THE ACCOUNTING INFORMATION SYSTEM QUALITY IMPROVEMENT THROUGH INTERNAL CONTROL AND TOP MANAGEMENT SUPPORT EFFECTIVENESS

1,2AZMI FITRIATI, 3AZHAR SUSANTO
1Lecturer, Departement of Accounting, Univ. Muhammadiyah Purwokerto – Indonesia and
2Student, Accounting Doctoral, Padjadjaran University – Indonesia
3Professor, Departement of Accounting, Padjadjaran University – Indonesia
E-mail: 1azmi.fitriati@gmail.com

ABSTRACT

Information is needed for effective decision making. Thus, quality accounting information generated by a qualified accounting information system. This study uses two components of the DeLone & McLean Information System Success Model such as system quality and information quality which identified as the entry key to the information system succeess. Besides, internal control and top management support are important factors that affect AIS quality. The objectives of this study are to measure (1) the influence of internal control and top management support on AIS quality and (2) the influence of AIS quality on the quality of accounting information. The population were Muhammadiyah higher education institutions and choosing samples by simple random sampling technique. PLS-SEM was used as an analytical tool. Primary data were collected by questionnaires as research instruments. The results have shown that the AIS quality can be reflected by integration, flexibility, ease of use and accessibility dimensions. Thus, the quality of accounting information was reflected of relevant, accurate, timely and complete dimensions. Besides, AIS quality was enhanced by the effective implementation of internal control and top management support. The implementation of qualified AIS had been caused accounting information to be qualified as well.

Keywords: *Internal Control, Top Management Support, Information System Success, Accounting Information System Quality, Accounting Information Quality*

1. INTRODUCTION

Information has become an important resource for managing the organization [22]. Organizations need information to make effective decision [38]. Therefore the quality of information will affect any decision taken by organizations. Information is generated from information systems [22]. According to Gorla et al. (2010), Azhar Susanto (2015) accounting information quality is determined by AIS quality [19] [7]. A well-designed AIS can provide the information needed for decision making [38].

Once factors that AIS have not qualified is the ineffective implementation of internal control [2] [32] [34] [49]. Internal control is used as a mechanism to protect the organization from risk or to minimize the impact of risk if the risk occurs [29]. According to Yang et al. (2011) to ensure the reliability of financial reporting, internal control mechanisms must be built into the information system [51].

According to Stair & Reynold (2012:368), Daft & Marcic (2013:316) top management support also contributes to AIS implementation success [13] [46]. Top management will uses various techniques and policies to AIS implementation. Top management support is relating top management understands on the AIS function and activities [35].

DeLone & McLean (1992) were identified six components of information system success. These components are interrelated and interdependent, forming an information system success model (D&M IS Success Model), such as system quality (technical level), information quality (semantic level), usage, user satisfaction, individual impact, and organizational impact (level of influence) [15]. Thus, DeLone & McLean (2003) updated the information system success model (Updated D&M IS Success Model) by adding service quality components and replacing individual impact components and organizational impacts with net benefits [16].

This study was used two components of D&M IS Success Model. Nelson et al. (2005) was

argued that DeLone & McLean (1992: 2003) identified system quality and information quality as the initial key to the success of information systems [33], but this model have not linked. The novelty is this study linked both of the quality of the system and the quality of information, as Sacer et al. (2013) argued that accounting information quality depends on AIS quality because accounting information is the output of it [40]. Similarly, according to Raymond & Bergeron (2008), Gorla et al. (2010), Al-Mamary et al. (2014) there is a relationship between system quality and information quality [4] [19] [36]. The objectives of study are to measure influence of (1) internal control and top management support to AIS quality; and (2) AIS quality to accounting information quality.

It is necessary to conduct a study of the influence of internal control and top management support effectiveness on quality of AIS and its implication on quality of accounting information at private higher educations in Indonesia based on previous researches and theoritical framework

2. LITERATURE REVIEW

2.1 Internal Control

Moeller (2010:8) defines internal control as a process designed by boards of directors, management and other personnel to purpose effectiveness and efficiency of the operations, reliability of financial reporting and compliance with applicable laws and regulations [31]. This similarly argued by [22] [23] [28] [38].

Moeller (2010:14) argued the internal control of AIS including in the component of control activities. The effectiveness of control activities is the most important component of COSO internal control framework. Control activities are actions taken through policies and procedures to reduce risks in the purposes achievement. In this study, there undertaken to provide the confidence of financial reporting reliability.

The information system controls consisted of general controls and application controls [6] [22] [28] [31]. General controls include software controls, physical hardware controls, computer operations controls, data security controls, controls over implementation of system processes, and administrative controls. Application controls include input, process and output controls [28].

2.2 Top Management Support

Top management support is defined as the top management participation to involve and successive the objectives actively [44] [50]. According to Ragu-Nathan et al. (2004) and Štemberger et al (2011) top management support refers to the degree to which top management understands on the importance of function and involves on the information systems implementation [35] [47].

Štemberger et al (2011) was reflected top management support in four indicators, such as top management is aware of the importance of information systems functions, top management actively participates in information system planning, top management sponsors initiatives taken by information system personnel and top management has sufficient knowledge of information systems [47]. McLeod & Schell (2007: 202) states that top management plays important role in (1) establishing policies that ensure the objectives of information system are congruent with the organizational goals; (2) providing funds for information systems needs; and (3) resolving conflicts in the information systems implementation [29]. Ifinedo (2008) and Mir et al. (2014) states top management support means how to top manager provides the company resources, directs and authorities in the implementation of information system [25] [30]. According to Young & Jordan (2008) that top management support means how to top management involves actively, able to solve the problems and facilitates the information systems implementation [52].

2.3 Accounting Information System Quality

According to Romney & Steinbart (2012: 30); Stair & Reynold (2010: 11); O'Brien & Marakas (2011: 30), accounting information system is a collection of resources, such as people and equipment, that are designed to transform financial and other data into information [34] [38] [46]. The objectives of AIS are to collect, process and produce any information that is relating on financial aspects of business activities [18].

Azhar Susanto (2013:30) stated that the information system success is an effective information system and can be used by users to improve their control, efficiency and rapidity [6]. A quality of AIS is required to produce qualified information, then assist management on making right decisions [24].

Romney & Steinbart (2012:615) stated that a qualified AIS has some characteristics such as usefulness, economy, reliability, availability, timelines, ease to use, flexiblility, tractability,

auditability, and security [38]. Thus, according to Heidmann (2008:87-90), the system quality of accounting systems includes integration, flexibility, accessibility, formalization, and media richness [24]. According to Reis & Carvalho (2013:423-425) the AIS quality includes usability, adaptability, flexibility, reliability, efficiency, effectiveness, security and accessibility [37]. A quality information system is usually flexible, efficient, accessible, and timely [46].

2.4 Accounting Information Quality

According to Romney & Steinbart (2012: 30); Hall (2011: 11); Stair & Reynold (2012: 5-6); Gelinas & Dull (2008: 17), data are facts that are collected, recorded, stored, and processed by an information system. Information is data that has been organized and processed to provide meaning and improve the decision-making process [18] [22] [38] [46]. Information of high quality is information products whose characteristics, attributes, or qualities make the information more valuable to decision makers [34].

Quality of information characteristics include relevant – up to date problem related, can reduce uncertainty and improve decision-making ability; accurate or reliable - free from error/bias; Timely - information is provided when needed; Complete - provides a complete picture on a particular problem or solution [18] [22] [29] [38] [46].

3. THEORITICAL FRAMEWORK

3.1 The Influence of Internal Control on AIS Quality

Laudon & Laudon (2012:320) argued the implementation of internal control effectiveness can improved the quality and reliability of information system [28]. Hayes et al. (2005:232) stated that once of the management objectives of designing an internal control system is to ensure the reliability of financial reporting [23]. O'Brien & Marakas (2011:569) argued that internal control makes efforts to maintain the accuracy, integrity, and security on the implementation of information system. Internal control is designed to ensure data entry, processing techniques, storage methods, and output of appropriate information, so that effective implementation of internal control can minimize errors, fraud, and losses in the implementation of information system [34]. Similarly, Yang et al., 2011; Abbas & Iqbal, 2012; Badara & Saidin,

2013; Sacer & Oluic, 2013 have concluded that internal control is essential to ensure the success of an information system [1] [10] [40] [51].

Teru & Hla (2015) stated internal control is implemented to ensure the objectives accomplishment and performance of the information system implementation [49]. According to Neogy (2014), internal control ensures the effectiveness and efficiency of business operations, compliances with management policies, asset securities, prevention and fault and fraud detection, accuracy and accounting records completeness, and ensures the information system can produces the quality information [32]. The internal control systems have some purposes such as to eliminate the threats, detect some errors and restore information systems when threats occured [38]. Effective internal control implementation will be prevent, detect and correct errors and failures that may occur in the implementation of AIS [20] [53].

3.2 The influence of Top Management Support on AIS Quality

Schwalbe (2010:54) suggests that top management is a major support in the information systems implementation. There is very important because the information system requires adequate resources and visibility of information systems implementation [43]. The development and implementation of AIS successiveness is influenced by it [38]. If there is no support from top management, the organization will not take serious efforts [11]. According to Daft & Marcic (2013: 316), top management will use various ways for in implementing project successively [13].

Top management have power to the organization controlled. With its power, they can ensure adequate resource allocation and act as a change agent to create a more conducive environment in the information system implementation [48]. Dezdar & Ainin (2011); Al-Hiyari et al (2013) also state top management who play an role in the information system implementation actively will be involved and have a willingness to allocate resources, they become drivers and make employees motivated and aligned in implementing information system [3] [14].

Top management play an important role that enables organizations to response to the information systems implementation dynamically. Support from them provides motivation for all units to work together in the information systems implementation [35]. According to Jitpaiboon & Kalaian (2005), Sabherwal et al. (2006), top management support is an important factor on the

successful of information systems implementation. Top management play a strategic role in allocating resources for the implementation of information systems running effectively [26] [39]. Young & Jordan (2008) stated that the essence of it is related to effective decision making to authorize changes in the organization as well as to solve problems related to the implementation of information systems. It is an important factor and provides a powerful explanation of succeed or failed the information system implementation [52].

3.3 The Influence of AIS Quality to Accounting Information Quality

An effective of AIS can provide information that appropriate the user's needs [18] [28] [34]. If the information system is not qualified, then the risk that may occur is the information discrepancies in lower, middle and upper level management. The next is the unsyinchronized of decision makings and activities in various level of the organization, which ultimately leads to organizational performance become ineffective, unefficient and uncontrolled [6].

Salehi et al. (2010), Alzoubi (2011), and Sambasivam & Assefa (2013) concluded that AIS integrated will improve the relevance of accounting information and reduce the level of uncertainty on making decisions [5] [41] [42]. According to Gabriel & Obara (2013), an effective information system is able to produce timely and accurate information and result in efficiency and effectiveness in the organization ultimately [17]. Similarly, according to Azmi Fitriati & Sri Mulyani NS (2015a,b), the successful implementation of AIS can result the quality accounting information, as relevant, accurate, timely and complete, so that it can be used in decision making [8] [9].

4. METHODOLOGY

Quantitative methods were used this study. Data collection using questionnaires. Sampling is based on simple random sampling technique at Muhammadiyah higher education institutions in Indonesia. The data were measured using Likert scale five-point. Structural Equation Modeling based on component or variance (PLS-SEM) is used for analysis tool. Evaluation of PLS-SEM model includes evaluation of measurement model (outer model) and structural model (inner model).

In this study, exogenous and endogenous variables are latent variables. The latent variable measurement model in this research includes: (1) the first order is the dimension measurement model

of the indicator, and (2) the second order is the latent variable measurement model for its dimension. Thus, the measurement model of the internal control variable is reflective in the first order and formative in the second order. Top management support variables are reflective in both first and second orders, as well as AIS quality variables. The model used in this study as in Figure 1.
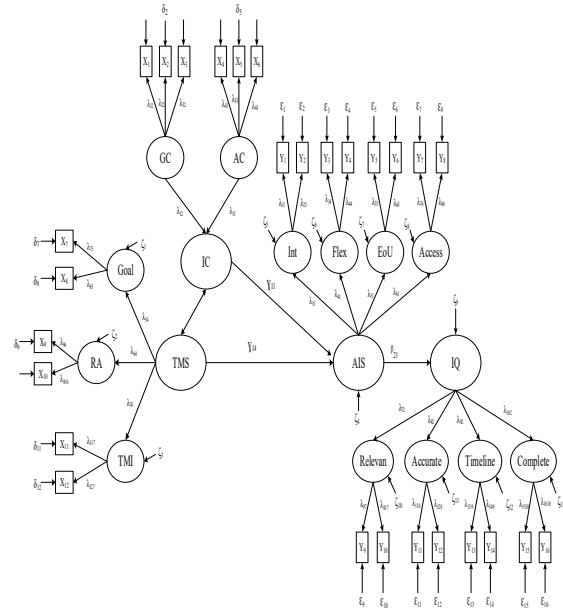

Figure 1: SEM Model

5. RESULT

The number of respondents analyzed by 120 respondents. Characteristics of respondent as in Table 1. There table indicates that most (56%) of the respondents are women, aged under 40 years (52%), tenure of more than 10 years (38%) with manager positions (62%) approximately. Most respondents passed graduate education (75%) and more a half (54%) have accounting background.

Table 1. Characteristics of Respondents

Character istics	N	%	Character istics	N	%
Gender			**Position**		
Male	42	36 %	Manager	75	62 %
Female	68	56 %	Staff	33	28 %
Unidentified	10	8%	Unidentified	12	10 %
Age			**Strata**		
≤ 30 years	27	23 %	High School	4	3%

31–40 years	36	29%	Diploma	13	11%
41–50 years	31	26%	Graduate	90	75%
≥ 51 years	9	8%	Unidentified	13	11%
Unidentified	17	14%			
Tenure			**Academic Background**		
≤ 5 years	30	25%	Accounting	66	54%
6 – 10 years	26	22%	Economic	17	14%
11–20 years	37	30%	Non Economic	21	18%
≥ 21 years	9	8%			
Unidentified	18	15%	Unidentified	16	14%

This study uses reflective measurement model to measure the relationship between indicators and its dimensions. Reflective and formative measurement models are used for measure the relationship between the dimensions and their latent variables or constructs. Tests on the measurement model are presented in Table 2.

The factor loading values of all indicators and dimensions are above 0.7 with p-values are less than the significance level α 0.05, thus it means all indicators is valid to measure their dimensions and all dimensions is valid to measure their constructs. Based on test results of all indicators and dimensions have R^2 more than 0.5. This indicates that all indicators and dimensions have reliable criteria. All dimensions and variables have AVE more than 0.5, that it means all indicators and dimensions have convergence validity criteria.

Table 2 indicates the value of Composite Reliability (CR) in all dimensions and variables is greater than 0.7, so it means all indicators in each dimension and all dimensions in each construct have a good internal consistency. The discriminant validity test were used the Fornell-Lacker criterion [21]. Based on this resulted have shown that the measurement model has valid and reliable criteria. It means that all indicators used in this study has reflected the dimensions and constructs.

Furthermore, the testing of structural models includes testing of collinearity, significance of path coefficients, R2 and f2. The results of the structural model testing are presented in Tables 3 and 4.

Table 3 indicated that the exogenous variables of internal control and top management support have VIF below 5, it means that there are

no collinearity problems between those variables. R2 of AIS quality and accounting information quality are 0.6 and 0.5. This means that the variability of AIS quality can be explained by internal control and top management support of 60% approximately. The variability of accounting information quality is explained by the AIS quality of 50%. Then f2 for internal control and top management support are 0.2 and 0.08. This indicates that internal control have a strong effect while top management support has a weak effect the AIS quality.

Table 2. Factor Loading, R2, AVE and CR

Var	AVE	CR	Dimension	Factor Loading	R²	AVE	CR	Indicator	Factor Loading	R²
IC			GC			0.8	0.9	GC-1	0.8	0.7
								GC-2	0.9	0.8
								GC-3	0.9	0.8
			AC			0.8	0.9	AC-1	0.9	0.8
								AC-2	0.9	0.9
								AC-3	0.9	0.8
TMS	0.6	0.9	Goal	0.8	0.8	0.8	0.9	Goal-1	0.9	0.8
								Goal-2	0.9	0.8
			RA	0.8	0.8	0.8	0.9	RA-1	0.9	0.8
								RA-2	0.9	0.8
			TMI	0.8	0.8	0.8	0.9	Tmi-1	0.9	0.8
								Tmi-2	0.9	0.8
AIS	0.6	0.9	Int	0.8	0.8	0.9	0.9	Int-1	0.9	0.9
								Int-2	0.9	0.9
			Flex	0.8	0.8	0.8	0.9	Flex-1	0.8	0.8
								Flex-2	0.9	0.8
			EoU	0.9	0.8	0.9	0.9	EoU-1	0.959	0.9
								EoU-2	0.955	0.9
			Access	0.8	0.7	0.6	0.7	Acc-1	0.936	0.8
								Acc-2	0.761	0.5
IQ	0.6	0.9	Relevant	0.8	0.7	0.9	0.9	Re-1	0.938	0.9
								Re-2	0.945	0.9
			Accurate	0.8	0.7	0.8	0.9	Act-1	0.900	0.8
								Act-2	0.898	0.8
			Timeline	0.8	0.9	0.9	0.9	Tl-1	0.940	0.8
								Tl-2	0.939	0.9
			Complete	0.8	0.8	0.9	0.9	Co-1	0.931	0.9
								Co-2	0.935	0.9

Table 3. VIF, R^2 and f^2

Variable	VIF	R^2	f^2
IC	2.3		0.2
TMS	2.4		0.08
AIS		0.6	
IQ		0.5	

Table 4. Path Coefficient Estimation

Variable		Path Coef.	Stat-t	p-value
Exogenous	Endogenous			
IC	AIS	0.4	4.9	0.000
TMS	AIS	0.3	3.1	0.002
AIS	IQ	0.7	11.6	0.000

6. DISCUSSION

Table 4 indicates the path coefficient of influence of internal control on AIS quality is 0.4 (p-value <0.05). It can be explained that the application of internal control effectiveness has positive impact on qualified AIS implementation.

General controls and application controls had implemented in Muhammadiyah higher education institutions. The internal control implementation will support the AIS implementation that an integrated, flexible, easy to use and easy to access. However, there several uneffective findings on information system control implementation, such as (1) hardware and software maintenance have not done routinely; (2) uneffective usage of username and password; and (3) lack of database security. Thus, other findings is (4) the less of effective input, process and output controls, includes, unavailability of facilities/ features that can reduce the risk of data input, program logic, formulas errors, that the resulting information becomes inaccurate. Implementation of ineffective internal control led to the AIS implementation in Muhammadiyah higher education institutions to be less qualified.

Based on statistical results indicated that internal control has a considerable effect on the quality of AIS. It has shown the implementation of internal control in Muhammadiyah Higher Education have affected to the improvement of SIA quality significantly.

The Muhammadiyah Higher Education Management realizes their institutions are non-profit organizations whose sustainability is based on the principle of trust. They should be able to provide trust / confidence to stakeholders for the institutions management continuously. Effective management will have impacted on improving the quality of higher education and trust of public. Besides, the strong awareness to the vision and mission of Muhammadiyah and improving effort to employee attitude continuously made possible to decreased the mistake and fraud of AIS implementation.

As illustrated on Table 4, the path coefficient of top management support on AIS quality is 0.3 (p-value <0.05) approximately. It can be explained that the top management support have positive effect to AIS implementation qualified. Top management support includes active participation on the alignment of the objectives of the AIS implementation with the organization goals, human resources and financial allocation and active involvement in the AIS implementation. Thus, the alignment of organization vision, mission and goals can be facilitate in integrating the functions or units, and reduce the resistance and conflict in the AIS implementation.

Top management that supported the implementation of information systems have shown the high interest and understanding of the function of information systems as a strategic resource in the organization. Based on this understanding, they make serious effort to taking advantage of the information systems implementation. They also seeks to avoid recurring conflicts and errors for it successfully.

Top management have important performed to planning, design and implementation of information system optimally, so it can be eliminate the risk of failure and loss of strategic values of IS implementation. They always monitored and facilitated the this action continously. It was included the efforts to improve user expertise to ensure the information system can function optimally.

Kearns (2006) stated the success of AIS implementation is influenced by top management support on directing alignment between organizational strategy and AIS [27]. In its implementation, top management support have important role to prepare vision, mission, goals and strategies for integration of departments and units within the organization [45].

Based on the results, top management play a role in the allocation of human resources and financial resources. Their support can improve the AIS technical capabilities (integrated, flexible, easy to use and accessible). Jitpaiboon & Kalaian (2005), Boonstra (2013), Al-Hiyari et al. (2013) concluded that one of the factors affecting the AIS implementation successfuly is top management

support, ie by ensuring human and technical resources in the AIS implementation [3] [12] [26].

The others is provided as the main subject of active involvement and employee participations in the AIS implementation. Top management makes, monitors and evaluates on the AIS implementation policies and procedures, and becomes the initiator and motivator of its implementation.

Based on the results of structural model testing (Table 4), there is known that the path coefficient of AIS quality on accounting information quality is 0.7. It is explained that to improve the accounting information quality must improve the AIS quality. High qualities of AIS will produce a high quality of accounting information. AIS quality can be realized by integrating all components, providing flexible and easy-to-use systems, and designing ease of access. AIS quality can meet the needs of information that changes quickly and efficiently, leading to the release of relevant, accurate, current and detailed information, which implies a high quality of information.

The result shown the quality of AIS were explained by internal control and top management support only 60% respectively. There were 40% factors unexplained. In addition, top management support variable has least coefficient and effect on the quality of AIS (Table 3). Whereas previous research it is important factor [26]. [35]. [52].

In future research it is necessary to add variable such as organizational commitment because based on the research findings, top management support and internal control variables have a weak effect on improving the quality of AIS. This is because the commitment to the employee organization in in this study is quite high (52% of the tenure of employees were 6-20 years). So that top management support is only necessary as a motivator and dynamicator in the implementation of AIS.

7. CONCLUSION

The AIS quality is influenced by the effectiveness of internal control implementation and the high of top management support. Internal control will ensure AIS can be implemented optimally. Top management support will optimize in achieving AIS goals. The implementation of an AIS qualified will have an impact on the quality of the information resulted like relevant, accurate, timely and complete. It's consitent with the theory and the previous research. Furthermore, the results of this study are replicable by other researchers by adding variables, dimensions or indicators used.

8. ACKNOWLEDGMENT

REFRENCES

[1] Abbas, Q. & Iqbal, J., "Internal Control System: Analyzing Theoretical Perspective & Practices", *Middle-East Journal of Scientific Research.* Vol.12 (4), 2012, pp. 530-538

[2] Abu-Musa, A.A., "Evaluating The Security Controls of CAIS in Saudi Organizations: The Case of Saudi Arabia", *The International Journal of Digital Accounting Research*, 6 (11), 2006, pp. 25-64

[3] Al-Hiyari, A., Al-Mashregy, M.H.H., Mat, Nik K. N. & Alekam, J. M. E., "Factors that Affect Accounting Information System Implementation and Accounting Information Quality: A Survey in University Utara Malaysia", *American Journal of Economics.* Vol. 3(1), 2013, pp. 27-31

[4] Al-Mamary, Y.H., Shamsuddin, A. & Aziati, N., "The Relationship of System Quality, Information Quality and Organizational Performance", *International Journal of Knowledge and Research in Management & E-Commerce*. Vol. 4 (3), 2014, pp. 7-10

[5] Alzoubi, A., "The Effectiveness of the Accounting Information System Under the Enterprise Resources Planning (ERP) A Study on Al Hassan Qualified Industrial Zone's (QIZ) Companies," *Research Journal of Finance and Accounting*. Vol 2 (11), 2011, pp.10 – 18

[6] Azhar Susanto. *Sistem Informasi Akuntansi: Struktur Pengendalian Resiko Pengembangan*. Lingga Jaya, Bandung, 2013

[7] Azhar Susanto. "What Factors Influence The Quality of Accounting Information?" *IJABER*. Vol. 13 (6), 2015, pp. 3995 – 4014

[8] Azmi Fitriati & Sri Mulyani NS., "Factors That Accounting Information System Success and Its Implication on Accounting Information Quality", *Asian Journal of Information Technology*. Vol. 14(5), 2015a, pp.154-161

[9] Azmi Fitriati & Sri Mulyani NS., "The Influence of Leadership Style on Accounting

Information System Success and Its Impact on Accounting Information Quality", *Research Journal of Finance and Accounting*. Vol. 6(11), 2015b, pp. 167-173

[10] Badara, M. S. &, Saidin, S. Z., "Impact of the Effective Internal Control System on the Internal Audit Effectiveness at Local Government Level", *Journal of Social and Development Science*. Vol. 4(1), 2013, pp. 16-23

[11] Bateman, T. S. & Snell, S. A. *Mana-gement: Leading & Collaborating in a Competitive World*. 11th edition. McGraw-Hill, New York, 2013.

[12] Boonstra, A. "How Do Top Managers Support Strategic Information System Projects and Why Do They Sometimes Withhold This Support?" *International Journal Project Management.* Vol. 31, 2013, pp. 498–512

[13] Daft, R.L. & Marcic, D. *Understanding Management*. 8th edition. South-Western Cangage Learning, 2013

[14] Dezdar, S. & Ainin, S., "The influence of organizational factors on successful ERP implementation", *Management Decision.* Vol. 49 (6), 2011, pp. 911-926

[15] DeLone, W.H. & McLean, E.R. "Information Systems Success: The Quest for the Dependent Variable" *Information Systems Research,* Vol. 3 (2), 1992, pp. 60-96

[16] DeLone, W.H. & McLean, E.R., "The DeLone and McLean Model of Information Systems Success: A Ten-Year Update", *Journal of Management Information Systems.* Vol. 19 (4), 2003, pp. 9-30

[17] Gabriel, J.M.O. & Obara, L.C., "Management Information Systems And Corporate Decision– Making: A Literature Review", *The International Journal Of Management*. Vol 2 (3), 2013, pp.78 - 82

[18] Gelinas, Ulric J. & Richard B. Dull. *Accounting Information System. 7th edition*. Thompson. South-Western, 2008

[19] Gorla, N., Somers, T.M. & Wong, B., "Organizational Impact of System Quality, Information Quality and Service Quality", *Journal of Strategic Information Systems*. Vol. 19, 2010, pp.207 – 228.

[20] Guan, Y.. "A Study on The Internal Control of AIS" *International Confrence on Computer and Communication Technologies in Argiculture Engineering*, Januari, 12, 2006

[21] Hair, Jr. J. F., G.T.M. Hult, C.M. Ringle & M. Starstedt. *A Premier on Partial Least Squares Structural Equational Modeling (PLS-SEM).* Sage Publication. Inc, California, 2014

[22] Hall, James A. *Accounting Information System. 7th edition*. Cengage Learning. South-Western, 2011

[23] Hayes, R., Dassen, R., Schilder, A., Wallage, P. *Principles Of Auditing An Introduction to International Standards*, 2nd*edition.* Prentice Hall. Pearson Education, 2005

[24] Heidmann, M. *The Role of Management Accounting Systems in Strategic Sensemaking*. Universitäts-Verlag Wiesbaden, Germany: Deutscher, 2008

[25] Ifinedo, P., "Impacts of Business Vision, Top Management Support, and External Expertise on ERP Success", *Business Process Management Journal, Vol.* 14(4), 2008, pp. 551-568

[26] Jitpaiboon, T. & Kalaian, S.A., "Analyzing The Effect of Top Management Support on IS Performance Across Organizations and Industries Using Hierarchical Linear Modeling", *Journal of International Technology & Information Management.* Vol. 14(2), 2005, pp.131-143

[27] Kearns, G.S., "The Effect of Top Management Support of SISP on Strategic IS Management: Insights from The US Electric Power Industry", *Omega* 34, 2006, pp.236 – 253

[28] Laudon, Kenneth C., Jane P. Laudon. *Management Information System. Managing The Digital Firm. 12th edition*. Pearson Prentice Hall, New Jersey, 2012

[29] McLeod, J. Raymond & George P. Schell. *Management Information System. 10th edition*. Prentice Hall, 2007

[30] Mir, U.R., Sair, S.A. & Malik, M.E., "Effect Organizational Culture and Top Management Support on ERP Implementation", *Science International,* Vol.26 (3), 2014, pp.1361-1369

[31] Moeller, Robert R. *IT Audit, Control, and Security*. New Jersey: John Wiley & Sons, Inc, 2010

[32] Neogy, T.K., "Evaluation of Efficiency of AIS: A Study on Mobile Telecommunication Companies in Bangladesh," *Global Disclosure of Economic & Business.* Vol 3(1), 2014, pp. 40 – 55

[33] Nelson, R.R., Todd, P.A. & Wixom, B.H., "Antecedents of Information and System Quality: An Empirical Examination Within The Context of Data Warehousing", *Journal of Management Information Systems,* Vol. 21 (4), 2005, pp. 99-235

[34] O'Brien, J.A., Marakas, G.M., *Management Information System. 10th edition* McGraw Hill/Irwin, New York, 2011

[35] Ragu-Nathan, B.S, Apigiah, C.H., Ragu-Nathan, T.S., Tu, Q., "A Path Analytic Study of The Effect of Top Management Support for IS Performance", *The International Journal of Management Science*. Vol. 32, 2004, pp. 459-471

[36] Raymond, L. & Bergeron, F., "Project MIS: An Empirical Study of Their Impact on Project Managers and Project Success", *International Journal of Project Management*, Vol. 26 (2), 2008, pp. 213-220

[37] Reis, J.L. & Carvalho, J.A. *Advances in Information Systems and Technologies*. Rocha, A. *et al.* (eds). Springer-Verlag, Berlin Heidelberg, 2013

[38] Romney, B.M. & Steinbart, J.P. *Accounting Information System. 12th edition*. Pearson Education Limited, 2012

[39] Sabherwal, R., Anand, J. & Chowa, C., "Information System Success: Individual and Organizational Determinants", *Management Science*, Vol. 52 (12), 2006, pp.1849-1864

[40] Sacer, Ivana M. & Oluic, Ana, "Information Technology and AIS' Quality in Croatian Middle and Large Companies", *Journal of Information & Organization Society*, Vol. 37 (2), 2013, pp. 117-126

[41] Salehi, M., Rostami, V., Mogadamet, A., "Usefulness of AIS in Emerging Economy:Empirical Evidence of Iran", *International Journal of Economics and Finance*, Vol. 2(2), 2010, pp. 186 - 195

[42] Sambasivam, Y. & Assefa, K.B., "Evaluating the Design of AIS and its Implementation in Ethiopian Manufacturing Industries", *Research Journal of Science and IT Management*, Vol.2 (7), 2013, pp.16-29

[43] Schwalbe, K., *Information Technology Project Management*. 6th edition. Boston: Cangage Learning, 2010

[44] Siau, K., *Cross-Disciplinary Models and Applications of Database Management: Advancing Approaches*. IGI Global, 2012

[45] Singh, R.K., "Prioritizing The Factors for Coordinated Supply Chain Using Analytic Hierarchy Process (AHP)", *Meas. Business Excell*. 17(1), 2013, pp. 80–97

[46] Stair, R.M. & Reynold, G. W., *Fundamental of Information System,* 6th edition Boston, Cangage Learning, 2012

[47] Štemberger, M. I., Manfreda, A. & Kovačič, A., "Achieving Top Management Support with Business Knowledge and Role of IT/IS Personnel", *International Journal of Information Management*, Vol. 31(5), 2011, pp. 428-436

[48] Thong, J.Y.L., Yap, C.S. & Raman, K.S., "Top Management Support, External Expertise and IS Implementation in Small Business", *Information System Research*. Vol.7 (2), 1996, pp. 248-267

[49] Teru, S. P. & Hla, T. D., "Appraisal of Accounting Information System and Internal Control Frameworks", *International Journal of Scientific and Research Publication*, Vol. 5 (9), 2015, pp. 1-3

[50] Tipton, H.F. & Kruse, M. *Information Security Management Handbook*. 6th edition Taylor & Francis Group, 2007.

[51] Yang, M.H., Lin, W.S, Koo, T.L. "The Impact of Computerized Internal Controls Adaptation on Operating Performance", *African Journal of Business Management,* Vol. 5(20), 2011, pp. 8204-8214

[52] Young, R. & Jordan, E, "Top Management Support: Mantra or Necessity?" *International Journal of Project Management*, Vol. 26 (7), 2008, pp. 713–725

[53] Zhang, H., Guo, C. & Sun, Q, "A Study on the Internal Control of Accounting Information Processing System under the Computer Environment", *International Journal of Advancements in Computing Technology*. Vol.4(22), 2012, pp. 857- 866