

# Recognizing Effective Factors in Creating Prevalent High-Schools in Tehran

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## ABSTRACT

This study investigates the effective factors in creating prevalent high school in Tehran from school manager's point of view. For selecting control groups and to elevate accuracy of study, 400 high school managers, 216 male (54%) and 184 female (46%), used on basis of simple random sampling and sample mass determining formula. Research tools include a 70-question questionnaire designed by the researcher, its validity was approved by Chronbach's alpha and its generalizability by structure generalizability. The most common statistical test, known as factor analysis test was used to approve data description and generalizing research results to the society from which the results were extracted. Total of 9 factors were detected, 50.34% of which cannot determine overall effective factor variance in creating prevalence school. According to the current research, there are 9 factors (F) affecting creation of prevalence schools: Skills of managers (25.265%, factor 1, F1); Ability of teachers (4.548%, F2); Equipping schools with technology and using it (Smart School, 4.427, F3); Objective celebration of religious and national ceremonies (3.359%, F4); Acquiring international standards (2.862%, F5); Success of students in entering higher education institutions (2.750%, F6); Participation of students and their parents in school problems (2.449%, F7); Dominance of human relationships in school (2.293%, F8); Using efficient tools for encouragement and punishment (2.217%, F9), which all can determine total variance.

**KEYWORDS:** prevalence school, skill of managers, ability of managers, smart school, international standard, participation, education.

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## INTRODUCTION

The main factor in improvement and progress of human society is nothing but education. By progress of societies, educational systems and their dominant activities are always changing, and these educational changes are due to social, scientific and technological changes. Pioneer educational systems are those which dare to change, experience, improve, and pass new and recognized ways. Efficient systems and prevalence schools all over the world never wait for new events to occur, but they seek these new horizons of changes based on universal view and nationalism, and play effective role in making changes. They create new methods and updated strategies and become a model for others, so other people will adjust themselves with this improvement pattern [1]. Prevalence or ideal schools are considered as significant patterns for those who want to enhance quality of their schools and reach higher new technological and information level beyond universal schools [2]. This research aims to introduce indicators of prevalence schools from viewpoint of managers of high-school in Tehran, and bring the attention of officials, and underlying further practices. We hope this research will be beneficial to our cultural society, and help managers enhance student's improvement.

Different researches have studied the effective factors on creating prevalence school. In his research, "idealistic cultural institutions and criticizing available methods and strategies for teaching and training", Geranmaye [3], represents a practical analysis of ideal teaching and training. He also suggests a pattern for characteristics, programs, structure, space and facilities of an idealistic cultural institution, named Dynamic institution. In another study, "effective factors on creating vivacious schools in Tehran", SadeghiMarasht[4], prepared a 106-question questionnaire, and by the use of random sampling method performed it on 1353 male and female students of Tehran. Alpha coefficient of questionnaire was 0.958. By some practical analysis on collected data, 17 effective factors and their relative importance were recognized in creating vivacious school. Tourani[5], in his research "management of circuit process at schools, using mental circuit process management", deviate tendency of school managers to a way in which they can solve problems by improving and optimizing processes regardless of limited facilities of schools. In this study, he analyses circuit process approach vs. traditional circuit input approach and emphasizes creating suitable approaches.

In the research "prevalence school in I.R. Iran", Yazerlou[2] investigates the importance of achieving prevalence school by inside and outside approaches. He also emphasizes 7 main orders for achieving prevalence school: training, learning, educational space schedule, evaluation, technology, teacher education. He investigates the effect of school facilities on educational progress of students in one of the states of America, in which educational progress of students of two schools are compared. One of the schools was modern and equipped, the other one had a very old building and limited resources. Statistical sample include 280 student of 4<sup>th</sup> and 6<sup>th</sup> grades, their teachers, and managers of schools. The results of the research indicated that students of modern school acquire higher marks than old school in reading, writing, mathematic, and science.

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Loovre[6], in a study "The characteristics of prevalence schools", introduces a pattern for recognizing standard and suitable school, and represents 11 elements and their indicators for a prevalence school:

1) information, 2) validity, 3) accuracy, 4) effective achievement, 5) effective recovery, 6) tangible issues, 7) responding, 8) security and insurance, 9) sympathy, 10) selection and activity, 11) user situation.

Based on these elements, school managers can prepare a check list and according to that, evaluate school performance. Whenever 70-80% of presented indicators were covered by the school, this school can be called a standard school.

Saki, 1388, states the following point in his study of effective school:

- a) According to Saki [7], characteristics of effective schools include: a clear view of learning, learning expectation from all the students, clear standards for evaluating its function, learning supporting atmosphere, and effective relationship with parents.
- b) Kerr [8] believes that effectiveness of school is due to professional improvement of teachers, which can be achieved by professional cultural development of schools. In this culture, effective management consists of information flow and communication. Schematization processes is open and interactive. Allocation of resources is carried on by a clear relation with objectives. Reflective thinking is encouraged and clear guidelines for evaluation are presented.

Checkland[9] in a research on the importance of educational space in school improvement, explains educational environment as a collection of physical status, acceptable behaviors, expectations, special learning elements, and identified objectives. He also believes that a teacher is responsible for all of these issues.

In a research on 2727 teachers, 9025 students, in 110 schools of Ontario, Riley and Louise [10] found an extended relationship between educational leadership and educational efficiency of school.

In another research, Henry [11] shows that 92% of 1050 teachers of state schools believe that classroom design is an effective factor on student's learning ability and their educational progress. These teachers believe that schools should be equipped with the following facilities:

- Good and comfortable chairs and working place to create a flexible atmosphere for teachers and students
- Controllable heating and cooling system
- Changeable class design and decoration
- Attractive colors, structure and models for walls and ground

Earthman [12] in an article "physical facilities and educational progress of students" investigated the researches carried on different school of USA and concluded that there is a meaningful relationship between accurate design of various school elements and student's learning. He also realized that school building status can have negative or positive effects on students. In the same social status, educational progress of students in more facilitated schools is 5-17% higher than other students.

Williams [13] in his research "investigating the characteristics of effective schools" stated that first we should have a clear definition of prevalence school and its effecting factors to achieve appropriate management in modern schools. He believes the most significant supporting elements of prevalence schools include: leadership, thinking teacher, communicating with society and family, learning culture, and evaluating system

In a research on functional management, based on 69 related studies during 35 years on 2802 schools and approximately 1.4 million students, Marzano[14] found a meaningful relationship between educational management and educational progress of students. In another word, this study showed that by improving managing characteristic, educational progress of students can be increased.

Association of Student's Parents of Canberra, Australia [15] defines effective schools as the schools that can successfully accomplish educational schedule to improve learning of students. There are 8 characteristics for effective schools:

- 1- Professional educational management
- 2- Thoughtful and professional teachers
- 3- Having clear and positive learning philosophy.
- 4- Establishing feedback based evaluation system for students
- 5- Learning motivating environment
- 6- Pervasive curriculum
- 7- Parents and society association
- 8- Resource sufficiency and proper using of them

Renzulli [16] states in his research, not only educational facilities, but culture of school are the main factors on creating positive view in students. School culture is not only effective on educational progress of students, but is also effective on inner and social satisfaction from school. He explains the good school as following:

"School building and yard is clean, emphasize is on positive aspects of student's work, and students' work is observable on school walls. Students and their parents participate in all of the school affairs. There are some facilities for students who live far away from schools, such as satellite, video films, TV channels, etc. Students can communicate with school officials using informational and communicational technologies."

Ramsey [17] believes that effective schools can be achieved only by effective educational management. The role of effective management is to create a place in which innovations are encouraged to solve the problems. This issue creates the principle of "We Can". In this atmosphere there are enough time and space for thinking, questioning is encouraged, information is easily flowed, and group work becomes a value.

Cullum andKelder [18] plan a long time program for creating pioneer school. Modern smart and prevalent schools may need a long time to complete its facilities, such as: communicational foundation, appropriate content, teacher education,

changing teaching methods, etc. Appearance of these schools has different architectural and physical design, and students can easily access laboratory in their own classes.

According to above mentioned issues, the main aim of this research is to find appropriate answer for the following questions:

- 1) What are the effective factors on creating prevalence schools in Tehran?
- 2) What indicators exist in these factors?
- 3) How is the prevalence of these factors and indicators?

### MATERIAL AND METHODS

This research is practical, with quantitative data, sectional identity, and study survey. Researcher aims to find when, how, and who has done the research. Statistical society of this research include 400 BA and higher level high-school managers of Tehran.

Simple random method was used to select sample group and increasing accuracy of measuring. In this regard, 400 high school managers were selected and sample group was determined based on statistical hypotheses of research and sample determination formula. For determine volume of timing control groups which is a cross-sectional survey and factor analysis of test, volume of control sample is equal question number × number 15 or 20, and or at least 300 person (named good) and or 500 persons (named very good) [19].

Data collection tools include a 70 question questionnaire prepared by the researcher. In preparing this questionnaire, first characteristic and criteria of prevalence schools were recognized based on national and international studies and view of Iranian and foreign researchers, and objectives of every characteristic were then explained. These characteristics were divided to different sub-characteristics and these issues were codified as a questionnaire.

The acquired information was sent to 20 expert using Delphi methods. Eventually, the questionnaire was carried on sample group using 1-7 (1= at least, 7= at last) for every criteria.

Validity of this research was calculated by Cronbach's alpha and was equal to 0.952, indicating high validity. In this research, statistical analysis test, known as analysis of main component explanatory test, was used. Responding to these research questions is justified considering test hypothesis.

### RESULTS

Findings of this research are represented in two parts:

- 1) Data description: primary description of research data represented in this part uses descriptive statistical methods, i.e. using statistical characteristic tables, frequency distribution table, and diagram (Figure).

Table 1 indicates that nine factors of under study group are in range of 1-7. Mean, average, indicator, mean deviation, variance, and standard deviation were recognized for each of the factors. Indicators skewness of the entire factors is negative; representing that skewness distribution is toward left. Highest skewness is for the first factor (= -3.09). Strain distribution of all the factors is positive, showing this distribution is higher than normal distribution. The most strain is for the first factor (= 18.03).

**Table 1.** Statistical characteristic of nine factors score

Factors	Minimize	Maximize	Amplitude	Indicator	Average	Mean	Mean deviation	Variance	Standard deviation	Skewness	strain
1st	1	7	6	6.33	6.26	6.17	0.02	0.34	0.58	- 3.09	18.03
2 <sup>nd</sup>	1	7	6	6.17	6.25	6.17	0.03	0.41	0.64	- 2.03	6.66
3 <sup>rd</sup>	1	7	6	6.33	6.11	6.03	0.30	0.54	6.33	-2.19	7.39
4 <sup>th</sup>	1	7	6	6.17	6.14	6.08	0.03	0.45	0.67	- 1.31	2.50
5 <sup>th</sup>	1	7	6	6.29	5.88	5.81	0.03	0.34	0.67	-0.76	0.55
6 <sup>th</sup>	1	7	6	6.29	5.8	5.65	0.04	0.77	0.87	-0.92	0.73
7 <sup>th</sup>	1	7	6	6.33	6.25	6.08	0.03	0.51	0.71	-0.91	0.97
8 <sup>th</sup>	1	7	6	6.00	6.00	6.01	0.02	0.31	0.56	-0.76	0.96
9 <sup>th</sup>	1	7	6	6.50	6.25	6.11	0.02	0.31	0.56	-0.84	1.18

#### Data analysis

Factorial analysis test was used for approving data description and generating research results to under-study society. Results of this test are represented in the following table.

**Table 2.** KMO measures and the results of Kervit Bartlett- correlation matrix

<i>Significance Sphericity KMO</i>
<i>p = 0.00036 14186.290 0.904</i>

The results of KMO and Kervit Bartlett test are represented to carry on factor analysis using refraction to main components method to achieve the highest accuracy of sampling and not zero correlation matrix of data in society. The results suggest that factor analysis was justifiable.

**Table 3.**Final characteristics of factor analysis to explore effective factors on creating prevalent school

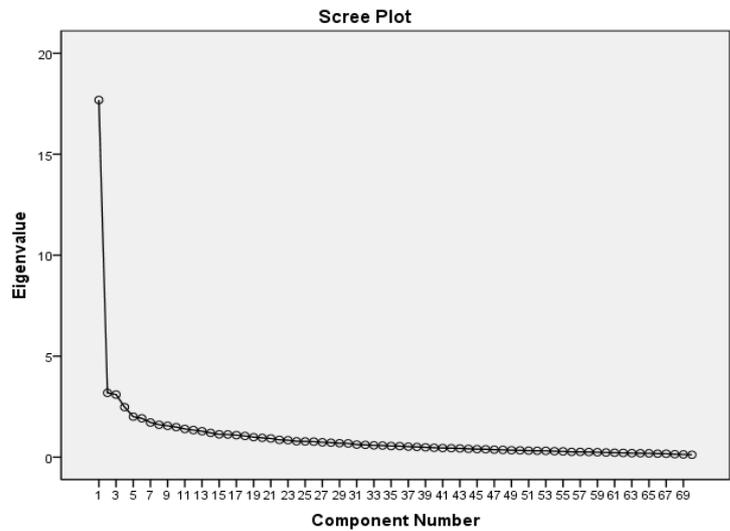
Factors	Special percentage	Variance percentage	Density percentage
1	17.686	25.265	25.265
2	3.183	4.548	29.813
3	3.099	4.427	34.240
4	2.477	3.539	37.778
5	2.003	2.862	40.64
6	1.925	2.750	43.390
7	1.715	2.449	45.839
8	1.605	2.293	48.132
9	1.552	2.217	50.349

To determine the fact that evaluation tool consists of some meaningful factors, three criteria have been considered:

- 1) Special value
- 2) Variance ratio determined by two factors
- 3) Evolutionary diagram of special values

These criteria of questionnaire were represented in Table 3. As it's clear, the first factor includes 25.265% of special value and 50% of the whole variance, which is completely different from other factors. According to Scree diagram with gradient started from 9<sup>th</sup> factor, for investigating the real amount of saturated factors of questionnaire 9 factors were selected.

Since the matrix of not rotated factor and its loads can't give a meaningful structure, we decided to transfer those factors explored based on common method to new axis using Varimax rotate to make the exploration of questions of questionnaire and structural recognition of simple structure available which represent main and clear lines for achieving changeable solutions. Matrix of factor is represented in Table 4.



**Fig. 1.**Scree diagram to determine the effective factors on creating prevalent schools

**Table 4.** Matrix of rotated factors of 70 questions using Varimax method

		Factors / Indexes																	
1 <sup>st</sup>	I	2 <sup>nd</sup>	I	3 <sup>rd</sup>	I	4 <sup>th</sup>	I	5 <sup>th</sup>	I	6 <sup>th</sup>	I	7 <sup>th</sup>	I	8 <sup>th</sup>	I	9 <sup>th</sup>	I		
0.564	1	0.469	32	0.358	20	0.438	52	0.417	12	0.617	27	0.454	59	0.364	8	0.386	26		
0.693	2	0.509	33	0.387	37	0.533	53	0.587	16	0.609	28	0.616	60	0.592	9	0.406	37		
0.677	3	0.530	34	0.429	39	0.637	54	0.716	17	0.623	29	0.658	61	0.468	10	0.529	41		
0.499	4	0.482	35	0.669	57	0.647	55	0.490	43	0.598	30	0.653	62	0.557	11	0.562	42		
0.337	5	0.382	36	0.539	58	0.756	56	0.533	53	0.537	31	0.528	63	0.373	13				
0.547	6	0.390	38	0.517	59	0.669	57	0.637	54			0.363	64	0.451	14				
0.567	7	0.386	39			0.539	58	0.647	55										
0.368	13	0.509	46			0.517	59	0.756	56										
0.439	19	0.631	47																
0.415	20	0.602	48																
0.645	21	0.555	49																
0.636	22	0.642	50																
0.591	23	0.620	51																
0.615	24	0.462	52																
0.531	25																		
0.442	33																		
0.453	34																		
0.454	35																		
0.456	38																		

<sup>1</sup>I = Indexes

According to analysis of 9 explored factors, identification and nomination of analysis factors are as follow:

- 1) Essence and size of variables that had higher portion of explored factors
- 2) Investigating glossary and phrases to consider name and identification, prospect, and incidental implications of variables
- 3) Existing theories and the results of previous studies

## CONCLUSION

Research data were gathered using 70 question questionnaire prepared by the researcher. The questionnaire was distributed among 400 high school managers of Tehran. Statistical test, known as analysis of factors of explored components, were carried on to find the answer of the following questions:

- 1) What are the effective factors on creating prevalence school among Tehran high schools?
- 2) What are the constituent criteria of these factors?
- 3) What are the hierarchy of these factors and indicators?

Results of this test represented that:

- 1) All in all, there are 70 indicators effecting prevalence schools in Tehran, all of which are in agreement with cultural, political, social, economic, religious, etc., values of teaching and training organization
- 2) There are 9 factors influencing establishment of prevalence school:
  - a) Skills of managers (25.265%)
  - b) Ability of teachers (4.548%)
  - c) Equipping schools with technology and using it
  - d) Objective celebration of religious and national ceremonies (3.359%)
  - e) Acquiring international standards (2.862%)
  - f) Success of students in entering higher education institutions (2.750%)
  - g) Participation of students and their parents in school problems (2.449%)
  - h) Dominance of human relationships in school (2.293%)
  - i) Using efficient tools for encouragement and punishment (2.217%)

In general, these 9 factors constitute 50.34% of effecting factors variance in creating prevalence school.

- 3) Each of the above mentioned factors include the following indicators:

Factor 1: skills of managers based on priority obtained from analysis of factor include the following indicators, which comprise 25.265% of the whole variance:

1. Familiarity of manager with new principles of planning
2. Familiarity of manager with different leadership methods in order to use effective management method
3. Supervising and accurate evaluation of employee's work
4. Making employees familiar with psychological skills
5. Preparing job description of employee
6. Creating improvement environment for employees
7. Work of manager based on systematic management
8. Familiarity of manager with objectives of high school period
9. Education level and major of manager
10. Preparing an environment for self-evaluation of responsibility of employees
11. Familiarity of manager with school regulation and financial process
12. Encouraging teachers to use various evaluation methods
13. Managing budget for school expenses
14. Cooperation of other organs to offer better services at school
15. Strategic thinking of manager

Factor 2: ability of teachers includes the following indicators, which comprise 4.548% of the whole variance:

1. Educational consulting students individually and in group
2. Creating appropriate environment to increase creativity of students
3. Teaching life skills to students
4. Reinforcing self-assessment in students
5. Making students familiar with correct studying methods
6. Using energetic teaching method
7. Paying attention to individual differences of students
8. Using different learning and teaching methods
9. Paying attention to different dimensions of student intelligence
10. Having expert advisors at school
11. Assessing the needs and holding family education classes
12. Using research-based teaching methods

Factor 3: equipping schools with technology and using it (smart school) include the following indicators, which comprise 4.427% of the whole variance:

1. Equipping school classes with IT equipment
2. Adjusting student numbers with educational standards
3. Having subjective classes
4. Strengthening of self-learning in teachers
5. Adjusting the amount of employees and students
6. Worldly thinking and national practicing
7. Using technologies at school in all the possible areas
8. Using IT in learning and teaching process
9. Ratio of MA teachers to other teachers

Factor 4: objective celebration of religious and national ceremonies includes the following indicators, 3.359% of the whole variance:

1. Participation of students in continuous celebration of religious ceremonies
2. Holding objective and glorious celebrations in religious and national ceremonies
3. Considering the quality of student's nutrition
4. Relationship between literacy of parents and educational progress of students
5. Holding objective camping and visiting scientific, religious, and recreational places
6. Agreement between parents and school on the quality of services
7. Holding and participating on cultural, artistic and athletic competitions

Factor 5: acquiring international standards include the following indicators, which comprise 2.862% of the whole variance:

1. Acquiring education- based international standards for school
2. Satisfying beneficiaries by permanent improvement of school activities
3. Relationship between educational degree and teaching branch of teachers
4. Ergonomics of school facilities
5. Equipping school with necessary equipment
6. Manager tendency to 360 degree evaluation at school
7. Number and quality of up to date books and journals of school library
8. Familiarity of teachers with second language
9. Using experiments of teachers of other schools

Factor 6: success of students in entering higher education institutions include following indicators, which comprise 2.750% of the whole variance:

1. Communicating with graduated students
2. Acceptance of graduates in higher education institutes
3. Success of students in final exams
4. Number of conferences hold on teaching and learning area
5. Having scientific supporter for each of the lessons in out-of-school time

Factor 7: participation of students and their parents in school problems include the following indicators, which comprise 2.449% of the whole variance:

1. Participation of students in school issues
2. Using united and standard tests
3. Assessing the need for holding extracurricular activities based on instruction
4. Observing standards in educational environment

Factor 8: dominance of human relationship at school includes the following indicators, which comprise 2.293% of the whole variance:

1. Innovation and creativity of school managers
2. Preparing annual executive calendar and presenting it on summer
3. Ability of manager in interpreting and analyzing exam results
4. Regarding the effect of latent curriculum at school
5. Dominance of human relationship at school

Factor 9: using appropriate tool for encouraging and punishing include the following indicators, which comprise 2.217% of the whole variance:

1. Using appropriate tool for encouragement and punishment
2. Continuous and positive relationship with parents
3. Having student-based research activities
4. Having fresh morality, decent appearance and observing Islamic values by employees

In general, this research has the following limitations. Considering these limiting factors necessitate cautious implementation of the findings:

- 1) Regardless of obeying the rules of random sample selection, the results of this research can't be generalized due to the limitation of our study to Tehran schools.
- 2) Little attention of managers and employees to research and importance of research results.
- 3) Empirical data of research is gained by 70-question indicators of creating prevalence school, if the other scales with different contents were used, more accurate answers will be gained.

- 4) There are many other variables in creating a prevalence school. In this research only 50.34% of descriptive evaluation quality enhancing variance is studied. Although this is a good amount for this questionnaire and appropriate conclusions have derived, but it's necessary to determine remaining 49.5%.
- 5) Giving information and further cooperation with officials, managers and teachers in a cooperative environment and specified time for answering questions is effective when there are complete explanations and definition of contexts, indicators, and each of the questions, and the aim of each question is to increase efficiency of the research tools.

The following suggestions are represented in this research:

1. Due to the importance of creating prevalence school, it's suggested to carry on this research on primary, secondary, and high schools and on teachers, managers, experts, and etc.
2. Before starting new educational year and during school time, it's better to hold educational workshop to increase school status.
3. To create a website to inform people of every aspect of creating prevalence school
4. To hold periodical exhibition in different areas on prevalence schools and recognizing and introducing the best schools to encourage school managers.
5. To classify state schools based on measurable scales such as educational space, school facilities, educational degree of managers and teachers, entering to higher educational institutions, etc. to create suitable circumstances to increase educational level of schools.

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