On the consideration of the relationship between the application of Six Sigma Management and Job Performance with the Intervening role of Job Satisfaction

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Abstract

Due to the significance of education and training category and job performance of school principals as well as the effects of principals’ job satisfaction on their performance, school, and achieving the educational goals in educational systems, this study, using the correlation method, is conducted to consider the relationship between the application of six sigma management and job performance of the principals in high schools, with the intervening role of job satisfaction. The statistical population for this study is 600 principals including 320 men and 280 women in Tehran education and training general organization. Multilevel cluster random sampling was used to select the samples, and based on the S. H. Bola formula, the sample size for this study included 234 high school principals in Tehran consisting of 128 men and 106 women. In this study, the measurement instrument included six sigma questionnaire which consists of 30 items and its Cronbach's alpha is 0.79. Moreover, in order to evaluate the rate of principals’ job satisfaction, we used Smith Kendal and Hallin’s job satisfaction questionnaire which includes 30 items and its Cronbach's alpha is 0.81. Furthermore, in order to evaluate the rate of principals’ job performance, Sorino’s questionnaire was used which includes 36 items and its Cronbach's alpha is 0.86. In this study, Pearson correlation test and regression were used to analyze the data. The results of this study indicated that there is a statistically significant relationship between the application of six sigma in management and the principals’ job satisfaction.

Introduction

Job performance is one of the most significant results of work. In an organization, Job performance is a variable which is taken into account and evaluated frequently. This issue gains significance when we perceive that an organization’s success and failure depends on staff’s performance in general and its manager’s in particular (Riggio, 1386, p 38). Today, with the existing competition among organizations, even educational organizations such as schools, managers are becoming interested in managerial measures and enriching the management. This interest is due to some factors: first, enriching and improving the managers’ performance can promulgate the culture of organization or society. Second, the managers’ efficacy will enhance due to their power division, because when managers give power to their subalterns, it provides creativity and commitment in them. Third, the improvement in managers’ performance will increase the staff’s motivation. Therefore, educational management whose goal is to facilitate learning in various aspects (learning to know, learning to do, and learning to live better) and finally train professional and accountable citizens, needs to gain ability and capability in technological, economic, social, thought, managerial, leadership, and moral domains.

According to the above-mentioned points, conducting the educational tasks and their management should be given to capable and qualified individuals, and also there should be some attempts to enhance the performance of educational managers (Shadaluee, 1391, p. 102). Nowadays in education and training, we need the managers who are experts and skillful in education and training; besides, they should have essential skills in perceiving and recognizing the organizational problems relevant to all aspects of the staff. The managers’ performance is a tool to evaluate and judge the manager himself and the institution led by him. Therefore, performance is beyond the goals of an organization and it is
the outcome of the individuals’ activities in the organization. That is, what individuals do in an organization is, in general, known as performance (Ingvarson, 2010, p. 77)

Due to dealing with the students who are in a specific and critical age, educational management in high schools is of great significance, and it is different from other educational sections. In this section, high school, students are able to receive overt and covert education such as order and discipline as necessities for their adulthood. Therefore, in this educational period, management is extremely significant. Since in every organization including educational ones such as schools, role of the organization manager is considered as one of the important factors in leading that institution, therefore, it is necessary to evaluate and study the educational managers’ job performance and the factors affecting that in order to be aware of their success rate in leadership for achieving the appropriate results.

Job satisfaction is one of the important factors in enhancing the efficacy and creating motivation and positive attitudes in individual with regard to his/her job. Therefore, promoting the morale and increasing the job satisfaction are important issues which should be taken into account by managers of education and training. The managers and staff of education and training should make use of appropriate methods and strategies in order to provide individual’s satisfaction and enhance the organization’s outcome (Ghafurian et al., 1390).

Today, society improvement is rooted in the optimum use of that society’s human resources. Accounting this huge resource in the realm of human resources management (HRM), considering their needs and problems, and installing suitable individuals in organizations are the effective factors for each organization’s success and improvement. An important issue which needs to be taken into account is staff’s job satisfaction, because the evolution of a society needs skillful and dexterous human forces, and in order to achieve high and outstanding results, it is very important to have morale and job satisfaction (Mirsepas, 1378).

Job satisfaction is an important factor in job success and it is also considered as a significant factor in individual’s efficacy and satisfaction, because this factor creates a positive sense and attitude in individual regarding his/her job and workplace conditions. So, according to the significance of job satisfaction and its effects on individuals’ efficacy and function, it can be concluded that this fundamental factor has an important role in the lives of all practitioners in the realm of education and training in general, and the managers in particular. That is, because a manager’s behavior can pave the way for staff’s maturity. In fact, school’s principals can encourage other school staff such as teachers to take the responsibilities for achieving the goals of country’s education and training.

In educational system, schools principals are, directly or indirectly, related to students and they have great roles in the efficacy of education and training system (Saki et al. 1392). As a new method in quality management and organizational evolution strategy, six sigma has caused many organizational improvements. Studies indicate that six sigma approach in educational systems has provided more organizational efficacy. Six sigma is a fragile strategy in management which includes evaluation and judgment with regard to the values and culture, and it creates quality culture in organizations (Antoni and Benvlas, 2002).

Six sigma is a comprehensive and flexible system for achieving, protecting and maximizing the job success. Six sigma is controlled via perceiving the customer’s need, regular use of the facts, data, statistical analysis, and regular attention to management, strengthening and reviewing the job procedures. Six sigma is qualitative index and can be used all over the organization. Moreover, it is a basis for comparative improvement against the competitors with high level and it also accounts for each year improvement. In fact, Six sigma is a procedure with a set of suitable statistical tools which is
used for the implementation of management theories in order to decrease the number of errors and failures.

Therefore, this concept is not a program, but it is a managerial programming. The principles of six sigma are: real focus on customer, managing based on realities and information, focus on procedures, management and its improvement, preventive management, unlimited cooperation, moving toward perfection, and ability to tolerate failure.

**Method**

The current study is a descriptive-correlation one. The statistical population for this study was 600 high school principals in Tehran including 320 men and 280 women. Since the population was restricted, we made use of H. S. Bola (1970, translated by Abili, 1375) to estimate sample size. So the sample size for this study included 234 high school principals in Tehran consisting of 128 men and 106 women. In this study, multilevel cluster random sampling was used. To do so, first the name of high schools in Tehran were provided, then 234 schools were selected via multilevel clusters.

In order to gather the data relevant to the application of six sigma, we used a researcher-oriented questionnaire including 30 items and its Cronbach's alpha is 0.79. For gathering the information relevant to job satisfaction, we used Smith Kendal and Hallin’s job satisfaction questionnaire, and for gathering the information related to job performance, a questionnaire on managers’ function including 36 items in Likert scale was used. This questionnaire is structured by Sorino (1999) and its validity and reliability are approved in various studies. Furthermore, in order to evaluate the rate of managers job performance, we used Sorino’s questionnaire which includes 36 items and its Cronbach's alpha is 0.86.

**Results**

In order to consider the correlation of six sigma management application and its components with job performance, Pearson correlation test was used and its results are used in table 1. As you can notice, the correlation between active management and job performance is 0.249 which is statistically significant in P value equal to zero (P= 0.000). Moreover, the correlation between focus on procedure, data management, fact-orientation, and job performance is 0.146 and 0.16 respectively. Both of them is significant in P value less than 0.05 (P<0.05).

In order to consider the rate of direct effects of 6sigma management components and indirect effects (with the intervention of job satisfaction) on job performance, linear regression was used and the results are shown in table 2. As it is shown in table 2, the coefficient of active management direct effect on job performance is 0.231, indirect effect is 0.205, and the sum of direct and indirect effects is 0.641.

The coefficient of focus direct effect on the procedure of job performance is 0.184, the indirect effect is .073 and the sum of the both direct and indirect effects is 0.257. The coefficient of focus direct effect of data and fact orientation on job performance is 0.189, the indirect effect is 0.139, and the sum of them is 0. 328. The diagram of the effects of direct and indirect components of 6sigma management on job performance is shown in Figure 1.

**Discussion**
The results of this study indicated that there is a statistically significant relationship between active management and managers’ job performance in Tehran high schools. Regarding this result, it should be explained that in active management, the emphasis is put on defining and continuous review of micro and macro goals, ranking and accurate allocation of resources, focus on preventing the occurrence of problems and confronting them. This component is considered the first step toward innovation, creativity, and making efficient changes.

These efficient changes have significant effects on managers’ job performance. In managing the high schools, prevention precedes the occurrence of errors and mistakes, and before any error can happen, we provide a solution for that. This issue will result in the decrease in time and energy waste which consequently lead to the increase and improvement in job performance. In line with this result, Zare (2011), in a study on factors affecting 6sigma, found out that if an organization aims to have a favorite performance and operate successfully, and the staff and managers possess high job satisfaction, the organizational goals should be obviously clarified. Finally, it was approved that there is a statistically significant relationship between 6sigma application and active management and job performance of the managers and staff. These finding matches the results of Ebrahimi’s study (1387).

The results of this study revealed that “focus on procedure” is significantly related to principals’ job performance in Tehran high schools. Therefore, it can be mentioned that “focus on procedure” will improve and simplify them. So, paying attention to procedures and organizational activities in schools will remove so many redundant stages in doing the activities. Consequently, we will have more time to account for and carry out other significant affairs, prioritization will be more accurately done, and finally the total performance in schools activities will enhance. It can be said that what is called “focus on procedure” in 6sigma is the definition of procedures when they are carried out. What occurs in “focus on procedure” is managers’ and staff’s dealing with job sections and the delegated activities. Undoubtedly, when managers and staff are coping with their activities during the procedure, they will have better performance regarding this issue. Farahi Buzanjani et al. (1389), in a study on the consideration of the effective factors on job performance, refer to the factors relevant to the nature of job, and consider job features and coping with the job duties as effective factors in the rate of satisfaction and dissatisfaction.

Moreover, the current study’s results revealed that there is statistically significant relationship between data management and fact-orientation and principals’ job performance in Tehran high schools. In 6sigman management, gathering the required data and their analysis will improve the performance of an organization. 6sigma determines what type of data and information are needed by managers and how these data and information can be used to maximize an organization’s profit. Achieving these goals, i.e. gathering the required data and having maximum profit, will cause an increase in job performance. In high schools, while gathering the updated data about school procedures, a kind of satisfaction is gained due to the correct ways and methods of doing the activities and tasks.

In line with the obtained results of this study, Ebrahimi (1387), in a study on considering the effects of using 6sigma approach on education quality of distance education courses in Tehran, concluded that from the viewpoint of students, real focus on customer, focus on procedure and management, their improvement, and moving toward perfection can enhance the quality of education in distance education centers. While from the teachers’ viewpoint, unlimited cooperation and managing based on information and facts can have great effects on the improvement of education quality in distance education centers. According to opinions of both groups, preventive management can have great effects on the enhancement of education quality in distance education centers, and there was no difference in the ideas of the two groups.