

# Impact of the Auditing Information System on the Banking Sector: A Case Study on the Al Rajhi Bank, Riyad Bank, Bank Albilad and Bank Aljazira

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It is a fact that at the time of making any economic decision, all the available information should be taken into account. At the time of sanctioning a business loan, for example, a bank has to consider the previous business-bank financial relationship, along with the present financial performance of the business reflected by its financial statements and any other factor that has come to the notice of the bank. The reliability and consistency of such decisions depends upon the reliability of information used by decision makers. If the available information is not reliable, or is insufficient and doubtful, it can misguide the decision makers and hence, is harmful for them and for the society. Speed attracts, but it must be associated with wisdom, otherwise it may be dangerous. In the present day complex society, speedy information and high speed communication tools don't give enough time sometimes for decision makers to check authenticity and reliability of information they are receiving and using. Information remoteness, data in bulk, complex exchange transactions, there may be a number of reasons which partially or wholly affect a decision making process. It is necessary for decision makers to develop a method to make certain that the information they are receiving is quite reliable in order to make the right decision and to achieve expected benefits. The audit is such a method of verification of reliability of information, because it is conducted by independent persons. The information can be assumed accurate, unbiased and reasonably complete after audit, and it can be used in the process of decision making.

**Key words:** Auditing information system, Banking sector study.



#### Introduction

The process of making economic decisions is commonly based on taking account of all available information and accessible data. For example, before a company loan is approved, a bank must consider the financial relationship between its former business and the bank, as well as the company's current financial performance, which can be detected through their financial statements and any other considerations informed by the bank. Such decisions depend greatly on the reliability and accuracy of the information and the data used by policymakers. If available information is inadequate, outdated and questionable, it can deceive analysts and thus drive decision makers to make inappropriate decisions, while negatively affecting the society as a whole.

A speedy pace is desirable, but it must be balanced with wisdom. In today's dynamic society, fast information and high speed communication methods do not often give decision-makers enough time to verify that the information they collect and use is accurate and reliable. Diffidence of the information, the bulk of data and complex exchange transactions can affect the decision-making process in general or in particular.

Thus, it is imperative that decision makers establish a sound system to make sure that the information they obtain is very reliable and helpful in making adequate decisions and achieving the desired benefits. The information should be reliable, objective and fairly complete after the audit process is complete and thus suitable to be used in the decision-making process.

#### **Significance of the Study**

The research is highly useful for the assessment of the present and potential performance of the banking sector, in terms of the impact of the audit information system on the banking sector. Therefore, ideally this work is useful and essential for commercial banks, its shareholders, managers, workers and other organisations, governmental departments and major enterprise groups in general.

#### Limitations

Since the bank staff reviewed was not aware of importance of the audit program, the processing of the main data was a difficult task. The primary data collected varied considerably between banks and individuals. The researchers depended to a large extent on written reports and secondary data; the consistency of accounting data is one of the limitations of the study. However, the scientific methods and tools may have inherent drawbacks, e.g. the combination of ease and tradition are financial details. The lack of



available knowledge concerning the working style and the productivity of the key personnel was another restriction. Ultimately, the research is subject to human limitations in general.

#### **Objectives of the Study**

The main objectives of the study can be summedup as follows:

- (1) Review the audit management system analytical aspects.
- (2) Monitor the history of business/commercial banks in Saudi Arabia.
- (3) Assess the status of implementing the new auditing framework in the Saudi banking industry.
- (4) Ascertain if there is a substantial gap between the commercial banks of Saudi Arabia being examined in their implementation of the new audit software versions of the information system.
- (5) Check if the quality of the data storage and updating is different, through adopting the audit information system in commercial banks in Saudi Arabia.
- (6) Determine if the information system auditing is sufficiently able to obtain and analyse data integrity facts.
- (7) Evaluate the relationship between the Saudi commercial banks' audit information systems and general control methods.
- (8) Assess the correlation between the Audit Information System (AIS) and the commercial banks' production power.
- (9) Measure the efficiency of the banking operations after the AIS has been installed.
- (10) Detect the gap in the efficiency of the profitability of the Saudi commercial banks under review.

#### **Hypotheses**

The 'hypotheses' of research play a significant role in providing the foundation and interpretation of science. This research paper is based on the following assumptions:

**Hypothesis 1:** The current edition of the information audit program, adopted by commercial banks in Saudi Arabia, is not significantly affected.

**Hypothesis 2:** The internal audit information program of Saudi commercial banks under scrutiny has no big difference.

**Hypothesis 3:** The collection and updating of data by using the Audit Information System in the commercial banking institutions of Saudi Arabia under study is not substantially different.

**Hypothesis 4:** The audit information system is not related to Saudi's general methods of control of the commercial banks under review.



**Hypothesis** 5: The audit information system has no direct connection to the outgoing control of commercial Saudi banks being examined.

**Hypothesis 6:** The quality of operations in the pre- and post-installation phases of the Saudi commercial banks information system under study is not substantially affected.

#### Research Methodology

This research paper is primarily focused on the researchers' openness and responsiveness to what is going on around them, as research helps social scientists maintain a daily interaction with social issues and problems to find out suitable solutions. Research in the field of corporate management is now well known.

The English word 'study,' which means searching again, is derived from the French word 'researchers'. Research is a 'systematic search for knowledge on a topic'. Most early work is intended to unravel nature's mysteries. This method continues to be more rigorous and emphasised. Thus, work can well be called the operation carried out to meet the need to reexamine and rediscover the world around. 'Research can also be described as a methodical and objective study and recording of controlled observations leading to generalisations, principles or theories, and leading to prevention and eventual controls'.

**Commercial Banks in Saudi Arabia**: the following commercial banks are currently operating in Saudi Arabia:

The Saudi Bank, Al Rajhi bank, Al Bilad Bank, Bank Al Jazira, Gulf International Bank Saudi Arabia / SAS, Saudi Bank, Saudi Arabia Bank, Saudi Arab Bank, Riyad Bank, Rijad Bank, Samba Financial Group (Samba).

#### Scope of the Study

The researcher selected a sample including four leading Saudi commercial banks, namely: Al Rajhi Bank, Riyad Bank, Bank Al Bilad and Bank Al Jazira.

#### Sources of Data

The methodology and instrument of the research is analytical and analysis-orientated. Any inquiry relies on the data sources to examine and analyse the collected information. Data sources can be separated into two sections in general:

(A) **Primary Data**: The primary data may be considered the original data collection source. The key data were gathered via a questionnaire used in this study for the various office



holders of banks involved in banks' auditing activities that mainly comprise accountants, auditors and the management. For this reason, 100 employees from all commercial banks who were subject to research were asked to respond to a comprehensive questionnaire. The questionnaire is divided into two parts:

- (a): Part A of the questionnaire is related to respondents' demographic information, including the address, gender, age, employment, experience, etc. Part B of the survey is basically related to collected information concerning the audit of the information systems. Part B discusses related issues to gather the data and test the hypothesis. The questions were based on the hypothesis and 5-6 questions were written in various ways for every hypothesis so there were no details left out.
- (b): The information obtained from the primary data was systematically re-arranged and the quality of the data was evaluated using version 19 of SPSS software. The hypotheses were tested using the F and Chi one-way square testing approach.
- (B) Secondary Data: The details included in the financial reports and accounts are the primary source of secondary information incorporating financial statements of all banks under investigation and were prepared for these annual reports and accounts. Significant proportions have been measured by competent heads of departments and statements prepared to analyse the influence of the information management system (IMS) on the profitability performance of business banks in Saudi Arabia.

Although the ratio analysis methodology has been used, statistical techniques such as means, standard deviation and coefficient variance have also been applied when analysing the quantitative data, depending on the secondary data. Hypotheses testing was also carried out using chi-square test, t-test and F-test.

#### **Scope for further Research**

It is preferable to conduct more study and work to examine the impact of the audit information system in other companies, examining other factors such as organisational challenges and management of the audit information system, the effectiveness and impacts on client performance and productivity of a multi-agency audit information system.

#### **Review of Literature**

The analysis 'of a text that someone writes to take into account the essential aspects of established knowledge and information of significant observations, theoretical and methodological contributions to a given topic' is known as a'literature review'. This may help to further extend work on a particular subject or similarly as a secondary source.



'A systematic review is a scientific literature review that aims to classify, analyse, pick, and synthesise all the applicable high quality research data', (Dellinger and Leech, 2007). Literature is a written text and, in the study, 'a compilation of published information and data relating to the question of study refers to all the published documents in a particular style on a specific topic'. The question of the study provides the meaning and the answers that the researcher tries to give.

A literature review relating to the study area and topic is mandatory for an academic thesis job. The review is a detailed analysis of a body of literature. Usually, checked literature covers scientific journals, scholarly books, authoritative repositories and primary sources. Often it includes newspapers, magazines, other books, movies, audio / video recordings, etc. Primary sources are the roots, or basic documents relating to a specific subject or idea, of the knowledge under review. They are also first-hand accounts of an incident or observation by a witness or a researcher. The study was carried out by Victoria Chiu, Qi Liu and Miklos Avasarheli (2014) and was titled 'the creation and intellectual framework of continuous auditing research'. This work could be accessible as physical publications, as publications in electronic databases or through the Internet'. The researchers stated that, 'the developments and continuing technological growth have been identified as a significant influence on the accounting sector (AICPA, 1998). The needs and opportunities for audits to be conducted automatically, constantly and almost in real time have been paying great attention to both academics and accounting professionals in the past 20 years. This document provides an overview of the evolution and development of the continuous audit database and classifies current continuous audit work based on the four work features of newly established research taxonomy'. This document offers a thorough analysis of ongoing audit research.

'Security of the auditing system for safe cloud storage' has been researched by Yong Yu et al. (2014). Cloud computing is a modern computing paradigm, which provides easy and ondemand access to a common collection of configurable computing resources. Checking services are very critical to ensure proper storage of the data in the cloud. Within this paper the authors analysed active adverse attacks within three cloud auditing schemes, including two identity-preserving mechanisms known as Oruta and Knox, and a distributed data integrity auditing mechanism. They showed that when successful opponents engage in cloud storage, these schemes are unsafe. In particular, an aggressive adversary can modify cloud data arbitrarily without the auditor's detection in a verification process.

In this study, they represented the higher quality in auditing, as more assurance of high financial reporting quality. In the study they identified a better quality as an assurance of high financial reporting quality. The authors of the study identified an approach to remedy the deficiency without losing the desirable features of such mechanisms. Researchers used many



proxies for audit quality, with little guidance for choosing among them. They provided a framework for systematically evaluating their unique strengths and weaknesses. Because the quality of the audit is necessarily related to the quality of financial reporting, it depends also on the underlying characteristics of businesses and financial reporting systems. Their analysis of the models which is widely used to distinguish these characteristics indicates that better conceptual guidance is required. Finally, the writers actually need more work and deep study on auditing and consumer experience.

David C. Chou (2015) reported on 'Cloud computing: a value model'. "Cloud computing has gained significant interest for its advancements in technology and availability. Easy-to-use, secure, on-demand connectivity, versatile and less user control are the possible benefits of cloud computing in organisations. This paper explores the components of risk and benefit in cloud computing via a benefit generation model.

Many researchers, such as (Abdallah, 2013: Adrian-Cosmin, 2015) tested the impact of the accounting information systems on the quality of financial statements. They found that there was a strong effect of using the accounting information systems on the quality of financial statements. Zakaria et al. (2017) assess the impact of accounting information systems (AIS) on the users' task efficiency. The findings ascertain a significant impact of (AIS) on their tasks efficiency related to budgeting, financial reporting, auditing and financial controlling in the companies. While Shuhidan et al. (2015) detected a significant impact of (AIS) on the organisational performance; they also discovered a strong relationship between AIS success and organisational performance. Whereas Onaolapo and Odetayo (2012) found that Accounting Information Systems (AIS) enhance organisational effectiveness, especially in global technology advancement, agreeing with Patel (2015), who detected the importance of accounting information systems that help in facilitating decision making and amend an organisations environment, structure and requirements of task.

Furthermore, they emphasised that accounting information systems play a necessary role in decision making processes related to financial and economic issues such as cost accounting systems, management accounting systems, price and profitability, which provide useful information to managers for making financial and economic decisions, also they stressed that (AIS) played a significant role in the survival of organisations.

In addition Rapina (2014), discovered a strong correlation between the organisational factors (management commitment, organisational culture and organisational structure) on the quality of accounting information systems and how (AIS) effects the quality of the accounting information. Furthermore he detected a significant influence of AIS application on the quality of financial reports, while Srivastava and Lognathan (2016) detected the impact of AIS in boosting their profitability and efficiency. Thus, accounting information systems can have a



significant effect that achieves this goal. Also, they stressed the role of good accounting information systems in increasing the company's profitability target. On the other hand, they found a significant role of AIS in decision making.

Nwinee et al. (2016) examined how applying AIS helps enhance management efficiency and decreases the cost of control to achieve firms' goals. A study conducted by Tan (2016), tested the impact of AIS on internal auditors in Turkey, revealed the important role of accounting information systems in companies through enabling all levels of management to access the comprehensive information that goes into the planning and controlling of activities within business organisations. In addition, AIS provides high quality information to internal and external users and typically covers six main aspects: people, procedures, data, software, information technology infrastructure, and internal controls. Alnajjar (2016) investigated the impact of accounting information systems on management performance and organisational performance. The results indicate that the accounting information systems significantly impact the management performance and organisational performance. Through applying accounting information systems, the obtained information will be more useful for decision making in order to fulfil the company's goals and objectives, which increases the company's performance.

Samuel (2011) indicated that Accounting Information Systems are essential means for organisations' effective management, for decision-making and controlling their activities, and AIS is a very effective tool for controlling and coordinating the activities of an organisation. Moreover AIS is considered a serious factor for producing high quality of accounting information.

The same results were detected by Hafij Ullah et al. (2014), who confirmed that there was a significant relationship between accounting information and strategic decisions, whilst Awosejo et al. (2014), pointed out that the usage of AIS improved the firms productivity, and Qatanani and Hezabr (2015), indicated that there are main factors that managers need to improve the accounting systems which in turn improve the quality of accounting information required to progress the value chain of business organisations (clearly defined responsibilities and authorities, specific work procedures, internal controls, recruit employees who have the competent qualifications, training and high quality of accounting systems).

Additionally, Almbaidin (2014) pointed out an important fact about the role of accounting information systems in improving the effectiveness in Jordanian banks. On the other hand, Jawabreh and Alrabei (2012), said that there was no relationship between accounting information system and planning, controlling, and decision-making in hotels. The same results were found by Jose Antonio Perez-Mendez and Angel Machado-Cabezas (2015), who discovered that applying AIS does not guarantee improving companies' performances.



However, Soudani, (2012) found that there was no correlation between using AIS in improving the company's performance. Ismail and King (2005) revealed a positive relationship between AIS and performance measures. A study conducted by Saeidi (2014), revealed that accounting information systems (AIS) which are part of information systems (IS) are helpful in facilitating the decision making process within organisations and should be modified to companies' environments, requirements, and structures.

Grande et al. (2011), measured the relationship between the use of the Accounting Information Systems (AIS) and indicators of improved performance and productivity, and they stated that there is a appositive relation between them. Furthermore, (Grande et al. 2011; Ofori and Lu (2016), discovered that there is a strong correlation between the accounting information systems, in a way that they contribute in boosting the company's efficiency(Cosmin, 2015; Zakaria et al. 2017).

On the other hand, a few studies show that there no clear relationship exists between applying AIS and improving performance indicators, such as (Jose Antonio Perez-Mendez and Angel Machado-Cabezas 2015; Soudani, 2012).

The impact of Auditing Information Systems on the performance of any concern can be made on the basis of primary data as well as on the basis of secondary data. The primary data gives the study of fieldwork where the feedback is gathered from the persons involved in the process of the work related to research work. On the other hand, the secondary data of the business concern helps in determining the growth as well as the progress of the business concern. The performance measured through the primary data may be regarded as the qualitative approach while the performance measured through the secondary data is referred to as the quantitative approach. In the present study both the approaches have been used to judge the impact of Auditing Information Systems on the performance of the commercial banks of Jordan. To collect the primary data a structured detailed questionnaire was framed while the source of secondary data was the published annual reports and accounts of the commercial banks of Jordan under study.

The feedback collected through the questionnaire has been analysed with the latest technique of SPSS 19.0 and interpretation has been made accordingly. For secondary data, the financial statements of the commercial banks under study were redrafted in the condensed form and various ratios have been calculated for the purpose of testing the hypothesis.

The purpose of analysis is to find out the relationship between the parameters/factors, which leads to verification of the hypotheses. It involves a process of breaking up the complex factors into simpler ones and making new arrangements for the purpose of interpretation.



Analysis and interpretation of data helps future researchers to analyse problems with appropriate statistical techniques to avoid unnecessary labour.

, 'Analysis is a process which enters into research in one form or the other form in the very beginning'. It may be fair to say in general, research consists of two longer steps i.e. the gathering of data and analysis of these data. Analysis and interpretation help the researcher to infer the results which are to be accomplished in the study. Hence, it is to be done carefully by examining the results obtained after analysis.

This analysis aims at understanding the impact of organisational culture on value expectancy behaviour of employees and employers. The prime focus of this section is to examine the effect of organisational culture on human behaviour at work. The study covers a sample of 400 members from four commercial banks, 100 members from each bank.

The design and structure of the questionnaire has been simple, study-specific, unambiguous, minimal and capable of invoking objective types of answers through marking a tick only. The questionnaire contains queries which are tailored to elicit information about the perceptions of the population that have a direct bearing on the hypothesis of this study.

At the start of this study, a number of hypotheses have been assumed. Now for testing these hypotheses, SPSS test is performed with data received through the questionnaire. Results are tabulated and analysed accordingly.

**Hypothesis 1:** There is no significant difference in the latest versions of the software of Auditing Information Systems adopted by the commercial banks of Saudi under study.

**Table 1:** *One-way ANOVA TEST for H(1)* 

ANOVA							
	Sum of Squares	df	Mean Square	F	Sig.		
<b>Between Groups</b>	4.073	3	1.358	5.690	.001		
Within Groups	77.538	325	.239				
Total	81.611	328					

**Source:** Spss\_19 output\_ based on survey data

Since there is a good difference between mean square values 1.358 and 0.239 resulting in a significance value 0.001, which is lower than the significant level 0.05. This means that hypothesis  $H_{01}$  must be rejected and it can be concluded that there is a significant difference in the versions of the software of Auditing Information Systems of commercial banks of Saudi.



**Hypothesis 2:** There is no significant difference in the internal audit information systems of the commercial banks of Saudi under study

**Table 2:** *One-way ANOVA TEST for H*(2)

total2=67 gfggfh ncvyth5hthnm m							
	Sum of Squares	df	Mean Square	F	Sig.		
Between Groups	.405	3	.135	.695	.555		
Within Groups	63.115	325	.194				
Total	63.520	328					

Source: Spss\_19 output\_ based on survey data

Since there is not a big difference between the mean square values 0.135 and 0.194, resulting in a significance value of 0.555, which is higher than the significant level 0.05. This means that hypothesis  $H_{02}$  must be accepted and it can be concluded that there is no significant difference in the internal audit information system of the commercial banks of Saudi.

**Hypothesis** 3: There is no significant difference in storing and updating data by using Audit Information Systems in the commercial banks of Saudi under study.

**Table 3:** *One-way ANOVA TEST for H*(3)

total3							
	Sum of Squares	df	Mean Square	F	Sig.		
Between Groups	.862	3	.287	1.302	.274		
Within Groups	71.685	325	.221				
Total	72.547	328					

Source: Spss\_19 output\_ based on survey data

This ANOVA table shows that there is not a big difference between the mean square values 0.287 and 0.221, resulting in a significance value 0.274 which is much higher than the significant level 0.05. This means that hypothesis  $H_{03}$  must be accepted and it can be concluded that there is no significant difference in storing and updating data by using Audit Information Systems in the commercial banks of Saudi.

**Hypothesis 4:** There is no significant relationship between Audit Information Systems and General Control Methods of commercial banks of Saudi under study.



**Table 4:** *One-way ANOVA TEST for H(4)* 

Total 4						
	Sum of Squares	df	Mean Square	F	Sig.	
Between Groups	8.248	3	2.749	12.103	.000	
Within Groups	73.831	325	.227			
Total	82.079	328				

**Source:** Spss\_19 output\_ based on survey data

From this ANOVA analysis, it can be seen that there is a big difference between the mean square values 2.749 and 0.227, resulting in a significance value 0.000, which is less than the significant level 0.05. This means that hypothesis  $H_{04}$  must be rejected and it can be concluded that there is a significant relationship between Audit Information Systems and General Control Methods of the commercial banks of Saudi.

**Hypothesis** 5: There is no significant relationship between Audit Information Systems and Output control of the commercial banks of Saudi under study.

**Table 5:** *One-way ANOVA TEST for H*(5)

total5							
	Sum of Squares	df	Mean Square	F	Sig.		
<b>Between Groups</b>	16.837	3	5.612	29.059	.000		
Within Groups	62.768	325	.193				
Total	79.605	328					

**Source:** Spss\_19 output\_ based on survey data

This ANOVA table shows, that there is a big difference between the mean square values 5.612 and 0.193, resulting in a significance value of 0.000 which is less than the significant level 0.05. This means that hypothesis  $H_{05}$  must be rejected and it can be concluded that there is a significant relationship between Audit Information Systems and Output control of the commercial Banks of Saudi.

**Hypothesis 6:** There is no significant difference in the efficiency of operations in the preand post - installation periods of Auditing Information Systems of the commercial banks of Saudi under study.



**Table 6:** *One-way ANOVA TEST for H*(6)

total6							
	Sum of Squares	df	Mean Square	F	Sig.		
<b>Between Groups</b>	7.077	3	2.359	14.925	.000		
Within Groups	51.367	325	.158				
Total	58.444	328					

Source: Spss\_19 output\_ based on survey data

This ANOVA table shows, that there is a large difference between the mean square values 2.359 and 0.158 resulting in a significance value of 0.000, which is less than the significant level 0.05. This means that hypothesis  $H_{06}$  must be rejected and it can be concluded that there is a significant difference in the operations of the banks after the installation of Auditing Information Systems.

#### **Pearson Correlation**

The Pearson Correlation for the total responses for each hypothesis table i.e. H(1), H(2), H(3), H(4), H(5) and H(6) comes from SPSS processing as follows:

**Table 7:** *Pearson Correlations (N= 329)* 

Source	total1	total2	total3	total4	total5	total6
total1	1	.122*	.088	.225**	.341**	.179**
total2	.122*	1	.173**	.179**	.123*	.101
total3	.088	.173**	1	.019	.048	030
total4	.225**	.179**	.019	1	.292**	.270**
total5	.341**	.123*	.048	.292**	1	.305**
total6	.179**	.101	030	.270**	.305**	1

Source: Spss\_19 output\_ based on survey data

#### Conclusion and Research Gap

Many scholars have previously focused on various theoretical aspects of the audit information system by conducting various studies. There is, however, no researcher who has carried out a study to assess the effect of audit information systems on the efficiency of commercial banks.

<sup>\*.</sup> Correlation is significant at the 0.05 level (2-tailed).

<sup>\*\*.</sup> Correlation is significant at the 0.01 level (2-tailed).



So, this study is distinguished from previous studies, as it offers an overview and focuses solely on the impact on the efficiency of the auditing information systems of commercial banks. In addition, it emphasises the importance of the information auditing program to improve the productivity of the banking operations of Saudi commercial banks. This study aims to discover the nature of the relationship between using AIS on banks' success, and how AIS actually affects banks positively or negatively, as the researcher used different techniques for measuring the variables in order to obtain more precise results.

According to the researcher's knowledge, until now, there are few studies that have been completed to inspect the nature of the impact of applying (AIS) on improving the banks' success from bank managers' perspectives. Although some researchers tackled the (AIS) effect on the banks' success in developing countries, most studies didn't investigate this issue independently as the main study problem; they discussed it in the context of other financial and accounting topics, such as decision making, improving the company's performance or improving the quality of accounting information; see (Kanakriyah, 2016).



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