



## **Evaluation of the Effectiveness Model of Educational Organizations Based on Social Systems Model in Shiraz High Schools**

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### **Abstract**

This research aimed to design and evaluate the effectiveness model of educational organizations based on the social systems model in high schools of Shiraz city. This research employed a sequential exploratory mixed-method (qualitative-quantitative) design and conducted as a case study in some high schools in Shiraz. The research, in the form of a thematic network, was designed as one overarching theme, 6 organizing themes, and 42 foundational themes. The organizing themes included components related to: teacher's human factors, student's human factors, parents' human factors and, structural, social, and educational-research components. Based on these, a proposed research model introduced. In the instrument development phase, a researcher-made questionnaire on school effectiveness, derived from the qualitative findings, designed. The statistical population consisted of teachers and included students majoring in mathematics - physics, in Shiraz high schools. For evaluating the research model, exploratory and confirmatory factor analysis methods employed. The fit indexes were indicators of the validity of the organizational effectiveness model with an approach toward the effectiveness of educational organizations. The findings of this research revealed that, in sequence, the human factors of the teacher are educational, the parents' human factors are structural and student's human factors are social research. Accordingly, it emphasizes the imperative attention of the relevant executives and officials towards implementing the research model.

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## Introduction

Education is one of the most important social organizations that prepares students for suitable roles in the future society. If educational organizations in any society prioritize their goals similarly to other organizations, This is the basis for examining and studying the effectiveness of schools (Ghanbari & Mojouni, 2021).

Nowadays, learners increasingly need to acquire critical thinking skills to make appropriate decisions and solve complex problems of society in order to face the astonishing developments of the 21st century. Many thinkers, such as Anis, Pol, and Lipman, believe that a fundamental goal of education should be the cultivation of thoughtful individuals (Wokaro et al., 2010). Critical thinkers are analytical and outspoken. They are essentially the engines that drive society forward and, they can hardly walk between the lines of exploration and taking risks. Powell believes that educating individuals with thoughtful minds should be the primary goal of education (Zak et al., 2012). In an era where textbooks quickly become outdated and innovation is constantly experienced, the ultimate and overall objectives of education must inevitably change. In other word, traditional teaching and learning methods, which means the passive position of learners in the educational environment and relying on filling the mind with information, no longer meet the educational needs of today's and future generations. Instead, learners should think freely, creatively, critically, and scientifically and educational institutions should instill intellectual discipline in learners, encouraging them to engage with problems rather than merely storing scientific facts. While the significance of a systemic perspective in large-scale management has been apparent since the inception and growth of management, However, initially, given the historical events of significant importance, the emphasis on having a comprehensive systemic perspective is more pronounced than ever (Bitran et al., 2015). Modern developments, especially the profound revolution in information technology, are rapidly reshaping human perspectives on social life and, with accelerating speed towards restructuring and strengthening relations between economies, cultures, and policies that once appeared independent of each other, a new form of relationship emerges. This transformation fosters a new relationship between the economy, government, and society at both national and international levels. This further enhances the resilience

of a systemic perspective in analyzing human societies and the insights derived from it for organizing and managing contemporary society more than ever before (Lee & Choi, 2014).

Therefore, the importance of a systemic view is that the perspective of social systems allows present and future managers to view the organization as a whole consisting of several subsystems and interconnected components. The systemic view challenges the narrow view of some lower-level organizational managers who consider their roles as static and independent entities. Systemic thinking offers a unique approach to problem-solving by viewing specific issues as parts of broader systems, characterized by features such as Interdependence among system components, overview, goal search, data transformation of data, negative entropy, feedback, co-termination, multi-termination and synergism. Anido ( 2012). Therefore, Systemic thinking provides a conceptual framework for addressing issues by focusing on problems. Problem-solving in this method is achieved by identifying a pattern to improve understanding of the organization and focusing on the problem The results of systemic thinking depend on how systems are designed since systemic thinking arises from existing relationships among different parts of a system (Martinez, 2018).

This underscores the necessity for a holistic view of systems. Effective management styles and characteristics play a crucial role in shaping culture, enhancing employee productivity, and ultimately determining success or failure. A manager should possess leadership qualities such as guidance, supervision, motivation, inspiration, coordination, facilitation, and innovation in changing, and expand one's own leadership qualities and those of others and, utilize planning, communication skills, and organizational skills. With a systemic approach, organizational components should be viewed as parts of an overarching system. This broader system is part of an even larger system and is interconnected and mutually influential with numerous other systems (Zheng et al., 2010).

The reality is that the role of systems in the success and failure of an organization is much more critical than other factors. To improve and succeed in an organization, changing and reforming systems is far more important than other changes. If organizational systems are designed sufficiently, comprehensively, and

intelligently, they will not give individuals opportunities for misuse, procrastination, or stagnation. In such systems, there is no opportunity for using Connections, violating rules, or bypassing processes. The overall system of the organization responds promptly and appropriately to environmental conditions and requirements while interacting with other systems (Esrivosta, 2020). Therefore, the importance and necessity of this are observed in educational organizations, especially high schools in Shiraz. Based on researchers' findings, especially from internal sources, it is evident that despite the limited studies mentioned earlier, no research has been conducted on the design and evaluation of the effectiveness model of educational organizations based on social systems. The significance of the capabilities available in the social systems model allows the design of a novel model for evaluating the effectiveness of educational organizations that utilize its capabilities.

Bonyadi and Eisvand, (2020) investigated the role of systemic thinking of managers on the efficiency and performance of educational organizations. In this research, the authors aimed to investigate the role of systemic thinking of managers on the efficiency and performance of educational institutions by collecting relevant information. The results indicated that systemic thinking among managers, with an inclusive approach involving all employees in decision-making and considering everyone's input, could enhance the efficiency and improve the performance of organizations.

A study by (Srivastava, 2020) explored the relationship between systemic thinking and systematic education among students. The research results indicate that there is a relationship between systems thinking, systematic education, and the systematic implementation of developed programs. The study finds that systems thinking influences the success of students and is consistent with the current research. Given the understanding and importance of a systemic perspective in management have been evident since the inception and growth of the management field. However, as we entered the new millennium, considering events of historical significance, the emphasis on having a comprehensive systemic perspective has become more pronounced than ever before. The strength of the systemic approach in analyzing human societies and the

insights derived from it enhances the organization and management of contemporary society.

A study by Bist (2019) titled 'Supervision in Management and Systems Thinking' was conducted. The statistical population of the study consists of all managers, and the results indicate that it regards management as synonymous with a facilitative system, and there is a meaningful relationship between them. The leadership role is seen as supporting, strengthening, assisting, aiding, and collaborating with employees, along with endorsing systemic thinking. It views achieving educational and training objectives as the duty of managers.

Rahayu et al, (2018) conducted research examining the impact of teachers' professional competencies, innovation, and emotional intelligence on school effectiveness. The results indicated that innovation, emotional intelligence, and professional competencies directly influence school effectiveness.

Therefore, given the importance of this topic, it is essential in various research and applied studies to present effective and efficient approaches, patterns, and models in the field of evaluating the effectiveness of educational organizations. By implementing these, it becomes possible to enhance the quality of education in these centers and organizations. Based on this, the model presented in the study can provide a new basis for evaluating the effectiveness of educational organizations based on social systems models, and will yield valuable results for relevant officials and managers. Ultimately, it can provide valuable strategies to enhance the quality and effectiveness of educational organizations. Considering the above content and noting that no similar research has been conducted nationally or internationally so far, the necessity of conducting the present study is emphasized. It is hoped that this research will serve as an effective method for improving students' academic performance and enhancing teaching methods for teachers in Shiraz high schools. Educational organizations in the relevant field can also utilize the results of this research to advance their objectives. Furthermore, it is anticipated that the findings of this study will pave the way for future research in this area.

### **Innovative Aspects of the Research**

The conducted investigations indicate the novelty of the research topic. Furthermore, presenting a model for evaluating the effectiveness of educational organizations based on the model of social systems will lead to a better

understanding by policymakers (at the macro level) and relevant managers and officials (at the micro level) of the current situation and will facilitate the delineation of the desired situation, thereby providing the grounds for attention to and improvement of this area. The researcher's investigations indicate the novelty of the research topic, especially in terms of the statistical community.

### Research Objectives:

Overall Objective:

Designing and evaluating the effectiveness of educational organizations based on the model of social systems in high schools in Shiraz (mixed approach).

Subsidiary Objectives:

1. Identifying the components of the effectiveness of educational organizations based on the model of social systems in high schools in Shiraz.

### Research Method

To collect the required data, a tool formulated in the qualitative section was utilized. The research method employed in this section was descriptive with a correlational type, relying on modeling and factor analysis. The primary objective was to evaluate the researcher-made tool based on qualitative findings.

In the quantitative phase of the present study, our goal was to design a quantitative tool based on the conceptual framework produced from identified indicators and components. This tool was extensively implemented among selected samples to present an appropriate model for evaluating the effectiveness of educational organizations based on social systems in Shiraz high schools.

### Statistical Population and Sampling Method

In this section, the statistical population included students majoring in mathematics - physics, experimental sciences, and humanities sciences, as well

2. Determining the appropriate model for the effectiveness of educational organizations based on the model of social systems in high schools in Shiraz.

3. Evaluating the model of the effectiveness of educational organizations based on the model of social systems in high schools in Shiraz.

### Research Questions:

1. What are the effectiveness components of educational organizations based on the model of social systems in high schools in Shiraz?

2. What is the appropriate model for the effectiveness of educational organizations based on the model of social systems in high schools in Shiraz?

3. How is the evaluation of the effectiveness model of educational organizations based on the model of social systems in high schools in Shiraz?

as teachers working in Shiraz high schools during the academic year 1401-1402. The reason for selecting these academic fields for participation in the research is the continuous and significant presence of students and teachers in these fields in the educational environment, which makes it necessary to emphasize of broader support under an effectiveness improving program of schools. The total statistical population was 857 individuals, and a sample size of 515 individuals was considered, taking into account the sample dropout (according to existing texts in the tool construction domain, a minimum of 500 sample individuals is mandatory for field execution of the constructed tool to estimate its validity and reliability). Sampling was done using a stratified random method, considering proportions (60% of each group was selected). Table (1) presents the distribution of individuals in the statistical population by groups, and Table (2) shows the proportion and number of the sample population.

**Table (1) Distribution of Individuals in the Statistical Population by Groups**

Groups Percentage and Number		Students			Educational Staff			Gender	
		Mathematics	Experimental	Humanities	Teacher	Manager	parents association	Female	Man
<b>Percentage Distribution in Society</b>		42/2%	29/2%	20/1%	4/8%	2/7 %	1%	59/6%	40/4 %
<b>Numbers</b>	<b>First Year</b>	282	216	173	41	23	8	511	246
	<b>Second Year</b>	69	34	----					
	<b>Third Year</b>	11	----	----					
<b>Total</b>		857 individuals							

Considering that a minimum sample size needed to be observed, therefore, 60% of each group was considered as the sample size. Given that we are initially seeking to discover the structure, more than half of the sample size was considered at this stage (equivalent to 309 individuals or 60%), and another 206 individuals were accounted for the second stage, the results of which are reported in Table (3-3).

Out of a total of 515 distributed forms in both stages, 489 forms were collected (a return rate of

95.94%) (287 forms in the first stage and 202 forms in the second stage). From the 489 received forms, 24 forms (23 forms in the first stage and 1 form in the second stage) were excluded because they were incomplete. Data analysis was conducted on the remaining 465 forms (The correct rate of the forms 95.09%) (264 forms for the first stage and 201 forms for the second stage).

**Table (2) Proportion and Number of Sample Population by Groups**

Groups		Students			Educational Staff			Gender	
Percentage and Number		Mathematics	Experimental	Humanities	Teacher	Manager	parents association	female	Man
Percentage Distribution in Sample		60%							
Numbers	First Year	169	130	104	25	14	5	307	208
	Second Year	41	20	----					
	Third Year	7	----	----					
Total		515 individuals							

This translation provides an overview of the methodological details and procedures undertaken in the

research, focusing on the design, sampling, and data collection processes.

**Table (3) Demographic Characteristics of Respondents Groups:**

Groups		Students			Educational Staff			Gender	
Percentage and Number		Mathematics	Experimental	Humanities	Teacher	Manager	parents association	Female	Man
Numbers	First Year	136	124	95	25	14	5	364	201
	Second Year	39	20	----					
	Third Year	7	----	----					
Total		465 individuals							

### Tools for collecting quantitative data and validating the instrument

In this section, the data collection tools consisted of a researcher-developed questionnaire. Its questions were arranged and drafted based on content extracted from scientific interviews, under the supervision of academic advisors and consultants.

### Method for Calculating Content Validity Ratio (CVR)

The CVR method is a technique for assessing the content validity of the questionnaire, designed by Lawshe. To calculate this ratio, the opinions of experts in the field of tool content related to the 91-question instrument were used (16 people in total). These experts included educational center managers, high school teachers, and school counselors. With explaining the

objectives of the test for them and providing operational definitions related to the content of the questions, they were asked to classify each question into one of three Likert scale categories: "Essential", "Useful but not Essential", and "Not Necessary". Then, based on the following formula, the content validity ratio (CVR) of Lawshe was calculated:

$$CVR = \frac{N_E - \frac{N}{2}}{\frac{N}{2}}$$

In this formula, n\_E is the number of experts who chose the 'essential' option, and N is the total number of experts. As a result, 45 questions were removed, and 46 questions were retained (Table 4).

After this stage, the questionnaire was provided to the research sample, and its validity was examined using

structural validity (exploratory factor analysis followed by confirmatory factor analysis) and convergent validity (by calculating the average variance extracted (AVE))

and its reliability using Cronbach's alpha coefficient and composite reliability (CR). The findings of this analysis are reported in Chapter Four.

**Table (4) Calculated Content Validity Ratio for the Initial Form of the Questionnaire**

Questions	Number of Essential Options	CVR
1- Is it essential for a teacher to strengthen a student's motivation during secondary school?	16	1
2- Is it essential for a teacher to boost a student's self-confidence in the effectiveness of secondary schools?	16	1
3- Is it essential for a teacher to establish informal and friendly relationships with students for the effectiveness of schools?	16	1
4- Is it essential for a teacher to pay attention and listen carefully to students' problems for the effectiveness of schools?	16	1
5- Is a teacher's integrity essential for the effectiveness of schools?	16	1
6- Is a teacher's patience and tolerance essential when dealing with students in schools?	16	1
7- Is the role of the teacher as a liaison between the student and the school management necessary?	16	1
8- Is a correct understanding of student problems by the teacher in schools essential?	16	1
9- Is allocating effective and sufficient time to communicate with students in schools essential?	16	1
10- Is it necessary for the teacher to serve as a role model in behavioral areas?	14	75/0
11- Is the teacher's capability in identifying student problems at school essential?	12	50/0
12- Is it imperative for teachers to exhibit high energy and enthusiasm when engaging with students in schools?	12	50/0
13- Is it essential for teachers to face students with an open demeanor in schools?	13	62/0
14- Is it essential for teachers to pay attention to their appearance in schools?	12	43/0
15- Is the importance of a teacher focusing on spiritual matters in schools necessary?	14	75.0
16- Is it necessary for a teacher to be recognized as a morally upright individual in schools?	14	75.0
17- Is it essential for students to be followed up to participate in educational sessions in schools?	14	75.0
18- Is having a positive view of the teacher's personality traits in schools necessary?	13	62.0
19- Is the honesty of the student in expressing their conditions and problems in education essential in schools?	14	75.0
20- Is it necessary for students to accept teachers' suggestions in schools?	14	75.0
21- Is it essential for students to have a questioning spirit and seek convincing answers in schools?	12	50/0
22- Is it essential for students to act responsibly based on the teacher's guidance in schools?	16	1
23- Is it necessary for teachers to introduce educational environment rules and emphasize their observance in schools?	16	1
24- Is it essential for teachers to emphasize maintaining the privacy and security of students in schools?	16	1
25- Is it crucial for teachers to establish comforting and evaluative communication with students' parents in schools?	14	75/0
26- Is it necessary for teachers to establish a close and collaborative relationship with the educational staff in schools?	14	75/0
27- Is it essential for teachers to have the capability to manage critical educational environment conditions in schools?	16	1
28- Is it essential for schools to employ teachers with a good track record and experience in educational settings?	16	1
29- Is it necessary for teachers to manage students' anxiety in schools?	16	1
30- Is it essential to recognize and utilize competent teachers in schools?	14	75/0
31- Is it necessary to hold explanatory sessions for students and teachers in schools?	14	75/0
32- Is it crucial for educational officials to coordinate with students' parents in effective schools?	14	75/0
33- Is it essential for officials to monitor the teaching process for effective schools?	14	75/0
34- Is it necessary to implement long-term planning in effective schools?	13	62/0
35- Is it necessary to integrate graduates and successful students into educational society?	14	75/0

36- Is it essential to enhance the specialized capabilities of teachers for schools effectiveness?	15	87/0
37- Is it necessary to create and strengthen a positive view of educational institutions regarding the importance of evaluating school effectiveness?	15	87/0
38- Is it vital for teachers and students to have the same field academically in schools?	16	1
39- Is it essential for teachers to be familiar with the arrangement and layout of students' lessons in schools?	15	87/0
40- Is it necessary for teachers to be updated in the subject matter and expertise of students for schools effectiveness?	16	1
41- Is it crucial to focus on academically vulnerable students and improve their academic status in effective schools?	15	87/0
42- Is it essential for teachers to introduce research areas related to students' academic fields in effective schools?	15	87/0
43- Is it vital to employ competent teachers in effective schools?	16	1
44- Is it necessary for teachers to boost students' self-esteem for the effectiveness of high schools?	16	1
45- Is it essential for teachers to introduce practical fields related to students' academic fields in effective schools?	14	75/0
46- Is it necessary for teachers to introduce innovative areas related to students' academic fields in effective schools?	13	62/0

### Data Analysis Methods:

Data obtained from the questionnaire were analyzed using SPSS version 26 and LISREL version 8.80 software. Exploratory factor analysis method was used to discover the initial structure, and confirmatory factor analysis was used to validate the final model. After identifying the extracted factors, LISREL software was used for confirmatory factor analysis and model final validation (confirmation of the fit of the extracted factors). In the confirmatory factor analysis, the first and second order analyses were conducted. Then, each dimension was separately validated, and fit indices for it were extracted.

### Findings:

After identifying and categorizing the components obtained from the interview analysis in the qualitative section, the initial questions of the 91-item questionnaire were set up and provided to experts. They used it to examine the validity of the questions. In this section, presented in Chapter Three, the CVR index was employed. As a result, 45 questions were eliminated, and the preliminary structure of the tool was obtained with 46 questions. This structure then progressed to the next phase of the research.

**Implementation of a preliminary questionnaire on a random sample of respondents:** In this section, a

spectrum of 5-point Likert scale (ranging from 'very high' to 'very low') was considered for 46 questions. Subsequently, experimentally, it was distributed among 50 individuals from the target population. In fact, given that the form consisted of 46 questions, one individual was considered for each question. By accounting for potential sample loss, ultimately, 50 individuals from the target group were requested to participate in the study. Accordingly, the initial questionnaire form was provided to them for feedback regarding the clarity of the questions and identifying ambiguous items. In this phase, out of the total 50 individuals, all 50 participated, resulting in a 100% response rate.

### Evaluation and Calculation of the Total Score for Each Responder

In this stage, after collecting the forms, questions that were unclear or required modification based on the gathered data were reviewed. Subsequently, the total score was calculated for every set of 50 valid forms.

### Determining the differential power of questions for the top 25% and bottom 25% and selecting the chosen questions.

To calculate the differential power, after calculating the total score for each respondent in the previous stage; the answers of the top 25% and bottom 25% groups were extracted to calculate the differential power of each

individual question. As a result, the differential power for all 46 questions was greater than 1. Considering that the differential power for all 46 items was above 1, all 46 desirable items were taken into account.

#### **Determination of the Reliability Coefficient of the Questionnaire to Examine the Internal Validity of Selected Questions (46 Questions)**

32 had correlations of less than 0.2 with the whole tools (with correlations of 0.072 and 0.042 respectively). Thus, these 2 questions were removed from the form, reducing the structure to 44 questions. All these 44 items had desirable correlations with the total score. After removing the undesirable items, the Cronbach's alpha coefficient value corrected from 0.69 to 0.78.

#### **Examination of the Validity and Reliability of the Tool in the Preliminary Stage (Number of Valid Forms: 264)**

To examine the internal validity of the 46 final items, the method of determining internal consistency (Cronbach's alpha coefficient method) was used. In this phase, questions number 10 and

In this section, both structural validity and Cronbach's alpha coefficient were used, as explained earlier. For validity assessment, the Cronbach's alpha coefficient revealed that one question (question number 33 with a correlation of 0.034) had a very low correlation with the overall tool score. Consequently, this question was removed, and exploratory factor analysis was performed on the remaining 43 questions.

#### **First Stage: Exploratory Factor Analysis**

Table (5) summarizes the status of the 5 stages of exploratory factor analysis.

Stage	KMO Index	Number of Factors				Cronbach's Alpha Coefficient	Decision
	Criteria	Special Value Criterion	Load Criterion	Explained Variance	Minimum Item criterion 3		
	Minimum 7/0	Minimum 1	Minimum 3/0				Minimum Coefficient 7/0
1	765/0	14 factors	✓	79/52	10 factors	Not computed	Removed 4 factors (lack of coverage of at least 3 items)
2	765/0	14 factors	✓	68/76	9 factors	Not computed	Removed 1 factor (lack of coverage of at least 3 items)
3	765/0	10 factors	✓	65/15	8 factors	Not computed	Removed 1 factor (lack of coverage of at least 3 items)
4	765/0	7 factors	✓	61/36	8 factors	6 factors	Removed two factors (alpha less than 7/0)
5	765/0	6 factors	✓	53/11	6 factors	6 factors	Retained all 6 factors

As evident in Table (5), exploratory factor analysis was conducted in 5 stages to identify valid factors. According to the table, the number of valid factors was 6, which explained a total of 53.11% variance.

The reason for choosing orthogonal rotation (varimax) is the independence of the factors from each other. According to this table, questions numbered 1 to 16 relate to the student factor, 17 to 22 are for the teacher factor, 23 to 29 for parents and mentors, 30 to 35 are structural, 36 to 38 are social, and 39 to 43 are educational-research.

In the second stage, to confirm the structure obtained from exploratory factor analysis, confirmatory factor analysis and the Cronbach's alpha coefficient were used, which are common methods for examining the validity and reliability of the instrument.

#### **Second Stage: Confirmatory Factor Analysis**

After obtaining the initial structure of the questionnaire, confirmatory analysis was conducted (on data collected in the second stage (201 valid sample forms)) to ensure that the discovered model structure has adequate fit. For this part of the research, the Lisrel software version 80/8 was used. In this section, a general



6-factor model was presented based on unstandardized and standardized estimates, and then the model was reported based on T-values.

**Table (6) investigates the factors, distinguishing by the load factor report and T-values**

Factor	Question	Standardized Load (β)	T-Value	Factor	Question	Standardized Load (β)	T-Value	Factor	Question	Standardized Load (β)	T-Value
Student	a15	0/51	8/32	Teacher	a20	0/62	10/42	Social	a37	0/60	10/92
	a13	0/59	9/99		a21	0/40	6/32		a38	0/86	17/95
	a8	0/52	8/54		a22	0/61	10/18		a36	0/83	17/14
	a6	0/60	10/17		a18	0/81	13/82	Prants and Teachers	a23	0/45	7/85
	a2	0/63	10/90		a19	0/32	5/25		a29	0/85	16/71
	a11	0/48	7/76		a17	0/97	16/82		a26	0/32	5/46
	a7	0/49	8/03	a35	0/77	15/36	a25		0/49	8/54	
	a12	0/57	9/49	a31	0/74	14/35	a24		0/96	19/83	
	a1	0/54	8/87	a30	0/75	14/75	a28		0/49	7/63	
	a3	0/49	7/94	Structural	a34	0/75	14/61	a27	0/73	15/24	
	a16	0/64	10/94		a32	0/85	17/61				
	a14	0/54	8/83		a33	0/83	17/00				
	a9	0/53	8/52		a42	0/67	12/76				
	a4	0/48	7/74		a43	0/76	15/12				
	a10	0/53	8/53		a41	0/36	6/10				
	a5	0/55	8/98	Educational-Research	a40	0/60	10/99				
			a39		0/76	15/13					

According to Table (6), in the factor discriminative analysis, all questions relative to their respective factor showed a standardized load factor value greater than 0.3

and a T-value greater than 1.96, All questions. indicating that they were desirable.

**Table (7) the model fit indexes.**

Type of Index	Index	Obtained Value	Acceptable Value
Absolute	Chi-Square Normed (CMIN)	1502/11	-
	p-value	0/001	-
	Root Mean Square Error of Approximation (RMSEA)	0/059	Less than 0/08
	standardized root mean squared residual (SRMR)	0/067	Less than 0/10
	Goodness of Fit Index (GFI)	0/86	At least 0/90
Incremental (Relative)	Comparative Fit Index (CFI)	0/93	At least 0/90
	Incremental Fit Index (IFI)	0/93	At least 0/90
	Normed Fit Index (NFI)	0/88	At least 0/90
	Non-Normed Fit Index (NNFI)	0/92	At least 0/90
Economical	Relative Chi-Square (CMIN/DF)	1/87	Less than 3

Based on Tables (4-7), except for two GFI and NFI indexes (close to 9/0), all other fit indexes have values above 9/0. Therefore, the 6-factor model discovered in the exploratory factor analysis is confirmed in the first-order confirmatory factor analysis

**Validity Assessment**

After ensuring the construct validity, the validity of the scale was examined using the Cronbach's alpha coefficient and composite reliability (CR). Also, convergent validity was assessed by calculating the average extracted

variance (AVE) for each factor. The findings are reported in Tables (4-8).

**Table (8) Cronbach's alpha, CR, and AVE values for each factor.**

Model Element	Factor	Alpha	CR	AVE
Input	Student	0/79	0/85	0/63
	Teacher	0/83	0/75	0/59
Process	Structural	0/80	0/79	0/57
	Educational-Research	0/87	0/77	0/63
Output	Social	0/72	0/75	0/55
Feedback	Parents and Mentors	0/94	0/81	0/63

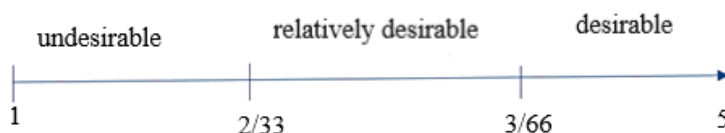
In Table (8), the alpha values for each factor scale are reported. As observed, the alpha and CR values are acceptable (above 7/0), and the AVE values for all factors are above 5/0. The AVE values are above 5/0 indicating desirable convergent validity for the tool. Notably, if the CR value exceeds 7/0, it indicates the convergent validity of the intended structure; meaning, all questions uniformly represent a latent structure. For a more accurate interpretation, in addition to the mentioned criteria, for CR and AVE,  $AVE < CR$  should be in all factors to ensure convergent validity (Farahani

& Roshan Chesli, 2020: 206). Therefore, the validity of all six factors is confirmed.

#### Data Description

How is the evaluation of the effectiveness model of educational organizations based on social systems model in Shiraz high schools?

Given that the questionnaire used in the research had a 5-option spectrum, the range between numbers 1 to 5 is divided into three equal parts. In this study, a desirability range of 33.1 was obtained. This spectrum is depicted in the following chart.



**Spectrum of Bazaragan. Source: Bazaragan and colleagues (1386).**

Accordingly, if the average of each factor is between 1 to 33.2, it is considered undesirable; if between 34.2 to 66.3, it's relatively desirable, and if between 67.3 to 5, it's considered desirable (Bazaragan et al., 1386).

#### Determination of Desirability of Questionnaire Factors

The scores of the questionnaire factors are shown in Table (9). Based on this, the parents and mentors factor had the highest score, while the structural factor had the lowest.

**Table (9): Descriptive indexes of questionnaire factors**

Element	Dimension	Standard Deviation $\pm$ Mean	Kolmogorov-Smirnov Test		Status
			t-statistic	Significance Level	
Input	Student	4/54 $\pm$ 0/32	0/96	0/15	Desirable

	Teacher	4/57±0/47	0/78	0/24	Desirable
<b>Process</b>	Structural	4/35±0/37	0/89	0/20	Desirable
	Educational-Research	4/45±0/72	0/91	0/08	Desirable
<b>Output</b>	Social	4/49±0/55	0/88	0/20	Desirable
<b>Feedback</b>	Parents and Mentors	4/61±0/71	0/84	0/20	Desirable

Given the Bazaragan spectrum and the findings of the above table, it can be concluded that the agreement level on all six factors related to the four elements of the model (input, process, output, and feedback) is at an acceptable level. Regarding data distribution, given the significance level (p-value) obtained for the t-test in the Kolmogorov-Smirnov test ( $P>0.05$ ), it can be stated that the data have a normal distribution.

### Summary and Conclusion

The aim of this research is to evaluate the effectiveness model of educational organizations based on the social systems model in Shiraz high schools. The findings from the qualitative findings based on the thematic analysis and thematic network approach, laid the foundation for the quantitative section and thus, a link between the two approaches was established, consequently, a 6-factor, 43-item questionnaire was developed, which its validity and reliability were examined and confirmed. This study used common methods in psychometrics, and the findings indicated that questions numbered 1 to 16 relate to the student factor, 17 to 22 to the teacher factor, 23 to 29 to parents and mentors, 30 to 35 to structural, 36 to 38 to social, and 39 to 43 to educational-research factors. In the confirmatory factor analysis for the factor separation, all questions related to their respective factors showed the standardized load factor greater than 0.3 and the T value exceeding 1.96 and they are desirable, the fit indexes, except for two indexes GFI and NFI (close to 0.90), displayed values greater than 0.90. Therefore, the 6-factor model discovered in exploratory factor analysis was confirmed in the first-order confirmatory factor analysis. After ensuring the validity of the structure, the scale's reliability was examined using Cronbach's alpha coefficient and Composite Reliability (CR). Convergent validity was also examined by calculating the Average Variance Extracted (AVE) for each factor separately.

The values of alpha and CR were acceptable (above 0.7), and the AVE values for all factors were above 0.5 then, Therefore, the validity of all six factors was confirmed. Since this research was conducted for the first time, comparisons with previous studies were not possible. However, it can be generally stated that given the validity and reliability of the tool, it can be used to measure effectiveness in target organizations. In conclusion, establishing relationships is a fundamental characteristic of human societies. Humans are social beings inherently inclined to connect with others. On the other hand, one of the environments in which interactions in various forms such as individual, social, educational, professional, and so on are clearly evident is the educational domain. Among the diverse fields presented within this domain, secondary education and related areas were the focus of the current research due to the sensitive roles they play in the educational system.

Generally, establishing organizational effectiveness in schools and educational institutions leads to alleviating many educational challenges. Especially since this period, while being a time for evolution, flourishing, and shaping the future, is also a time when young students face new and concerning challenges.

If the shortcomings and problems of students are addressed systematically and through a planned process, by the end of their educational period, the outcome will be individuals who are matured and developed in personal, social, professional, and other dimensions. This systematic approach, known as organizational effectiveness, encompasses various dimensions and aspects.

In the current study, an attempt was made to design a model to articulate and evaluate the dimensions of organizational effectiveness in secondary education schools. The aim was to create a model that could be implemented not only at the secondary level but also, with slight modifications in some components, at other

educational levels, with the aim of elucidating the comprehensive conditions of students as the primary objective, and by utilizing experienced and capable teachers, an interactive relationship accompanied by support and intimacy was established with them.

Based on this premise, the valuable approach of this path is that the student does not feel neglected or overlooked by teachers and officials. With their informed guidance, the student can navigate the pivotal and significant stages of secondary education with even greater motivation. Consequently, they can enter the societal realm of the country as specialized and benevolent human resources. The nature of the challenges faced by secondary school students acts as a catalyst and guide to the dimensions of organizational effectiveness in educational institutions at these levels. This study elucidates these dimensions in human, structural, educational, social, and research aspects.

In the effectiveness process of schools, superior teachers are individuals who, from a human perspective, are motivating figures. They possess skills in informal communication and are considered role models for students. For the continuity and effectiveness of this process, students require qualities such as honesty in expressing concerns, openness to teacher suggestions, assertiveness, and taking responsibility for what is assigned to them by the teacher.

Another aspect of effectiveness relates to the quality of interaction that occurs in the social sphere between parents of students and teachers. The social environment encompasses all conditions and stimuli affecting learning, arising from cognitive, cultural, social, emotional, motivational, and educational factors. Key elements include addressing student stress, parental anxiety, introducing innovative research areas to students, recognizing the broader implications of school effectiveness in the educational system, and emphasizing the entry of competent experts into societal employment. Implementing these aforementioned components requires comprehensive planning, strategies, and large-scale programs and continuously monitored by relevant officials and managers.

Considering that students' enthusiasm for research and scientific dynamism is one of the important

objectives of education, especially at the secondary level, it is suggested that to better address this issue, the process of research effectiveness should be independently and separately organized in alignment with other personal, social, cultural, and specialized aspects of educational effectiveness.

-Given the special importance of the human dimension in educational effectiveness, it is essential to maximize the practical and applied utilization of the school effectiveness process, while recognizing and introducing exemplary and competent teachers by relevant authorities, their experiences and perspectives should be practically and effectively utilized.

-In the realm of social affairs as well, there is room for broader aspects of this field to be explored and investigated by researchers

- The comprehensive, coherent, and goal-oriented process of effectiveness, accompanied by step-by-step monitoring from the moment students enter schools until they complete their education, especially at the secondary level, should be formulated and implemented. In doing so, a significant step is taken toward the comprehensive advancement of all aspects of students.

### **Research Limitations**

Due to the lack of formal and documented promotion of organizational effectiveness in schools, the possibility of utilizing experiences and conducting comparisons among findings is constrained.

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