UCT JOURNAL OF MANAGEMENT AND ACCOUNTING STUDIES 2014(02)

Available online at http://journals.researchub.org

Identifying Critical Success Factors for Effective Development of E-monitoring

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ARTICLE INFO

Article history:
Received 19 Mar 2014
Received in revised form 29 Apr 2014
Accepted 12 May 2014

Keywords:
Supervision,,
Electronic government,
E-monitoring,
Effective development

ABSTRACT

Objective: Electronic government has been among certain concepts and strategies facilitating public management in most societies. Thus, being concerned about the said concept and making its infrastructure thought operational have always been of great interest. **Methodology:** The essential part and the most important pyramid of e-government have been devoted to e-monitoring. Essentially, such kind of supervision has been made toward general ideal of the e-government and includes the most important means for materialization of its goals accordingly. This research has been conducted aiming at identifying key factors, which influence effective development of e-supervision in four structural, technical, strategic and human dimensions. Statistical population of this research includes all experts from State General Inspection Organization (Khorasan Razavi, South Khorasan, North Khorasan, Golestan and Sistan va Baluchestan Provinces) consisting of 110 persons; the entire persons have been chosen as sample going through statistical method. Data collection means of this research is a questionnaire consisting of 40 measurements, classified on the basis of Likert Scale. **Results:** Collected data by the said questionnaire has been processed using Spss method. Chi-Squared and Friedman's Test has been used for analysis of data. According to rating of the said four dimensions, technical dimension has been the most effective one in effective development of e-monitoring and structural, strategic and human dimensions stand next. **Conclusion:** The research results indicate that all dimensions, subject of study, are effective on effective development of e-supervision. In concluding, certain guidelines have been presented for effective development of e-monitoring accordingly.

1. Introduction

Scientific and practical development in all fields of human knowledge is an absolute and evident matter, which is happening with great speed. Governments, as the most important national element of any country, inevitably go through such internal changes and transitions. Electronic government is among certain concepts and strategies facilitating public management in most societies. Thus, being concerned about the said concept and making its infrastructure thought operational have always been of great interest. On this global path, officials in our country, intelligently and thinking about good management, have taken steps toward using and hire of such concept. The essential part and the most important pyramid of e-government have been devoted to e-monitoring. Essentially, such kind of supervision has been made toward general ideal of the e-government and includes the most important means for materialization of its goals accordingly. E-monitoring, aiming at decrease of supervision and personnel references and increase of use of electronic communication, is seeking for the most suitable and efficient mechanism.

In consideration of changes all over the world, one of the sectors, which have been influenced by global changes, is public sector and governmental organizations. Electronic government refers to presentation of governmental services and information through internet and other online digital means. The electronic government may realize a few main goals of "comprehensive quality management" including customer-orientation and empowerment of societies, personnel and customers, materializing effectiveness and efficiency for public sector (Rasouli, 2007).

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DOI: https://doi.org/10.24200/jmas.vol2iss02pp59-66

Electronic government means using information technology and communication in order to change government and governance process through creating ability of access and to make it more effective and responsive. Considering another definition, electronic government means using information technology for improvement of governmental information and services, considered for citizens, employees, tradesmen and governmental agencies (Belanger et al., 2005).

One of the most important elements, associated with electronic government, which is regarded as one of its elements, is emonitoring. On a whole, supervision and inspection finds more extensive and comprehensive meaning in management literature. Government is interested in inspection over its executive organizations. Obviously, organizations are interested in evaluation of and supervision over their personnel. Recent technological progresses have led to swift growth and development of this supervising method in more social organizations (Grant & Higgins, 1989).

In recent years, extensive researches and studies have been conducted about e-monitoring and more organizations use emonitoring as a means for encouragement of desirable performance among its personnel. E-monitoring may be used as a means for supervision over and evaluation of its personnel and also, it can be regarded as an effective step for feedback of the same and effectively assist employees with identification of their problems and difficulties. The question in this study is "What critical success factors do play a prominent role in effective development of e-monitoring?" In this research, which has been conducted at district 2 of State General Inspection Organization, the researcher tries utmost to designate relevant CSF (Critical Success Factors) and to give priority to the said factors in the view of degree of importance after identification of effective critical factors. The second question of this research goes as follows (Mohsenian-Rad, 2000).

2. Materials and methods

2.1 Research Background

Hosseini and Fooladi-Toroghi & Hosseini (2010) reviewed the barriers and limits in implementing the E-Monitoring. In their research, the legal and educational limits are the most important limits to implement e-monitoring. Managers and staff enjoy cultural awareness and sufficient knowledge in employing mentioned system which is in fact some of the strengths of using this monitoring instrument. For the study of Critical Success Factors (CSFs) and application of information technology, Mashayekhi et al. (2005) in a research entitled: "a study of the key factors affecting the application of IT in Iranian governmental organizations", have identified in total 37 factors as influential key factors in the success of failure of the application of IT in Iranian governmental organizations. These factors are classified in 6 categories of human factors, structural factors, environmental factors, and the role of senior management, capacity of planning and capacity for change.

Fallahi (2007) in a research entitled, "A study of the barriers and limits of employing e-government in Iran: A case study of Ministry of Commerce", has divided the barriers of employing in five categories: Infrastructural barriers of IT, lack of IT knowledge and skills, social and cultural barriers, legal and national barriers and security barriers respectively. Different researchers in their researches have mentioned different necessities and limits as the variable in the domain of E-Monitoring and electronic government. Some of them are as follows:

Infrastructural and fundamental barriers, social and cultural barriers, legal and national barriers, security barriers, lack of It knowledge and skills by Fallahi (2007); Organizational barriers, Lack of technical skills barriers, Systemic barriers, User's problems barriers, Technological barriers by Hakim & Hakim (2009); Cultural barriers, Social Barriers by Panina & Aiello (2005); and Legal barriers, Administrative barriers by Stanton & Weiss (2000).

Some investigations have been done on the vital causes of success and failure of information technology projects. One of the researches conducted on the factors affecting the application of information technology in Iran is allocated to study the factors influencing the application of information technology in the public or governmental sector. This research which has been done by Mashayekhi et al. (2005); it refers in total, to 6 general factors (human factors , structural factors , environmental factors , the role of senior management , planning capacity and capacity to change) . It also mentioned 27 secondary factors. This research has been conducted with a qualitative attitude and in Delphi method.

Akhavan et al. (2006). It refers to the vital causes of success and failure of IT projects in the country. These researchers put forth two key factors of deep structure and surface structure. Each factor is divided into some factors and sub-factors which are influential in the establishment of IT projects.

2.2 Research Method

In consideration of nature of this research and conformity of its characteristics to kinds of research methodology, it may be stated that considering research goals, this research is of applied type because the main goal of this research is to investigate and to study critical success factors in effective development of e-monitoring and to offer an appropriate suggestion in this regard.

On the other hand, on the basis of data collection method, and concerning the fact that this research deals with description and elaboration of the relationship among variables (independent and dependent variables) and description of testable views of the research with respect to existing elements and indices in the questionnaire, and for statistical study, research method is of survey type, this research is of descriptive-survey type. In other words, it is of descriptive type because it describes and interprets what exists and it is conducted in one state in order to designate and to describe characteristics of variables (Danaeifard et al., 2008). This research is of survey type because in this research, the researcher performs a kind of survey on a sample or the entire society in order to describe attitudes, thoughts, behaviors or characteristics of the society (Ibid). This research is also of field type because it deals with study of critical success factors in effective development of e-monitoring in consideration of four structural, technical, strategic and human dimensions using a questionnaire.

2.3 Research Model

Theoretical research model consisting of four dimensions of the effective development of e-monitoring is shown in the following figure. In exploring studies and research literature and concerning the fact that monitoring is one of management processes, this research model has been designed by making

slight changes adopted from dynamic evaluation pattern of organizational elements in interaction with information technology.

- Structural dimension
- Technical dimension
- Strategic dimension
- Human dimension

a primary sample including 30 questionnaires have been pretested. Then, using respective data obtained from the said questionnaires and SPSS Statistical Software, reliability coefficient has been calculated by the use of Cronbach's Alpha Method. Cronbach's Alpha Coefficient of the questionnaire was given as 95%. The said figure indicates that the said questionnaire enjoys reliability or in other words, required reliability. The table 1 indicates final test result of reliability of the research questionnaire:

Table 1. Chemical composition of aluminum alloy AA7075-T6

N of items	Cronbach's Alpha
40	0.951

In this research, for assessment of validity of research means, every single test question has been provided by study and investigation of various references for study and then, benefiting from the viewpoints of advisors and second readers of the research and several professors, who have mastery over the subject and several experts of the inspection, the validity of questions has been tested and their amending comments have been hired and then, the same has been distributed in the respective population after required amendments are made.

A statistical population consists of a group of individuals or units, with at least one characteristic in common. The common characteristics refer to the characteristic, which are common among all elements of the population and differentiate the statistical population from other populations.

In this research, statistical population consists of all experts, chosen from District 2 State General Inspection Organization, for 110 persons totally. Respective data has been collected by numerating total number of individuals of the society (census). After distribution of questionnaires, because a few questionnaires have not been completed, analysis has been done on the basis of 96 questionnaires.

3. Discussion and results

In this research, for analysis of data, obtained from samples, both descriptive statistical methods and inferential statistical methods have been used. In fact, for data analysis, Chi-squared and Friedman's Test in SPSS software have been used for test of questions

3.1 Testing first research question

Q1: What are the key success factors in the effective development of e-monitoring?

To answer the above question, we investigate the effect of each of the identified factors.

A. To what extent do structural elements influence effective development of e-monitoring?

Table 2. Frequency of structural factors

Variable	No.	Average	Standard deviation
Structural factors	96	4.50	.649

Table 3. Observations of structural factors

	No. of observations	Expected number	Remaining
Average	8	0.32	-0.24
High	32	0.32	00.0
Very high	56	0.32	0.24
Total	96		

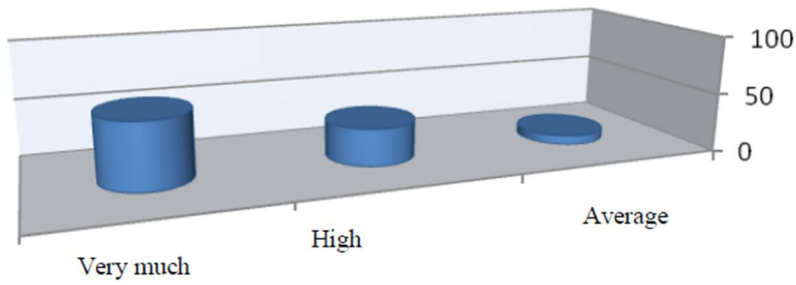

Figure 1. Frequency of structural factors

tables 2, 3 , and Figure 1 show that 8 of the respondents have chosen option "Average", 32 of them have chosen "High", and 56 of them have chosen the option "Very High" in relation to the effect of structural factors in the effective development of emonitoring.

Table 4. Results of K-Square test for structural factors

Structural factors	
36	Chi-squared value
2	Freedom
0.000	Significance

The results of table 4 show that since the calculated Chi-square (36) is significant with 2 degrees of freedom in a 99% level, therefore, it can be concluded that structural factors are quite efficient in the effective development of e-monitoring.

B. To what extent do technical elements influence effective development of e-monitoring?

Table 5. Frequency of technical factors

Variable	**No.**	**Average**	**Standard deviation**
Technical factors	96	4.83	0.375

Table 6. Observations of technical factors

	No. of observations	**Expected number**	**Remaining**
High	16	0.48	-0.32
Very high	80	0.48	0.32
Total	96		

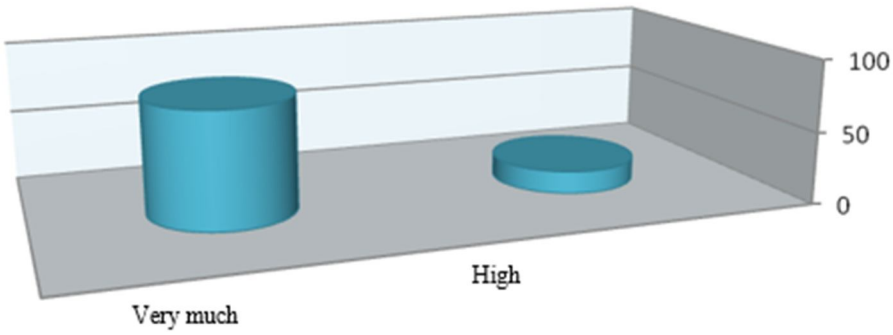

Figure 2: Frequency of technical factors

Tables 5, 6 and Figure 2 show that 16 of the respondents chose the option High and 80 of them chose the option Very High in relation to the effect of

technical factors in the effective development of e-monitoring.

Table 7. Results of Chi-squared test for technical factors

Technical factors	
42.667[a]	**Chi-squared value**
1	**Freedom degree**
0.000	**Significance level**

According to table 7, since the calculated Chi-square (42.66) is significant with a freedom degree of 1 in a level of 99%, therefore, it can be concluded that technical factors are very effective in the efficient development of e-monitoring.

C. To what extent do strategic elements influence effective development of e-monitoring?

Table 8. Frequency of strategic elements

Variable	**Number**	**Average**	**Standard deviation**
Strategic elements	96	4.42	0.643

Table 9. Strategic elements observations

	No. of observations	**Expected numbers**	**Remaining**
Average	8	0.32	-0.24
High	40	0.32	0.8
Very high	48	0.32	0.16
Total	96		

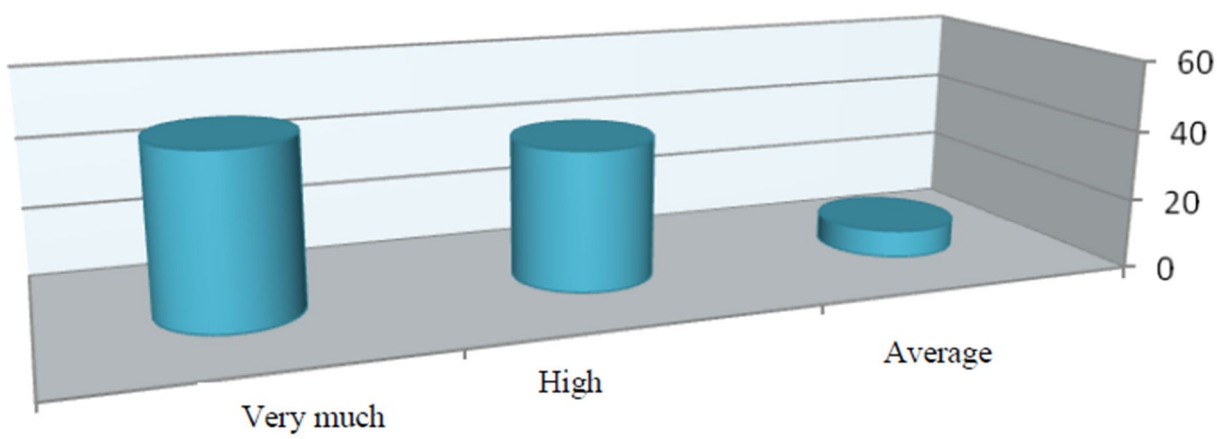

Figure 3. Frequency of strategic elements

Tables 8, 9 and Figure 3 show that 8 of the respondents chose the option Average, 40 chose High and 48 chose Very High in relation to the effect of strategic elements in the efficient development of e-monitoring.

Table 10. Results of Chi-squared test for strategic elements

Strategic elements	
28	**Chi-squared value**
2	**Freedom degree**
.000	**Significance level**

According to table 10, since the calculated Chi-square (28.00) is significant with a freedom degree of 2 in a level of 99%, therefore, it can be concluded

that strategic elements are very effective in the efficient development of e-monitoring. **D. To what extent do human elements influence effective development of e-monitoring?**

Table 11. Frequency of human elements

Variable	Number	Average	Standard deviation
Human elements	96	4.25	.754

Table 12. Human elements observations

	No. of observations	Expected number	Remaining
Average	18	32.0	-14.0
High	36	32.0	4.0
Very high	42	32.0	10.0
Total	96		

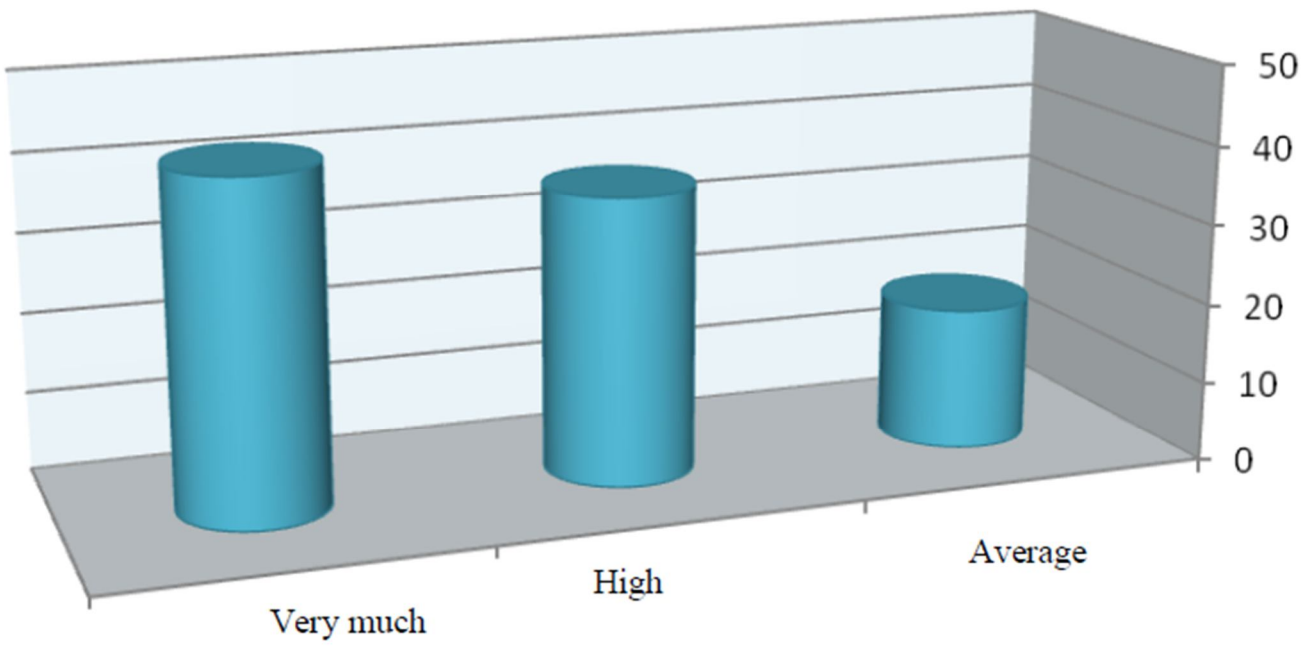

Figure 4. Frequency of human elements

Tables 11, 12, and Figure 4 show that 18 of the respondents chose the option Average, 36 chose High and 42 chose Very High in relation to the effect of human elements in the effective development of emonitoring.

Table 13. Results of Chi-squared for human elements

Human elements	
9.750[a]	**Chi-squared value**
2	**Freedom degree**
.008	**Significance level**

According to table 13, since the calculated Chi-square (9.75) is significant with a freedom degree of 2 in a level of 99%, therefore it can be concluded that human elements are very effective in the efficient development of e-monitoring.

Considering the results of Chi-squared test, questions of the questionnaire relevant to this question were set forth that all structural, strategic, technical and human elements were effective in the development of effective e-monitoring from the viewpoint of sample group.

3.2 Testing second research question

Q2: How is the priority of the identified key success factors in the effective development of e-monitoring and relevant structures?

To determine which of these elements are more effective in the efficient development of e-monitoring, we do as follows by using Friedman test:

Table 14. Ranking of Friedman test results - elements

Variable	Rank average	Rank
Structural elements	2.47	2
Technical elements	3.12	1
Strategic elements	2.30	3
Human elements	2.11	4

Table 15. Results of Friedman test results for ranking the elements

Variable	
96	**Number**
74.880	**Chi-squared value**
3	**Freedom degree**
.000	**Significance level**

According to tables 14 and 15, since the significance level of the test, i.e., (p=0.000) is smaller than the test alpha, i.e., 0.05, it can be concluded that there is a significant difference between the four elements and technical, structural, strategic and human factors have the highest effects, respectively.

4. Conclusion

Research findings show that structural factors have great effect on effective development of e-monitoring, standing after technical dimension in order to importance. Also, those technical factors highly influence effective development of emonitoring and enjoy the highest priority. We concluded that strategic factors highly influence effective development of emonitoring, standing third. Based on Human Dimensions, of research model, human factors highly influence effective development of e-monitoring, standing at the lowest level

Relying on research results and findings and in consideration of observations and interviews with the elite and considering field of work and orientation of the researcher with e-monitoring, for effective development of e-monitoring the following suggestions and approaches are presented. It is hoped that hire of the same shall result into effectiveness of monitoring in organizations.

- Compiling appropriate criteria, rules and instructions with definition and standardization of monitoring methods and organizational structure of e-monitoring the same (Structural dimension) law-centralized.
- Allocation of a certain row in annual budget for concentrated data management (Technical Dimension)
- Development of data centers in e-monitoring for concentrated data management (Technical Dimension)
- Accelerating suitable communicative substructures such as communicative networks and internet especially private communicative networks such as national information network (Technical Dimension)
- Considering trans-organizational integrated software generating in e-government regarding mains of e-monitoring (Technical Dimension)
- Considering e-monitoring in policies and macro policies of information technology development (strategic dimension)
- Monitoring authorities council, established for establishment of coordination among monitoring authorities. Emonitoring development strategy is considered as the most important strategy and macro monitoring strategy.
- Establishment of e-monitoring course in related fields (Human Dimension)
- Empowerment and promotion of skills in using information technology of monitors, managers and parties, being monitored (Human Dimension)
- Considering culture development and participating in e-monitoring development (Human Dimension)

REFERENCES

Akhavan, M., Mohammadlou, M., & Habibi, J. 2006. Critical success and defeat causes of information technology projects in the nation. Industrial Management Journal, 6.
Hosseini, M., & Fooladi-Toroghi, M. 2010. Study of Barriers and Limitations for Execution of E-monitoring. M.S. thesis, Payame Noor University, Tehran.
Danaeifard, H., Alvani, M., & Azar, A. 2008. Qualitative Research Methodology in Management, Comprehensive Approach. Tehran: Safar Publication.
Mashayekhi, A., Farhangi, A., Momeni, M., & Ali-Doosti, C. 2005. Study of Critical factors, affecting application of information technology in governmental organizations in Iran: Using Delphi's Method. Journal of Human Sciences (Special Issue of Management).
Belanger, F., Carter, L., & Schaupp, L. 2005. U-government: a framework for the evolution of e-government. Electronic Government, an International Journal, 2(4): 426-445.
Fallahi, M. 2007. The barriers and guidelines of establishing e-government in Iran (Case study: Ministry of commerce). (Unpublished M.S. thesis), Tarbiat Modares University, faculty of Engineering, Tehran, Iran with collaboration of Luleå University of Technology, Division of Industrial Marketing and E-Commerce,Luleå, Sweden Retrieved from http://epubl.ltu.se/1653-0187/2007/052/LTUPBEX-07052-SE.pdf.
Grant, R., & Higgins, C. 1989. Monitoring service workers via computer: The effect on employees, productivity, and service. National Productivity Review, 8(2): 101-112.
Hakim, A., & Hakim, H. 2010. A practical model on controlling the ERP implementation risks. Information Systems, 35(2): 204-214.
Mohsenian-Rad, M. 2000. Systematic look to advertising: harmful effects of free advertising public relations. Conference Proceedings, Tehran, Ministry of Culture, Directorate General
Panina, D., & Aiello, J. 2005. Acceptance of E-Monitoring and its consequences in different cultural contexts: A conceptual model. Journal of International Management, 11(2): 269-292.
Rasouli, M. 2007. Advertising Research. Institute of Culture, Arts and Communication, the Ministry of Culture and Islamic Guidance.
Stanton, J., & Weiss, E. 2000. E-Monitoring in their own words: an exploratory study of employees› experiences with new types of surveillance. Computers in Human Behavior, 16(4): 423-440.

How to Cite this Article:

Shahoozadeh S., Identifying Critical Success Factors for Effective Development of E-monitoring, Uct Journal of Management and Accounting Studies 02 (2014) 59–66.