

Estimate Role of Accounting Information Systems in Presentation Managers Required Information

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Abstract

Accounting Information Systems (AIS) are among the most important systems of every organization since all relations with elements outside the organization is held through these systems. The significant role of management accounting has already been proved in providing appropriate data for management decisions. The present paper aims to investigate whether the AIS of Foolad Mehr Sahand Company provides required information for management decision-making. Hence, managers of the company are evaluated and studied as the research population. Data are gathered through Likert spectrum questionnaire. In addition, Z normal test was used to test research hypotheses. Results indicated that the AIS of Foolad Mehr Sahand (FMS) Company works efficiently and provides managers with their required information.

Keywords: Accounting information systems, management accounting, information, decision- making

Introduction

No manager, although wise and smart, can not make proper decisions without being aware of facts about tasks and operations of an institute. Those who make decision based on their own hypotheses and thoughts (regardless of the company's facts) achieved unfavorable results and encountered financial and economic crises. These along with the need to precise and just-in-time information for planning, organizing, decision-making and controlling propose accounting, especially management accounting, as a desired information system and a staff department presenting proper information for different decisions.

Companies' managers should notice the fact that if they ignore information networks, they won't be trusted to manage a company any more. Information networks aim to provide required information, exert required supervision and make the most appropriate decisions for survival, growth and development of an organization.

The effect of accounting information on managers' decision is an issue of certain interest among researchers. Accounting is an information system through which managers have to collect proper and qualified data required for better decision-making from all official and unofficial channels. The present paper tries to measure the effect of proper and qualified data (collected by accounting information system) on improving managers' decisions (Bushman,2004).

Useful accounting data provided for managers must be:

1. Understandable: Accounting information should be understandable to managers. Financial knowledge and the manner of information presentation are related to this characteristic.
2. Relative: Accounting information related to the issue under investigation. Those data are considered relative which are provided in the right time, were effective on previous decision and will influence future predictions.
3. Reliable: Data destitute of error and partiality are called reliable data. Reliable accounting information is complete, correct, just and confirmable.
4. Comparable: Managers must be able to compare their accounting information during the time and to compare financial status and operation outcomes of other institutes with those of themselves. Respecting accounting standards and uniformity in presenting information increase comparability.
5. Just-in-time: It refers to appropriateness of time of presenting financial data

The present paper tries to evaluate the role of accounting information system in providing managers with their required information. Therefore, this research measures the effect of being understandable, relative, reliable, comparable and just-in-time (as independent variables) on managers' decision-making (as the dependent variable).

Moreover, the paper aims to specify whether accounting information system of Foolad Mehr Sahand Company has above characteristics to be used by managers in making decisions concerning production level determination, pricing, minimizing costs and maximizing profits.

Review of Literature

Management information system (MIS) is an applied scientific course which used computer and information technology to assist an organization and its employees, with efficiency and effectiveness, in achieving organizational, group or individual goals (William, R. King, 2003). Information systems are those the function of which is to store data, process them in framework of institution's information objectives and provide information required for economic decisions. These systems are designed and established in organizations by managers, analysts

and system designers having sufficient knowledge on computer technology (Khajavi & Etemadi, 2010). In Steves et al viewpoint the lifecycle of information systems is composed of six steps which include:

1- Decision-making and information system adoption, 2- acquiring information system, 3- implementing information system, 4- employing and maintaining information system, 5- gradual improvement of information system, and 6- bypassing.

The third step is identified as the most important and the most costly step in a system's lifecycle (Arab Mazad Yazdi et al, 2007).

Accounting information system uses the technique of capital budget and controlling and comparing capital costs (accomplished with physical advance in the project) to manage implementation of decisions and provides the manager with data required for modifying actions.

Accounting information system is a component (or element) of the company which provides users with financial data and decision-making base information through processing financial circumstances. This system can be considered as the logical intersection of two wider issues, accounting and management information system. What is common in both fields is a pivotal interest in information. Accounting is more tended toward information itself whereas MIS mostly considers covering systems which produce information (Nikoo Maram & Mahmoodi, 2012). These three environments are displayed in the following figure.

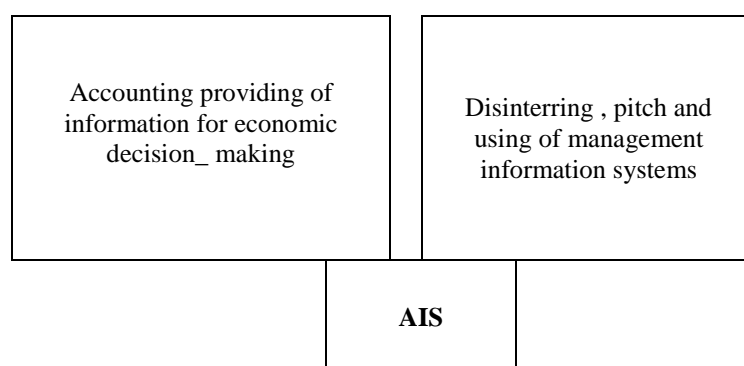


Figure1: Station accounting information systems.

The most important studies on the filed under investigation in this research

In an article the objective of which was to investigate characteristics of industrial management accounting systems Namazi (1996) examined different types of practical management accounting systems, information they give, time alternation of providing financial reports and users of such information. He concluded that industrial units of Fars province (Iran) are mostly small and deficient in an industrial accounting system. Even most medium-sized industries lack a management accounting system and hence this causes financial data not to be presented precisely, fast and in a relative form. Hence they have little intervention in decision-making processes.

Noorvash and Sadeghian (1995) studied information content of accounting figures in inter-organizational reporting. Their results indicated that management accounting reports are used in managers' decision-making. In addition, the use of these reports is dependent on their quality (information content). Finally, they found a direct relationship between assumed information content of reports and their qualitative characteristics.

Dastgir et al (2003) investigated the effect of accounting information system characteristics on improving managers' decision-making (Bahman car manufacturing group). Results showed that accounting information system influences managers' decision-making. Results of their investigation on current status of accounting information system in this company suggested that the system has not provided managers with their required information. In general, results indicated a significant difference between current and desirable status of accounting information system in this company.

In a research in 2010 Dastgir and Qalebi evaluated qualitative characteristics of accounting information system (case study of Bandar Imam Petrochemical Company). Their research hypotheses examined qualitative characteristics of AIS including being understandable, relative, reliable, comparable and just-in-time. Results of this study suggested that this company's AIS possess all qualitative characteristics in a favorable level.

In a research titled "Value-making concepts of accounting information" Theodore Mock (2006) investigated the necessity of identifying information value and demonstrated that employing accounting information system plays a significant role in management decision-making, planning and controlling activities.

Maldin and Rachel (2005) proposed a fundamental theory for development of information systems which identifies the importance of system design and performance features. Their findings explained three analytical levels (cognitive, technical and organizational structure) to be performed in research on accounting information systems.

Ad (2000) examined how information system characteristics affect users' decision fairness. Results showed that accounting information systems provide required primary data for decision-making.

Research Hypotheses

Main Hypothesis

The accounting information system of Foolad Mehr Sahand Company provides managers with useful information for decision-making.

Side Hypotheses

1- Accounting information system of FMS Company is understandable. 2- Accounting information system of FMS Company is relative. 3- Accounting information system of FMS Company is reliable. 4- Accounting information system of FMS Company is comparable. 5- Accounting information system of FMS Company is just-in-time.

Research Methodology

The present research is performed with a combination of field and library studies. It is also a cross-section research since it is done in a certain time period and explores the reality in that period. In terms of objective it is considered among applied studies. Research population is composed of all managers of FMS Company (47 individuals). The figure is obtained considering all limitations and lack of precise statistics in the company. Their common feature is decision-making and the paper measures effects of information quality on their decision improvement. Respecting the small population tests are performed on the whole population. Questionnaire was used as the main data collecting tool and independent variables were operationally defined while conducting the questionnaire. Operational definitions of these variables are taken from proposed announcement of Iranian Board of Accounting Standards(Williang, 2003).

Data Analysis

Of 47 questionnaires distributed among managers of the FMS Company 40 were returned and identified as proper form data analysis. No unanswered questions were observed among all questionnaires. Variables were measured in ordinal form and Likert Spectrum was used to achieve this goal. Answered range form "very little" to "very much". Weight 1 and weight 5 were assigned to items "very little" and "very much", respectively. Therefore, weights 1-3 confirm the null hypothesis and contradict relationships between variables and weights 4 and 5 reject the null hypothesis and confirm relationships between variables. In order to investigate hypotheses average answers by managers (to questions) are estimated and compared with above cases.

Examining the first side hypothesis

Is the accounting information system of the FMS Company understandable? Questions 1, 2 and 3 are used to measure this characteristic of the accounting information system of FMS.

Table 1: Operational definitions of independent variable of the first side hypothesis

Questions	Definition
1	Explicit description accounting information
2	Perceptible economic information for managers
3	Communicative economic reports

Test supposition:

$$3 \leq \mu \quad H_0 : \text{zero supposition}$$

$$3 > \mu \quad H_1 : \text{research supposition}$$

(μ is the average of answers given to hypothesis questions)

Results of answers given to questions pertaining to the first side hypothesis are presented in table 2.

Table 2: Abundance of answers given to questions of the first side hypothesis

Questions code	Very small 1	small 2	average 3	much 4	Very much 5	Sum
1	1	4	16	14	5	40
2	0	6	17	13	4	40
3	0	2	15	12	0	40
fi	1	12	48	50	9	$120f_i = \sum$

Computing answers average: $\frac{\sum F_i \times X_i}{N} \mu = 3.45.$

Decision-making:

As mentioned before, the null hypothesis is $H_0: \mu \leq 3$ and the research hypothesis (claim) is $H_1: \mu > 3$. The average obtained from population is 3.45. This is bigger than the average assumed in population (3). Therefore, H_0 could not be accepted. According to what mentioned so far, the first side hypothesis is confirmed. Thus, "accounting information system of the FMS Company is understandable".

Examining the second side hypothesis

Is the accounting information system of the FMS Company relative? Questions 4 and 5 are used to measure this characteristic of the accounting information system of FMS. Results of answers given to questions pertaining to the second side hypothesis are presented in table 4.

Table 3:Operational definitions of variables of this hypothesis

questions	activity definitions free variant
1	Capability valuation last decisions by accounting information systems.
2	Capability schematization and control by accounting information systems.

Test supposition :

$3 \leq \mu H_0$: zero supposition

$3 > \mu H_1$: Research supposition

(μ is the average of answers given to hypothesis questions)

Table 4:

Questions code	Very small 1	small 2	average 3	much 4	Very much 5	Sum
4	1	5	13	20	1	40
5	1	4	15	18	2	40
fi	2	9	28	38	3	fi =80Σ

Computing answers average: $\frac{\sum f_i \times X_i}{N} \mu = 3.39$.

Decision-making

The null hypothesis is $H_0: \mu \leq 3$ and the research hypothesis (claim) is $H_1: \mu > 3$. The average obtained from population is 3.39. This is bigger than the average assumed in population (3). Therefore, H_0 could not be accepted. According to what mentioned, then, the second side hypothesis is confirmed. Thus, "accounting information system of the FMS Company is relative".

Examining the third side hypothesis

Is the accounting information system of the FMS Company reliable? Questions 6, 7 and 8 are used to measure this characteristic of the accounting information system of FMS.

Operational definitions of the independent variable are presented in Table 5.

Table 5: Operational definitions of the independent variable in third side hypothesis

questions	activity definitions free variant
1	Showing general accounting information
2	Showing neuter and no predilection accounting information
3	Showing correct on transactions effects and occurrences.

Test supposition :

$3 \leq \mu H_0$: zero supposition

$3 > \mu H_1$: research supposition

(μ is the average of answers given to hypothesis questions)

Table 6: Abundance of answers given to questions of the third side hypothesis

Questions code	Very small 1	small 2	average 3	much 4	Very much 5	Sum
6	0	5	16	14	5	40
7	0	6	17	13	4	40
8	0	0	15	23	2	40
fi	0	11	48	50	11	120fi = Σ

Computing answers average: $\frac{\sum Fi \times Xi}{N} \mu = 3.5$.

Decision-making

The average obtained form population is 3.5. This is bigger than the average assumed in population (3). Therefore, H_0 could not be accepted. According to what mentioned, then, the third side hypothesis is confirmed. Thus, "accounting information system of the FMS Company is reliable".

Examining the fourth side hypothesis

Is the accounting information system of the FMS Company comparable? Questions 9, 10 and 11 are used to measure this characteristic of the accounting information system of FMS. Operational definitions of the independent variable of this hypothesis are given in Table 7.

Table 7: Operational definitions of independent variable of the fourth side hypothesis

Questions	Operational definitions of the independent variable
9	Comparability of information of the information system during the time
10	Comparability of information of the information system with similar units and organizations
11	Respecting accounting standards and uniformity in presenting accounting information

Computing answers average: $\frac{\sum Fi \times Xi}{N} \mu = 3.35$.

The average obtained from population is 3.35. This is bigger than the average assumed in population (3). Therefore, H_0 could not be accepted. According to what mentioned, then, the fourth side hypothesis is confirmed. Thus, "accounting information system of the FMS Company is comparable".

Examining the fifth side hypothesis

Is the accounting information system of the FMS Company just-in-time? Questions 12 and 13 are designed to measure this characteristic of the accounting information system of FMS. Operational definitions of the independent variable of this hypothesis are given in Table 9.

Table 9: Operational definitions of the independent variable of fifth side hypothesis

Questions	Definition
12	Presenting information just-in-time for decision-making
13	The speed of receiving required information

Results of answers given to questions pertaining to the fifth side hypothesis are presented in table 10.

Table 10: abundance of answers given to questions of the fifth side hypothesis

Questions code	Very small 1	small 2	average 3	much 4	Very much 5	Sum
1	0	5	15	15	5	40
2	0	6	17	13	4	40
fi	0	11	32	28	9	fi =80Σ

Computing answers average: $\frac{\sum Fi \times Xi}{N} \mu = 3.44$.

Decision-making

The average obtained form population is 3.44. This is bigger than the average assumed in population (3). Therefore, H_0 could not be accepted. According to what mentioned, then, the fifth side hypothesis is confirmed. Thus, "accounting information system of the FMS Company is just-in-time".

Overall examination of the main hypothesis

Table 11: Abundance of answers given to questions pertaining to the main hypothesis

Questions code	Very small 1	small 2	average 3	much 4	Very much 5	Sum
1	1	12	48	50	9	120
2	2	9	28	38	3	80
3	0	11	48	50	11	120
4	2	16	48	45	9	120
5	0	11	32	28	9	80
Sum	5	59	204	211	41	520

Computing answers average: $\frac{\sum F_i \times X_i}{N} \mu = 3.43$

Since all side hypotheses are confirmed in separate examinations and answers average is bigger than 3 in the overall examination, then the research main hypothesis is confirmed. Therefore, "The accounting information system of the FMS Company provides managers with useful information for decision-making".

As no sampling was done to perform this research it can be assumed that 40 managers (which were asked research questions) can represent a sample of the whole managers' population. Thus, results of average answers can be generalized to the whole managers' population (which may include more than 47 individuals) through normal Z :

- $3 \leq \mu H_0$: zero supposition
- $3 > \mu H_1$: research supposition
- $1 - \alpha = 95\%$ assurance surface

Table 12: Normal Z test on hypotheses

critical	Critical z	Calculation z	answersΣ	Result
Secondary hypothesis 1	1.45	2.82	1.645	H0
Secondary hypothesis 2	1.58	4.68	1.645	H0
Secondary hypothesis 3	0.71	1.78	1.645	H0
Secondary hypothesis 4	1.61	3.32	1.645	H0
Secondary hypothesis 5	1.47	4.58	1.645	H0
basic hypothesis	1.56	2.37	1.645	H0

According to Table 12, results of the Normal Z test are, with 95% of confidence, similar to those of descriptive data analyses. Hence, the research main hypothesis can be generalized to the whole population of managers (with 95% confidence). This means that "the accounting information system of the FMS Company provides all managers with useful information for decision-making".

Conclusion

In a general conclusion it can be said that accounting system is essentially designed as a key component of an organization's whole system. In other words, accounting system is a part of the management information system which is itself a main component of every organization (as an economic unit). In order to best exploit an accounting system, expectations of a system must be specified and these should associate with long-term objectives of the organization to help it make best use of limited resources in order to achieve its goals.

Findings of the present research showed that the accounting information system of the investigated company had all mentioned characteristics (it was understandable, reliable, comparable, relative and just-in-time). Based on results the necessity more efficient application of information systems in modern businesses is becomes clear.

Suggestions

1. Variable environmental conditions make it necessary to revise, modify and review the structure of accounting information systems. This improves managers' trust on such systems in addition to optimization of these systems.
2. Managers must be surveyed for revision in the structure of accounting systems to determine their required information.
3. Wide research on accounting information systems in order to recognize obstacles and difficulties makes managers become familiar with accounting systems.
4. Performing similar studies in other industries and increasing the use of accounting information.

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