The Impact of Accounting Information System on the Effectiveness of Public Enterprises: The Case of Kosovo

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Abstract:

Purpose: *The aim of this paper is to measure the impact of the accounting information system on the effectiveness of public enterprises in Kosovo.*

Design/methodology/approach: *The study ensured primary data using survey methods by a considerable representative sample of public enterprises in Kosovo. The collected data, were analyzed by descriptive statistics, correlation and multiple linear regression analysis.*

Findings: *The analyzed results provide an overview of significant impact of accounting information system on effectiveness of public enterprises in Kosovo. The effectiveness of public enterprises has been expressed through quality of financial reporting, decision-making process, control system, performance and facilitation of transactions in general.*

Practical implications: *The findings emphasize the importance of the accounting information system towards increasing effectiveness in public enterprises, respectively providing support for quality of financial reporting, decision-making process, control system, performance and facilitation of transactions process.*

Originality/Value: *The study results encourage and provide opportunities to increase the quality of the accounting information system, taking into consideration his importance on effectiveness at public enterprises.*

Keywords: *Accounting information system (AIS), effectiveness, the quality of financial reporting, decision-making process, control system, performance and facilitation of transactions process.*

JEL codes: *G34.*

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1. Introduction

The accounting information system (on-going AIS) is a complex system, integrated to perform the potential accounting functions. The participators on AIS, have their own importance on increasing system quality and meeting system requirements in general. AIS in all enterprises provides meaningful information by merging enterprise actions and returning them into values or outcomes, from financial and non-financial issues, from internal and external sources, oriented in the pasts, present and futures actions/events. AIS functions are in gathering, processing, storage the data, to allocate sufficient and qualitative information for accounting information users. The relation between human resources, information technology, data, techniques, models and good accounting practices, support the enterprise to manage the knowledge effectively. The integrated components of AIS, designed in the proper way affect the information from AIS to be effective by requirements obverse with coordination and control purpose of enterprise. The enterprise is effective when the enterprise achieves its goals, mission or desired results. The effectiveness of AIS can be achieved through AIS elements contribution on expected results.

The aim of this paper is to measure the impact of the AIS on the effectiveness of public enterprises in Kosovo. Consequently, the effectiveness of AIS is when all AIS users have sufficient, adequate, reliable and convenient information to enhance the enterprise's effectiveness in quality of financial reporting, decision-making process, control system, performance and facility of transactions in general.

2. Literature Review

AIS is an information system that operates by gathering, processing and reporting financial activities in order to offer relevant information to support action during coordination, control and decision making process at enterprises (Libby and Waterhouse, 1996). Between organizational processes and AIS exist a strong relationship, therefore decision making process, structural organizational activities and other activities are not independent from financial information (Hopwood, 1978). AIS should be constructed and designed depending to the situations and conditions that are important for the organization (Kieso, Weygandt and Warfield, 2011). Effectiveness in organization is achieved when the organization has reached its goals (Daft, 1983) or its desired results (Oguntimehin, 2001). Effectiveness in organization measure how successful organization has been on reaching its mision, its consideration and sensitivity at environmental actions and its capacity to understand and to response market demands (Mccann, 2004).

AIS effectiveness, equivalently to organizational effectiveness, can be seen through a number of different perspectives. AIS effectiveness is achieved when all accounting information users have sufficient, accurate and relevant data for decision making process and control during business activities (Borthick and Clark, 1987).

AIS is effective if it fits to enterprise during different conditions, by adapting technology and culture or values of the enterprise, interact with the surrounding environment, adopting the legislation, the nature and the organizational structure (Markus and Pfeffer, 1983). AIS is considered an important organizational mechanism, which is critical to effective decision-making and control in the organization (Hall, 2011).

The main reason why accounting information is generated is to facilitate decision and increase the quality of financial reporting to be complete and trustworthy (Ponemon and Nagoda, 1990). Relationship between AIS and sales growth, return on investment, number of clients and increase of cost-effectiveness in enterprise control is positive (Nwinee *et al.,* 2016). Therefore, implementation of AIS and its success in the performance of the enterprise lie in direct connection (Grande, Estébanez and Colomina, 2011). The importance of AIS is expressed by enabling information growth within the organization, considering this as the main organizational feature for selecting different opportunities and problems and improving organizational performance in general (Hopwood, 1978).

Planning, decision making process, process implementation, control and coordination, information structuring and performance evaluation are functions that AIS should combine in the proper form to deliver effectiveness (Simons, 1987). AIS provides the quality of information in support of the organization's control, planning, decision making process and analysis of economic activities in accordance with the purpose and function of the AIS based on information technology (Susanto, 2015). Relationships between AIS and organizational effectiveness have a strong connection, which implies that access to AIS would lead to the organization's effectiveness (Hunton, 2002). The effectiveness of enterprise during AIS implementation is defined by improving the decision-making process, performance, internal controls and assistance in enterprise transactions (Bolon, 1998). Using AIS contributions, may result in better decision-making by administrators, more effective internal control, improved financial reporting quality, performance enhancement and facilitation of transaction process, consequently increasing effectiveness overall the enterprise (Sajady, Dastgir and Nejad, 2008; Huber, 1990).

3. Research Methodology

The data used in this study are primary data obtained from the results of questionnaire surveys on respondents. Questionnaires are built into three sections, which have been realized depending on the organizational structure of the enterprise. The first section carried out the general data about the participants and them AIS closeness at enterprises. The second and third section carried out the data about AIS elements and AIS contribution factors on the effectiveness of the enterprises. The questionnaires are address to complete the purpose of the paper throughout two main research questions:

- Which AIS elements, have impact on AIS effectiveness?
- What is the impact of AIS on effectiveness of public enterprises?

Consequently, the hypotheses raised by research questions are:

- H_1- AIS is affected by the AIS elements at public enterprises?
- H_2- AIS has impact on effectiveness of public enterprises?

Descriptions and comparisons of the data are done using descriptive analysis and other tests. The relationship between the variables were measured by correlation and for each hypothesis, a linear equation of multiplex regression was constructed. The size of the sample is adjusted to ensure of the accuracy of the results, with totally 150 questionnaires. Data processing is done using the Statistical Package for Social Science (SPSS, 20).

4. Findings and Discussion

The first section of questionnaire carried out the general data about the participants. The descriptive analysis represent that the questionnaire have been fulfill out of 59.3% men and 40.7% women. The education level of respondents shows that 75.3% participants had obtained a master's degree and 24.7% participants had obtained a bachelor degree. In terms of professional experience, 32% of participants answered that have over 5-10 year experience, 23.2% have over 10-15 year experience, 15.3% have over 1-3 year experience, 14.8% have over 3-5 year experience and 14.7% have over 15 year experience. The analysis results represent that the position of participants over AIS contains out of 33% user information, 21% designers of AIS, 17% producer of information and 29% other responsibilities. The professional qualification of respondents consisted of 33% supervisor, 25% accountants, 18% administrators, 7% technical of accounting and 18% other qualification.

Figure 1. *Position of participants over AIS and their professional qualification*
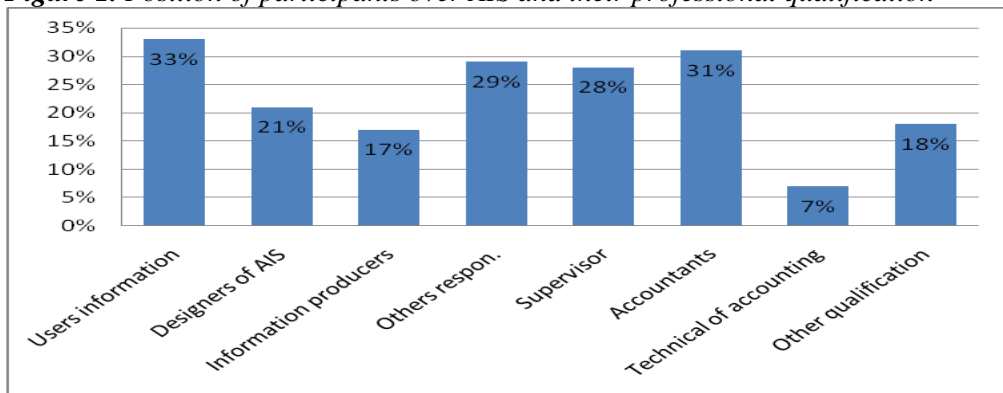
Source: Authors.

4.1 Analysis of data related to research questions and hypothesis H1

AIS can be approached from its formal construction that implies the development of a system or technological processes and the development of relationships sides, respectively capacity building to achieve functional communication and coordination in the enterprise between organizational structures, tasks and committees for the purpose of influence on decision-making (Galbraith, 1973). The relationship between quality and information is determined by the quality of the system and the technical components (Wilkin and Tanya, 2003).

AIS designers are system components, system users, system developers, management and staff capability. Some of the accounting information characteristics are: focus, aggregation, orientation, time, financial/nonfinancial and qualitative /non-financial information. Other important elements in measuring the effectiveness of AIS are information technology, professional education, regulations, standards, laws and practices (Chenhall and Morris, 1986; Otley, 1980; Okour, 2016). Consequently, the constructed linear equationof multiplex regression to show about the impact of each AIS element on AIS effectiveness is:

$$Y = \alpha_0 + \alpha_1 X_{1i} + \alpha_2 X_{2i} + \alpha_3 X_{3i} + \alpha_4 X_{4i} + \alpha_5 X_{5i} + \varepsilon$$

Where: $\alpha_0, \alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$–are coefficients of regression;
$X_{1i}, X_{2i}, X_{3i}, X_{4i}, X_{5i}$- elements of AIS (AIS designers, characteristics of AIS information, technology, professional education, regulations, standards, laws and practices);
Y– AIS effectiveness;
ε – Error term.

Table 1 below shows the results from the linear equation of multiple regression analysis. It seems that AIS effectiveness is affected by AIS elements. Respectively, the AIS characteristics affected the AIS effectiveness with value 0.00, AIS designers affected the AIS effectiveness with value 0.023, technology affected the AIS effectiveness with value 0.041, education level affected the AIS effectiveness with value 0.029 and laws, standard and regulation affected the AIS effectiveness with value 0.01. All coefficient values reflected the statistically significant level of components, because they are under the critical p-value of 0.05. Concretely the significant level is higher at the AIS characteristics continuing with laws, standard and regulation, AIS design, education level and laws and technology.

4.2 Analysis of data related to research questions and hypothesis H2

Effectiveness is a concept that can be measured by different models, but none of them can be adapted to different circumstances of organizations (Cameron, 1981). The organization effectiveness is measure through quality of financial reporting, decision-making process, control system, performance and facility of transactions

process (Sajady, Dastgir and Nejad, 2008; Huber, 1990; Bolon, 1998; Hunton, 2002; Simons, 1987).

Table 1. *The impact of each AIS elements on AIS effectiveness*

Model	Un standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.716	.320		2.237	.027
Characteristics of AIS	.316	.058	.395	5.474	.000
AIS designers	.151	.066	.153	2.305	.023
Technology	.122	.059	.131	2.062	.041
Education Level	.122	.055	.167	2.203	.029
Laws, standards, regulation	.136	.052	.165	2.601	.010

Source: *Authors.*

To analyze the variables' connection, the questions relate to the quality of financial report, decision making process, control systems, performance and transaction process we correlate AIS characteristics, AIS design, technology, education level, laws, standards and regulation questions throughout the factor analysis (Table 2).

Table 2. *The correlation of variables*

Comp.	QFR	AIS elem.	Comp.	DM	AIS elem.	Comp.	CS	AIS elem.	Comp.	P	AIS elem.	Comp.	FT	AIS elem.
QFR1	0.863	-0.196	DM1	0.903	-0.149	CS1	0.899		P1	0.93	0.179	FT1	0.939	
QFR2	0.8	-0.48	DM2	0.897	-0.23	CS2	0.843	-0.241	P2	0.928		FT2	0.887	0.348
QFR3	0.787	0.273	DM3	0.89	-0.136	CS3	0.835	0.332	P3	0.854	0.159	FT3	0.854	0.277
QFR4	0.785	0.369	DM4	0.845	-0.429	CS4	0.787	-0.488	P4	0.85	-0.24	FT4	0.847	-0.195
QFR5	0.765	-0.371	DM5	0.752	0.464	CS5	0.787	0.552	P5	0.831	-0.115	FT5	0.694	-0.426
AIS_1	0.746	0.367	AIS_1	0.744	0.529	AIS_1	0.75	-0.283	AIS_1	0.804	-0.517	AIS_1	-0.212	0.788
AIS_2	0.705	-0.414	AIS_2	0.595	-0.245	AIS_2	0.675	-0.172	AIS_2	0.784	-0.157	AIS_2		
AIS_3	0.621	-0.558	AIS_3	0.361	0.63	AIS_3	0.674	-0.533	AIS_3	0.696	0.533	AIS_3		
AIS_4	0.61	0.715	AIS_4			AIS_4	0.664	0.386	AIS_4	0.663	-0.382	AIS_4		
AIS_5	0.504	0.519	AIS_5			AIS_5	0.405	0.556	AIS_5	0.443	0.857	AIS_5		

Source: *Authors.*

The pattern matrix shows that between each variable and factors almost exists a linear relationship. The correlation coefficients ranging show the strong or weak correlation depending on the variables. To analyze the variable dependency, respectively the impact of AIS on effectiveness of public enterprises, we use the linear multiple regression equation (Table 3):

$$Y = \alpha_0 + \alpha_1 X_{1i} + \alpha_2 X_{2i} + \alpha_3 X_{3i} + \alpha_4 X_{4i} + \alpha_5 X_{5i} + \varepsilon$$

Where $\alpha_0, \alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$–are coefficients of regression;

$X_{1i}, X_{2i}, X_{3i}, X_{4i}, X_{5i}$- contribution of AIS (AIS designers, characteristics of AIS information, technology, professional education, regulations, standards, laws and practices);

$Y- Y_{1i}, Y_{2i}, Y_{3i}, Y_{4i}$ – organization effectiveness (the quality of financial reporting, decision-making process, control system, performance and facilitation of transactions process);

ε – Error term.

Table 3. *The impact of each AIS elements on effectiveness of enterprises*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.195	.307		10.411	.000
Characteristics of AIS	.227	.041	.425	5.584	.000
AIS designers	-.103	.040	-.197	-2.610	.010
Technology	.116	.038	.234	3.065	.003
Laws, standards, regulation	.075	.043	.139	1.742	.084
Education Level	.132	.059	.132	2.062	.044

Source: *Authors.*

Table 4 shows the results from the linear equation of multiple regression analysis. It seems AIS elements have impact on the effectiveness of enterprises. Respectively, the AIS characteristics affected the enterprises effectiveness with value 0.00, AIS design affected the enterprises effectiveness with value 0.010, technology affected the enterprises effectiveness with value 0.003, education level affected the AIS effectiveness with value 0.044 and laws, standard and regulation affected the AIS effectiveness with value 0.084. All coefficients values reflected the statistically significant level of the components, because they are under the p-value critical coefficient which is 0.05. Concretely, the significant level is higher at the AIS characteristics continuing with technology, AIS design, education level and laws, standard and regulation.

To analyze the variable connection, we relate AIS characteristics, AIS design, technology, education level, laws, standards and regulation with the quality of financial report, decision making process, control systems, performance and transaction process throughout the factor analysis.

Table 4. *The correlation of variables*

Component	Quality of financial report	Decision making process	Performance	Control process	Transaction process
Quality of financial report	1.000	.334	.498	.252	-.020
Decision making process	.334	1.000	.180	.131	.154
Performance	.498	.180	1.000	.153	-.082
Control process	.252	.131	.153	1.000	.014
Transaction process	-.020	.154	-.082	.014	1.000

Source: *Authors.*

The pattern matrix shows that correlation coefficients' significant level is stronger at the decision making process continuing with quality of financial report, performance, control process, and transaction process.

5. Conclusion

This article presented the impact of the accounting information system on the effectiveness of public enterprises in Kosovo, according the interdependent and complex nature of the accounting information system. The collection of data for the public enterprises and connection between variables was conducted through a questionnaire and were processed using quantitative analytical method. The result verified by descriptive as well as by analysis of significance and correlation between questions and variables.

The results determined the relationship between AIS elements and AIS effectivenss. Respectively, characteristics of AIS information, AIS designers, technology, professional education, laws, regulations, standards and practices affected the AIS effectivenss on public enterprises.

Consequently, either AIS element has impact on effectiveness of public enterprises. Based on the research result, we can determined that effectiveness of enterprises or the quality of financial report, decision making process, control systems, performance and transaction process significantly are influenced by AIS elements. Respectively, the interconnection or dependency of effectiveness of enterprises is affected from AIS elements.

The information distributed by effective AIS aims to improve and facilitate the decision-making process, enhances communication and coordination through enterprise, influence the quality of financial reports, improve control process mechanisms and increase performance of enterprises.

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