

Impact of Accounting Information System on Organizational Performance: A Study of SMEs in the UAE

Mohd I M Alnajjar*

The purpose of this study is to investigate the impact of accounting managers' knowledge and top management support on accounting information systems and, moreover, to analyze the impact of accounting information systems on performance management and organizational performance. This study analyses the data collected from 74 SMEs related to the trading, services and manufacturing sectors. SPSS and AMOS are used for doing regression analysis; specifically structural equation modeling is applied for data analysis. Based on the results this study concludes that accounting managers' knowledge and top management support significantly impact on the accounting information systems in an organization and, consequently, accounting information systems also significantly impact the performance management and organizational performance of that organization. By using accounting information systems, decision makers obtain useful information and use it in decision-making and strategy building to achieve organizational goals and objectives, which should increase the company's performance.

1. Introduction

The emerging global economic development that is characterized by rapid changes in production processes, development in information technology (hereafter IT), fierce market competition, increased sophistication of consumers and unethical manipulative activities of businesses in the drive to ensure the complex and unpredictable business dynamics has brought to the fore the critical role of Accounting Information Systems (hereafter AIS) in the economic and business discourse, especially as it relates to management effectiveness (Curtis 1995).

AIS is a tool that uses the IT component to help in controlling the economic-financial activity of an organization. However, increased advancements in IT have made it possible for organizations to use this option for a strategic standpoint (Louadi 1998). Therefore, several authors argue in favor of the importance of AIS for an organization (Wilkinson et al. 2000; Wilkinson 1993; Rahman et al. 1988; Curtis 1995; Borthick and Clark 1990) and hence the need to maintain it in every organization, whether profit-oriented or non-profit oriented (Wilkinson et al. 2000). AIS are not just a component for recording financial data, but a whole component which collects raw data and then transforms this common data into useful financial information for the policy makers (Salehi, Vahab & Abdolkarim 2010).

Alnajjar

For a better understanding of the AIS, three words of AIS are elaborated separately. The first is “accounting,” which is a language of business, which records all the financial or monetary transactions (Wilkinson 1993). Second is “information,” which is the processed form of all financial transaction data used by decision makers. Lastly, according to Thomas and Kleiner (1995) and Bhatt (2001), is “system,” which is an integrated entity that focuses on the set of objectives.

There is an argument in accounting literature that AIS leads to the strategic success of an organization (Langfield-Smith 1997). A study conducted by Bouwens and Abernethy (2000) have analyzed the role of AIS in strategic management decisions, and they have also examined the attributes of AIS about different strategic priorities. It has also been observing the impact of AIS on the firm’s performance by considering the various designs of AIS on the different strategies.

According to Chenhall (2003), different designs of AIS support different organizational strategies, which increase the organizational performance (hereafter OP). Increasing investment in the AIS makes the corporate culture more flexible and stronger, which enables the organization to face changing business environmental conditions. Innovation brings the ease to organizational processes and makes the performance better by reducing the obstacles in these processes, which also leads to possible access to capital markets. AIS is a system which uses the financial data of an organization, but it also combines the accounting techniques and controls along with different methodologies by using IT to track the external and internal reporting data, financial statements and trend analysis, and thus to impact on the performance of an organization (Grande, Estebanez & Colomina 2010).

Knowledge of managers in developing high-quality information systems (hereafter IS) is crucial (Abdipour 2011; McLeod & Schell 2007). Moreover, Laudon and Laudon (2005) argue that implementation of AIS is significantly related to the knowledge of managers. Since managers are the personnel who have a better understanding of the needs of businesses and do consider the needs of the business, they can better decide on appropriate AIS for the organization (Ismail 2009). Moreover, it is further argued that knowledge of the manager about the IT is very crucial because managers use this knowledge for the survival and prosperity of a company (Laudon & Laudon, 2005). Usually, the knowledge of executives is comprised of computer application programs, the internet, email, database, spreadsheet, word processing, financial and managerial accounting. This enhances the effectiveness of AIS. As Ismail and King (2007) state, the knowledge of the manager about more sophisticated software contributes to the increased efficiency of AIS.

Jarvenpaa and Ives (1991) and Hussein et al. (2005) argue that top management support (TMS) is also considered as imperative in determining the quality of AIS and implementation of AIS in the organization, as top management support increases the quality of AIS (Lerwongsatien & Wongpinunwatana 2003; Thong & Yap 1995). This support could be in different forms, e.g., it could be in the form of commitment to align organizational strategies (Jarvenpaa & Ives 1991). Moreover, it can also be in the form of participation in supporting the employees for building a constructive attitude towards the usefulness of IS. Furthermore, it could be the administrative

Alnajjar

authority's surety on the availability and the appropriateness of the resources for implementation of AIS (Guinea et al. 2005).

The above discussion shows that the role of AIS is imperative in managing an organization. Thus, it is vital to set up an internal control system in the organization. Nicolaou (2000) says that the fit of AIS regarding information control and information communication as per organization's requirement is very much related to accounting and management decision-making. Sajady, Dastgir, and Hashem (2008) argue about the benefits of AIS by studying its impact on facilitating the company's transactions, internal controls, performance evaluation, quality of accounting information and improvement in the decision-making process. Considering these five dimensions, AIS gains importance in increasing OP since performance management (hereafter PM) is a maturing business discipline (Downes & Barclay 2008). Therefore, it is also vital in improving OP. Yang, Lin, and Koo (2011) also conclude from their study that control efficacy of financial information reliability has an effect on the operating performance of companies.

Previously, many research studies conducted in Iran, Pakistan, Finland, Malaysia and Spain have shown that increased firm profitability and increased operations efficiency are the results of AIS adoption (Sajady, Dastgir & Nejad 2008; Kouser, Awan, Rana & Shahzad 2011; Gullkvist 2002; Grande, Estebanez & Colomina 2010; Kharuddin, Ashhari & Nassir 2010). In the UAE, new computer tools and information society have made it possible for the firms to make better use of AIS concerning their dealings with customers and suppliers. Moreover, electronic banking and the development of AIS have also helped the companies in saving time while making transactions.

Accounting information is a crucial ingredient for most of the managerial and financial decisions. Each year, these decisions are worth billions of dollars in developed economies. Sometimes, these decisions are deficient in quality. It is necessary to conduct studies that could incite managers about the importance of the quality of information available in the organization, which could lead to better decision-making in the organization of a developing country. If research studies could influence the managers by giving them insights into the use of AIS for making their decision process better, stakeholders will benefit.

Several authors, e.g., Jarvenpaa and Ives (1991), Hussein et al. (2005), Lerwongsatien and Wongpinunwatana (2003), Thong and Yap (1995) analyzed the impact of top management support and accounting manager's knowledge on the AIS in developed countries about two decades before. Ang et al. (2001) conducted a study on SMEs but compared the role of accounting managers' knowledge of the alignment and non-alignment of AIS. There is a lack of research studying the impact of accounting managers' knowledge and top management support on AIS implementation in the developing country context, where SMEs started adopting technology recently. Thus, it is important to analyze the impact of top management support and accounting managers' knowledge on the AIS in a developing country along with the further impact of AIS on the OP and PM of SMEs. Based on the above discussion, it is observed that top management support and accounting managers' knowledge have a relation with AIS, and AIS leads to OP and PM. This study attempts to provide clarification of the relationship between top management support, accounting managers' knowledge, AIS, OP and PM in a developing country. The study contributes to the literature by analyzing the impact of top management

Alnajjar

support and accounting managers' knowledge on the AIS and the further impact of AIS on the OP and PM of SMEs of a developing country. Therefore, the study contributes to the literature by analyzing the impact of top management support and accounting manager knowledge on the AIS and the further impact of AIS on the OP and PM of SMEs of a developing country. Previous studies also did not use the structural equation modeling to test the study variables. Therefore, this study further contributes to the literature by using the structural equation modeling through AMOS and analyzed the data of 74 companies gathered from different industrial sectors namely manufacturing, trading, and services.

This article is organized as follows. After discussing the literature, this study develops the hypotheses. Subsequently, the method is explained and then based on statistical analysis this article presents the results. Afterword, this study concludes the key findings and provides the limitation.

2. Literature

Grande, Estebanez and Colomina (2010) state that improving the external relationship of the company (specifically with the foreign customers), new business opportunities and better flow of financial information between the different hierarchy levels, have dramatically changed the nature of the business. Hence, it is necessary to change the traditional business functions or processes to encounter the changing nature of operations. This study focuses on the AIS as it is very beneficial for an organization: it provides a high level of competitiveness, improved management of business transactions, and a better acceptance of changing business environmental conditions.

According to the AICPA (American Institute of Certified Public Accountants), accounting is an IS and, more precisely, it practices the general theories of information in the area of effective economic activities and presents the foremost portion of information in the quantitative form. According to the definition mentioned above, accounting is a part of IS. According to Boochholdt (1999), AIS consisted of various operating functions which gather financial data, process it, categorize it and report financial events. This study considers the AIS as used for keeping records, directing attention and decision-making by considering all the relevant financial information.

Borthick and Clark (1990) state that the need for information is the reason for the existence of accounting. To keep it relevant in the business, accounting data should respond quickly to the needs of users and more particularly to the needs of investors. Usually, investors do not assess the performance of a target firm where they invest or intend to invest. Financial reports are the source of information for the investors, which are usually prepared by the management of companies. The prime objective of the financial reports is to provide information about the financial condition of the company, cash flows, changes in control of the firm and its operational results.

The financial report gives the economic information of the organization to the investors so that the stakeholders could ascertain the investment opportunities in the market. AIS plays a vital role in making these financial reports by processing the financial and non-financial data more

Alnajjar

accurately. Therefore, this study places significant emphases on the AIS. The research studies of Gerdin and Greve (2004) and Chenhall (2003) state that the role of AIS is proactive in strategic management. AIS serves as a mechanism for enabling the organizational strategy. Various typologies (see, e.g., Miles & Snow 1978; Porter 1985) have been used for examining the strategy, but Miles and Snow's typology have been used extensively in management literature. This study considers that OP is a function of AIS.

Chang (2001) states that AIS plays a significant role in increasing the effectiveness of organizations in the global competitive environment. Financial statements are still an important source of financial information to external stakeholders (Doms, Jarmin and Klimek 2004). Despite the continuous advancements and extensive usage, accounting practices have not kept pace with tremendous technological advancements and rapid economic development, which consistently impact the significance of accounting information. Onaolapo and Odetayo (2012) argue that massive accounting frauds reported in the developed countries and rapidly changing economic conditions, as well as some empirical studies, show the declined significance of accounting information. However, Onaolapo and Odetayo (2012) conclude in their research that accounting information still has value relevance.

2.1 Accounting Managers' Knowledge

Top management has been recognized as a critical factor in numerous types of development. Managers' beliefs and practices have been identified as crucial for adopting sustainable practices (Jabbour & Jabbour 2016). However, there is a scarcity in recent literature discussing the influence of manager's knowledge on the implementation of AIS in SMEs' newly adapting technology.

Accounting managers' knowledge (Hereafter AMK), related to AIS, includes the knowledge of computer application programs, accounting, the internet, e-mail, database, spreadsheet and word processing (Ismail 2009). Ang et al. (2001) and Jarvepaa and Ives (1991) state that AMK is comprised of specialized knowledge of IT and IS along with the experience in accounting and IT. Likewise, they also argue that managers' knowledge is observed through their experience, their level of awareness of IT, their background of IS, their acknowledgment of the potential of IT, and their ability to use IS for developing strategies.

AIS plays a critical role in the SMEs decision-making. Thus, AMK about AIS is a crucial factor in the success or failure of AIS implementation in SMEs (Hussin et al. 2002; Thong 2001; Seyal, Rahim & Rahim 2000). The manager is the only person who knows the goals of the company; thus, managers who are aware of new technology would select the correct software for the business (Hussin et al. 2002). Managers with accounting and IT knowledge are in a better position to deploy the IT system as per the requirements of the organization that best matches the organization needs.

Managers with the relevant knowledge and skills are likely to be more participative, proactive and productive to IS and IT, and they tend to have a positive attitude towards IS and IT (Jarvenpaa & Ives 1991). The study of Ang et al. (2001) was limited to testing the AIS alignment

Alnajjar

and compared the AMK in AIS aligned companies and AIS non-aligned companies. Therefore, it is necessary to investigate the impact of AMK on AIS implementation in SMEs.

2.2 Top Management Support

In addition to knowledge, TMS is a critical factor in the effective implementation of AIS in SMEs (Seyal & Abdul Rahman 2003; Lertwongsatien & Wongpinunwatana 2003; Igbaria et al. 1997; Thong & Yap 1995). Top management has a dominant role in bringing into line the IT with firm's strategies and objectives (Jarvenpaa & Ives 1991). Top management support would also bring about a positive attitude in users of AIS in the organization which most likely results in the successful implementation of AIS in SMEs. Furthermore, top management has the authority to ensure the distribution of adequate resources for the IT projects (de Guinea et al. 2005).

As stated by the Sheth (2010), top management support decides on the tipping point between the possible failure and success of the management projects, while developing and implementing these projects. Top management support includes the guidance about the project, political support for the project and commitment to delivering the necessary resources. Commitment, participation, and authority are different dimensions of TMS (Ismail 2009; Jarvenpaa & Ives 1991; Guinea et al. 2005).

According to Jarvenpaa and Ives (1991) and Igbaria et al. (1996), TMS is the participation and involvement of top-level management or executives of the firm in the IS or IT activities. It is also the participation of managers in developing strategies for the implementation of IS. Considering the relevant arguments of Jarvenpaa and Ives (1991) and Igbaria et al. (1996), this study uses the commitment, participation and authority dimensions to calculate the TMS. There is a lack of literature studying the role of TMS in AIS implementation in SMEs of a developing country; hence, this study investigates the impact of TMS on AIS implementation in SMEs.

2.3 AIS, Performance Management and Organisational Performance

AIS processes the non-financial and financial transactions which have a direct impact on the financial transaction processing. Wilkison et al. (2000) state that AIS not only processes the financial information and accounting data but also transforms the non-financial data into accounting information. Eventually, non-financial and financial data is transmuted into the accounting information for decision-making. Collecting, processing, storing and distributing information to support the controlling and decision-making process within an organization is the core units and interconnected components of AIS (Laudon & Laudon 2005).

AIS is the integration of physical and non-physical components, which are interconnected. These components collaborate with each other to process the financial transaction data to solve financial problems (Susanto 2007). According to Laudon and Laudon (2005), various types of IS are required to support the decision-making and work activity at different functional levels in an organization. Most of the IS are needed to integrate the various functional levels information and business processes for producing useful information for decision-making. Hence, the integration of systems is necessary. According to Hall (2008), AIS consists of different subsystems, one subsystem of AIS covers the managerial reporting, transaction reporting

Alnajjar

system, and financial reporting system. AIS includes various components, including technology, network communication, database, procedures, brain-ware, software, and hardware.

Existing research provides limited evidence of a correlation between PM and AIS. AIS is a critical organizational mechanism for better control and efficient decision-making in the organization (Sajady, Dastgir & Nejad 2008). The presence of AIS in the organization has changed the way of distributing information, storing, processing and capturing the data. Nowadays, organizations are using online and digital information in their AIS for better decision-making (Huang, Lee & Wang 1999).

Conway (2009) states that PM in an activity that guarantees the goals are being reliably met in an efficient way. PM focuses on the OP. AIS affects the PM and have an impact on the whole organization by affecting various departments (Conway 2009). Management engages in different activities for acquiring reliable information so that the PM could increase.

The quality of information provides a comparative advantage to the organization. AIS offers an option of acquiring quality information which serves as a comparative advantage (Xu 2010). Therefore, organizations are investing in AIS so that timely flows of quality information could be increased for better management decisions. Essex and Magal (1998) argue that quality information obtained through AIS is essential for management. Therefore, organizations often use AIS to back-up their management decisions. Usually, financial analysis of accounting information is used in decision-making and often the analysis is done by using AIS. Using business technology, AIS can process an ample amount of data for managers and owners of the firms (Vitezand Baligh 2011).

The performance of management is assessed through the achieved goals and objectives. Usually, management measures the performance by using the forecasts and budgets to compare them with the current performance and then identify the unusual results which need follow-up (Soudani 2012). The primary responsibility of the managers is to determine the financial risk of the processes, and they are also responsible for developing, executing and monitoring the internal control systems. Usually, internal controls deal with AIS, where the primary function of the internal control is to move the financial information in the organization. Therefore, managers can use the internal control to measure and monitor the accounting operations' effectiveness for firm performance (Vitezand Baligh 2011).

PM is crucial for increasing the overall value of the company (Armstrong & Baron 2005). AIS is the most regular source of getting information in an organization. AIS is designed to provide the reasonably accurate and timely information to all levels of management to help them in making a decision and increasing the PM, which ultimately results in achieving high OP. OP is a main construct in the management studies (Richard, Timothy & George 2008). Therefore, this study aims to analyze the contingency fit between AIS, PM, and OP.

Based upon the above discussion, the following hypotheses are formulated:

H1: There should be a positive impact of accounting managers' knowledge of accounting information system implementation.

Alnajjar

H2: There should be a positive impact of top management support on accounting information system implementation.

H3: There should be a positive impact of accounting information system implementation on performance management.

H4: There should be a positive impact of accounting information system implementation on organizational performance

3. Methodology

The Ministry of Finance and Industry of the United Arab Emirates took the initiative to modernize the public resources so that the efficiency and effectiveness of government agencies could be increased (Shamsi 2007). This initiative improves the cash management efficiency and modernizes the accounting system. IS used by government agencies for a financial management purpose introduces the performance-based budgeting and strengthens the strategic budgeting process across the federal government organizations. This study focused on the Small and Mid-sized Enterprises (hereafter SMEs) and analyzed whether these changes inspired the SMEs and SMEs are incorporating changes for better financial management, thereby increasing the efficiency and effectiveness of the firm.

This study collects data for SMEs working in a major industrial sector like Trading, Services, and Manufacturing as classified by the UAE government. A hundred and fifty companies from sectors mentioned above were selected, and questionnaires were distributed equally to each sector. Out of the 150 questionnaires distributed, the researcher received 115 responses, and out of these 115, only 74 questionnaires were error-free. Therefore, based on all the collected questionnaires, the rate of reply is almost 76%, but if only considering the useful data, the response rate for this study is around 50%.

Items for analyzing the constructs used in the questionnaire are taken from several different studies. Accounting Managers' Knowledge (AMK) constructs are measured by the six-item scale employed by Ismail (2009), Laudon and Laudon (2005) and McLeod and Schell (2007). Top Management Support (TMS) construct is measured by taking the five-item scale used by Ismail (2009), Jarvenpaa and Ives (1991) and Guinea et al. (2005). Accounting Information Systems (AIS) constructs measured by taking the 19-item scale used by Ismail (2009), O'Brien and Maraks (2005), Laudon and Laudon (2005), Susanto (2007) and Romney and Steinbart (2006). Performance Management (PM) constructs are measured by taking the five-item scale used by Kellen (2008). Organisational Performance (OP) constructs are measured by taking the five-item scale employed by Friedman (1970) and Fretwell and MSW (2002). All the questionnaire items are presented in Appendix 1.

All the elements of the questionnaire are rated on 5-point Likert scales, ranging from strongly disagree to agree strongly. Self-administered survey method and emails are used for gathering responses from the managerial personnel of the firms. This study uses SPSS for producing the frequency distribution, Cronbach Alfa values and descriptive statistics of data. Previously conducted studies, e.g., Jarvenpaa and Ives (1991), Hussein et al. (2005), Lerwongsatien and Wongpinunwatana (2003), Thong and Yap (1995) did not use the structural equation modeling (SEM). This study used the AMOS software for analyzing the data for SEM.

Alnajjar

4. Results

Table 1 Industry

		Frequency	Percent	Cumulative Percent
Valid	Trading	27	36.5	36.5
	Services	29	39.2	75.7
	Manufacturing	18	24.3	100.0
	Total	74	100.0	

Table 1 shows the distribution frequency of the questionnaire used for the analysis of the industry. The largest number of respondents of 39.2% is from the services industry with the value of 29, followed by the trading sector with 36.5% and a value of 27, and the lowest number of respondents are from the manufacturing sector with the percentage value of 24.3. This frequency shows that the results could be generalized in all three sectors as the number of contributory respondents is adequate regarding percentage contribution to the analysis of this study.

Table 2 Age

		Frequency	Percent	Cumulative Percent
Valid	18-23	3	4.1	4.1
	24-28	7	9.5	13.5
	29-33	13	17.6	31.1
	34-38	26	35.1	66.2
	39/Above	25	33.8	100.0
	Total	74	100.0	

Table 2 shows the contribution of respondents from different age groups. It can be seen that most respondents are from the senior age group, contributing to the overall survey with 82.4%, i.e., all respondents above 29 years old. The high response rate from senior age employees from the majority of firms shows that most of the firms have experienced persons working in managerial positions.

Table 3 Gender

		Frequency	Percent	Cumulative Percent
Valid	Male	70	94.6	94.6
	Female	4	5.4	100.0
	Total	74	100.0	

Table 3 shows the contribution of respondents from different genders. The high response rate with a value of 94.6% comes from male respondents who are working in managerial positions.

Alnajjar

Table 4 Education

		Frequency	Percent	Cumulative Percent
Valid	Bachelor	59	79.7	79.7
	Masters	12	16.2	95.9
	PhD	3	4.1	100.0
	Total	74	100.0	

Table 4 shows the contribution of respondents with different educational backgrounds. The highest rate of respondents has a bachelor's qualification with 79.7% contribution in the present study. Then, there are 12 respondents having Masters level qualification and only three persons are having Ph.D. qualification. Based upon the level of education and age, it is concluded that respondents have the understanding of the AIS.

Descriptive Stats

**Table 5
Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Accounting Managers' Knowledge	74	1.83	5.00	3.7095	.83085
Top Management Support	74	2.40	5.00	3.7486	.68411
Accounting Information Systems	74	1.87	4.73	3.6640	.59067
Performance Management	74	3.00	5.00	4.1514	.44391
Organizational Performance	74	3.00	5.00	4.1919	.43471
Valid N (listwise)	74				

Descriptive statistics are the inferential statistics used for explaining the characteristics of data used for analysis. Table 5 explains the values of descriptive statistics for all the variables of this study. Mean value shows the central tendency of responses. Since all the items of the questionnaire are rated as 1 for strongly disagree to 5 for strongly agree, the mean value explains the central tendency of obtained responses at the stated scale, and standard deviation value shows the dispersion of replies from the mean value.

The mean value for AMK (Accounting Managers' Knowledge) is 3.7095, which express a mild agreement of respondents about the impact of AMK on the AIS, with 0.83085 standard deviation value, which explains the dispersion of responses from the mean. The mean value for TMS (Top Management Support) is 3.7486 with a dispersion value of 0.68411. Moreover, the mean value of 3.6640 for AIS (Accounting Information Systems) is the lowest mean value of any variable in this study with a standard deviation value of 0.59067. Furthermore, the mean value for PM (Performance Management) is 4.1514, with the lowest dispersion value of 0.44391. Lastly, the mean value of 4.1919 for OP (Organizational Performance) is the highest mean value of other variables with the standard deviation value 0.43471. All these values are explaining the central tendency of response rate and the dispersion of replies from the central tendency.

Reliability

Reliability of the data is tested through Cronbach's Alpha.

Table 6
Reliability Statistics

Cronbach's Alpha	N of Items
.897	5

The reliability of a study is always a big concern. Therefore, Cronbach's Alpha test is used to verify the reliability of the data. Perfect fit value for reliability is 1 and least acceptable value of Cronbach's Alpha is 0.6. This study's Cronbach's Alpha value is 0.897 which is highly reliable. Therefore, the results of this study are reliable and can be generalized.

4.1 Regression Analysis and Discussion

Results of the structural equation modeling are shown below in Figure 1.

Figure 1

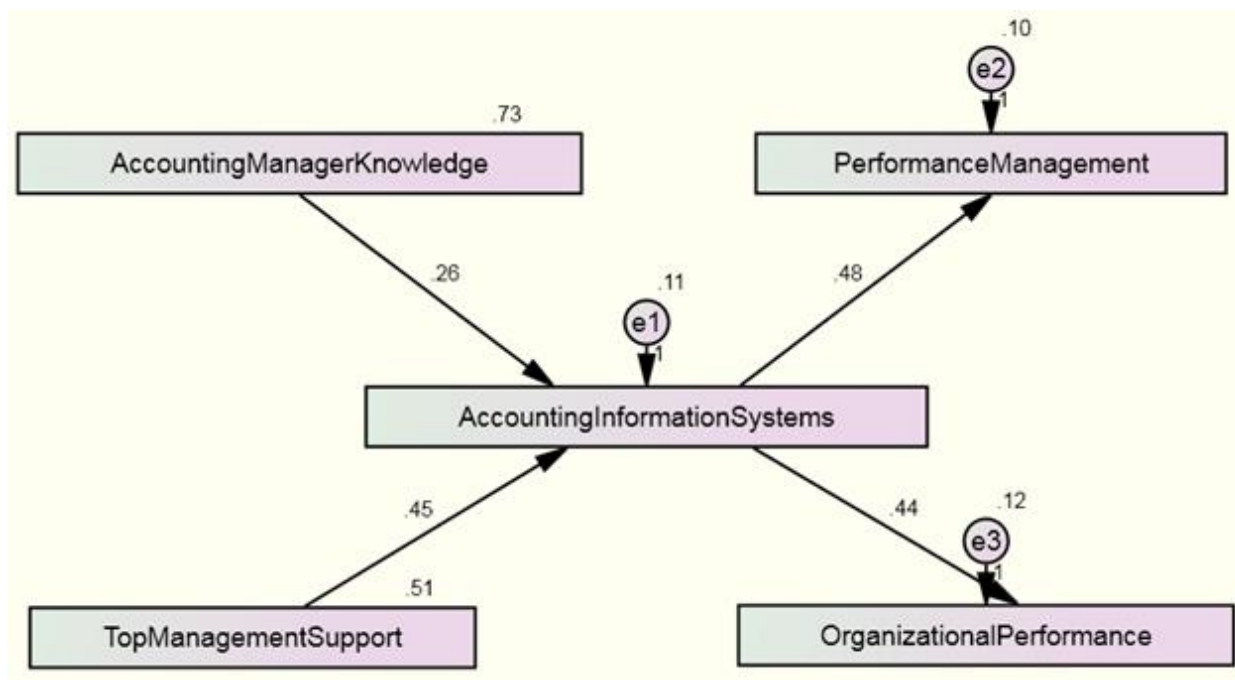


Figure 1 shows the relations between study variables. Arrows are used to point the hypothesized relations between variables. Results of structural equation modeling are indicating the impact of accounting manager's knowledge and top management support on the accounting information systems and, hence, the impact of accounting information systems on the performance management and organizational performance. Figure 1 shows the coefficient estimate values for study variables which are further explained in Table 7.

Alnajjar

Table 7 describes the statistical results of structural equation modeling analyzed by using the AMOS software. Arrows in the table show the impact of one variable on the other variable. Estimated number is the estimate of the coefficient which shows the values of the impact of one variable on the other variable. Usually, the estimated value is multiplied by 100 to come up with a percentage value showing percentage change, e.g., accounting managers' knowledge have 26.2% impact on the accounting information system.

S.E. means Standard Error which represents the average distance from which the observed values fall from the regression line. Smaller values are better because it indicates that the observations are closer to the fitted line. The larger the standard error of the coefficient estimate, the less precise is the measurement of the coefficient. In Table 7, S.E. values for all the relationships are quite lower which shows that observations are much closer to the regression line or the average distance of the observed value from the regression is smaller compared to others.

Table 7 Regression Weights

		Estimate	S.E.	C.R.	P
Accounting Information Systems	<--- Accounting Managers' Knowledge	.262	.058	4.533	***
Accounting Information Systems	<--- Top Management Support	.445	.069	6.436	***
Organizational Performance	<--- Accounting Information Systems	.444	.102	4.347	***
Performance Management	<--- Accounting Information Systems	.480	.095	5.075	***

C.R. means critical ratio which is measured with t-value or z-value based upon the sample size. C.R. value is used to determine the significance of the results. Moreover, Probability value or P-value is also used for determining the significance of the results. C.R. value and P-value are used to explain the level of significance and to reject the null hypothesis or to accept the alternate hypothesis. For statistical significance, the absolute value of the C.R is expected to be greater than 2 and the P-value to be less than 0.05 for rejecting the null hypothesis. Usually, the researcher explains the level of significance based upon choosing one value between C.R. and P-value. In Table 7, all the C.R. values are greater than 2 and P-values are less than 0.01. Therefore, by considering the P-value as a parameter, all the relationships are considered significant as P-value is below 0.01.

To conclude, all the relations are significant with P-value below 0.01. Based on these estimates, all the relationships are positive and significantly impacting as per hypothesized relations. Depending on the results of Table 7, this study accepts all the alternate hypotheses.

All the results are in line with the analyzed literature. The relation of AMK with AIS is positively impacting with the value of 0.262 and supports the argument that AMK has a significant impact on the AIS in a UAE SME. The results are in line with the previously conducted studies. Ismail (2009), Ang et al. (2001), Boynton et al. (1994), Jarvepaa and Ives (1991), Seyal et al. (2000),

Alnajjar

Thong (1999) (2001) and Hussin et al. (2002) showed that knowledge of manager/owner or executives influence the IT implementation in an organization. This study confirms these results by demonstrating that accounting managers' knowledge is positively affecting the implementation of AIS in the SMEs of the UAE.

Similarly, TMS also has a positive and stronger impact on the AIS in the SMEs with the value of 0.445. Previous studies conducted by Jarvenpaa and Ives (1991), Igbaria et al. (1996), Ismail (2009) and Guinea et al. (2005) also showed that managers' commitment, support, involvement, and participation are positively related to IT alignment and IT implementation in an organization. This study result also supports the relationship of TMS with the AIS implementation in the SMEs of the UAE. Moreover, the use of AIS in the SMEs has a significant and positive impact on the PM and OP with the value of 0.48 and 0.44. Results of PM and OP are also in line with the studies of Soudani (2012), Vitez (2010), Friedman (1970), Vazirani (2008) and Fretwell (2002).

Moreover, studies conducted in different countries confirm that the adoption of AIS increases the firm's performance. This study further confirms the results of previously conducted studies by Sajady, Dastgir, and Nejad (2008) in Iran; Kouser, Awan, Rana and Shahzad (2011) in Pakistan; Gullkvist (2002) in Finland; Grande, Estebanez and Colomina (2010) in Spain; and Kharuddin, Ashhari and Nassir (2010) in Malaysia. Our study contributes to the body of literature by investigating the phenomenon in the UAE where SMEs are recently implementing the AIS and confirms the results of previously conducted studies. This study confirms the role of AMK and TMS in the AIS implementation in an organization resulting in an increase of OP and PM of the organization.

5. Conclusion

The objective of this research is to study the impact of AMK and TMS on the AIS. Moreover, a second objective was to explore the impact of AIS on the PM and OP of the SMEs working in the Trading, Services and Manufacturing sectors of the UAE.

Based on the statistical results, this study concludes that AIS significantly impacts on the PM and OP of the organization. This study found that AIS enhances performance management in an organization. Through AIS, management obtains useful information and uses it in decision-making and strategy building for achieving the organizational goals and objectives. Moreover, this study also found that AMK and TMS significantly impact the AIS implementation in an organization. TMS and the existence of knowledgeable and experienced AMK play a vital role and affect the AIS in an organization.

While this research has achieved its goals, there was an unavoidable limitation. The research was conducted only on 74 companies because of the resistant to participate from many companies and lack of transparency.

References

Ang, CL, Davies, MA& Finlay, PN 2001, 'An Empirical Model of IT usage in the Malaysian Public Sector', *Journal of Strategic Information Systems*, vol. 10, pp. 159-174.

Alnajjar

- Armstrong, M. & Baron, A., 2005. *Managing performance: performance management in action*. CIPD publishing.
- Bhatt, GD, 2001. 'Knowledge management in organizations: examining the interaction between technologies, techniques, and people', *Journal of knowledge management*, vol. 5, no. 1, pp.68-75.
- Boockholdt, J. 1999, *Accounting Information Systems Transaction Processing and Control*, The Mac-Graw-Hill companies, 433-444.
- Borthick, AF& Clark, RL 1990, 'Making accounting information systems work: An empirical investigation of the creative thinking paradigm', *Journal of Information Systems*, vol. 4, pp. 48-62.
- Bouwens, IL& Abernethy 2000, 'Quality Strategy, Strategic Control Systems, and Organizational Performance', *Accounting, Organizations and Society*, vol. 22, no. 3/4, pp. 293-314.
- Chang, YW 2001, 'Contingency factors and accounting information system design in Jordanian companies', *Journal of Accounting Information System*, vol. 8, pp. 1-16.
- Chenhall, RH 2003, 'Management control systems design within its organizational context: findings from contingency-based research and directions for the future', *Accounting, Organizations and Society*, vol. 28, no. 2-3, pp. 127-168.
- Conway, N 2009, *A Course Module on Incorporating Environmental and Social Costs into Traditional Business Accounting Systems, full cost accounting*. Carnegie Mellon University Pittsburgh, PA 15213.
- Curtis, G 1995, *Business information systems: Analysis, design, and practice*. Wokingham: Addison-Wesley Publishing Company.
- de Guinea, AO, Kelley, H, and Hunter, MG 2005, 'Information systems effectiveness in small businesses: Extending a Singaporean model in Canada', *Journal of Global Information Management*, vol. 13, no. 3, pp. 55- 79.
- Doms, ME, Jarmin, RS & Klimek, SD 2004, 'Information technology investment and firm performance in U.S. retail trade', *Economics of Innovation and New Technology*, vol. 13, no. 7, pp. 595-613.
- Downes, A & Barclay, N 2008, *The Role of Performance Management in Organizations*. An excerpt from *The Rational Guide to Planning with Microsoft Office Performance Point Server 2007*, Mann Publishing Group (978-1-932577-42-6), 8-12.
- Essex, PA& Magal, SR 1998, 'Determinants of Information Centre Success', *Journal of Management Information Systems*, vol. 15, no. 2, pp. 95-117.
- Fretwell, BJ & MSW, A 2002, 'Promoting Organizational Competency: A Solution To Increasing Employee Morale And Customer Satisfaction', *CERES Innovations*, pp. 1-9.
- Friedman, M 1970, 'A theoretical framework for monetary analysis', *The Journal of Political Economy*, pp. 193-238.
- Grande, UE, Estebanez, PR & Colomina, MC 2010, 'The impact of Accounting Information Systems (AIS) on performance measures: empirical evidence in Spanish SMEs', *The International Journal of Digital Accounting Research*, vol. 11, pp. 25 – 43.
- Gerdin, J & Greve, J 2004, 'Forms of contingency fit in management accounting research-a critical review', *Accounting, Organizations and Society*, vol. 29, no. 3-4, pp. 303-326.
- Guinea, AO, Kelley, H & Hunter, MG 2005, 'Information System Effectiveness in Small Business: Extending a Singaporean model in Canada', *Journal of Global Information Management*, vol. 13, no. 3, pp. 55-70.
- Huang, HT, Lee, YW & Wang, RY 1999, *Quality information and knowledge*. Prentice Hall, PTR.

Alnajjar

- Hussin, H, King, M and Cragg, PB 2002, 'IT alignment in small firms,' *European Journal of Information Systems*, vol. 11, pp. 108-127.
- Hussein, R, Selamat, MH, Anom, RB, Karim, NSA & Mamat, A 2005, The impact of organizational factors on information systems success: an Empirical investigation in the Malaysian electronic government agencies. Online. kmap2005. vuw. ac. NZ/papers/The%20Impact%20of%20Org. Factors%20on. pdf.
- Igbaria, M, Baroudi, J & Parasuraman, S 1996, 'A motivational model of microcomputer usage', *Journal of Management Information Systems*, vol. 13, no. 1, pp. 127-143.
- Igbaria, M, Zinatelli, N, Cragg, PB, and Cavaye, ALM 1997, 'Personal computing acceptance factors in small firms: A structural equation model,' *MIS Quarterly*, vol. 21, no. 3, pp. 279-305.
- Ismail, NA 2009, 'Factors influencing the alignment of accounting information systems in small and medium-sized Malaysian manufacturing firms', *Journal of Information Systems and Small Business*, vol. 1, no. 1-2, pp. 1-20.
- Ismail, NA & King, M 2007, 'Factors Influencing the Alignment of Accounting Information Systems in Small and Medium Sized Malaysian Manufacturing Firms', *Journal of Information Systems and Small Business*, vol. 1, no. ½, pp. 1-19.
- Jarvenpa, S & Ives, B 1991, 'Executive Involvement and Participation in Progressive Use of IT,' *MIS Quarterly*, Jun.
- Jabbour, CJC & Jabbour, ABLDS 2016, 'Green Human Resource Management and Green Supply Chain Management: linking two emerging agendas', *Journal of Cleaner Production*, vol. 112, no. 3, pp. 1824-1833.
- Kellen, V 2008, 'The Future of Competitive Advantage and Enterprise Software,' *Cutter IT Journal*, vol. 21, no. 6, pp. 23.
- Kharuddin, S, Ashhari, MZ & Nassir, MA 2010, 'Information System and Firms' Performance: The Case of Malaysian Small Medium Enterprises', *International business research*, vol. 3, no. 4, pp. 33.
- Kouser, R, Awan, A, Rana, G & Shahzad, F 2011, 'Firm Size, Leverage, and Profitability: Overriding Impact of Accounting Information System', *Journal of Management and Business Review*, vol. 1, no. 10, pp. 58-64.
- Langfield-Smith, K 1997, 'Management Control Systems and Strategy: A Critical Review', *Accounting, Organizations and Society*, vol. 22, no. 2, pp. 207-232.
- Laudon, KC & Laudon, JP 2005, *Sistem Informasi Manajemen*. Yogyakarta: Penerbit Andi.
- Lertwongsatien, C & Wongpinunwatana, N 2003, 'E-commerce Adoption in Thailand: an Empirical Study of Small and Medium Enterprises', *Journal of Global Information Technology Management*, vol. 6, no. 3, pp. 67-83.
- Louadi, EM 1998, 'The relationship among organization structure, information technology and information processing in small Canadian firms', *Canadian Journal of Administrative Sciences*, vol. 15, no. 2, pp. 180-199.
- McLeod, R & Schell, G 2007, *Management Information Systems*. 10th Edition. New Jersey: Printice- Hall. Inc.
- Miles, RE & Snow, CC 1978, *Organization strategy, structure, and process*. Mc Graw-Hill, New York.
- Nicolaou, AI 2000, 'A contingency model of perceived effectiveness in accounting information systems: Organizational coordination and control effects', *International Journal of Accounting Information Systems*, vol. 1, no. 2, pp. 91-105.

Alnajjar

- O'Brien, JA & Marakas, G 2005, *Management Information System*. 7th Edition. New York: McGraw- Hill/Irwin Companies.
- Onaolapo AA & Odetayo TA 2012, 'Effect of Accounting Information System on Organisational Effectiveness: A Case Study of Selected Construction Companies in Ibadan, Nigeria', *American Journal of Business and Management*, vol. 1, no. 4, pp. 183-189.
- Richards, PJ, Devinney, TM, Yip, GS & Johnson, G 2008, 'Measuring organizational performance as a dependent variable: Towards methodological best practice. *Strategic Management Journal*, vol. 35, no. 3, pp.718-804
- Porter, ME 1985, *Competitive Advantage: Creating and Sustaining Superior Performance*. The Free Press, New York.
- Rahman, M & Halladay, M 1988, *Accounting information systems: Principles, applications, and future directions*. New Jersey: Prentice Hall.
- Romney, MB, Steinbart, PJ & Cushing, EB 1997, *Accounting Information System*. Seventh Edition, Addison-Wesley.
- Sajady, H, Dastgir, M & Nejad, HH 2008, 'Evaluation of the Effectiveness Of Accounting Information Systems', *International Journal of Information Science and Management*, vol. 6, no. 2, pp. 49-59.
- Abdipour, M.S.A 2011, A study of the barriers to implementation of accounting information system: Case of listed companies in Tehran Stock Exchange.
- Salehi, M, Rostami, V & Mogadam, A 2010, 'Usefulness of Accounting Information System in Emerging Economy: Empirical Evidence of Iran', *International Journal of Economics and Finance*, vol. 2, no. 2.
- Seyal, AH & Abd Rahman, MN 2003, 'A preliminary investigation of e-commerce adoption in small and medium enterprises in Brunei,' *Journal of Global Information Technology Management*, vol. 6, no. 2, pp. 6-26.
- Seyal, A, Rahim, MN & Rahim, N 2000, 'An empirical investigation of the use of information technology among small and medium business organizations: a Bruneian scenario,' *The Electronic Journal of Information Systems in Developing Countries*, vol. 2, no. 7, pp.1-17.
- Shamsi, J 2007, *The Role of Judiciary in the United Arab Emirates. IALS Conference, Learning from Each Other: Enriching the Law School Curriculum in an Interrelated World*.
- Sheth, S 2010, *Ten Things That Indicate Top Management Support for Business Continuity*. Continuity Central.
- Soudani, SN 2012, 'The Usefulness of an Accounting Information System for Effective Organizational Performance', *International Journal of Economics and Finance*. Vol. 4, no. 5.
- Susanto, A 2007, *Sistem Informasi Akuntansi Konsep dan Pengembangan Berbasis Komputer*. Bandung: Lingga Jaya
- Thomas, V & Kleiner, BH 1995, 'New developments in computer software', *Industrial Management & Data Systems*, vol. 95, no. 6, pp. 22-26.
- Thong, JYL & Yap, CS 1995, 'CEO Characteristics, Organizational Characteristics and Information Technology Adoption in Small Business', *OMEGA International Journal of Management Science*, vol. 23, no. 4, pp. 429-442.
- Thong, JYL 2001, 'Resource constraints and information systems implementation in Singaporean small business,' *OMEGA International Journal of Management Science*, vol. 29, pp. 143-156.

Alnajjar

- Vitez, O & Baligh, HH 2011, *Organization Structures: Theory and Design, Analysis and Prescription*, Information and Organization Design Series. New York: Springer.
- Wilkinson, JW 1993, *Accounting information systems: Essential concepts and applications*. Second Edition. New York: John Wiley & Sons Inc.
- Wilkinson, JW, Cerullo, MJ, Raval, V & Wong-On-Wing, B 2000, *Accounting information systems: Essential concepts and applications*. New York: John Wiley and Sons.
- Xu, H 2010, 'Data quality issues for accounting information systems implementation: Systems, stakeholders, and organizational factors', *Journal of Technology Research*, vol. 1, no. 5.
- Yang, HM, Lin, SW & Koo, LT 2011, 'The impact of computerized internal control adaptation on operating performance', *African Journal of Business Management*, vol 5, no. 20.

Alnajjar

Appendix 1

Variable	Authors	Questionnaire Items
Accounting Knowledge Manager	McLeod & Schell(2007),Laudon & Laudon(2005),Ismail (2009)	Knowledge of Accounting Knowledge of Accounting Information System Knowledge of managerial Experience on accounting Experience on accounting information system Experience on managerial
Top Management Support	Guinea et al. (2005),Jarvenpaa & Ives (1999), Ismail (2009)	Definition of needs (information requirement) Choice of hardware & software Implementation of system System maintenance and problems solving Planning of further developments
Accounting Systems Information	Laudon & Laudon (2005),O'Brien&Maraks (2005),Romney &Steinbart (2006),Susanto (2007), Ismail (2009)	Availability & function of operating system Availability & function of software Information system manager Database Administrator Network Administrator Operator System documentation Activity documentation Function documentation Having the function of data recovery Integrated Having a data security system Characteristically multi-access Have a system of authorization data Availability of communication technology network The function of communication technology network

Alnajjar

<p>Performance Management</p>	<p>Kellen (2008), Fretwell & MSW (2002)</p>	<p>Labor is the largest controllable expense item in your organization. Successful practices to improve performance can lower your labor cost</p> <p>An effective measurement and reporting process can improve performance and lower costs</p> <p>Employee engagement is critical to any organization that seeks to retain valued employees</p> <p>Employee engagement emphasizes the importance of employee communication on the success of a business. An organization should thus recognize employees, more than any other variable, as powerful contributors to a company's competitive position</p> <p>Interactive control systems help managers integrate new data and learning into the decision-making process</p>
<p>Organizational Performance</p>	<p>Friedman (1970)</p>	<p>Effective inventory management is the single most important tool to improve customer service</p> <p>Successful organizations show respect for each employee's qualities and contribution – regardless of their job level</p> <p>Social responsibility of business refers to all such duties and obligations of business directed towards the welfare of society. These duties can be a part of the routine functions of carrying on business activity, or they may be an additional function of carrying out welfare activity</p> <p>Social responsibility is a voluntary effort on the part of business to take various steps to satisfy the expectation of the different interest groups</p> <p>Employee stewardship is an opportunity exists for ensuring high employee morale and customer satisfaction, an increase in employee and customer retention rates, and a positive long-term outlook for the company's successful performance</p>