

ORIGINAL ARTICLE

# Critical Success Factors of Safety in Tehran Governmental High Schools

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## ABSTRACT

The school environment is a place wherein students spend one third of their life with the other students and school staff. Therefore, it is essential to pay continuous and specific attention to safety problems in schools. We identified 20 critical success factors (CSFs) in the current study based on previous researches in order to achieve effective school safety. Then these factors validated by 33 governmental high school administrators. This survey was conducted in Tehran, among 96 governmental high school administrators. The data for this survey was collected from 96 high school administrators and then we prioritized those success factors based on high school administrators' viewpoints. "Physical safety" was the most influential factor for school safety in Tehran governmental high schools. The last four factors of school safety CSFs were excluded from the list. In conclusion, physical safety which is the most traditional school safety element and concerned with the physical vulnerability of the buildings at school, plays a major role in making a safe school in Tehran governmental high schools.

**Keywords:** *School safety, high school administrators, Governmental high schools, CSFs, Tehran*

## INTRODUCTION

Educational systems in every country have an inevitable role in achieving the goals. Schools as a part of the educational systems, as well as many educational and scientific centers, have a major role in this development process. Nowadays, schools have faced a variety of challenges; one of them, which is the most frequent one, is safety challenge. Although, there are laws and regulations that may assure students' safety, but this is still a serious problem for students in school environments [1].

Generally, nowadays schools face many safety-challenging factors such as bullying, assaultive and gang violence, drug and alcohol use, natural disasters, car accidents, suicide, and death of a student or school staff that can directly affect learn or teach [2].

The school environment is an environment that students spends one third of their life with teachers and other students and staff [3]. Therefore, it is important to pay continuous and specific attention to safety problems in this environment [4]. Schools accommodate too many students, teachers, administrators and other supportive professionals, and so they have to provide safe working situations for staff and students [5].

In an unsafe school, we can see fear among its teachers and students, and so it leads to interrupted learning process. Unsafe learning condition makes bad effects on school; reduces teacher effectiveness and student's participation, increases student anxiety and destroys the valuable school building and the facilities [6]. Unsafe schools environment make children terminate their schooling and make parents refuse to register and keep their children in the school [7].

Some researchers believe that school safety characterized by two distinct dimensions; physical and psychological safety. These two concepts are

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interrelated and are critical to make the schools safe [2]. Other researchers believe that school safety cover safety problems ranges from preparing for natural disasters to preventing school violence and saving students from illnesses. School administrators are responsible to provide students with safe environment at schools [5]. Devine and Cohen (2007) believed that students all need to feel safe to discover, learn, and relate in healthy ways. Feeling safe in school needs to feel socially and emotionally as well as physically safe. A safe school shapes student learning and development [8]. Davis (2005) believed that school safety has two points of view; condition and process. As a condition, school safety can be defined as an effective, safe environment, which is disciplined very well, as an on going process, actively evaluates the school's needs in order to make necessary changes [9].

In this regard, school would be safe if can create a social and physical environment that reinforces appropriate behavior. The social environment includes the norms, rules, policies, procedures and their enforcement, and any support necessary to enable students and adults to behave properly. The physical environment includes the way in which the building and the school's daily programs are managed to prevent the problems. However, various studies in recent years have shown that the schools are not so safe for the students and for the school staff due to some threatening problems for school safety [1].

A safe school is a school with no injury to student and staff, no damage to equipment, machines and tools, no damage to environment, no loss of school competition, no damage to school image or brand name, ensuring increased scientific productivities [10]. In order to make a school safe, it requires watching over what takes place in the school environment and being cautious about environment condition and situations which can make harm [11]. We must never feel comfortable and think that schools are safe places for our students. Therefore, we must persistently try our best to make our schools as safe as possible, because the students deserve it.

Today, about 18 million students (about 1/3 of peoples in the country) are studying in about 100,000 schools in Iran. About 7% of them are studying in high schools in Tehran who are vulnerable so it is important to make a safe environment in these places [12]. Insufficient educational space per capita, schools nearness to unsafe places, old school buildings, unhealthful toilets and drafts, unsafe classrooms and grounds, risk of electric shock, fire, inadequate and inaccessible first aid facilities, inappropriate board and seats, insufficient and Non-standard grounds are the most important safety issues in Tehran's governmental high schools [13].

Although safety in schools and its actual state has been studied extensively, minimal effort has been made to investigate factors contributing to success of making schools safe. In this regard, it is crucial to discover specific factors that are significantly important in order to build successful safe schools. The concept of

"critical success factors" (CSFs) was introduced by Rockart for the first time [14]. He believed CSFs as those a few essential domains of activity, which are necessary for a particular company to reach suitable results and its goals. CSFs, in emergency management, are vital elements necessary for a particular response to disaster. They are necessary for a successful secure activity, and they contribute to achieve success directly [15]. Therefore, in the case of school safety, school accidents, and emergency conditions, they can be so useful and helpful. CSFs in school safety are few essential conditions, characteristics or variables that are necessary to make schools safe. Some studies [16-20] have identified several factors contributing to successful safe schools such as family involvement, Law enforcement and policymaking, physical safety, social safety, and cultural safety. Most of them were descriptive reviews, lacked detailed quantitative analysis, and so failed to prioritize the importance of those success factors.

Therefore, the aim of this research was to identify and quantitatively prioritize the factors contributing to successful safe school in governmental high schools in Tehran and so authors hope that this research would be useful to everybody who cares about student's safety in the country.

## MATERIALS AND METHODS

Based on school safety document review and previous researches, 20 factors were commonly proposed as critical elements for making schools as a safe environment. First, a pre-test was performed to ensure the questionnaires were phrased appropriately, practically feasible, and significant. Fifty-five high school administrators from all over Tehran, including 34 men and 21 women, who have been involved in managing schools for at least 13 years, were provided with copies of the original questionnaire. The subjects were asked to comment on the readability, comprehensiveness, and accuracy of the questionnaires. Thirty-three copies were retrieved for the pre-test. It was inferred that all identified (20) CSFs are strongly accepted. These factors are (1) Planning to achieve the safety goals and preventive programs, (2) Student involvement and Shared decision making, (3) Personal competency and qualification, (4) Family and community involvement, (5) Leadership, (6) Management support and commitment, (7) Cultural environment safety, (8) Academic achievement, (9) Goal setting; clear and realistic goals, (10) Sufficient resource allocation and support, (11) Identify problems and assess progress towards solutions, (12) Discuss safety issues openly, (13) Respectful behavior with students, (14) Physical environment safety, (15) Mass media, (16) Law and policy enforcement, (17) Preventive security measures, (18) Social environment safety, (19) Improve positive behavior among students and personnel, and (20) Appropriate safety training and education.

**Table 1.** Critical success factors for school safety in Tehran

No	Factor	Source
CSF1	Planning to achieve the safety goals and preventive programs	[20, 21, 22, 23, 24, 25]
CSF2	Student involvement and Shared decision making	[8, 26, 2]
CSF3	Personal competency and qualification	[27, 28]
CSF4	Family and community involvement	[26, 20, 31, 29, 30, 25, 17, 10, 23, 24]
CSF5	Leadership	[27, 16]
CSF6	Management support and commitment	[28, 10, 31]
CSF7	Cultural environment safety	[27, 29, 16, 31, 17]
CSF8	Academic achievement	[23, 26]
CSF9	Goal setting and clear and realistic goals	[29, 25]
CSF10	Sufficient resource allocation and support	[28, 25]
CSF11	Identify problems and assess progress toward solutions	[26, 30, 25]
CSF12	Discuss safety issues openly	[26, 32]
CSF13	Respectful behavior with students	[26, 29, 33]
CSF14	Physical environment safety	[30, 28, 29, 27, 16, 34]
CSF15	Mass media	[16, 35, 25]
CSF16	Law and policy enforcement	[20, 28, 29, 30, 16, 27, 24]
CSF17	Preventive security measures	[24, 27, 30]
CSF18	Social environment safety	[27, 8, 16]
CSF19	Improve positive behavior among students and personnel	[26, 20, 27, 31, 17, 18, 10, 36]
CSF20	Appropriate safety training and education	[30, 10, 25, 24]

Table 1 reviews these critical success factors to build a safe school sourced from school safety literatures. In this study, the survey was carried out on governmental high schools in Tehran. Therefore, as the second step, a questionnaire was devised to facilitate gathering practitioners' views. The final questionnaire comprised two parts: (i) questions on governmental high school administrators' general information and their management experiences, and (ii) questions on their perception about the influence of success factors on high school safety.

The questionnaires were designed on a 5-point Likert scale, to investigate the degree of influence of CSFs on school safety, as perceived by the governmental high school administrators in Tehran, and the respondents were asked to rate factors listed in Table 1 on a five-point Likert scale, to make a safe school, varying from "completely disagree" (1) to "completely agree" (5). Because Persian is the formal language in Tehran, the questionnaire was arranged in Persian.

The questionnaire survey was conducted in Tehran and the whole process lasted about three months, from April to July 2011. Overall, 121 questionnaires were distributed via postal letter to the survey sample which was randomly selected from the target population, who were all governmental high school administrators in Tehran. With the response rate of 80%, 96 administrators, including 62 male and 34 female, answered the questionnaires and sent them back as

shown in Table 2. The obtained raw data were then used as input and analyzed. The analysis was conducted to rank the success factors based on the average score. A *t*-test was then carried out in order to evaluate the general agreement of ratings on the CSFs and determine the factors, which have a large influence on a School safety. In this step, we analyzed whether the mean rated by all respondents differs significantly from the values that identified in a hypothetical value and previous researches. In this study, a hypothetical value of three is assigned as this corresponds to the "very influential level" in the five-point Likert scale.

## RESULTS

Table 3 shows that 16 factors have a large influence on the success of safety program implementation and the following factors were thus excluded: Leadership (CSF5), Cultural environment safety (CSF7), Respectful behavior with students (CSF13), and Improve positive behavior among students and personnel (CSF19).

Based on the findings obtained in Table 3, the calculated *t* score related to Planning to achieve the safety goals and preventive programs (CSF1), Student involvement and shared decision making (CSF2), Personal competency and qualification (CSF3), Family and community involvement (CSF4), management support and commitment (CSF6), academic achievement (CSF8), Goal setting and clear and realistic goals (CSF9), Sufficient resource allocation and support

**Table 2.** Respondents General information

Table 2: Respondents General Information															
		Work experiences; years					Education		Age; years					Total	
		1-5	5-10	10-15	15-20	20-25	BA	MA	25-30	30-35	35-40	40-45	45-50	50-55	
Gender	Female	5	11	11	5	2	19	15	2	5	7	11	7	2	34
	Male	6	25	15	15	1	29	33	9	10	15	15	8	5	62
Total		11	36	26	20	3	48	48	11	15	22	26	15	7	96

**Table 3.** one sample t test; Evaluation of the general agreement on the CSFs and determine the factors which have a large influence on a School safety

Critical Success Factor	Mean	Standard Deviation	t	P-value	df
					95
CSF1	4.042	0.7243	14.09	0.00	
CSF2	3.635	0.9190	6.77	0.00	95
CSF3	3.438	1.1771	3.64	0.00	95
CSF4	3.271	0.9567	2.77	0.003	95
CSF5	2.865	0.9017	-1.47	0.928	95
CSF6	3.438	1.0544	4.07	0.00	95
CSF7	2.771	0.8141	-2.76	0.997	95
CSF8	3.833	0.8293	9.85	0.00	95
CSF9	3.146	0.7811	1.83	0.035	95
CSF10	4.125	0.6689	16.48	0.00	95
CSF11	3.271	1.0807	2.46	0.008	95
CSF12	3.229	0.8520	2.64	0.005	95
CSF13	2.865	0.6589	-2.01	0.977	95
CSF14	4.083	0.5743	18.48	0.00	95
CSF15	3.177	0.8078	2.15	0.017	95
CSF16	3.188	0.8248	2.23	0.014	95
CSF17	3.458	0.6793	6.61	0.00	95
CSF18	3.323	1.1832	2.67	0.004	95
CSF19	2.917	1.0226	-0.8	0.787	95
CSF20	4.240	0.7779	15.61	0.00	95

(CSF10), Identify problems and assess progress toward solutions (CSF11), Discuss safety issues openly (CSF12), Physical environment safety (CSF14), Mass media (CSF15), Law and policy enforcement (CSF16), Preventive security measures (CSF17), Social environment safety (CSF18), Appropriate safety training and education (CSF20) are bigger than the t of the Table, therefore, it is concluded that these critical success factors are significant in survey. Calculated t test of CSF1, CSF2, CSF3, CSF4, CSF6, CSF8, CSF10, CSF11, CSF12, CSF14, CSF17, CSF18, and CSF20 are larger than the Table t with 95% confidence level. Therefore, with the 99 % of confidence, we can conclude that these CSFs are significant. Ranking of CSFs are performed by Coefficients of Variations (COV) as shown in equations (1), (2) and (3) respectively [37].

$$\bar{X} = \frac{\sum_{i=1}^{96} x_i}{96} \quad (1)$$

$$S^2 = \frac{\sum_{i=1}^{96} (x_i - \bar{X})^2}{95} \quad (2)$$

$$COV = \frac{S}{\bar{X}} \quad (3)$$

The CSFs are ranked using their respective COV. Using COV in ranking is more reliable because it considers both  $\bar{X}$  (Expected Value) and  $S$  (Standard Deviation) [38]. Table 4 shows the detailed analysis of the rankings from School administrators' viewpoints.

It is found from Table 4 that the most important CSF is "Physical environment safety" (CSF14) with smallest COV =0.1406. "Sufficient resource allocation and support" (CSF10) is the second important CSF. The two CSFs namely, planning to achieve the safety goals and

preventive programs (CSF1), and appropriate safety training and education (CSF20) were highly rated by school administrators as essential elements to make a safe school. Likewise according to a large number of studies [29, 28, 22, 10], we found four variables (Physical environment safety, Sufficient resource allocation and support, Planning to achieve the safety goals, preventive programs, Appropriate safety training and education), to be the key success factors for school safety in Tehran.

On the other hand, leadership (-1.47), cultural environment safety (-2.76), respectful behavior with students (-2.01), and improve positive behavior among students and personnel (-0.8) have the lowest influence. Table 4 also shows the overall ranking of 20 success

**Table 4.** The overall ranking of critical success factors by all respondents

Critical Success Factor	COV	Rank
CSF1	0.1792	3
CSF2	0.2528	8
CSF3	0.3424	15
CSF4	0.2925	12
CSF6	0.3067	13
CSF8	0.2163	6
CSF9	0.2483	7
CSF10	0.1621	2
CSF11	0.3304	14
CSF12	0.2638	11
CSF14	0.1406	1
CSF15	0.2543	9
CSF16	0.2588	10
CSF17	0.1964	5
CSF18	0.3561	16
CSF20	0.1835	4

factors by all respondents.

## DISCUSSION

The highest ranking by all respondents was physical environment safety. Like Bass (2004) we found that school physical environment safety play a major role in making a safe school in Tehran governmental high schools which therefore considered as an extremely influential factor to the success of school safety. Physical environment of the school is the most traditional school safety element. The maintenance of the grounds, buildings, and classrooms are placed all in this aspect of safety in schools. It seems that Tehran governmental high schools need this factor more than any other factors to make sure of their school's safety.

Seabrook (2001) identified funding and governmental support, as a key factor in school safety [28]. Here our findings had partially confirmed this claim in Tehran governmental high schools and this factor was ranked as the second most influential factor. It seems that old schools in Tehran made respondents to identify this factor as one of the highest rate factors to make safe schools.

The third ranked factor for planning to achieve the safety goals was preventive programs. Each school should prepare a school safety program based on needs of the school to make sure that school staff and students are safe [20]. Our findings support this idea that school safety plans are essential elements to make our schools safe.

The fourth ranked factor was safety training and education, which is another important element to make our schools safe in Tehran, as school administrators said. It seems that many accidents and injuries in Tehran high schools can be prevented if appropriate safety training and education provided. Therefore, it is not surprising that this factor obtained a high value among the other factors.

It is worth noting that all respondents perceived cultural environment safety, improving positive behavior among students, personnel respectful behavior with the students and leadership as the four least influential factors influencing school safety in Tehran governmental high schools.

We can consider two separate concepts for school safety as physical and psychological safety, both are critical for the success establishing a safe school environment. In fact physical safety is concerned with the physical vulnerability of the buildings and the measures that adults take to ensure that students are safe from bodily harm at school, and psychological safety is concerned with the mood of the students & staff and the relationship between them and steps that ensure that students feel safe at school and view it as a place where they can study and are free from emotional or psychological harm [2]. It seems that the highest-ranking factors belong to Physical aspect of school safety and the four less influential factors are categorized in psychological aspect of school safety. Our findings indicate that Physical aspect of school

safety play a more important role than the psychological safety at school in Tehran governmental high schools.

## CONCLUSION

This research study was set out to explore the critical success factors of school safety in Tehran governmental high schools using quantitative methods. The data collected from 96 high school administrator from Tehran, provided enough empirical information for statistical analysis to arrive at a number of conclusions. This research identified 20 factors at first and after analysis, excluded 4 factors and then ranked 16 CSFs else based on their degree of influence. The researchers found that "Physical environment safety" was the most influential factor for school safety in Tehran governmental high schools. The results of the 16 CSFs in the order of the degree of influence were: (1) Physical environment safety; (2) sufficient resource allocation and support; (3) planning to achieve the safety goals; preventive programs; (4) appropriate safety training and education; (5) preventive security measures; (6) academic achievement; (7) goal setting; clear and realistic goals; (8) student involvement and shared decision making; (9) mass media; (10) law and policy enforcement; (11) discuss safety issues openly; (12) family and community involvement; (13) management support and commitment; (14) identify problems and assess progress toward solutions; (15) personal competency and qualification, and (16) social environment safety. It is worth noting that the first four factors were the highest ranking by all respondents and so considered as extremely influential factors to the success of school safety and last four factors were excluded from the list of CFSs for school safety in Tehran governmental high schools based on the results of our research because they were least influential factors influencing governmental high school safety in Tehran.

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