

Analyzing, Prioritizing, and Presenting the Model of Core Competencies of Education Managers

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Abstract

Background: Today, with the advancement of science and technology, societies are becoming more complex and specialized. Therefore, knowledge should be considered the foundation of the development and social welfare of countries.

Objectives: The present study aimed to examine the role of three managerial skills in designing the competence model of education managers of Islamic Azad Universities in Khorasan Razavi.

Methods: This research is applied in terms of purpose and exploratory mix (qualitative-quantitative) in terms of method. The measurement instrument in the qualitative part was a semi-structured interview, and in the quantitative part, it consisted of a researcher-made questionnaire. The statistical population included 951 employees of the Islamic Azad University of Razavi Khorasan, of which 274 were randomly selected. For data analysis, the Delphi technique was employed in the qualitative part, and the structural equation modeling method of SPSS22 and AMOS26 software was used in the quantitative part.

Results: It was found that 75% of managers' competence depends on the dimensions of managerial skills (technical, human, perceptual). These dimensions can explain and predict the competence of education managers, including individual characteristics, organizational factors, entrepreneurial competence, business competence, leadership, decision-making, and cooperation.

Conclusions: According to the results of this study, it is required to develop a long-term and operational strategic roadmap and program with a paradigmatic approach and a local and regional view.

Keywords: Competencies; The Competence of Managers; Managerial Skills; Islamic Azad University Branches

1. Background

Competence has become a multipurpose term used with different meanings in scientific fields (1). Many expressions such as merit, capability, ability, qualification, and skill are used for competence. Competence is the characteristic that scientifically leads to effective or superior performance in a job. In the most comprehensive definition, competence, as a key factor in the survival of organizations, refers to the knowledge, skills, personality traits, interests, experiences, and capabilities related to the job which make a person successful in her/his job performance (2). Managers' competence in terms of management skills is one of the most important factors for the continuity of success in any organization. Managers' effectiveness and efficiency require managerial skills, and the lack of any of these skills reduces the chances of the manager's success and, ultimately, the organization's success as a whole (3).

Nowadays, the role and importance of universities and higher education are clear in guiding and managing society's affairs and creating fundamental changes in line with scientific and cultural growth in the country (4). Since higher education centers and universities are among the largest and most complex organizations that are more related to human resources than other organizations and are responsible for training society's efficient human resources, they have special sensitivity. Considering that the development of human beings in line with society's great changes is the main task of higher education, this requires universities to have educational managers with the necessary qualifications (5).

1.1. Theoretical Principles

Competence means the proven ability to use knowledge, skills, personal, social, or methodological abilities



in work or academic situations and professional and personal development. Competence refers to the process governing the application of knowledge to a set of tasks (6).

The skills management approach starts with Rabert Katz's (1974) triple skills classification. He considers three types of skills necessary for managers of organizations:

Technical skills: Refer to the ability to use the techniques, devices, and tools needed to perform specific tasks obtained through experience and training.

Human skills: It means having the ability and discernment to create understanding, cooperation, and doing work with others, and engaging in effective activity as a group member, which includes understanding, motivation, and applying effective leadership (7).

Perceptual skills: The mental ability to understand and analyze the complexities of an organization and to understand all the elements and components that make up organizational work and activity as a single whole. In other words, the ability to understand and recognize that the organization's various functions depend on each other and that changes in each department necessarily affect the other departments (8).

1.2. Literature Review

In an article entitled "model of project manager competencies in the construction industry in Poland," Dziekoński concluded that there is a proper understanding of the relationships between personal skills, knowledge, and capabilities of construction engineering in the ability to manage. This research identified four effective factors: Basic management skills, supporting management skills, interpersonal abilities, emotional intelligence, and formal skills (9). The results showed that the issues described in the reports and definitions in the field of competence are confirmed. In research, Mufti et al. stated the components and dimensions of competence: Strategic contribution, business knowledge, personal credit, and technology (10). In research with the help of semi-structured interviews, Wesselink and associates mentioned dimensions and components, including systemic thinking, acceptance of diversity and interdisciplinary, interpersonal competence, practical competence, and strategic management (11). Liikamaa considers motivation, social skills, self-awareness, empathy, self-regulation, and cognitive skills among the dimensions and components of competence (12). Asumeng and Osa-Larbi stated intrapersonal, extrapersonal, leadership, technical, job, and counseling skills as dimensions or components of competence for the community under his study. Robbins (2000) claimed that successful managers have four skills, which include technical, human, perceptual, and political skills (13).

In recent years, many efforts have been made by researchers to study and identify competence, but since

competence differs from one organization to another and at different levels of management according to the degree of its application and according to the investigations carried out by the researchers so far, no research has been carried out on the competence of education managers.

2. Objectives

The current research seeks to answer the question of what model can be presented in the field of competence of education managers of Khorasan Razavi Islamic Azad University branches with regard to the role of management skills.

3. Methods

The present research is applied in terms of its objective and mixed-exploratory in terms of its methodology (qualitative-quantitative). The statistical population of the research in the qualitative part included university experts with related expertise who were included in the study through targeted sampling. The data collection method was the library method, the measurement tool used in the qualitative part was a semi-structured interview, and a researcher-made questionnaire was used in the quantitative part, the questions of which were taken from the data obtained from the interview.

3.1. Research Tools

After selecting the dimensions in the initial proposed model with the meta-synthesis method, according to the mentioned valid research, a semi-structured questionnaire was designed to apply the opinion of experts in the Delphi technique. This questionnaire included the selected dimensions based on previous research. The questionnaire designed based on the initial proposed model, in the form of a semi-structured questionnaire, was given to experts (prominent professors and experts in the field of management who authored books) who were asked about the importance of selected dimensions as well as dimensions which in their opinion explain the final model of the research (the competence model of education managers of Khorasan Razavi Branch of Islamic Azad University with regard to the role of three managerial skills). In the first stage, 8 dimensions for competence and 5 dimensions for management skills were prepared and compiled for the first Delphi questionnaire based on the theoretical foundations of the research criteria and were given to the experts. A 10-point Likert scale was used to design the questionnaire. This process was also done in the second and third stages. In the second round, 7 dimensions for competence and 4 dimensions for management skills were considered, and in the third round, 7 dimensions for competence and 3 dimensions for management skills were obtained (Table 1).

Table 1. Average Values of the Extracted Variance and Composite Reliability of the Research Variables

Section and Dimensions	Cronbach's Alpha	AVE	CR	MSV	ASV
Managerial skills					
Technical	0.770	0.592	0.928	0.004	0.03
Human	0.765	0.610	0.881	0.04	0.02
Perceptual	0.751	0.558	0.800	0.04	0.02
Managers' competencies					
Personal characteristics	0.758	0.650	0.517	0.004	0.03
Organizational factors	0.770	0.580	0.700	0.004	0.02
Entrepreneurial competence	0.790	0.564	0.417	0.004	0.03
Business competence	0.805	0.770	0.835	0.04	0.02
Leadership	0.870	0.505	0.816	0.04	0.02
Decision making	0.814	0.604	0.928	0.004	0.03
Cooperation	0.740	0.612	0.881	0.04	0.02

Abbreviations: AVE, average extracted variance; MSV, maximum shared variance; ASV, average shared variance.

Then, based on the secondary model, the final questionnaire (closed questionnaire) was designed and given to a group of experts to obtain the questionnaire's face validity. After confirming the face validity of the questionnaire, the content validity of the questionnaire was also examined. The next step is the reliability of the questionnaire. In order to determine reliability, the questionnaire was given to 30 members of the statisti-

cal community (managers and experts and employees of Khorasan Razavi Azad University branches) to determine the reliability of the questionnaire using Cronbach's alpha method. Table 2 summarizes Delphi's results, whose reliability was checked with Cronbach's alpha test. We can confirm its accuracy since the test result is more than 0.7.

Table 2. The Results of the Kolmogorov-Smirnov Test for Research Variables

	Managers' Competence (8 Dimensions)		Professional Skills (6 Skills)
Number of samples	274		274
The highest difference in limits	0.119	0.540	0.075
	0.107	0.617	0.056
	-0.120	-0.095	-0.085
Z	0.965		0.605
Significance level	0.820		0.714

3.2. Statistical Methods

For data analysis, the Delphi technique was employed in the qualitative part, and the structural equation modeling method of SPSS22 and AMOS26 software was used

in the quantitative part. The results of these methods are presented in Tables 2, 3 and 4:

Table 3. Descriptive Statistics of Research Variables

Section and Dimensions	Item	Mean ± SD	Variance
Managers' competence			
Individual characteristics	1 - 8	7.89 ± 0.690	0.411
Managerial skills	9 - 14	8.21 ± 0.659	0.429
Organizational factors	15 - 17	7.20 ± 0.640	0.402
Entrepreneurial competence	18 - 24	7.40 ± 0.618	0.401
Business competence	25 - 29	7.85 ± 0.619	0.413
Leadership	30 - 34	7.96 ± 0.620	0.420
Decision-making	35 - 37	8.02 ± 0.700	0.400

Cooperation	38 - 41	8.59 ± 0.721	0.509
Professional skills			
Technical	42 - 49	7.39 ± 0.659	0.405
Human	50 - 55	7.22 ± 0.618	0.400
Perceptual	56 - 58	7.84 ± 0.619	0.409
Communicative	59 - 64	7.99 ± 0.620	0.410
Team work skill	65 - 68	8.09 ± 0.615	0.409
Innovative skill	69 - 71	7.29 ± 0.490	0.405

Table 4. The Results of the (KMO) and Bartlett Test

	Test	Results	
The design of the competence model of education managers of Razavi Khorasan Azad Universities using the approach of professional skills.	Sampling adequacy coefficient (KMO)	0.892	
	Bartlett's test of sphericity	Chi-square	636789.958
		Degree of freedom	4580
		Significance level	0.001 **

Based on the obtained results, the KMO index is greater than 0.6 and indicates values almost close to one, which shows the adequacy of the sample size based on the identified indicators for factor analysis. The significance level of 0.001 for Bartlett's test also demonstrated the suitability of the research variable for factor analysis.

4. Results

The characteristics considered in this section are the status of respondents in terms of gender, age, level of education, and work experience, the summary of which is as follows: The highest frequency in this table is related

to the number of male respondents (152 people, 55.47%). The result of the age frequency of the respondents also showed that 52 respondents were between 30 and 35 years old, 74 were between 36 and 41 years old, 83 people were between 42 and 47 years old, and 65 people were over 48 years old. Also, in terms of education, 83 of the respondents had a BA, 122 had an MA, and 69 had a PhD degree. Examining the work experience of the respondents also showed that most respondents had work experience between 16 and 20 years (22.99%).

Based on the results of the fitted model in the studied sample (Table 5), the extracted structural equation is as follows.

Table 5. The Coefficients of the Studied Path and the Significance of the Estimated Parameters a

Path	Path Coefficient	t-Value	Significance	Result
Managers' competence				
→ Individual characteristics	0.59	10.72	0.000 **	Supported
→ Managerial skills	0.61	9.58	0.000 **	Supported
→ organizational factors	0.55	9.70	0.000 **	Supported
→ Entrepreneurship competence	0.58	8.58	0.002 **	Supported
→ Business competence	0.52	10.11	0.003 **	Supported
→ Leadership	0.65	8.83	0.000 **	Supported
→ Decision making	0.51	9.90	0.002 **	Supported
→ Cooperation	0.54	11.11	0.000 **	Supported
Professional skills				
→ Technical	0.60	8.50	0.000 **	Supported
→ Human	0.61	10.19	0.001 **	Supported
→ Perceptual	0.75	10.59	0.000 **	Supported
→ Communicative	0.58	8.20	0.001 **	Supported
→ Teamwork skill	0.70	11.60	0.000 **	Supported
→ Innovative skill	0.54	9.70	0.001 **	Supported
Professional skills				
→ Manager's competence	0.75	12.71	0.000 **	Supported

^a Professional skills = 69*competence, R² = 0.75*.

The results of the Friedman test have two outputs (Tables 6 and 7). The first output of Table 7 is a descriptive statistic showing each variable's average rank. The larger the average of ranks, the more important that variable is. The second output of Table 8 presents each variable's

data, the chi-square statistic's value, the degree of freedom, and significance. Because the significance level is less than the threshold of 0.05, H_0 is rejected, and the claim that the mean ranks of the variables are the same is not accepted.

Table 6. The Results of Friedman's Test (Average Ratings of Education Managers' Competence Dimensions) a

Dimension	AVE
Personal characteristics	4.42
Leadership	3.1
Decision making	3.84
Organizational factors	3.69
Business competence	3.50
Entrepreneurial competence	3.39
Cooperation	3.21

Abbreviation: AVE, average extracted variance.

^a Significance results.

Table 7. Friedman Test Results

Variables	Chi-square	DF	Sig.	Error
Values	71.967	5	0.000	0.05

Table 8. The Goodness of Fit Indices of the Factor Confirmation Model Based on the Main Model

Index	Obtained Value	Acceptable Value	Result
GFI	0.94	GFI > 90%	Supported
AGFI	0.93	AGFI > 90%	Supported
CFI	0.92	0.90 < CFI < 1	Supported
CMIN/df	1.89	< 3	Supported
RMSEA	0.006	RMSEA < 0.1	Supported

Abbreviations: GFI, goodness of fit; AGFI, adjusted goodness of fit; CFI, comparative fit index; RMSEA, root mean square error of approximation.

After collecting and entering the data into the computer, the data were analyzed using Amos and SPSS software. SPSS software was used to determine the reliability of internal consistency. Amos software was used to perform confirmatory factor analyses. Finally, composite reliability (CV), reliability of each question (IR), average extracted variance (AVE), maximum shared variance (MSV), and average shared variance (ASV) were used to determine convergent and divergent (diagnostic) validity based on the final model and according to the model proposed by Frenell and Larker (1981). In order to gather evidence related to construct validity, the factor analysis (confirmatory) method has been used, which will be discussed in the following. All factor loadings above 0.4 are suitable and are significant at the 0.1 level. In structural equations, in addition to convergent validity, which is used to check the importance of structural indicators, diagnostic validity is also desired. This process is shown with AVE values higher than 0.4, the coefficients of which are listed in Table 7.

Table 9 also indicates that the correlation coefficient of

the questions with the total score of the questionnaire was higher than 0.3, and the reliability of each question was higher than 0.20, which shows that the questions have sufficient accuracy in measuring the variables. In addition, Cronbach's alpha reliability was reported to be higher than 0.60, and composite reliability was higher than 0.70, which shows that all factors have the necessary accuracy in determining the structure. Also, the results of Table 2 show that for each section, $CR > (AVE)$ and $AVE > 0.5$; as a result, the components have convergent validity; moreover, for each component, $MSV < AVE$ and $ASV < AVE$, which indicates diagnostic and divergent validity. These findings show that each factor estimates the purpose of the questionnaire (convergent validity). The results indicate that the subscales do not have such a high correlation that they all become one structure; therefore, the dimensions are not repeated. Also, as the fit indices in Table 2 show, the data of this research fit well with the factor structure and the theoretical foundation of the research, indicating that the questions are aligned with the theoretical structures.

Table 9. The Results of the Friedman Test (Average Ratings of Managerial Skills Dimensions)

Dimensions	AVE of Ratings
Human	4.69
Perceptual	4.51
Technical	4.40

Abbreviation: AVE, average extracted variance.

5. Discussion

Examining the competence of education managers of Khorasan Razavi Islamic Azad University branches about the role of three management skills in the present study showed that management skills after performing the three stages of qualitative Delphi technique in the fourth stage (decision and approval) have three technical, human, and perceptual dimensions. Also, after performing the four steps of the Delphi qualitative technique, the variable “competence of managers” has seven dimensions: Personal characteristics, organizational factors,

entrepreneurial competence, business competence, leadership, decision-making, and cooperation. The results of this research showed a positive and significant relationship between the components and dimensions of competence of education managers of Khorasan Razavi Azad University branches with the approach of professional skills (Figure 1). The findings are in line with the research findings of Liikamaa (12), Sabokroo et al. (5), Shafipour et al. (4), Ekrami and Hoshyar (14).

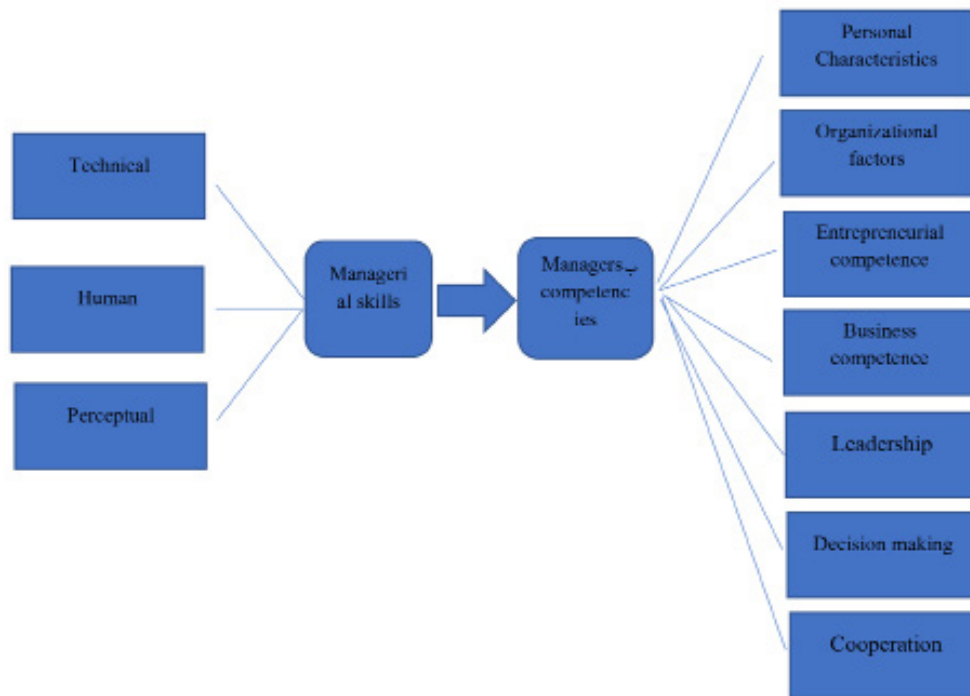


Figure 1. Research conceptual model

In this study, the researcher has investigated this issue with the aim of providing a comprehensive model suitable for Khorasan Razavi Azad University branches, and the presented model has been reviewed and approved by the experts in the field of organization, management, and ethics in Khorasan Razavi Azad University branches. Finally, the findings of this research are consistent with the results of the research conducted by Kazemi Kia et al. (15), Pazhohan (16), Najarpour Ostadi and Taghizadeh (17). It should be noted that Khorasan Razavi Azad University

should act step by step and gradually according to a road map and a long-term strategic plan. To this end, it is necessary to develop an operational plan. A paradigmatic approach with a local and regional perspective also helps realize this goal. Of course, these two variables are not linear; therefore, in behavioral sciences, such categories are distantly related. The competence of managers is directly related to the citizenship of the organization. In some cases, it may indirectly affect the organization's citizenship behavior due to the variable of management

skills. In some cases, these two variables may have an overlapping relationship in some concepts.

Recommendations for future researchers: (1) a similar study is performed in other organizations, and the present results should be compared; (2) research is carried out with the aim of determining the infrastructure needed to execute the proposed model of competence dimensions of education managers with the approach of professional skills; (3) research is performed with the aim of examining the effectiveness of competence dimensions with the approach of professional skills, assistants, and principals of schools.

Authors Contribution:

Concept and design of the study: Elham Fariborzi and Atefeh Razavi; data analysis and interpretation: Elham Fariborzi and Atefeh Razavi; editing of the manuscript: Atefeh Razavi; critical review of the manuscript of important intellectual material: Elham Fariborzi and Mahmoud Ghorbani; administrative, technical and material support: Atefeh Razavi, Elham Fariborzi and Mahmoud Ghorbani; study supervision: Elham Fariborzi.

Conflict of Interests:

It was not declared by the authors.

Ethical Approval:

Ethical considerations, including maintaining confidentiality in referring to sources, providing a legal letter of introduction, explaining the purpose of the study and the roles of the researcher and participants, obtaining informed consent, and ensuring the confidentiality of information, were observed. The subjects entered the study voluntarily.

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