

THE INFLUENCE OF ACCOUNTING INFORMATION SYSTEMS IN ENHANCING THE EFFICIENCY OF INTERNAL CONTROL AT JORDANIAN COMMERCIAL BANKS

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ABSTRACT

This study aims to explore the influence of (AISs) on enhancing the efficiency of Internal Control (IC) at Jordanian Commercial Banks (JCBs). The researcher has designed a 35-item survey distributed to 156 respondents working at JCBs, and only 144 surveys were returned, which yielded a 92% response rate. The results show a significant positive effect between AISs (relevance, reliability, timeliness, understand ability, completeness, and verifiability) with IC. The study recommended that the (JCBs) pay more attention to (AIS) when performing an IC.

Keywords: Accounting Information Systems, Internal Control

JEL Classification: M41, M42

INTRODUCTION

Banks worldwide considered the Accounting Information Systems (AISs) a backbone for successful internal control systems for banks, the adoption of computers in AISs and helped banks develop their management methods. Accounting, like other sciences, has used information technology since the early date and employed it in the accounting system. Still, it was accompanied by some penetrations and manipulation of its inputs, thus obtaining inaccurate outputs, so it becomes necessary for the (IC) system to keep up with information technology developments. AIS aim to provide financial and managerial information about business enterprises or any other economic entity. In short, anyone who must make decisions regarding a business enterprise requires accounting information (Karthikeyan, 2010). So, the AIS are considered one of the Main systems in most firms for what they performed in providing the management of the firm with financial and non-financial information in the form of reports. The internal control system is also considered an essential tool for controlling the financial and administrative structure.

Whenever there is, the IC system is more effective whenever it leads to more assured accounting data accuracy and increases information quality (Abu Shaiba & Saeed 2018; Alrabei et al., 2020)

AIS should include the means and controls instruction data and help auditors provide reports containing reliable information by users of AISs. Hence a new task and a great responsibility for the management of information systems need to provide methods and means to ensure the continuity of this technological work. On the other hand, the audit under the electronic AISs faces problems and risks due to technological development, which obliged auditors to be more familiar and inclusive with the types of electronic AISs. The stakes should be equipped with the necessary tools to detect, avoid, or correct these risks to achieve audit objectives efficiently and effectively (Abu Shaiba & Saeed, 2018).

Accounting Information Systems

Information technology has dominated all fields until it reaches accounting, where the role of the accountant has changed from a traditional accountant to a computerized accountant to

enter a lot of information, use it, design and review systems, thus leading to the presents of new science, namely Accounting Information Systems.

A system is two or more interconnected and interacting elements and components that perform a function to achieve a specific goal. And before going into the information, we will deal with data as it is the basis for forming statements and data documents related to one topic. These matters have no value before they are processed and converted into information. The information is the data that has been processed after it has been collected and becomes meaningful, valuable, and beneficial.

As a result of the development of accounting information in all fields, this leads to the expansion and interaction of accountants with accounting information systems through the method of their use, evaluation, and development. Therefore, this interaction was linked between them. An accounting information system is a system that collects, records, stores, and processes data to produce information for users to help them show results and make appropriate decisions (Al-Aasrah, 2017; Alrabei, 2017).

Characteristics of Useful Information

One of the most notable characteristics of useful information is Relevant, which includes reducing uncertainty, improving decision making, or confirms or corrects prior expectations. Another reliable factor is that it is free from error or bias; it accurately represents corporate events or activities. The third characteristic confirms that it ultimately does not omit important aspects of the events or activities it measures. On the other hand, the fourth characteristic shows that timely provided decision-makers can make decisions. Another critical factor includes understandable Presented in a useful and intelligible format. Verifiable two independent, knowledgeable people produce the same information is considered the sixth characteristic of Useful Information. Finally, the last aspect of useful information includes accessible which means making it available to users when they need it and, in a format, they can use (Romney & Steinbart, 2018).

Internal Control

The global IC system plays a useful and essential role in firms' and organizations' success, so most firms are interested in IC because it is the core stone in these firms' continuity. Therefore, firms should focus on developing and improving the IC system.

The importance of IC in that it is a tool to ensure the proper implementation of the established financial policies, and thus achieve the objectives related to the credibility and fairness of the financial statements and the accuracy of the financial reports submitted to it, to protect the company's assets from manipulation and misuse. So, the management is required to evaluate this system to identify weaknesses and work on Correcting and processing them because it reveals flaws and deficiencies in administrative processes, as well as the people in charge of implementing these processes, which help in correcting paths and deviations during the efficient implementation of the laid plans (Bassiouni, 2009).

Internal control procedures under the accounting information system are divided into two main types, namely application control and general control:

1. Application control procedures: The auditing standards bulletin issued by the American Institute of Certified Public Accountants (AICPA) defined it as based on the control of applications with special functions managed by the electronic data processing department, with main aim is to providing the integrity of the processes of recording, processing data and preparing reports. (AICPA)
2. General control procedures: General control procedures are concerned with controlling the input processing and extraction of accounting data, which concerned with the economic operations related to the activity of the institution. (Lutfi, 2009)

Some researchers believe that the goal of the application control is to reach reliable information and provide a degree of assurance of safety of recording, data processing and reporting processes, as it consists of three groups: control of inputs, control over data processing and control of outputs. General

control aims to develop production efficiency, protect resources from misuse, and ensure the achievement of policies and objectives set by the administration. (Alshlol)

The Relationship between Accounting Information Systems and Effectiveness of Internal Control.

Designing and operating an effective internal control structure that needs to use and make information technology benefit, given the need for effective internal control to keep going with developments in the information technology environment through the possibility of its integration with administrative and financial information systems, and since accounting information systems are open systems, Then it is required to take into account those variables that occur in the surrounding environment and try to benefit from them.

STUDY OBJECTIVES

This study aims to identify the Influence of AISs (relevance, reliability, timeliness, understandability, completeness, and verifiability) in Enhancing the Efficiency of IC in JCBs.

LITERATURE REVIEW

Abu Shaiba & Saeed (2018) aimed to identify the effect of AISs on the effectiveness of internal audits in Libya. By used a descriptive-analytical method to reach the results of the study. A questionnaire consisting of 43 questions was distributed to Commercial Banks (CBs) operating in Libya. The study sample consisted of CBS working in Libya, and the selection of the study consisted of 18 CBs working in Misrata city. The model was targeted (bank managers, accounting department, internal audit department). 65 questionnaires and 45 valid questionnaires were retrieved. The analysis results showed that there is a positive effect of the AISs on the effectiveness of the audit and to follow the protection measures against the risks of AISs used in Libyan CBS. The study also recommended increasing interest in AISs to achieve more integration to serve the functions of planning, implementation, and control for decision-making.

Naami & Sammour (2015) aimed to identify the role of AISs in the development of IC systems through applied Studies on Palestinian universities. Naami & Sammour (2015) used a descriptive-analytical method to reach the results of the study. A survey was designed and distributed to test this relationship with the financial and control departments' employees in the Palestinian universities. The number of questionnaires distributed and approved for statistical analysis was 51. The analysis results showed a statistically significant role for AISs in the development of IC systems in Palestinian universities and, as an essential role in reducing financial reporting errors.

Teru & Hla (2015) aimed to evaluate AISs and IC systems to link each element of AISs and IC systems' corresponding elements. To enable management to know the IC component responsible for ensuring the accounting information extracted AISs and allowing the user to of AISs to ensure that the control component accountable for the integrity of information systems exists and is used to ensure the security, safety, and efficiency of using information systems. The study has already shown the elements of the two systems responsible for each other. Accordingly, the study recommended the use of AISs because of the impact on health and accuracy of accounting information, thus increase the effectiveness of financial control, with emphasis on the need to provide all elements of IC responsible for the integrity of information systems because of their effect on efficiency and effectiveness of AISs.

Abo Haserah (2015) explored using the computerized AISs on internal auditing efficiency in the communication firms working in the Gaza Strip. To achieve the objective of this study, a total of 40 questionnaires were distributed on the study's society, consisting of all internal auditors, at the communication companies working in Gaza Strip; to test this relationship a 55-item questionnaire and sent to 40 respondents and 35 valid questionnaires were returned 87.5 % responding rate. The multi-regression analysis was used. The study concluded that there is an effect on using the computerized accounting information systems, and the

variables: personnel skills, equipment, (infrastructure) , programs, databases, procedures, and data characteristics, had an impact on the efficiency of internal auditing. The study recommended giving more concern to the level of computerized accounting information systems through updating with new equipment, (infrastructure) , programs, databases and to conduct routine maintenance procedures, for its impact in improving the efficiency of internal auditing, improve services provided by the internal auditors. The study also recommended the necessity of improving the quality of the information provided by the computerized accounting system, which the internal auditing department relies upon.

Al-Shanti (2013) examined the effect of AISs on improving the effectiveness and efficiency of internal audits in the Jordanian industrial sector. The study population consisted of the Jordanian industrial firms, and the study sample consisted of the departments of Jordanian public shareholding firms and internal auditors. Sixty questionnaires were distributed. The study concluded that the application of AISs in the Jordanian industrial sector improves the effectiveness of internal audits by providing the necessary information on time to make decisions. The study recommended increasing the application of AISs in the Jordanian industrial sector because it increases the effectiveness and efficiency of internal audits to achieving the optimal opportunity of the resources available by management.

Al Jwafel (2011) examined the role of computerized AISs in achieving IC's effectiveness in Islamic banks of Jordan. The study population includes all Jordanian Islamic banks, namely, Jordan Islamic Bank and Arab Islamic Bank. To test this relationship, a 45-item questionnaire. Regression analysis and ANOVA were used. The study concluded that there is a role for AISs in achieving IC effectiveness in Jordan's Islamic banks. The relevance of information is the most influential variable on the IC effectiveness variable. The study recommended increasing attention to the newly and latest developments in AISs, reflecting positively on activating the IC in the Jordanian Islamic banks.

Al-Jarrah (2011) aimed to evaluate the Reliability of AISs and their impact on improving IC's efficiency in JCBs. To achieve the aims of the study, the researcher designed a survey. The study population consisted of 13 commercial banks. And 130 surveys were distributed to the study sample. The study concluded that the Reliability of AISs affects the improvement of JCBs' internal control efficiency.

Alqudah (2006) aimed to examine the impact of AISs on the effectiveness of IC in JCBs. The study population consisted of JCBs. The survey was distributed to the study sample of individuals working in the IC Department in the JCBs. The researcher distributed (90) surveys, of which (80) surveys were analysed using SPSS. The study concluded that the AISs positively impact the effectiveness of the IC of the JCBs, and the information they produce is accurate, comprehensive, and comparable and helps to prepare periodic reports. The study recommended the Central Bank of Jordan develop a directory of companies to include the IC mechanism in the media, technology, and environment. The study suggested raising the accounting system-level applied in JCBs to obtain information from various parties involved.

STUDY HYPOTHESES

This study has developed six hypotheses to test the Influence of AISs (Relevance, Reliability, Timeliness, Understandability, Completeness, and Verifiability) on Enhancing the Efficiency of IC in JCBs. The hypotheses are formulated as follows:

- H1: There is an influence for relevance on the Efficiency of IC.*
- H2: There is an influence for reliability on the Efficiency of IC.*
- H3: There is an influence for timeliness on the Efficiency of IC.*
- H4: There is an influence for understand ability on the Efficiency of IC.*
- H5: There is an influence for completeness on the Efficiency of IC.*
- H6: There is an influence for verifiability on the Efficiency of IC.*

METHODS

Population and Sample Selection

The study population consists of (18) Jordanian Banks, and the survey was distributed to 156 employees who work in (13) Banks, the researcher retrieved (151) surveys. After reviewing the retrieved surveys, there were (7) a survey that is not valid for statistical analysis. Thus, the number of surveys useful for research has reached (144).

Validity and Reliability of the Study Tool

The reliability of the content of the study tool used has been verified by presenting it to a group of experienced and qualified faculty members and head departments in banks, to view their visions in each field of study and to handle and to know how each paragraph is related to its area, some Questions has been correct, and other has deleted. A new question has been added to conform with arbitrators' suggestions and observations. Thus, the study tool (the survey) has become in the final form, consisting of (35) paragraphs distributed on seven fields.

To calculate the study tool's stability, the study tools have been divided into seven fields to measure each lot's strength and the agency as a whole. The Cronbach Alpha, the internal consistency test, has been used for answering the study sample obtained, and alpha can be interpreted as the internal stability factor between answers. And the statistically acceptable value of this scale is (60%) or more (Sekaran & d Bougie, 2013). In other studies, the statistically acceptable value is (70%) or more. From the results, it's obvious that data analysis in table No. (1) That the study items' result stability is high.

Model	No of Items	Internal Consistency Factor (Cronbach Alpha)
Relevance	6	85.3
Reliability	7	86.5
Timeliness	4	87.1
Understandability	5	90.6
Completeness	4	85.7
Verifiability	4	83.1
DV: Internal Control	5	85.6
Total	35	93.4

The above table shows that all the Cronbach alpha coefficients' values were high and that the study items' stability is also high, reaching (93.4), indicating that the study tool has high credibility.

Descriptive Analysis

Before doing the analysis, it was necessary to assert the basic assumptions of linear regression represented by the data's normal distribution and the multiple correlations between the study variables. The researcher used (Skewness & Kurtosis) to test the data's standard distribution; table (2) shows the result.

Skewness and kurtosis test

Variables	Skewness	Kurtosis
Relevance	-0.384	-0.069
Reliability	-1.219	1.892
Timeliness	-0.97	1.843
Understandability	-0.895	1.744
Completeness	-0.605	0.678
Verifiability	-0.996	1.552
DV: Internal Control	-1.078	1.639
Total	35	93.4

In the above table, the normality shows that the test value for Skewness is between (± 1.96) and the importance of the Kurtosis test is between (± 2.58), so data distribution undergoes the normal distribution Hair et al. (2018). The previous table reveals that the value held within these limits and the study data are typically distributed.

IV: Accounting Information Systems		
Model	N Statistic	VIF
Relevance	144	1.68
Reliability	144	1.412
Timeliness	144	1.382
Understandability	144	1.222
Completeness	144	2.272
Verifiability	144	2.273

Table (3) reveals values of (Tolerance) vary between (0.440 – 0.818) and values of (VIF) vary between (1.222 – 2.273), which are good indicators and indicate that there is no self-correlation in the study variables, where a value of (Tolerance) is considered acceptable if it exceeds 0.05 and the importance of (VIF) considered an acceptable if it is less than 10.

RESULTS

To verify the hypotheses' correctness, the correlation coefficient between AISs and IC's efficiency in JCBs was extracted. Multiple regressions have been used in this study to test the relationships mentioned above.

	B	T	Sig
(Constant)	-0.594	-1.602	0.111
Relevance	0.18	2.428	0.016
Reliability	0.191	2.832	0.005
Timeliness	0.136	2.292	0.023
Understandability	0.134	2.37	0.019
Completeness	0.214	2.716	0.007

Verifiability	0.285	4.008	0.000
Value F	41.077	Sig	0.000
Adj. R2	62.7%	R2	64.3%
Durbin-Watson	1.364	No of Items 144	

Table (4) appears R-value, which is (0.802), and it represents the strength of the effect between AISs and IC in JCBs and an R2 value which is (0.643) as AISs explain 64% of variance independent variable, a large proportion. It's indicated a high degree of influence for AISs on the IC.

H1: There is an influence statistically significant between Relevance and the Efficiency of IC in JCBs.

The result of the first hypothesis showed that the R-value is (0.802), (F=41.077, Sig. <0.016). The relevance is statistically significant at the level of significance (0,016), and the value of (t) is (2.428), and the importance of (B) is (0.180) means that any increase of relevance by one unit, the efficiency of the IC will increase by (0.180).

H2: There is an influence statistically significant between Reliability and the Efficiency of IC in JCBs.

The result of the second hypothesis showed that the R-value is (0.802), (F=41.077, Sig. <0.005). The reliability is statistically significant at the level of significance (0,016), and the value of (t) (2.832) and the value of (B) (0.191) means that any increase of reliability by one unit, the efficiency of the IC will increase by (0.191).

H3: There is an influence of statistically significant between Timeliness and the Efficiency of IC in JCBs.

The result of the third hypothesis showed that the R-value is (0.802), (F=41.077, Sig. <0.023). The timeliness is statistically significant at the level of significance (0,023), and the value of (t) is (2.292). The value of (B) is (0.136) means that with any increase of timeliness by one unit, the efficiency of the IC will increase by (0.136).

H4: There is an influence of statistically significant between Understandability and the Efficiency of IC in JCBs.

The result of the fifth hypothesis showed that the R-value is (0.802), (F=41.077, Sig. <0.019). The understandability is statistically significant at the level of significance (0,019), and the value of (t) is (2.370). The importance of (B) is (0.134) means that with any increase of understandability by one unit, the efficiency of the IC will increase by (0.134).

H5: There is an influence statistically significant between completeness and the Efficiency of IC in JCBs.

The result of the fifth hypothesis showed that the R-value is (0.802), (F=41.077, Sig. <0.007). The completeness is statistically significant at the level of significance (0,007), and the value of (t) is (2.716). The importance of (B) is (0.214) means that with any increase of completeness by one unit, the efficiency of the IC will increase by (0.214).

H6: There is an influence statistically significant between Verifiability and the Efficiency of IC in JCBs.

The result of the fourth hypothesis showed that the R-value is (0.802), (F=41.077, Sig. <0.000). The verifiability is statistically significant at the level of significance (0,000), and the value of (t) is (4.008). The value of (B) is (0.285) means that with any increase of verifiability by one unit, the efficiency of the IC will increase by (0.285).

CONCLUSIONS AND RECOMMENDED

The results reveal that there is a positive effect between relevance and IC at JCBs. The bearing is statistically significant at the level of significance (0,016), and the value of (t) is (2.428). The importance of (B) is (0.180) means that with an increase of relevance by one unit, the efficiency of IC will increase by (0.180). The results of the present study are in agreement with the results of a survey by (Alqudah, 2006; Naami & Sammour, 2015; Abu Shaiba & Saeed, 2018), which showed an effect for AISs in enhancing IC. Additionally, Al Jwafel (2011) the relevance of information is the most influential variable on the IC effectiveness variable. Also, a positive effect between Reliability and IC at JCBs. The reliability is statistically significant at the level of significance (0,005), and the value of (t) is (2.832). The value of (B) is (0.191) means that with any increase of reliability by one unit, the efficiency of IC will increase by (0.180). The results of the present Study are Matches with (Al-Jarrah, 2011). The study concluded that the Reliability of AISs affects the improvement of the IC efficiency of JCBs. And matches with (Alqudah 2006; Naami & Sammour, 2015; Abu Shaiba & Saeed, 2018). On the other hand, a positive effect between timeliness and IC at JCBs. The timeliness is statistically significant at the level of significance (0,023), and the value of (t) is (2.292 and the importance of (B) is (0.136) means that any increase of timeliness by one unit, the efficiency of IC will increase by (0.136). Matches with Al-Shanti Study (2013). The application of AISs in the Jordanian industrial sector improves internal audits' effectiveness by providing the necessary information on time to make decisions. And a positive effect between understand ability and IC at JCBs. The understand ability is statistically significant at the level of significance (0,019), and the value of (t) is (2.370). The importance of (B) is (0.134) means that with any increase of understand ability by one unit, the efficiency of IC will increase by (0.134). Matches with (Alqudah, 2006; Naami & Sammour, 2015; Abu Shaiba & Saeed, 2018). Also a positive effect between completeness and IC at Jordanian JCBs. The fullness is statistically significant at the level of significance (0,007), and the value of (t) is (2.716). The value of (B) is (0.214) means that with any increase of completeness by one unit, the efficiency of IC will increase by (0.214). Matches with (Alqudah, 2006; Naami & Sammour, 2015; Abu Shaiba & Saeed, 2018). On the other hand a positive effect between verifiability and IC at JCBs. The verifiability is statistically significant at the level of significance (0,000), and the value of (t) is (4.008). The value of (B) is (0.285) means that with any increase of verifiability by one unit, the efficiency of IC will increase by (0.285). Matches with (Alqudah, 2006; Naami & Sammour, 2015; Abu Shaiba & Saeed, 2018). The R2 value (0.643) is recommended as the AISs explain 64% of the IC variance, which means that there are 36% from variance not included in this study.

LIMITATIONS

Due to the Corona pandemic, the researcher faced difficulty in distributing the questionnaire of the study sample, which took him several months to distribute the questionnaire, due to the strict procedures on Jordanian commercial banks and the rest of the other sectors inside Jordan because of the spread of Corona virus in Asia and all over the world. The sample of the present study is considered small so the result can't be generalized to other commercial banks. Also the results is only limited to Jordanian commercial banks. So more researches should be done cross cultural in order to find the similarities and the differences in order to compare Jordanian commercial banks with other commercial banks, so the results can be more convenient.

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