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The Impact of Accounting Information Systems on Organizational Performance: The Context of Saudi's SMEs

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ABSTRACT

Accounting information system (AIS) is considered as an important organizational mechanism that is critical for the effectiveness of decision making and control in organizations. The main purpose of this paper is to investigate the impact of AIS on organizational performance (cost reduction, improving quality and effective decision making). Data is collected through questionnaires from SMEs in Saudi Arabia. Smart partial least squares was used to analyze the data and to test the study hypotheses. Findings proof that using an AIS has a significant impact on organizational performance generally and on all its dimensions including cost reduction, improving quality and effective decision making.

Keywords: Accounting Information System, Organizational Performance, Quality, Decision Making
JEL Classifications: M40, M41

1. INTRODUCTION

Accounting information system (AIS) is a tool that can help organizational management to improve its control on the firm's operations and to develop its performance. AIS involves Identifying, collecting, processing and delivering the accounting information to employees and decision makers throughout all organizational levels. AIS is also seen as a system that is used to record the financial transactions of a business or organization. This system combines the methodologies, controls and accounting techniques to track financial transactions and to provide internal and external reporting data as well as helping the preparation of financial statements with capabilities to improve organizational performance (Pérez et al., 2010).

Traditional legacy AISs were mainly paper-based systems and seem inappropriate for today's rapidly changing business environment. Information technology (IT) revolution has transformed the nature of business operation, including accounting, to be led by IT and information systems (IS) applications. The diffusion of such applications enhances the financial performance and maintains transparency within the business organizations while providing continuous access to the financial reports throughout the financial year (Melitski and Manoharan, 2014). Moreover, effective use of such applications can improve customer satisfaction which ultimately leads to organizational success. Lots of other benefits for AIS have been cited in the literature including: Improved quality, cost reduction, increasing the speed of services, informed decisions and more effective information flow. AIS could provide management with their needs of valuable information that are timely, relevant, verifiable, and accurate to enable them to make better decisions (Al-Adaileh, 2008).

However, gaining of such significant benefits depends on several contextual and external factors that might hinder or support the achievement of these benefits. These factors might include organizational and society culture, IT infrastructure, IT skills, management support, and the user's perception of the usefulness of IS applications including AIS.

Accordingly, this study seeks to explore the potential impact of AIS on the organizational performance within the context of Saudi SMEs in order to measure the added value of AIS and its impact on some important performance measures including quality, cost, and decision making.

2. PROBLEM STATEMENT

Organizations today seek to enhance their profit, market share and quality through applying the available IT tools. AIS – as one of

these tools - is an important system that has a crucial role as the most important of source of internal information. It has a great potential to enhance the success of the process of decision making which is seen as the most important enabler for the achievement of the organizational goals (Akgün and Kılıç, 2013). An impact that leads to better organizational performance and improved effectiveness.

Many previous researches have discussed AIS and its impact on organizational performance (Khairuddin et al., 2010; Kouser et al., 2011; Sajady et al., 2008). However, most of these studies have focused on investigating of such issue within the context of large organizations. The value of AIS in SMEs has been doubted as investment in AIS has been difficult to be justified from the owners' (most probably managers') point of view.

Considering the aggregated contribution of SMEs as the largest proportion of economics pillar in a country, and based the important role that can be played by SMEs in creating employment and supporting economic growth. SMEs need to develop new business strategies to employ new technologies (Caldeira and Ward, 2003). This research argues that SMEs need to respond to the competitive environment facing today's business. They can't stay behind in their investment in ISs including AIS. However, the proposition that is made concerning this issue needs to be evidenced-based. Therefore, this study and based on an empirical investigation will attempt to explore the potential impact for AIS on organizational performance within the context of SMEs in Saudi Arabia. This study seeks to address and explore this issue in a systematic research process that aims to answer the following main question:

- What is the impact of AIS on organization performance within the context of Saudi's SMEs?

3. AIM AND OBJECTIVES

The main aim of this study is to investigate the impact of AIS on the organizational performance (improving quality, cost reduction, and improved decision making). The study also seeks to achieve the following objectives:

- Providing an overview of the available literature relating to AIS impact on organizational performance.
- Measuring the level of AIS implementation in Saudi's SMEs.
- Providing recommendations for decision makers based on the findings of the study.

4. LITERATURE REVIEW

IS are artificial systems that are designed to help in the process of decision (Akgün and Kılıç, 2013. p. 26). It is also defined as a set of elements that interact with each other to collect, store, process and report data and information to enhance the processes of decision making processes (Al-Adaileh, 2008. p. 17). Different types of ISs are available to support different organizational levels including operational, tactical, and strategic level. These systems can provide a continuous flow of information from internal or external sources.

AIS can be defined as the integration of accounting with technology, information and managerial approach (Gökdeniz, 2005. p. 89). AIS is considered as an important organizational mechanism that is critical for effectiveness of decision management and control in organizations (Sajady et al., 2008. p. 50). Onaolapo and Odetayo (2012) states that AIS provides tools to financial department to enhance organizational effectiveness. He emphasized the strong relationship between AIS and organizational effectiveness. It is concerned with measurement or quantification of business events in monetary forms (by recording in accounts) and accounting data processing in addition to preparation of financial statements. It can be seen as the most important source of financial data for internal and external users (Knežević et al., 2012. p. 63).

Furthermore, accounting system, in recent times, has tended to be a system of information that does not stop at limits of data and financial information, but also it includes data and descriptive and quantitative information which is useful in decision making for users distinct with plurality and diversity (Nwinee et al., 2016). The main function of AIS is to assign quantitative value of the past, present and future business events. Accounting information, in the form of periodic reports or special analyses, is often a source of information for making decisions including pricing, production levels and product mix, outsourcing, inventory policy, customer servicing, labour negotiations, and capital investments (Horngren et al., 2005; Sprinkle, 2003).

Computerized accounting tools as integral part of AIS are directly related to the economic and financial results and productivity in SMEs (Urquía et al., 2011). Advantages of an optimal use of AIS in an organization might include: Better adaptation to a changing environment, better management of internal business transactions and a high degree of competitiveness. There is also a boost to the dynamic nature of firms with a greater flow of information between different staff levels and the possibility of new business on the network and improved external relationships for the organization, mainly with foreign customers accessed through the firm's web (Pérez et al., 2010).

Financial managers need the financial and accounting data provided by AIS to evaluate the firm's past performance and to map future plans. Therefore, the organizational performance is measured in terms of return on assets and return on equity (ROE). These ratios are financial performance measuring ratios (Majeed, 2011). ROE is a key to provides useful information about the performance of debt in the capital structure that the general manager must try to influence in order to improve and manage the overall organizational performance (Miller et al., 2001). Performance management has a key role to play in improving the overall value of an organization (Armstrong and Baron, 1998).

Largely, the quality of information depends on the reliability, form of reporting, timeliness and relevance to the decisions. Effectiveness of AIS also depends on the perception of decision makers on the usefulness of information generated by the system to satisfy informational needs for operation processes, managerial reports, budgeting and control within the organization (Nwinee et al., 2016).

Hall (2008) states that an AIS comprises four major sub-systems including:

- The transaction processing system, which supports daily business operations with numerous documents and messages for users throughout the organization;
- The general ledger/financial reporting system, which produces the traditional financial statements, such as income statements, balance sheets, statements of cash flows, tax returns, and other reports required by law;
- The fixed asset system, which processes transactions pertaining to the acquisition, maintenance, and disposal of fixed assets, and
- The management reporting system, which provides internal management with special purpose financial reports and information needed for decision making, such as budgets, variance reports, and responsibility reports.

Thus, the relationship between AIS and organizational performance would be moderated by the performance management. According to the pervious argument we analyze the contingency fit between AIS, performance management and organizational performance using accounting data, decision making and internal control process. Therefore, we formulate the following hypotheses.

5. RESEARCH HYPOTHESIS AND MODEL

- H_1: Using of AIS has a significant statistical impact on the organizational performance.
- $H_{1.1}$: Using of AIS has a significant statistical impact on the improving quality as dimension of organizational performance.
- $H_{1.2}$: Using of AIS has a significant statistical impact on the cost reduction as dimension of organizational performance.
- $H_{1.3}$: Using of AIS has a significant statistical impact on the effective decision making as dimension of organizational performance.

To test the above hypotheses, the following research model is proposed (Figure 1)

6. RESEARCH METHODOLOGY

6.1. Data Collection Method and Sampling Framework

Research methodology involves describing, explaining and predicting phenomena in addition to the research plan. It is necessary for the researcher to recognize the research and its contents to be able to identify the type of research. However, this research adopted a descriptive and analytical approach. A quantitative survey was used to collect the necessary data. The study population included all employees of the Saudi's SMEs. A convenient sampling techniques was used to select the participants. 140 questionnaires were distributed. 137 questionnaires were analyzed. Table 1 outlines the sample characteristics.

6.2. Instrument Design

The research is based on questionnaire that was developed for the purpose of this study. Face validity and contents validity of the questionnaire were made. The answers were classified according to five Likert scale. The questionnaire includes two parts; the first part contains 3 items that related to personal information; the second part contains 16 items related to the research variables.

7. DATA ANALYSIS

Partial least squares (PLS) was chosen for the current study using smart PLS software. It was used in a two-stage approach, measurement and structural model testing.

7.1. Measurement Model

The measurement model can be assessed by examining the reliability, convergent validity and discriminant validity. Specifically, reliability which refers to the internal consistency of measurement, can be assessed by checking if the value of composite reliability (CR) is more than 0.7, the average variance extracted (AVE) is >0.5 and Cronbach's α is >0.6 (Hair et al., 2006). Table 2 shows that the CR values ranged from 0.88 to 0.92 and the AVE values ranged from 0.60 to 0.80. These values are higher than the acceptance value 0.70 and 0.50 which indicate a good construct reliability. Furthermore, in order to check the convergent validity, loading factor for each item was calculated. All item loadings are larger than 0.6 and t values indicate that all loadings are significant at 0.05 which indicates that the scale has a good convergent validity.

Bootstrapping method in smart PLS software was used to test the statistical significance of path coefficients. Figure 2 shows the P value for all research variables and the PLS model of the study.

7.2. Structural Model

The analysis result reveals that the factor (using AIS) has a significant impact on organizational performance (t = 9.29,

Table 1: Sample characteristics

Personal Information	Frequency (%)
Educational level	
Diploma (college) degree	17 (12.4)
Bachler's degree	73 (53.3)
Master degree	39 (28.5)
PhD degree	8 (5.8)
Experience (years)	
<5	39 (28.5)
11–15	57 (41.6)
More than 15	41 (29.9)
Total	137 (100)

Figure 1: Research model

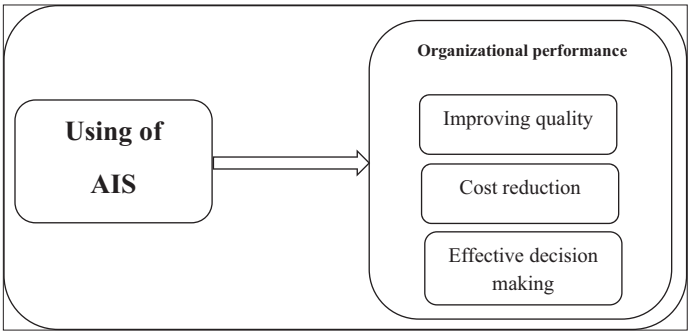


Table 2: Result of construct assessment

Constructs	Items	Factor loading	Mean±SD	CR	Cronbach's α	AVE
Using of AIS	AIS1	0.813	0.673±4.467	0.881	0.828	0.605
	AIS2	0.792	0.82±3.46			
	AIS3	0.819	0.685±4.204			
	AIS4	0.852	0.681±4.248			
	AIS5	0.852	0.685±4.38			
Cost reduction	Cost1	0.788	0.87±3.956	0.883	0.824	0.655
	Cost2	0.862	0.733±4.058			
	Cost3	0.833	0.778±3.964			
	Cost4	0.75	0.755±3.954			
Improving quality	QL1	0.84	0.686±4.182	0.925	0.891	0.754
	QL2	0.833	0.784±3.883			
	QL3	0.912	0.758±4.036			
	QL4	0.887	0.724±4.044			
Effective decision making	1-Dec	0.85	0.853±3.847	0.923	0.874	0.8
	2-Dec	0.908	0.731±3.832			
	3-Dec	0.924	0.749±3.788			

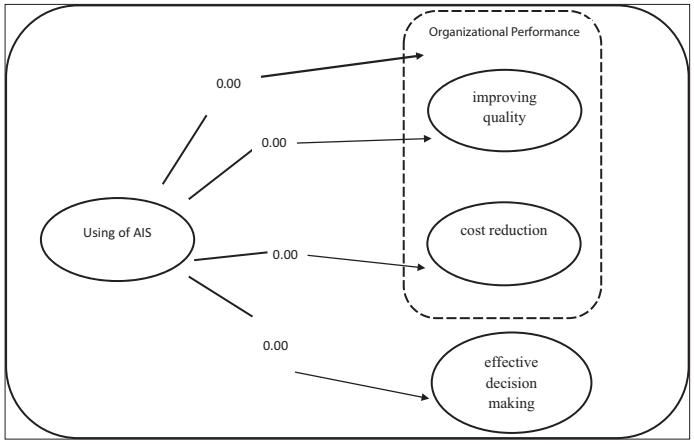
AIS: Accounting information system, SD: Standard deviation, CR: Composite reliability, AVE: Average variance extracted

Table 3: Hypothesis testing results

Path (hypothesis)	t	P	R^2	Results
Using of AIS→organizational performance (total affect) H1	9.29	***	0.47	Supported
Using of AIS→improving quality H1.1	8.64	***	0.37	Supported
Using of AIS→cost reduction H1.2	7.05	***	0.45	Supported
Using of AIS→effective decision making H1.3	9.48	***	0.29	Supported

AIS: Accounting information system

Figure 2: Result of partial least squares



P ≤ 0.001) which supported H_1. In addition, using of AIS explained 0.47% of organizational performance variance.

Specifically, using AIS has a significant positive influence on improving quality with values (t = 8.64, P ≤ 0.001) and can explain 0.37% of improving quality variance. Thus, $H_{1.1}$ was supported.

Furthermore, using AIS has a significant positive influence on cost reduction and effective decision making with t values (7.05, 9.48) respectively and (P ≤ 0.001). Using AIS can explain 0.45% of cost reduction variance and 0.29% of effective decision making variance. Thus, $H_{1.2}$ and $H_{1.3}$ were supported. Table 3 summarizes these findings.

8. DISCUSSION AND CONCLUSION

The primary insights from this research are as follows. Using AIS might be seen as a strong predictor of the organizational performance, coinciding with previous findings in the literature (Soudani, 2012; Nabizadeh and Omrani, 2014; Harash, 2015). Specifically, using AIS significantly affect improving quality. Similar to previous studies, AIS tools will likely help organization to enhance its overall quality (Nwinee et al., 2016; Nabizadeh and Omrani, 2014). Regarding the cost reduction, the results show that AIS has a positive and significant influence on cost reduction coinciding with previous findings in the literature (Hla and Teru, 2015). Finally, the research revealed that using AIS can enhance the effectiveness of decision making, which agrees with the study of (Onaolapo and Odetayo, 2012).

The study concludes that more concern should be directed towards AIS as an enhancement tool for better organizational performance. In a highly competitive and attractive organizational setting like SMEs, this seems critical to achieve a competitive advantage. However, considering the changing technological environment, AIS should be seen as a moving target where continuous improvement is important to adapt to the changing nature of such systems. Management willingness and awareness seem important and their continuous support is needed to push up the investment figures in AIS. The findings of this study can provides systematic justification of this conjunction.

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