.718	0.515	3.750	1.250	5.000
Social	196	3.499	3.600	4.000	0.697	0.486	3.800	1.200	5.000
Technology	196	3.426	3.333	4.000	0.848	0.719	4.000	1.000	5.000
Legal	196	3.318	3.333	3.333	0.776	0.603	4.000	1.000	5.000
Cultural	196	3.410	3.333	4.000	0.860	0.739	4.000	1.000	5.000
Entrepreneurship	196	3.471	3.667	4.000	0.847	0.717	4.000	1.000	5.000
Public Health	196	3.474	3.667	4.000	0.804	0.647	4.000	1.000	5.000
Communicative Skill	196	3.440	3.333	4.000	0.830	0.689	4.000	1.000	5.000
Decision-Making Skill	196	3.586	4.000	4.000	0.827	0.683	4.000	1.000	5.000
General Knowledge	196	3.576	4.000	4.000	0.801	0.641	3.333	1.667	5.000
Occupational Knowledge	196	3.380	3.333	4.000	0.784	0.615	4.000	1.000	5.000
Organizational Knowledge	196	3.421	3.500	3.500	0.696	0.484	4.000	1.000	5.000

Source: Research Findings of the Author

Table 6 indicates that all topics or classes of human resources development in Iran Meteorological Organization are located in medium average scope from the perspective of managers and experts.

4 . Discussion and Conclusion

The present study aims at creating a questionnaire for assessment and presenting a model for human resources development in Iran Meteorological Organization from the viewpoint of managers and experts. To do so, the question which was asked was “What are topics or classes of human resources development in governmental organizations?”. For achieving the research objectives and answering the question, at first we did content analysis for the content of articles, books as well as semi-structured interview. The key words for the articles were obtained in 14 main topics as follows: 1 – Doctrinal, 2 – Legal, 3 – Social, 4 –

Political, 5 – Cultural, 6 – Economic, 7 – Technology, 8 – Entrepreneurship, 9 – Public Health, 10 – General Knowledge, 11 – Organizational Knowledge, 12 – Occupational Knowledge, 13 – Decision-Making Skills, 14 – Communicative Skill. Based on the 14 topics, we prepared the questionnaire of “Human Resources Development”. After preliminary execution and obtaining proper validity for the questionnaire, it was applied for 196 individuals among Iran Meteorological Organization’s managers and experts. The final validity of mentioned questionnaire was obtained well. Structural equations of 14 topics for human resources development of Iran Meteorological Organization indicate that the model for measuring “Human Resources Development in Governmental Organizations” is confirmed. Also all factors for human resources development in this organization based on perspectives of managers and employees in medium scale. The human resources development in this organization in various dimensions of doctrinal, political, economic, social, legal, entrepreneurship, public health, decision-making skill, general knowledge, and organizational knowledge obtained a grade very close to the possible average point. The grades show that human resources development in Iran Meteorological Organization in the present research are not at the level of existing potentials regarding various factors of doctrinal, political, economic, social, legal, entrepreneurship, public health, decision-making skill, general knowledge, and organizational knowledge. It is true while it was expected that Iran Meteorological Organization places itself in a high level scope considering various aspects of doctrinal, political, economic, social, legal, entrepreneurship, public health, decision-making skill, general knowledge, and organizational knowledge; because the organization with its long services, is in its maturity age. The organization places itself higher than the medium level considering technological, cultural and communicative aspects.

Iran Meteorological Organization must enjoy political, social and doctrinal maturity proportionate to its maturity and growth. In Islamic Republic of Iran’s regime, according to emphasizing commitment to religious ethics, moralities and principles, it is expected that through planning for doctrinal issues, organizations promote this dimension. Also considering and promoting legal issues as well as enhancing recognition of employees from legal issues and required knowledge from ruling regulations and laws on organization, it increases and promotes human resources; therefore, there is an important question here: “What can we do for increasing and promoting each of these dimensions?” What factors prevents the existing potentials to actually perform in the organization?”. To do so, it is suggested to conduct researches on

different types of educational plans, workshops as well as in-service programs for employees and managers. Also according to recognized factors, it is recommended to promote doctrinal factor through working on religious and moral factors while presenting practical brochures and encouraging employees to take part in doctrinal courses. For factors of entrepreneurship, occupational knowledge, general knowledge, and organizational knowledge, one must hold in-service courses of marketing and organizational strategies as well as enhancing communicative skills and large-scale decision-makings for managers and employees through much more relations among an organization's different pillars. Finally, according to organizational capabilities and existing facilities, we must pay attention to economic, social and cultural invigoration in a way that the organizational and ethical charter be explicitly expressed in the organization, and middle managers and employees' opinions be enforced.

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