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Evaluating the impact of a successful accounting information system on firm performance case study: Bojnourd Cement Company

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ABSTRACT

The main purpose of the current research is evaluating the effect of successful implementation of information systems on firms' performance; case study is Bojnourd Cement Company during 2001 to 2004. Productivity, managers' decision-making process, information quality, and human resources are considered as variables of the study. Research method is of questionnaire type, using general and professional questions in Likert scale. Research type, in terms of aim, is considered as applied research type. For data analysis, descriptive and inferential statistics is used. In inferential statistics-part of the study, to answer and to make decisions regarding study hypothesis as well as generalization of them to the statistical population under investigation, various tests such as one-tailed Student's t-test, one-tailed variance analysis test and Duncan Compare Means Test is used after converting study variables from ordinal scale to interval scale. The results of the study indicate that implementation of a successful accounting information system is effective on all performance components except productivity.

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Introduction

The state of competition in today's world, does not allow a company to be commercially successful merely through investment data management and analysis. Commercial firms should attain this goal by an evaluative and non-evaluative environmental factors approach regarding internal data of the firm. For this purpose, centralized management and customer acquisition is considered as one of the most important factors. The quality of productions that are produced by a firm is evaluated by customers. The quality of these services, in its verbal concept, is evaluated in the first place through the coefficient of error and the coefficient of efficiency (Guney, 2012, 1-3).

What kind of configuration a firm should take to make customers' satisfaction possible in a customer oriented management system regarding internal aspects of firm's procedures? Along with correct evaluation of data, confidence coefficient, direction, and orientation of results will increase in such aggregated, ever increasing competitive environment. Commercial organizations not only have to check their expenses in a continuous way in order to decrease the ratio of replacement methods, but also have to be responsive for increasing demands of their customers in order to keep a minimum level of their profit. For these reasons, it is necessary to invest on a deep analysis of management and accounting system in order to recognize the capacity of information dispatch in proper time and in adequate amount. A successful implementation of this information inside the firm and handing them (the information) over organizations' research managers, is summarized in understanding the relationship of general or financial accountants in giving information to people outside the organization, specially to shareholders and assuring a better management in internal accounting research which is based on accounting costs or accounting management. Accounting information system has also applications in producing

information in other information systems. Accounting information system is a component and element of a system that becomes available to users by analysis of financial events, enabling them to make right decisions.

Statement of the problem

Today's world is the world of information, and successful people are those who have better and more relevant information. Inattention to this important subject may bring about serious consequences in process of decision-making. To achieve a result regarding this important subject, paying attention to influencing factors in successful implementation of information seems evident and essential. In management literature and when facing financial problems, making decision is considered as an important jobs of managers, and making decision is nothing but choosing a clear solution among available alternative options and solutions. What has the most importance in decision-making process, is a correct definition and explanation of the question or problem, and then is to find possible solutions to that problem and finally choosing a solution from within available solutions. Throughout this procedure, the bold and important role of information is quiet clear. In fact, without the right information, organizations either big or small would be involved in much more complex situations in today's world.

Issues such as close competence in market, daily crisis in international relations, rapid technological development in most of fields, the ever-increasing sensitivity of human resource subject in organizations and many other factors, make the survival of organizations much harder than before. In some cases, management has transformed from 'a decision for a lifetime' to 'a decision for today'. We can say for sure that managers of 50 years ago were facing much simpler decisions than managers in today are. In most of the organizations, a great deal of decisions made by managers is involved with financial information, so in most of the cases financial information has a key role in this regard.

Weakness in information system of an organization usually results in weakness in accounting information system as well, and incapability of accessing valid and timely information sometimes cause irrecoverable loss. Is establishing an upright information system too difficult to restrain us from thinking of it in information technology era? Where are the roots of current deficiency in accounting information system in many organizations? In this brief study, while trying to find answers to some of these questions, the position of financial accounting systems in firms is also investigated.

Research history

ArabmazarYazdi et al. (2007) performed a research titled "Reasons for success and failure in implementation of information systems", and obtained the following results. Success criteria include widespread use of the system, satisfaction of users, attaining goals and return of investment. Serious obstacles in implementation include resistance from users, high costs, long time, and lack of proper management.

AsadianOghaee (2008) did a research under the title "Evaluating the effect of web based financial reporting on qualitative characteristics of accounting information". The findings of this research indicate that web based financial reporting increases relevance of accounting information.

Ahmadpour et al. (2009) did a study under the title "Information system for financial event processing and as basic criteria for decision making". Findings of this study are as follows:

Implementing accounting information system in a right way, paves the way to exert an efficient and effective management.

Study hypothesis

Upon theoretical basics and research history, hypotheses are specified as follows:

First Hypothesis: Successful implementation of accounting information system is effective in performance of Bojnourd Cement Company.

Second Hypothesis: Successful implementation of accounting information system is effective in productivity of Bojnourd Cement Company.

Third Hypothesis: Successful implementation of accounting information system is effective in information quality of Bojnourd Cement Company.

Fourth Hypothesis: Successful implementation of accounting information system is effective in human resources of Bojnourd Cement Company.

Fifth Hypothesis: Successful implementation of accounting information system is effective in managers' decision making of Bojnourd Cement Company.

Research method

With regard to this study, which explores the effect of successful implementation of accounting information system on performance of Bojnourd Cement Company, the type of the study is descriptive. Current study is categorized under survey research method. Questionnaire is mainly used. However, other technics such as interview as well as library observations are also employed. In addition, this research is considered as applied study from aim point of view, because it seeks a description of situations or phenomenon resulted from successful implementation of accounting information systems on performance of Bojnourd Cement Company, and through this study, it is tried to provide solutions to be applied for decision-making and future planning.

Statistical population and sample size

Statistical population of this research consist of all related and specialist employees in financial and administrative contexts in Bojnourd Cement Company in 2013. On this basis and according to obtained information and statistics, statistical population of this study consist of 72 employee working in financial, administration, sales and production departments of Bojnourd Cement Company. It include 17 people in financial department (eight people in factory and one manager, eight people in central office and one manager), fifteen people in administration department (nine people in factory and one manager, four people in central office and one manager), 16 people in sales department (fifteen people and one manager) and 2 people in production section.

First, target population is divided into 4 categories, which is the most relevant uniform categorization type relevant to the field of study. In fact, in this categorization, all the employees in each section of factory are considered in one category. Therefore, regarding the importance and significance of working field of participants in evaluation and surveillance of components under study, statistical population of the study is categorized into four categories.

After defining statistical population and type of sampling, the following equation and STATISTICA software is used to find the required size of the sample.

$$n = \frac{72 \times \frac{5}{72} \times \frac{5}{72}}{(72-1) \times \frac{5}{72} \times \frac{5}{72} + \frac{5}{72} \times \frac{5}{72}} = 42.11$$

Therefore, a minimum of 43 people is required for sample size. Size and method of dedicating samples to each sampling categories

Categories	Population size	Ratio	Sample size
Financial section	17	0/24	10
Administration section	15	0/21	9
Sales section	16	0/22	10
Production section	24	0/33	14
Total	72	1	43

In this study of which the main purpose is to evaluate the effect of successful implementation of accounting information system on efficiency of Bojnourd Cement Company, the questionnaire is distributed in operational field (Bojnourd Cement Company) and it made exchange of information possible.

It is worth mentioning that the questionnaire consists of two major parts including general questions and specific questions sections. In general-questions section, five questions about characteristics of tests including title, occupation, gender, education, work experience in Bojnourd Cement company and age are asked. Specific questions related to variables under study consist of questions required to evaluate opinions of all the employees related to –and specialized, in administration and financial field of Bojnourd Cement Company activities regarding the effect of successful implementation of accounting information system on performance of Bojnourd Cement Company.

Likert Scale				
Very High	High	To Some Extent	Low	Very Low
1	2	3	4	5

Research variables

✓ Independent variables

In this study, independent variable is successful implementation of accounting information systems

✓ Dependent variables

Variable	Number	Average	Minimum point	Maximum point	Standard deviation
The effect of successful implementation of AIS on productivity	43	48/3	15/0	80/0	17/04
The effect of successful implementation of AIS on information quality	43	79/5	50/0	100/0	12/90
The effect of successful implementation of AIS on human resources	43	65/9	40/0	90/0	13/86
The effect of successful implementation of AIS on Manager's decisions	43	59/4	35/0	95/0	13/33

The effect of successful implementation of AIS on performance	43	62/9	38/9	83/3	11/38
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In this research, it is tried to evaluate the effect of successful implementation of accounting information system on efficiency of Bojnourd Cement Company, therefore this important subject is considered as a dependent variable.

A comparison between the descriptive statistics of successful implementation of accounting information system on components of Bojnourd Cement Company performance

Data analysis and results of hypothesis tests

Student's t-test results for first hypothesis of study

Variable	Descriptive indexes			Statistical value of t_o	Degree of freedom	P-value
	Sample Size (n)	Average (\bar{x})	Standard deviation (S)			
The effect of successful implementation of AIS on productivity	43	48/3	17/04	-0/671	42	0/506

Findings reported in above table indicate that with regard to views and opinions of participants, the average of the effect of successful implementation of accounting information system on productivity in Bojnourd Cement Company is equal to 48.3. With regards to Student's t-test statistic value and its resulting P-value, since its value is equal to 0.506 and is greater than significance value of the study (which is considered to be equal to 0.05) or

$$0.506 > \alpha = 0.05, \text{ therefore } P\text{-Value} = 0.506$$

Therefore, null hypothesis is significant at 5 percent level of significance. Consequently, and concerning the result of the test, by 95 percent confidence we can deduce that participants believe that 'successful implementation of accounting information system on productivity in Bojnourd Cement Company has not been significant.'

Student's t-test results for second hypothesis of study

Variable	Descriptive indexes			Statistical value of t_o	Degree of freedom	P-value
	Sample Size (n)	Average (\bar{x})	Standard deviation (S)			
The effect of successful implementation of AIS on information quality	43	79.5	12.90	14.97	42	0.000

Above table indicates that the calculated significant value is greater than significance level of the test ($P\text{-Value} = 0.000 < \alpha = 0.05$), therefore, null hypothesis or in another word *implementation of the average significance of successful implementation of accounting information system on information quality is smaller than 50*, is rejected at 5 percent significance. Therefore, with 95 percent confidence coefficient we can deduce that "successful implementation of accounting information system on information quality in Bojnourd Cement Company has been significant."

Student's t-test results for third hypothesis of study

Variable	Descriptive indexes			Statistical value of t_o	Degree of freedom	P-value
	Sample Size (n)	Average (\bar{x})	Standard deviation (S)			
The effect of successful implementation of AIS on human resources	43	65.9	13.86	7.54	42	0.000

As the above table shows, calculated significance is smaller than significance level of the test, thus rejecting null hypothesis. To be more precise, the hypothesis that indicates that the average effects of successful implementation of accounting information system on human resources in Bojnourd Cement Company is 50, is rejected at significance level of 5 percent ($P\text{-Value} = 0.000 < \alpha = 0.05$). Meanwhile, the average of this variable is 65.9 which emphasize on above mentioned result. Hence, generally it could be said that this effect is higher than the average value. Therefore, by 95 percent of confidence coefficient we can deduce that "successful implementation of accounting information system on human resources in Bojnourd Cement Company has been significant".

Student's t-test results for fourth hypothesis of study

Variable	Descriptive indexes			Statistical value of t_o	Degree of freedom	P-value
	Sample Size (n)	Average (\bar{x})	Standard deviation (S)			
The effect of successful implementation of AIS on managers' decisions	43	59.4	13.33	4.63	42	0.000

As the above table shows, calculated significance is smaller than significance level of the test, thus rejecting null hypothesis. It means that the hypothesis, which indicates that the average effects of successful implementation of accounting information system on managers' decisions in Bojnourd Cement Company is smaller than 50, is rejected at significance level of 5 percent ($P\text{-Value} = 0.000 < \alpha = 0.05$). On the other hand the average of this variable is 59.4 which is greater than 50, therefore it could be said that the effect is higher than average. Therefore, by 95 percent of confidence coefficient we can deduce that from the viewpoint of Bojnourd Cement Company's employees "successful implementation of accounting information system on managers' decisions in Bojnourd Cement Company has been significant".

Student's t-test results for fifth hypothesis of study

Variable	Descriptive indexes			Statistical value of t_o	Degree of freedom	P-value
	Sample Size (n)	Average (\bar{x})	Standard deviation (S)			
The effect of successful implementation of AIS on performance	43	62.9	11.38	7.42	42	0.000

The results, which are shown in table 19-4, indicate that considering the viewpoints and opinions of participants, the average effectiveness of successful implementation of accounting information system on performance is equal to 62.9. With regards to Student's t-test statistic value and its resulting P-value, since its value is equal to 0.000 and is smaller than significance value of the study (which is considered to be equal to 0.05) or ($P\text{-Value} = 0.000 < \alpha = 0.05$), thus the null hypothesis is rejected at 5 percent level of significance. Therefore, by 95 percent of confidence coefficient we can deduce that from the viewpoint of Bojnourd Cement Company's employees "successful implementation of accounting information system on performance in Bojnourd Cement Company has been significant".

Conclusion and recommendation

Findings of this study indicate that:

1. Other accounting beneficiaries have the most participation in answering questionnaire.
2. 67 percent of participants from education level viewpoint have of bachelor's degree
3. About 30 percent of Bojnourd Cement Company employees have more than 15 years of work experience in this company.
4. Among employees of Bojnourd Cement Company, about 9 percent are less than 30 years old, which has the least abundance among age levels.

Variable	Number	Average	Minimum points	Maximum points	Standard Deviation
The effect of successful implementation of AIS on productivity	43	48/3	15/0	80/0	17/04
The effect of successful implementation of AIS on information quality	43	79/5	50/0	100/0	12/90
The effect of successful implementation of AIS on human resources	43	65/9	40/0	90/0	13/86
The effect of successful implementation of AIS on managers' decisions	43	59/4	35/0	95/0	13/33

The effect of successful implementation of AIS on performance	43	62/9	38/9	83/3	11/38
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As the above table indicates, the average point for the main variable (The effect of successful implementation of accounting information system on performance) is equal to 62.9 with standard deviation equal to 11.38. Minimum and maximum points for the main variable of the test is 38.9 and 83.3 respectively, which indicates that from the testable variables in general aspect, successful implementation of accounting information system on performance of the Bojnourd Cement Company has higher than average significance.

The information of the above table shows that the average of information quality component (79.5%) is higher than the average of other components, which shows the significance of successful implementation of accounting information system on improvement of information quality from participant points of view. In other word, participants (Bojnourd Cement Company employees) believe that successful implementation of

accounting information system is significant in improvement of information quality in Bojnourd Cement Company.

Student's t-test for the proposed questions regarding mentioned statistical rules are as follows:

In hypothesis number one, the null hypothesis is rejected since $P\text{-value} < \alpha = 0.05$. In simpler word, successful implementation of accounting information system is not significant in productivity of Bojnourd Cement Company.

Considering general above mentioned rules, $P\text{-value} = 0.000 > \alpha = 0.05$ and in this case implementation of null hypothesis is confirmed. Therefore, by 95% coefficient confidence, "successful implementation of accounting information system is significant in information quality in Bojnourd Cement Company".

Considering the equation $P\text{-value} = 0.000 < \alpha = 0.05$ and 95% coefficient confidence, it is evident that null hypothesis is rejected; therefore, we can deduce that "successful implementation of accounting information system is significant in human resources of Bojnourd Cement Company".

Finally, in fifth question, where $P\text{-value} = 0.000 < \alpha = 0.05$ null hypothesis is rejected at 5 percent significance, therefore "successful implementation of accounting information system is significant in performance of Bojnourd Cement Company".

Resources

1. Ahmadpour, Edris, SorayaJamalzadeh and JafarBezrenji, (2012) The effects of accounting information system on manager's decision improvement
2. Arzaghi, Reza, (2001) Success factors in implementation of information systems of senior managers, Tadbir publication, issue 116, p. 52.
3. Elahi, Shaban, AzamShokri, (2004) The effect of accounting information system on user's decisions, Research paper, First national symposium of Information Technology Management.
4. Ansari, Abdolmehdi, Abbas SheibaniTazroji, (2010) Study and determination of factors effective on homogenization of accounting information system from the viewpoints of small and medium sized firms accepted in Tehran stock exchange organization, DaneshHesabdari, first year, issue 3, pp. 139-159.
5. P. Robbins, Stephen, (2004) Organizational theory, Translated by Mehdi Alvani, Hassan Danaeefar, Safar Tehran publications, eight print.
6. Kahjavi, Shokrollah, MostafaEtemadijoryabi, (2010) Study of factors effective on Successful implementation of accounting information system in firms accepted in Tehran stock exchange organization, Journal of financial accounting researches, second year, issue 2, p. 12.
7. Dastgir, Mohsen, (Mehdi alineghad, NejhadSaroukolaee, Akbar Rahimipour), (2012) Usage level of information technology in accounting reports by firm's managers, financial accounting empirical researches quarterly, issue 3, pp. 53-64.
8. Dastgir, Mohsen, RezaGhalebi, (2010) Evaluation of qualitative characteristics of accounting information system, Financial accounting Research and scientific quarterly, second year, issue 5, pp. 17-38.
9. Dastgir, Mohsen, Mehdi Jamshidian and Abbas Jadidi, (2003), The effect of accounting information system on manager's decisions improvement: case study of Bahman Group, Accounting and audition research quarterly, issue 34, p 27.
10. Romney, Marshall Bart, (1947), Accounting information systems, Transated by Dr. Sajjadi and Tabatabaenejhad, University of ShahidChamranpublicationsm pp. 12-38.

11. Ronaghi, MohhamadHosein, (2011), How information quality defines a framework for information quality evaluation criteria in an organization, p. 10.
12. Sasani, Hossein, (2005), Productivity definition, Iran's industru confederation, p. 14.
13. Taheri, Asghar, (2009), An overview of integrated information systems implementation in Iran, Hesabrasjournal, issue 46, p. 65.
14. Arab mazaryazdi, Mohammad, AbolfazlAlipour and Mohammad Arab, (1994), The necessity of revising the position of accounting information system in education and employment, Accounting Studies journal, third year, issue 9, pp. 22-42.
15. Arab mazaryazdi, Mohammad, AbolfazlAlipour and Mohammad Arab, (2006), Studying the aspects of relationship between management information systems and accounting information systems, Accounting Studies journal, issue 182.
16. Arabi, Mehdi, (2009), The effect of information technology on accounting information system, Tadbir monthly, issue 210, p. 45.
17. Fazeli, Ahmad, Ahmad Edalat, (2010) Accounting information systems, Hesabras bimonthly, issue 51, p. 120.
18. Faye Nals, John, (1996) Productivity improvements and its benefits, translated by NazaninDanesh and Sohrab KhaliliShoreini, Morvarid publications, p. 31.
19. Bagranoff, Nancy, Mark G. Simkin and Carolyn A. Strand Norman, (2007), Accounting Information Systems, principal concepts by MortezaEsmaeeli, mohammad Najafi, Ahmad vahedianGhaffari, chapter third to fourth.
20. Mohammadian, Mohammad, (2011) Accounting Information Quality, Heavy investments in free cash flow, Accounting advancements journal, article no. 3, period 3, p. 43.
21. Mahmoudi, Seyed Mohammad, (2003) The role of information systems on crisis management, Management culture, year one, fourth issue, pp. 60-91.
22. Mirmojarabian, Hamid, ShabnamDadbin, (2008), The effect of information integration on usefulness of management accounting information, hesabras journal, issue 40, p. 12.
23. Mina, Narges, Mehdi Beheshtian, (1994), A criticism study of senior managers' information systems, Tadbir journal, issue 42, p. 45.
24. Mahdavi, Abdolmohammad, (2009), p. 49.
25. Hemmat far, Mahmud, Abbas Kolivand, (2011), Accounting Information Systems, Fifth edition, FarhangZaman, Mazandaran.
26. Hemmat far, Mahmud, Seyyed-mohammad-rezaTabatabaeeabd Ahmad MalamiriFirouz, (1998), Management systems: a new approach, Opnalkabanuchi, translated by Ali panahi, Azarakhsh publications, Tehran