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The Impact of Information Systems Audit on Improving Bank's Performance.
"Applied Study at Banks Working in Gaza"

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نتيجة الحكم على أطروحة ماجستير

بناءً على موافقة عمادة الدراسات العليا بالجامعة الإسلامية بغزة على تشكيل لجنة الحكم على أطروحة الباحث/ **رزق خليل محمد حرب** لنيل درجة الماجستير في **كلية *التجارة*/ قسم المحاسبة والتمويل** وموضوعها:

The Impact of Information Systems Audit on Improving Bank's Performance
"Applied Study at Banks Working in Gaza"

وبعد المناقشة التي تمت اليوم الأربعاء 10 ذو القعدة 1433 هـ، الموافق 2012/09/26م الساعة الحادية عشرة صباحًا، اجتمعت لجنة الحكم على الأطروحة والمكونة من:

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وبعد المداولة أوصت اللجنة بمنح الباحث درجة الماجستير في **كلية *التجارة*/** قسم **المحاسبة والتمويل**.

واللجنة إذ تمنحه هذه الدرجة فإنها توصيه بتقوى الله ولزوم طاعته وأن يسخر علمه في خدمة دينه ووطنه.

والله ولي التوفيق ،،،

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[طه:114]

DEDICATION

I would like to take this opportunity to express my deepest thanks and dedicate this work to

To my beloved parents whose love and support encouraged me throughout life.

To my wonderful brothers and sisters.

To all my lovely people that I know.

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Praise be to Allah, lord of the worlds, and prayers and peace on the prophet Mohammed peace be upon him.

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Abstract

The study examines the impact of information systems audit on improving performance of the working banks in Gaza Strip. The study population consists of some of the banks‘ branches in Gaza Strip and the main management centers in Gaza Strip. The research targets the banks managers, heads of sections, accountants, IS auditors, internal controllers and internal auditors of the banks.

The researcher used the descriptive analytical method, regression analysis and utilized both primary and secondary sources for data collection.

The research results show that information systems auditing play a central role in improving the performance of banks and achieving the bank's strategic development aims, because the banks have reliable technology that organizes the information gathered from all sources and analyze the data to increase the quality of information provided systems. Business operations in the banking has been increasingly dependent on the computerized information systems. It has now become impossible to separate (IT) from the business of the banks.

The researcher recommends that the banks should train the employees to use the IS audit available in the bank. In addition, the banks should enhance the use of general control that will lead to provide a high quality information free from errors.
The management must spend more effort in protecting and safeguarding their assets and to ensure the efficient and effectiveness of operation and build strong systems security to prevent any internal or external hacking attempts.

الملخص

تهدف الدراسة الى التعرف على أثر تدقيق نظم المعلومات في تحسين الأداء لدى المصارف، حيث يتمثل مجتمع الدراسة في المصارف العاملة في قطاع غزة والادارات العامة لهذه المصارف.

استخدم الباحث المنهج الوصفي التحليلي و تحليل الانحدار حيث اعتمد على عدد من المصادر الرئيسة والثانوية في جمع المعلومات، وقد مثلت المصادر الأولية في استبانة صممت خصيصاً للحصول على النتائج.

من أهم النتائج التي خلصت إليها الدراسة هو أن تدقيق نظم المعلومات يلعب دوراً أساسياً في تحسين الاداء لدى المصارف و تحقيق أهداف التنمية الاستراتيجية للمصارف. وذلك لأن المصارف لديها تكنولوجيا موثوق بها والتي تساهم في تنظيم المعلومات التي يتم جمعها من جميع المصادر و التي تحلل البيانات لتزيد من جودة المعلومات المزودة من الأنظمة. تعتمد العمليات التشغلية لدى المصارف بشكل متزايد على نظم المعلومات المحوسبة، حيث أصبح من المستحيل فصل تكنولوجيا المعلومات عن أعمال المصارف.

ومن أهم توصيات الباحث أن على المصارف الاهتمام أكثر بتدريب الموظفين على استخدام تدقيق نظم المعلومات لديها. وبالاضافة الى ذلك يتعين على المصارف تعزيز استخدام الرقابة العامة و التي بدورها شأنها ستقود الى توفير معلومات ذات جودة عالية خالية من الاخطاء والمخالفات. و على الادارة بذل الجهد أكثر في الحفاظ وحماية أصولها لضمان كفاؤة وفعالية العمليات التشغيلية و بناء أنظمة حماية قوية لمنع محاولات الإختراق الداخلية أو الخارجية.

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List of Abbreviations

ACL	Audit Command language
AICPA	The American Institute of Certified Public Accountants
BRA	Business Risk Audit
CAATTS	Computer Assisted Auditing Tools and Techniques
CGEIT	Certified In Governance Of Enterprise IT
CIO	Chief Information Officer
CIS	Computerized Information Systems
CISA	Certified Information Systems Auditor
CISM	Certified Information Security Manager
COBIT	Control Objectives for Information and Related Technology
COSO	The Committee of Sponsoring Organizations
CRISC	Certified In Risk and Information Systems Control
EDI	Electronic Data Interchange
EDP	Electronic Data Processing
ERP	Enterprise Resource Planning
GAAP	Generally Accepted Accounting Principles
GAAS	Generally Accepted Auditing Standards
GAO	Government Accountability Office
IA	Internal Auditors
ICT	Information & Communication Technology
IDEA	Interactive Data Extraction and Analysis
IFRS	International Financial Reporting Standards
IIA	Institute Of Internal Auditors
IRS	Internal Revenue Service
IS	Information Systems
ISACA	Information Systems Audit and Control Association
ISD	Information systems Development
IT	Information Technology
ITGCs	Information Technology General Controls
ITGI	IT Governance Institute
SAS	Statement on Audit Standard
SPPIA	Standards for the professional practice of internal Auditors
SQL	Structure Query language
SSA	Strategic Systems Auditing
TQM	Total Quality Management

Chapter 1

General Framework of the Research

1.1 Introduction:

The digital world phenomenon, on the one hand, offers tremendous benefits, but on the other, it also creates significant and unprecedented risks. Web technology allows users quick and inexpensive access to a large amount of information provided on websites, digital libraries or other sources of data. The same factors that generate the benefits – speed and accessibility – if not properly controlled can leave the information systems (IS) vulnerable to fraud, sabotage, and malicious or mischievous acts. There are many and varied security techniques which can be applied. The selection of one or a set of security techniques must be done according to the potential risks. **(Suduc et al, 2010, pp 43)**

The information technology (IT) function is responsible for designing, implementing and maintaining many of controls over an organization's business processes. IT has a critical role in collecting, processing and storing data that is summarized and reported in financial statements. Many organizations are becoming increasingly dependent on IT with such elements as fully integrated (IS) and electronic document management becoming more prevalent. IT increases the accuracy and speed of transaction processing, and can lead to competitive advantages for many organizations in terms of operational efficiency, cost savings and reduction of human errors. On the other hand, there are many types of risk associated with IT, this includes loss of computer assets, erroneous record keeping, increased risk of fraud, competitive disadvantages if the wrong IT is selected, loss or theft of data, privacy violations and business disruption.**(Abu-Musa, 2008, pp 438-439).**

Advances in IT have drastically changed the manner in which information is recorded, processed, and reported. Concurrent with those changes have been improvements in generalized audit software programs that have created a situation in which auditing through the computer has become much easier. **(Nieschwietz, 2002, pp307)**

Today, the IS audit is an integral part of the audit process since it complements the auditor's role and supports his judgment on the quality of the information processed by computer systems. **(Majdalawieh & Zaghloul, 2009, pp. 353)**

IS Audit assess the adequacy of environmental, physical security, logical Security, and operational controls designed to protect IS hardware, software, and data against unauthorized access and accidental or intentional destruction or alteration, and to ensure that information systems are functioning in an efficient and effective manner to help the organization achieve its strategic objectives. **(Champlain, 2003, pp 28)**

Therefore auditors need to evaluate audit risk and reliability of the received information; therefore it is important to know how the general controls of information systems audit enhance systems security, prevent and detect errors and fraud, reduce risk and improve the performance of information systems of banks which work in Gaza Strip.

In this research, in order to evaluate & analyze the impact of information systems audit on performance, and the problems that the banks may faced by using information systems, the questions, hypotheses, variables, objectives, importance, methodology, population, samples and previous studies are being examined in the study as follows:-

1.2 Research Problem

There are many obstacles that limit the application of information systems audit and these are either in the management and employees or in the documentation, report and audit procedure. This can be summarized in the following points:

1- Are there techniques can be used to prevent unauthorized access to the bank's information systems resources?
2- What steps can management take to be prepared to effectively respond to security incidents?
3- Is information about bank activities was processed accurately, completely and in timely manner?
4- Is IS resource would always be available when ever management needed access to them?
5- Are entity objectives broad and communicated to employees and management?
6- Is (IS) can adapt with the latest changes and have management's authorization and approval?

1.3 Research Importance:

The importance of the study is stem from the importance of general Control of IS audit to prevent errors and irregularities from occurring, ensure the quality of IS and achieve the strategic objective.

- Safeguarding the information system assets.
- Maintenance of data integrity .
- Maintenance of system effectiveness.
- Ensuring system efficiency.

1.4 Research Objectives:

1- Security provisions protect computer equipment, programs, communications and data from unauthorized access, modification, or destruction.

2- Program development and acquisition are performed in accordance with management's general and specific authorization.

3- Processing of transactions, files, reports, and other computer records is inaccurate and complete.

4- Program modifications have management's authorization and approval.

5- Source data that are inaccurate or improperly authorized are identified and handled according to prescribed managerial policies.

6- Computer data file are accurate, complete, and confidential.

1.5 Research Hypothesis

Audit of IS general controls is to evaluate internal control which covers all IS of an organization. General controls are important elements of the internal control structure and must be effective to help ensure the reliability, confidentiality and the availability of critical information.

1- There is significant a relationship between general controls of IS auditing and improving the quality of information provided by the systems.

2- There is significant a relationship between general controls of IS auditing and increasing the contribution of IS to achieve the objectives of the bank.

3- There is significant a relationship between general controls of IS auditing and facilitating the adaptation of systems with the latest changes.

4- There is significant a relationship between general controls of IS auditing and system contribution to bank financial performance.

1.6 Variables:

A- Dependent Variable:

Information systems performance:

1- Quality of information provided by systems
2- Information system contribution to achieving the objectives of the bank
3- The system's ability to adapt to the new changes
4- System contribution to bank financial performance

B- Independent variables:

General controls of information systems auditing:

1- Information systems strategy
2- Documentation
3- Legal controls to protect information systems
4- Internal auditing on the bank performance.

1.7 Research Methodology.

We analyzed data through using the descriptive analytical approach by collecting data from secondary sources (books, references, studies, websites, articles … etc.).

And through the questionnaires as a primary source that were prepared and distributed to a sample of a population under consideration.

1.8 Research Population and Sample

Research population consists of 10 Palestinian banks located in Gaza. And the study sample involves 81 employees including Accountants, banks managers, Heads of Sections, IS Auditors, Internal controllers and Internal Auditors in Gaza Banks.

Table: Show a list of Gaza Banks

Seq.	Name of Bank
1.	Bank of Palestine
2.	Arab Bank
3.	Palestine Commercial bank
4.	Palestine Investment Bank
5.	Arab Islamic Bank
6.	Al Quds Bank
7.	Palestine Islamic bank
8.	Cairo Amman Bank
9.	Bank Of Jordan
10.	The Housing Bank For Trade and Finance

1.9 Research Literature

First: Arabic Studies:

Jarbou study (2004): Studying and evaluating the internal control system

This study is concerned with the management of the company which is responsible for the designing of a strong internal control system. Also, the management is responsible for it's application by all the employees. There is a legal responsibility towards the management to adopt on organized books and records that will support in producing the balance sheet and income statement at the end of the period. So it cannot be imagined that there should be an organized accounts without the existence of a strong internal control.

It is considered that internal control is the first process when preparing the audit program and defining nature, timing and extent of tests to be performed. The weakness and the strength of the internal control system will not only define the nature of obtaining evidence, but it also define the deep required in examining this evidence. And the study ensures that the auditor must concentrate on the important elements of the internal control

which aimed at the assets protection from fraud and theft, the accuracy of financial information and the elements which needs the inspection and has a relationship of financial statement's correction.

Al-Banna study (1995): The internal control in the Islamic financial system and the modern systems.

This study aimed to prove that internal control was existed in the Islamic system, as the case in the recent days, and they agreed on some things and disagreed on others. The Islamic thought have the precedence in control and establishment of accounting system and regulation, also this study aims to clarify the ideas and the accounting and regulatory rules that can be inferred from the provisions and guidelines of Islam in accordance with the requirements for the maintenance of public funds and control and to contribute in solving modern problems. And the study ensured that internal control considered as basic structure of accounting system in any organization.

Second: Foreign Studies:

Bacha (2012): "The impact of information systems on the performance of the core competence and supporting activities of a firm"

The purpose of this paper is to determine whether the performance of the supporting activities is more influenced by information systems (IS) than the performance of the core competence.

A mail questionnaire survey was sent to alumni of a French business school working in the IS departments of firms. A sample of 100 French firms was collected.

The results of the study show that IS have relatively more influence on the performance of the core competence than on the performance of supporting activities, especially on the exclusivity and value creation components of the core competence.

The majority of the firms are in the industry sector. It would be useful to replicate the findings across a sample of firms distributed equally among the service and industrial sectors for comparison purposes. Also, it would be interesting to study the performance of the core competence and supporting activities by using objective measures.

The paper reveals that the attitudes of top management and employees towards IS must be taken into account when integrating IS in firms.

Several studies were conducted to examine the impact of IS on the performance of firms. The paper examines the impact of IS on the performance of the core competence and supporting activities, a subject not yet explored.

Al Matarneh (2011): "Factors Determining the Internal Audit Quality in Banks: Empirical Evidence from Jordan"

The main objectives of this paper are to examine the relationship, if any, between the competence, objectivity and, performance of internal auditor and the quality of internal audit. And provides evidence whether the internal auditor's objectivity, qualification, and effectiveness affect the internal audit quality. To accomplish these objectives, a questionnaire was designed and distributed to a sample of Jordanian banks internal auditors. The results of the questionnaire indicate that internal auditors in Jordanian banks consider the competence, objectivity and performance of internal auditors as important factors affecting the internal audit quality. It was found that "performance" had the highest mean score (4.5667), followed by "competence" (4.5533) and "objectivity" (4.2400). The study recommended that Jordanian banks must work to ensure the availability of the key factors to achieve the quality of the internal audit function.

Moorthy (2011) " The impact of information technology on internal Auditing"

This paper evaluates the role of information technology and how it affects internal audit process in the organization. The study also stresses on the global trend of adopting IT system (software/ hardware) in producing a more controlled environment in delivering the auditing process. It also constitutes on how IT affects internal control (control environment, risk assessment, control activities, information and communication and monitoring) and provides guidelines and best practices in evaluating techniques available to effectively perform auditing tasks internally. It also addresses how technology, Information system (IS) and electronic data processing (EDP) have changed the way organizations conduct its business, promoting operational efficiency and aid decision-making. It also spotlights many aspects of IT risks and controls and highlights whether the right people are overseeing IT risks to the degree they should.

The information and data of the research project were gathered from various

sources of secondary data. Sources of secondary data include journal articles published in magazines and downloaded from the Internet Websites including Emerald and EBSCO Host Research Databases. The Internet search engine like Google, Lycos and Yahoo also offered excellent search for locating on-line articles. Other references were also made on the research topic from various chapters of relevant accounting and textbooks.

It demonstrates the impact of technology convergence on the internal control mechanism of an enterprise. It emphasizes that the auditor also has a responsibility to assure that the governance level of management (the audit committee and board of directors) understand risks accepted by management and the liabilities potentially transferred to board members.

Lin & Wang (2011): "A selection model for auditing software"

The main contribution of this Study is the construction of an auditing software assessment model, which can be applied to other decision-making topics. Moreover, this study applies the model on audit command language, interactive data extraction and analysis, and For audit as examples. In addition to determining project priority sequences, the advantages and disadvantages of the model are presented in order to provide references to businesses on decision making regarding software purchases.

Hammersley et al (2010): "The Influence of Documentation Specificity and Priming on Auditors' Fraud Risk Assessments and Evidence Evaluation Decisions"

The Public Company Accounting Oversight Board (PCAOB) recently suggested that auditors' lack of specific fraud planning documentation has led auditors to devote insufficient attention to fraud risks in subsequent audit work. Guided by Support Theory, they experimentally investigated how the specificity of fraud risk documentation during audit planning influences auditors' subsequent audit work. We also examine the effect of priming auditors about the fraud risks identified during planning before they begin subsequent evidence evaluation. They find that auditors' planning stage efforts affect subsequent fraud risk assessments and evidence evaluation decisions. Unprimed auditors

who receive more specific documentation increase their fraud risk assessments and evidence requests. Priming's effects are more complex. Priming auditors who receive summary documentation also increases fraud risk assessments and evidence requests; however, priming auditors who receive specific documentation reduces these judgments because the priming makes the client-specific risks seem less typical. Accordingly, the PCAOB's call for more documentation can have the unintended consequence of reducing auditors' sensitivity to fraud.

SUDUC et al (2010): "Audit for Information Systems Security"

The information and communication technologies advances made available enormous and vast amounts of information. This availability generates also significant risks to computer systems, information and to the critical operations and infrastructures they support. In spite of significant advances in the information security area many IS are still vulnerable to inside or outside attacks. The existence of an internal audit for IS security increases the probability of adopting adequate security measures and preventing these attacks or lowering the negative consequences. The study presents an exploratory study on informatics audit for IS security.

Wang et al (2008): "The impact of information technology on the financial performance of third-party logistics firms in China"

The paper aims to examine the impact of information technology (IT) on the financial performance of third-party logistics (3PL) firms in China.

A questionnaire-based mail survey was conducted in mainland China. Path analysis and spline regressions were used to model the relationship between IT and financial performance.

This study found that IT can significantly improve 3PL firms' financial performance and there are complementarity and plateau effects of influencing financial performance between IT advantage and executives' involvement in both IT and business strategy planning.

The modeled relationship between IT and competitive advantages may not hold in different cultural environments and industrial settings. The sample size was small. Perceptual performance data were used.

To achieve better financial performance, it is essential for 3PL firms to sense strategically the importance of IT and commit sufficient managerial efforts and resources to achieve IT competency. In addition, IT executives should involve themselves in strategic business planning to better understand business strategies.

The results of this study – which constitutes the first to investigate IT in the 3PL industry in China – provide empirical evidence and a better description of the relationship between IT and financial performance. The findings provide valuable managerial guidance and insights for logistics managers.

Doomun (2008): "Multi-level information system security in outsourcing domain"

Information security is an integral part of all outsourcing activities and it is important for both the outsourcing company and the vendor to reach agreement as regards what type and what level of information security will be provided by the vendor in relation to the outsourced activities. The purpose of this paper is to evaluate the potential risks and information system (IS) security needs when outsourcing takes place and analyses the different security level in outsourcing agreements.

This paper is primarily based on a review of the literature.

International security standards and best security practices are analyzed and discussed. A multiple level security framework as an effective approach in outsourcing domain is addressed.

It is found that IS security risks can be effectively identified, monitored and evaluated by the concept of a layered security model that fits best in the complex outsourcing domain. There are three levels of security, first guidelines of technical security, second risk analysis and, third compliance and evaluation criteria, including managing information security.

The approach could be used to integrate IS security with service level agreements. Outsourcing vendors with security certifications, strong security adherence systems and optimal disaster recover plans will have a competitive edge in the industry.

Abu-Musa (2008): " Information technology and its implications for internal auditing - An empirical study of Saudi organizations"

The purpose of this Study is to investigate empirically the impact of emerging (IT) on internal auditors' (IA) activities, and to examine whether the IT evaluations performed in Saudi organizations vary, based on evaluation objectives and organizational characteristics. The results of the study reveal that IA need to enhance their knowledge and skills of computerized information systems (CIS) for the purpose of planning, directing, supervising and reviewing the work performed. The results of the study are consistent with Hermanson et al. that IA focus primarily on traditional IT risks and controls, such as IT data integrity, privacy and security, asset safeguarding and application processing. Less attention has been directed to system development and acquisition activities. The IA's performance of IT evaluations is associated with several factors including: the audit objectives, industry type, the number of IT audit specialists on the internal audit staff, and the existence of new CIS. The findings of this study have important implications for managers and IA, enabling them to better understand and evaluate their computerized accounting systems.

Majdalawieh & Zaghloul (2008): "Paradigm shift in information systems auditing"

This Study seeks to identify change factors within the various elements of the IS audit universe aiming to give practitioners and management insight about the state of the IS audit profession and its future directions, especially within the United Arab Emirates context.

The study concluded that the role of IS auditors in lessening in applications and infrastructures audits and is strengthening in the arena of IT management audits.

The implication of study for IS audit practitioners is that they need to be better equipped to conduct IT management audits and to contribute value to their organization as part of IT governance endeavors rather than focusing on infrastructure and application audits. On the other hand, the implication for management is that they should be aware of the capabilities of IS audit and set their biggest value expectations in the area of IT management assurance and governance.

The Study makes a contribution by identifying change factors within the various elements of the IS audit universe aiming to give practitioners insight about the state of the profession and its future direct.

Forslund (2007): "Measuring information quality in the order fulfillment process"

The purpose of this paper is to develop a scale for measuring information quality in the order fulfillment process.

Measurement scales are developed out of the practical information needs and a theory review. A state-of-the-art description and further scale development are based on a survey of the most important suppliers of 136 Swedish companies.

The paper finds that information quality can be measured with variables as in time, accurate, convenient to access and reliable. The scales were found to possess unidimensionality, validity and reliability.

The implications of this paper are mainly theoretical, providing a foundation for further empirical research.

Even though established customer-supplier relations were studied, information quality deficiencies were found on all variables. This is an indication of improvement possibilities.

There is a lack of research on measuring the information quality construct, which might be the reason for little empirical research on the impact of information quality on logistics performance.

Ahmed, (2007): "Information Systems Development and the Changing Role of Internal Audit"

Investigates the impact of Information Systems Development (ISD) on changing role of internal audit. Based upon a multiple quantitative method research, this paper examines the changes role of internal audit as a result of increasing ISD and complexity of business processes in e-commerce. The results highlight the impact of ISD on changing role of internal audit as shifting from paperless documents to e-commerce and online transactions. The findings of this study indicate that internal auditors' skills should expand beyond accountancy to meet the expectations of top management and audit committee. This study

provides awareness of increasing complexity of e-commerce and online business processes which influence the traditional internal audit function and audit procedures.

Olugbode et al, (2006)"The role of information technology in achieving the organization's strategic development goals: A case study"

The role of IT in achieving the organization's strategic development goals has been an area of constant debate. This paper describes the experiences of John Nicholls Builders Ltd, a Cornish building firm, in their attempt to achieve their strategic development goals through the adoption of IT. The implementation stage of the project involved setting a flexible program and timescale from the start. The company adopted a bottom up approach whereby potential users were consulted and involved in the process. Also the support of top management staff was crucial for the successful transition to the new system. Although there was no single ready-made solution that could fit the organizations requirements, they were able to identify appropriate construction industry software packages and integrate them through development of an intranet and database system. Now, there is greater management control, all departments have greater access to information, enabling them to function more effectively and efficiently, and since projections are more accurate or now available, management can make long-term strategic plans. These improvements and developments to the business system have improved operational efficiency, turnover and profitability of the organization.

Fadzil et al, (2005): "Internal auditing practices and internal control system"

Two main objectives of this study: to determine whether the internal audit department of the companies listed in the Bursa Malaysia complies with the Standards for the Professional Practice of IA (2000); and, to determine whether compliance to SPPIA will affect the quality of the internal control system of the company.

It was found that management of internal audit department, professional proficiency, objectivity and review significantly influence the monitoring aspect of the internal control system.

Scope of work and performance of audit work significantly influences the information and communication aspect of the internal control system while performance of audit work,

professional proficiency and objectivity significantly influence the control environment aspect of the internal control system. The study also shows that management of internal audit department, performance of audit work, audit program and audit reporting significantly influences the risk assessment aspect of the internal control system. Lastly, performance of audit work and audit reporting significantly influences the control activities aspect of the internal control system.

The research has contributed to the agency theory with respect to the bonding costs that management has to pay to the IA for the best interest of the principals of the companies. Another important implication pertains to the extent of the internal auditing practices among IA in Malaysian public listed companies. Research has also shown that the compliance with internal auditing practices partially influence certain aspects of the quality of the internal control system.

Yang and Guan, (2004): "The evolution of IT auditing and internal control standards in financial statement audits"

The rapid escalation of technology and the use of computers in business practice result in more (IT) auditing and internal control standards and guidelines to assist auditors in their roles and responsibilities. Several organizations, such as the American Institute of Certified Public Accountants (AICPA), the International Federation of Accountants and the IS Audit and Control Association (ISACA), have issued standards in this area to be observed by their members in performing an IT audit. This paper traces the evolution of US IT auditing and internal control standards in financial statement audits and discusses their significance for the auditing profession. We primarily focus on the discussion of the IT audit standards issued by

the AICPA and ISACA. As the use of computers in business data processing gets more widespread and the integration of IT in business processes gets more intricate, we expect to see more pronouncements of IT audit standards in the future. Auditors should well understand these pronouncements, standards and guidelines when performing an IT audit.

1.10 Discussion:

The researcher find that previous studies did not focus directly on the information systems audit, where the researchers gave their attention to another type of information and have written extensively in it but there is no researcher collect this information for (IS) audit and the writing them fully.

Also found that most of the previous studies are complementary to previous ones studies of (IS) audit characteristics and its impact on every factor of the audit process factors, but what distinguishes this study is to demonstrate all the characteristics of (IS) audit and type of IS provided to help the braches managers in his work.

The researcher benefited from previous studies to identify the efforts of others in the field of search, where (IS) audit is one of the important science, as well as the researcher benefited from previous studies to know what is new about the auditing techniques and electronic information systems used by Banks and other Firms.

Chapter 2

Information systems & Information systems Audit

2.1 Information systems

2.2 Information systems Audit

2.3 Internal Control

In this section the research is aimed mainly to highlight the main concept of IS and its components then move to the IS definition and its type. In additional, the definition of IS Audit, objectives and the type of it. And the important of internal control.

2.1.1 Information systems:

Information systems are the means by which people and organizations, utilizing technologies, gather, process, store, and use disseminate information. It's the processes for which information presenting to the director to assist him in making decisions and achieving organization goal. **(Al-Qudah, 2012, p262)**

IS consists of a number of ‘‘interrelated components working together to collect, process, store and disseminate information’’ **(Maruster et al, 2008, P222)**

2.1.2 Information system objectives

Each organization must tailor its IS to the needs of it users. Therefore, specific information systems objectives may differ from to firm. However, three fundamental objectives are common to all systems. They are: **(Hall, 2007, P16)**

1- To support the stewardship function of management. Stewardship refers to management's responsibility to properly manage the resource of the firm. The IS provides information about resource utilization of external users via traditional financial statements and other mandated reports. Internally, managers receive the stewardship information from the various responsibility reports.

2- To support management decision making. The IS supplies managers with the information they need to carry out their decision making responsibilities.

3- To support the firm's day to day operations. The IS provides information to operations personnel to assist them in the efficient and effective discharge of their daily tasks.

2.1.3 The role of information systems

An *information system* can be considered as an arrangement of a number of elements that provides effective information for decision-making and / or control of some functionalities of an organization. Information is an entity that reduces uncertainty about an event or situation. Enterprises use information system to reduce costs, control wastes or generate revenue. Hence onwards we will focus our discussions only to computer-based information system.

In modern business perspective the information system has far reaching effects for smooth and efficient operations. Some of important implications of information system in business are as follows: **(ICAI, Board of Studies, 2010)**

- Information system will help managers in effective decision-making to achieve the organizational goal.
- Based on well-designed information system, an organization will gain edge in the competitive environment.
- Information systems help take right decision at the right time.
- Innovative ideas for solving critical problems may come out from good information system.
- Knowledge gathered though information system may be utilized by managers in unusual situations.
- If information system is viewed as a process it can be integrated to formulate a strategy of action or operation.

2.1.4 Different kinds of information systems:

For Type of IS serve different organizational levels: operational level systems, knowledge level systems, management level systems, and strategic level systems terms. **(Laudon & Laudon, 2012, P39-40)**

Operational level systems support operational managers by keeping track of the elementary activities and transactions of the organization. Examples of operational level systems include a system to record bank deposits from automatic teller machine or one that tracks the number of hours worked each day by employees on a factory floor.

Knowledge level systems support the organization‘s knowledge and data workers. The purpose of knowledge level systems is to help the business firm integrate new knowledge into the business and to help the organization control the flow of paperwork. Knowledge level systems, especially in the form of workstations and office systems are among the fastest growing application in the business today.

Management level systems serve the monitoring, controlling, decision making, and administrative activities of middle manager. An example is a relocation control systems term that reports on the total moving, house-hunting, and home financing costs for employees in all company divisions, noting wherever actual costs exceed budgets.

Strategic level systems help senior management tackle and address strategic issues and long-term trends, both in the firm and in the external environment. Their principal concern is matching changes in the external environment with existing organizational capability.

2.2 Information systems auditing

The information technology (IT) function is responsible for designing, implementing and maintaining many of controls over an organization's business processes. IT has a critical role in collecting, processing and storing data that is summarized and reported in financial statements **(Cannon and Crowe, 2004, p. 31).**

2.2.1 IT Auditing

IT audit is the process of gathering and evaluating evidence based on which one can evaluate the performance of IT systems, i.e., to determine whether the operation of information systems in the function of preserving the property and maintain data integrity. **(Radovanovi et al, 2010, 1137)**

Although there is no common universal definition of IS audit, (Sayana, 2002) has defined IS audit as "the process of collecting and evaluating evidence to determine whether a computer system (IS) safeguards assets, maintains data integrity, achieves organizational goals effectively, and consumes resources efficiently".

Wulandari (2003) has defined IS audit as "the process of evaluating and reporting the adequacy of system controls, efficiency, economy, effectiveness, and security practices to assure that data integrity is protected, and that the system complies with applicable policies, procedures, standards, rules, laws and regulations". **(Majdalawieh & Zaghloul, 2008, pp. 353)**

As a result, business risk increases. IT auditing is needed to evaluate the adequacy of IS to meet processing needs, evaluate the adequacy of internal controls, and ensure that assets controlled by those systems are adequately safeguarded.

The evaluation of IS and IT by auditors has generated the term IT auditing. IT auditing is the evaluation of IT, practices, and operations to assure the integrity of an entity's information. Such evaluation can include assessment of the efficiency, effectiveness, and economy of computer-based practices. This involves the use of the computer as an audit

tool. The evaluation should also determine the adequacy of internal controls within the IT environment to assure valid, reliable, and secure information services.

The Computer auditor's evaluation of systems, practices, and operations may include one or both of the following:

- Assessment of internal controls within the IT environment to assure the validity, reliability, and security of information,
- Assessment of the efficiency and effectiveness of the IT environment in economic terms. **(Senft & Gallegos, 2009, p54)**

2.2.2 Objectives of IT Auditing

One primary purpose of IT auditing is to assess whether or not an information system is meeting stated organizational objectives and to ensure that the system is not creating an unacceptable level of risk for the business. The terms "assurance," "attestation," "audit," and "control" generally refer to this same general purpose, while each has a very specific meaning in context. The primary benefit of an IT audit is to ascertain with a certain level of confidence that an information system is working properly, e.g., that it processes inputs into outputs correctly, that only authorized individuals can access specific data and execute specific programs, and that data are stored correctly and securely. **(Merhout & Havelka, 2008, p465)**

IT auditing function is basically a support function for the attainment of conventional audit objectives. As has been described earlier, that IT auditing is the process of collecting and evaluating evidence to determine if an IS safeguards assets, maintains data integrity, achieves organizational goals effectively, and consumes resources efficiently.

The main objectives of IT auditing are as follows:

- review of soundness and adequacy of various operational controls, and promotion of these controls at a reasonable cost in the organization.
- ascertaining the extent of compliance with the policies, plans and procedures of the organization.
- ascertaining the extent to which the corporate IS resources are accounted and safeguard for various loss exposures.
- ascertaining the correctness and the completeness of the information processed through the IS in the organization.

• recommending various internal controls for maintaining data integrity in the IS.

• ascertaining the effectiveness and the efficiency of various information and communication technology hardware and software in the organization. **(Pathak, 2005, P5)**

2.2.3 Need for IT Audit

Management employing the use of IS have objectives and expectation of what they intend to achieve from the large investment made in utilizing technology. Reason for implementing ICT within the organization include the desire to obtain business value through reduced costs, greater effectiveness, enhanced efficiency and/or increased service delivery. It is against these objectives that an IT auditor is required to provide management assurance. Typically, Managements aims and objectives in utilizing technology to support business processes include: **(6th ASOSAI Research, 2003)**

- Confidentiality;
- Integrity;
- Availability;
- Reliability;
- Compliance with legal and regulatory requirements.

Underpinning these goals and objectives is the need to insure information technology, and the control supporting such technology, assists the organization to achieve its business objective (effectiveness) with appropriate use of resources (efficiency).

- **Confidentiality**

Consideration needs to be given to the level of sensitivity to the data, as this will determine how stringent controls over it access should be. Management need assurance of the organization‘s ability to maintain information confidential, as compromises in confidentiality could lead to significant public reputation harm, particularly where the information relates to sensitive client data.

- **Integrity**

This is an important audit objective to gain assurance on because it provides assurance to both management and external report users that the information produced by the organization‘s IS can be relied and trusted upon to make business decisions.

- **Availability**

Given the high-Risk nature of keeping important that organization gain assurance that the information they need for decision-making is available when required. This implies ensuring that recovery can be made in a timely manner from disaster so that information is available to users as and when required.

- **Reliability**

Reliability refers to the degree of consistency of system or the ability of system (or component) to perform its required function under stated conditions. Reliability is an important audit objective in order to provide assurance that the systems consistently operates and performs its stated functions as expected.

- **Compliance with legal and regulatory requirement**

"Compliance deals with complying with those laws, regulations and contractual obligation to which the business is subject, that is, externally imposed business criteria". Management and key stakeholders required assurance that necessary compliance procedures have been put in place, as there is a potential risk that the organization could incur penalties should legal and regulatory procedure not be enforced".

2.2.4 The Need for the IT Audit Function

Organizations continue to rely heavily on computer technology. With the increased reliance on computers to perform daily transactions and with the higher risks associated with new technology, management needs assurance that the controls governing its computer operations are adequate.

The Top Ten Reasons for the Start Up of IT Auditing

1. Auditing around the computer was becoming unsatisfactory for the purpose of data reliance.
2. Reliance on controls was becoming highly questionable.
3. Financial institutions were losing money due to creative programming.
4. Payroll databases could not be relied on for accuracy due to sophisticated programmers.
5. The security of data could no longer be enforced effectively.
6. Advancements occurred in technology.
7. Internal networks were being accessed by employees' desktop computers.
8. Personal computers became accessible for office and home use.

9. Large amounts of data required advanced software programs to audit them, known as CAATs.
10. The tremendous growth of corporate hackers, either internal or external, warranted the need for IT auditors. **(Senft & Gallegos, 2009, P55)**

2.2.5 Areas of IS audit

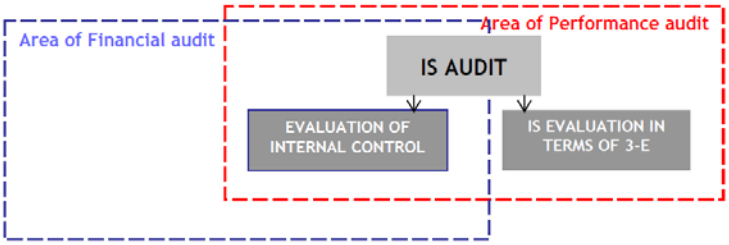
Application of IS audit may be divided into two areas:

1. Evaluation of internal control,
2. Evaluation of IS in terms of economy, efficiency, and effectiveness (hereinafter – 3Es) **(www.intosaiitaudit.org)**

In order to avoid problems of IS management and security protection general IS control methods were developed. Generally IS audit is meant to evaluate such control.
Evaluation of the audited entity's internal control is an area of financial and performance audits; therefore IS audit is a constituent part of financial and performance audits.

Evaluation of IS in terms of economy, efficiency, and effectiveness is a separate IS performance audit conducted following Performance Audit Manual (Figure 2.2.1)

Figure 2.2.1 Areas of IS Audit

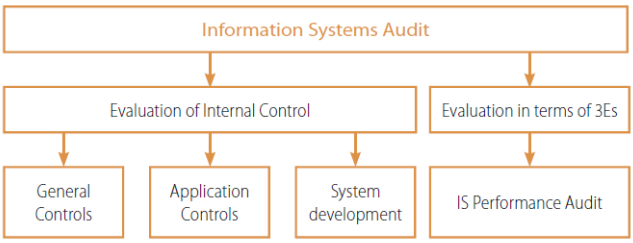


source:www.intosaiitaudit.org, 2006

2.2.6 Types of IS audit:

- Audit of IS general controls,
- Audit of application controls
- Audit of IS development controls
- IS performance audit. **(www.intosaiitaudit.org)**

Figure 2.2.2 Types of IS audit



Source: -www.intosaiitaudit.org- 2006.

2.2.6.1 General Control apply to all aspects of the IT function, including IT Administration; separation of duties; systems development; physical and online security over access to hardware, software, and related data; backup and contingency planning in the event of unexpected emergencies; and hardware controls. Because general control for the company as a whole.

The six categories of general control have an entity wide effect on all IT functions. Auditors typically evaluate general control early in the audit because of their impact on application controls. **(Arens et al, 2010, 372-376)**

- **Administration of the IT Function** The board of directors and senior management's attitude about IT affect the perceived importance of IT within an organization. Their oversight, resource allocation, and involvement in key IT decision each signal the importance of IT. In complex environments, management may establish IT steering committee to help monitor the organization's technology needs. In less complex organizations, the board may rely on regular reporting by a chief information officer (CIO) or other senior IT manager to keep management informed. In contrast, when management assigns technology issues exclusively to lower-level employees or outside consultants, an implied message is sent that IT is not high priority. The result is often an understaffed, underfunded, and poorly controlled IT function.
- **Separation of IT Duties** To respond to the risk of combining traditional custody, authorization, and record-keeping responsibilities by having the computer perform those tasks, well-controlled organization respond by separating key duties within IT. Ideally, responsibilities for IT management, systems development, operations, and data control should be separated as follows:

- **IT management.** The CIO or IT manager should be responsible for oversight of the IT function to ensure that activities are carried out consistent with the IT strategic plan. A security administrator should monitor both physical and online access to hard ware, software, and data files and investigate all security breaches.
- **Systems development.** Systems analysts, who are responsible for the overall design of each application systems, coordinate the development and change of IT systems by IT personal responsible for programming the application and personnel outside IT who will be the primary system user. Programmers develop flowchart for each new application, prepare computer instructions, test the programs, and document the results.

  Programmer should not have access to input data or computer operations to avoid using their knowledge of the system for personal benefit. They should be allowed to work only with test copies of programs and data so they can only make software changes after proper authorization.
- **Operations** computer operators are responsible for the day-to-day operations of the computer following the schedule establish by the CIO. They also monitor computer consoles for messages about computer efficiency and malfunctions.

  Network administrators also affect IT operations as they are responsible for planning, implementing, and maintaining operations of the network of servers that link user to various applications and data files.
- **Data control** Data input/ output control personnel independently verify the quality of input and reasonableness of output. For organization the use of database to store information shared by accounting and other functions, database administrators are responsible for the operation and access security of shared databases.

- **Systems development**

  There are various approaches to software development: traditional information systems development, purchasing and modifying a packaged system prototyping and rapid application development, and less formal end-user development. Although each approach is unique, they all have similar steps that must be completed. For example, each approach will have to define user requirements, design programs to fulfil those requirements, verify that programs work as

intended, and implement the system. Auditors need to understand the different approaches, the risks associated with a particular approach, and help ensure that all the necessary components are included in the development process.

A formal systems development process provides an environment that is conducive to successful systems development. This includes: (1) an information systems strategy that guides developers in building systems that are consistent with the organization's technical and operational goals, (2) standards that guide in the selection of hardware, software, and developing new systems, (3) policies and procedures that support the organization's goals and objectives, and (4) project management that ensures projects are completed on time and within budget. Auditors can assist organizations by reviewing the systems development process to ensure that developed systems comply with the organization's strategy and standards. **(Gallegos et al, 2004,pp 190)**

- **Physical and online security**

  Physical control over computers and restrictions to online software and related data files decrease the risk of unauthorized change to programs and improper use of programs and data files. Security plan should be in writing and monitored. Security controls include both physical controls and online access controls.

  - **Physical controls**. Proper physical control over computer equipment restrict access to hardware, software, and backup data file on magnetic tapes or disks, hard drivers, CDs, and external disks.
  - Online access controls. Proper user IDs and passwords control access to software and related data files, reducing the likelihood that unauthorized changes are made to software applications and data files. Separate add-on security software packages, such as firewall and encryption programs, can be installed to improve a system's security.

- **Backup and contingency planning**

  Power failures, fire, excessive heat or humidity, water damage, or even sabotage can have serious consequences to businesses using IT. To prevent data loss during power outages, many companies rely on battery backups or on site generators. For more serious disasters, organizations need detailed backup and

contingency plans such as off-site storage of critical software and data files or out sourcing to firms that specialize in secure data storage.

- **Hardware controls**

  Hard ware controls are built into computer equipment by manufactures to detect and report equipment failures. Auditors are more concerned with how the client handles errors identified by the hard ware controls than with their adequacy. Regardless of the quality of hardware controls, output will be corrected only if the client has provided for handling machine errors. **(Arens et al, 2010, pp376)**

2.2.6.2 Application controls

The following are two of the most common responses:

• Application controls are the automated controls, built into an application system, that help ensure the completeness, accuracy, timeliness and authorization of transaction processing for that application.

• Application controls are the activities (manual, automated or a combination thereof) that ensure the completeness, accuracy, timeliness and authorization of transaction processing for an application. **(Baker, 2009, p6).**

Application controls can be broken down into three main categories: input, processing, and output. **(Senft & Gallego, 2009, p386)**

- **Input Controls**

Input controls are meant to minimize risks associated with data input into the system. Defining input requirements ensures that the method of capturing the data is appropriate for the type of data being input and how it is subsequently used. Performance problems and accuracy issues can be introduced with non appropriate methods for capturing data.

Input controls ensure the authenticity, accuracy, completeness, and timeliness of data entered into an application. Authenticity is ensured by limiting access at the screen and field level and requiring secondary approvals of transactions above a defined threshold. Accuracy is ensured by edit checks that validate data entered before accepting the transaction for processing. Completeness is ensured through error-handling procedures that provide logging, reporting, and correction of errors. Timeliness is ensured through monitoring transaction flow, logging, and reporting exceptions.

- **Processing Controls**

Processing controls ensure the accuracy, completeness, and timeliness of data during either batch or online processing. These controls help ensure that the data is accurately processed through the application and that no data is added, lost, or altered during processing.

- **Output Controls**

Output controls ensure the integrity of output and the correct and timely distribution of the output produced. To be useful, information must be accurate and received in time to benefit decision making. Output controls include procedures to verify if the data is complete, accurate, and properly recorded; procedures for report distribution and retention; and procedures for correct output errors. If outputs are produced centrally, then conventional controls such as a security officer and distribution logs may be appropriate. If output is distributed over a data communication network, control emphasis shifts to access controls for individual workstations. Access to reports should be based on confidentiality.

- **Reconciliation**

Output should be verified against an independent source to verify accuracy. For example, transaction totals posted to the general ledger should be reconciled against the detailed balance due in the accounts receivable system. Data that is common to two or more applications should be reconciled to verify consistency. Often, applications are developed over time using the same information for different purposes.

- **Distribution**

Distribution of output is clearly defined and physical and logical access is limited to authorized personnel. The need for output should be regularly reviewed as reports may be requested at the time an application is developed but may no longer be useful. Also, the same information may be used for more than one system with different views, organization, and use.

- **Retention**

Because storage space (computer and physical) is expensive, retention periods and storage requirements should be defined for programs, data, and reports. Critical information should be stored securely (e.g., encrypted) and its destruction should be permanent and conducted in such a way as to prevent unauthorized viewing.

2.2.7 Evaluating IT Audit Quality

To ensure the value of audit assessments, audit management should implement a standard method for e valuating the quality of audits and auditors. Many companies have adopted "total quality management" (TQM). In a TQM environment, IA are measured against customer needs as well as traditional audit objectives.

An assessment form is included as a tool for evaluating both the quality of the audit and the performance of the auditor; a list of suggested assessment criteria is provided for each audit area. How audit managers can use the assessment form as a tool to communicate audit results to senior management, evaluate audit methodology, and develop a training program for staff members has also been

2.2.7.1 Terms of Assessment

Senior management must be able to trust that the IT auditor's report and recommendations are based on a complete and thorough investigation. The findings must be documented in detail in the audit work paper files associated with the IT audit and audit report.

To ensure that audit results are accurate, each IT audit should be reviewed. The review must assess the completeness, accuracy, and pertinence of the audit conclusions, findings, and recommendations. The IT audit management should review the results of the audit after the audit working papers and audit reports have been completed but before the audit report are issued and the closing meeting is held. Performing the review at this point allows identified weaknesses to be reviewed and corrected before audit conclusions are formally issued to senior management.

(Senft & Gallegos, 2009, p137)

2.2.8 Audit Documentation

Audit documentation is an essential element of audit quality. Although documentation alone does not guarantee audit quality, the process of preparing sufficient and appropriate documentation contributes to the quality of an audit**.**

The auditor must prepare audit documentation in connection with each engagement in sufficient detail to provide a clear understanding of

- The work performed, including the nature, timing, extent, and results of audit procedures performed.

• The evidence obtained and its source and the conclusions reached. **(Bragg, 2010, p280-281)**

2.2.8.1 Objectives of Audit Documentation

In Standard No. 3, the following are the objectives the PCAOB believes should be accomplished by audit documentation (work papers or working papers): **(Latshaw, 2004, p29)**

- Work papers are the written record of the basis for the auditor's conclusions that provide the support for the auditor's representations, whether those representations are contained in the auditor's report or otherwise.
- Audit documentation facilitates the planning, performance and supervision of the engagement.
- Audit documentation is the basis for the review of the quality of the work, because it provides the reviewer with written documentation of the evidence supporting the auditor's significant conclusions.

2.2.8.2 Evaluating the Quality of System Documentation

On the basis of user and IT staff inputs, as well as on the degree of difficulty experienced in constructing an audit data flow diagram, the auditor should be able to comment on the quality of system documentation. There are two basic questions to answer: Is the documentation accurate? Is the documentation complete?

To illustrate, if a federal auditor were examining IT internal control issues at a U.S. Navy computer facility, he or she might use the Standards for Internal Control in the Federal Government recently updated by the (U.S.) (GAO). This publication would provide a basis for assessing internal controls compliance to federal guidelines.

2.2.8.2.1 Assessing Controls over Documents

Control points identified during the preparation of the audit data flow diagram, along with information on controls developed in the background segment, should enable the auditor to identify system controls. With a diagram of this type, the auditor can determine whether the following controls are used:

- Turnaround documents. (These documents [manual or automated] should be returned to the originator to make sure that all documents were received and none were added during transmittal.)
- Record counts. (They [manual or system generated] should be maintained for all documents to make sure that none are added or lost.)
- Predetermined control totals. (For pay roll, predetermined control totals should be developed for important data items, such as hours worked, leave taken, hourly rates, gross pay, and deductions. The purpose is to make sure that records are not altered.)
- Run-to-run totals. (These totals should be maintained to assure that no records are added or lost during steps in the computer processing sequence.) **(Senft & Gallegos, 2009, p112-113)**

2.2.9 The structure of an IT Audit

The IT Audit is generally divided into three phase: audit planning, test of control, and substantive testing. The following illustrate the steps involved in these phases. **(Hall, 2007, p744)**

2.2.9.1 Audit planning

The first step in the IT audit is auditing planning. Before the auditor can determine the nature and extent of the rest of perform, he or she must gain a thorough understanding of client's business. A major part of this phase of the audit is the analysis of audit risk. The objective of the auditor is to obtain sufficient information about the firm to plan other phase of the audit. The risk analysis incorporates an overview of the organization's policies, practices, and structure. In this phase of the audit, the auditor also identifies the financially significant applications and attempts to understand the control over the primary transactions that are proceed by these applications.

The technique for gathering evidence at this phase includes questionnaires, interviewing management, reviewing systems documentation, and observing activities. During this process, The IT auditor must identify the principal exposure and the controls that attempt to reduce these exposures. Having done so, the auditor proceed to the next phase, where he or she the controls for compliance with pre-established standards.

2.2.9.2 Test of controls

The objective of the test of control phase is to determine whether adequate internal controls are in the place and functioning properly. To accomplish this, the auditor performs various tests of controls. The evidence gathering technique used in this phase may include both manual technique and specialized computer audit techniques.

At the conclusion of the tests of controls phase, the auditor must assess the quality of the internal controls. The degree of reliance the auditor can ascribe to internal controls affects the nature and extent of substantive testing.

2.2.9.3 Substantive Testing

The third phase of the audit process focuses on the financial data. This involved a detailed investigation of specific account balances and transaction through what are called substantive tests.

Some substantive tests are physical, labor intensive activities such as counting cash, counting inventories in the warehouse, and verifying the existence of stock certificates in a safe. In an IT environment, the information needed to perform substantive tests (such as account balance and name and addresses of individual customers) is contained in data files that often must be extracted using (CAATTs) software.

2.2.10 Assessing Audit risk and designing tests of controls

Audit risk is the probability that auditor will render an unqualified opinion on the financial statements that are, in fact, materially misstated. Material misstatement may be caused by errors or irregularities or both. Errors are unintentional mistakes. Irregularities are intentional misrepresentations to mislead the users of financial statements. The auditor's objective is to minimize audit risk by performing of controls and substantive tests. **(Hall, 2007, p745)**

2.2.10.1 Audit Risk Components

Audit risk: The risk that the auditor may unknowingly fail to appropriately modify his or her opinion on financial statements that are materially misstated. At the account balance or class of transactions level, it consists of the risk of material misstatement, and detection risk. **(Bragg, 2010, p21)**

The following are the components of risks:

2.2.10.1.1 Planned detection risk

Is the risk that audit evidence for a segment will fail to detect misstatements exceeding tolerable misstatement. Planned detection risk is dependent on the other three factors in the model. It will change only if the auditor changes one of the other risk model factors.

Planned detection risk determines the amount of substantive evidence that the auditor plan to accumulate, inversely with the size of planned detection risk. If planned risk detection risk is reduced, the auditor needs to accumulate more evidence to achieve reduced planned risk.

2.2.10.1.2 Inherent risk

Inherent risk is the likelihood of a significant loss occurring before taking into account any risk-reducing factors. In evaluating inherent risk, the auditor must consider what are the types of and nature of risks as well as what factors indicate a risk exists. To achieve this, the auditor must be familiar with the environment in which the entity operates. **(Cascarino, 2007, p28)**

2.2.10.1.3 Control Risk

Control risk measures the auditor's assessment of whether misstatement exceeding a tolerable amount in a segment will be prevented or detected on a timely basis by the client's internal control. Assume that the auditor conclude that internal control are completely ineffectively to prevent or detect misstatements.

2.2.10.1.4 Acceptable audit risk

Is a measure of how willing the auditors is to accept that the financial statement may be materially misstated after the audit is completed and an unqualified opinion has been issued. When auditors decide on a lower acceptable audit risk, they want to be more certain that the financial statements are not material misstated. **(Arens et al, 2010, p261-262)**

2.2.11 Using Computer-Assisted Audit Tools in the Audit Process

When assessing the effectiveness and integrity of the design and operation of controls, it is necessary for the auditor to test and evaluate these controls. The decision to test and evaluate is not related to the size of the firm but the complexity of the IT

environment. Therefore, CAATTs play a very important role in the performance of audit work.

CAATs can be used in a variety of ways to evaluate the integrity of an application, determine compliance with procedures, and continuously monitor processing results. Information systems auditors review application systems to gain an understanding of the controls in place to ensure the accuracy and completeness of the data. When adequate application controls are identified, the auditor performs tests to verify their effectiveness. When controls are not adequate, auditors must perform more extensive testing to verify the integrity of the data. To perform tests of applications and data, the auditor may use CAATs. Many tools and techniques have been developed that offer significantly improved management control and reduced costs if properly applied. Automated techniques have proven to be better than manual techniques when confronted with large volumes of information. The auditor, by using automated techniques, can evaluate greater volumes of data and quickly perform analysis on data to gather a broader view of a process.

There may be situations where the auditor may be required to conduct tests and evaluate IT controls and perform substantive tests to obtain sufficient information and evidence regarding financial statement assertions. Examples of some of these situations can be

- Applications or systems involving (EDI)
- Electronic payment systems that transmit electronic transactions from one company network to another
- Decision support systems that involve automatic reasoning or artificial intelligence or heuristic scenarios where they support decision making within the organization processes
- Applications that use technology such as neural network to assess financial conditions using ratio application in calculation of credit worthiness
- In systems where enterprise resource architecture is used to integrate the enterprise resource planning systems, blending legacy data with newer support systems
- In systems that provide electronic services of all types to customers, especially where the IT system initiates bills for services rendered and processes the billing transaction
- Computer programs that perform complex calculations involving money or resulting in a financial decision, present or future, such as reorder points,

commissions, retirement or pension funds, and collection of accounts. (**Lin & Wang, 2011, p. 777)**

2.2.12 ISACA (Information Systems Audit and Control Association) Standards:

The framework for the IS Auditing Standards provides multiple levels of guidance: **(Cascarino, 2007, p47-48)**

■ ***Standards*** define mandatory requirements for IS Auditing and reporting. They inform:

- IS Auditors of the minimum level of acceptable performance required to meet the professional responsibilities set out in the ISACA Code of Professional Ethics for IS Auditors
- Management and other interested parties of the profession's expectations concerning the work of practitioners
- Holders of the Certified Information Systems Auditor™ (CISA) designation of requirements. Failure to comply with these standards may result in an investigation into the CISA holder's conduct by the ISACA Board of Directors or appropriate ISACA committee and, ultimately, in disciplinary action.

■ **Guidelines** provide guidance in applying IS Auditing Standards. The IS Auditor should consider them in determining how to achieve implementation of the standards, use professional judgment in their application, and be prepared to justify any departure. The objective of the IS Auditing Guidelines is to provide further information on how to comply with the IS Auditing Standards.

■ **Procedures** provide examples of procedures an IS Auditor might follow in an audit engagement. The procedure documents provide information on how to meet the standards when performing IS Auditing work, but do not set requirements. The objective of the IS Auditing Procedures is to provide further information on how to comply with the IS Auditing Standards.

Control Objectives for Information and related Technology (COBIT) resources should be used as a source of best practice guidance. Each of the following is organized by IT management process, as defined in the COBIT *Framework*. COBIT is intended for use by business and IT management as well as IS Auditors; therefore its usage enables the

understanding of business objectives and communication of best practices and recommendations, to be made around a commonly understood and well-respected standard reference.
COBIT includes:

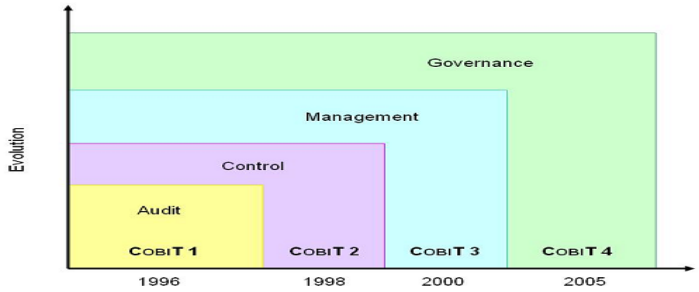
- **Control objectives.** High-level and detailed generic statements of minimum good control
- **Control practices.** Practical rationales and how-to-implement guidance for the control objectives
- **Audit guidelines.** Guidance for each control area on how to obtain an understanding, evaluate each control, assess compliance, and substantiate the risk of controls not being met
- **Management guidelines.** Guidance on how to assess and improve IT process performance, using maturity models, metrics, and critical success factors

2.2.13 COBIT

COBIT combines business and IT goals, providing the ability to monitor the maturity of the information metric system. COBIT enables management to optimize IT resources such as applications, information, infrastructure and people. The practice recommended by COBIT is the mixture of knowledge of numerous experts as a result of good practice, applicable in any organization.

The first version of COBIT was created as a tool to in order to support performance of audit of financial statements, but it continues further to develop following development of the IT role in business. By releasing second versions it became the most frequently used methodology for audit of information systems worldwide. Through further development and publishing of third version in the year 2004, COBIT became integrated framework for IT management, while the last version of COBIT 4.1 represents the major framework and methodology for IT governance. Figure 2.2.3 shows the development of the COBIT framework and roles it has had through his development and upgrading. **(Radovanovi et al, 2010, 1137)**

Figure 2.2.3 Development COBIT



Source: (Radovanovi et al, 2010, 1137)

The main objective of the COBIT framework is to support clear policies and good practices for security and control in IT, with worldwide endorsement by commercial, governmental and professional organizations. COBIT is designed for three distinct audiences:

- Management: COBIT helps management balance and mitigate risk in an unpredictable IT environment.
- Users: COBIT helps assure users of the security and controls of IT services provided by internal or third parties.
- Auditors: COBIT helps auditors in fairly assessing company claims regarding the company controls that are in place.

2.2.13.1 HOW COBIT MEETS THE NEED

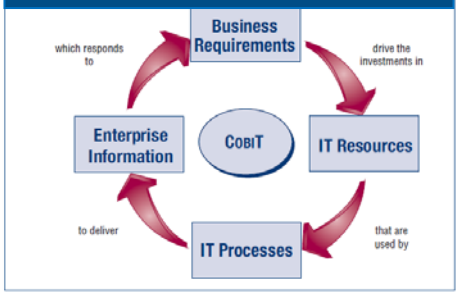
COBIT framework was created with the main characteristics of being business-focused, process-oriented, controls-based and measurement-driven. **(IT Governance Institute 2007)**.

2.2.13.1.1 Business-focused

Business orientation is the main theme of COBIT. It is designed not only to be employed by IT service providers, users and auditors, but also, and more important, to provide comprehensive guidance for management and business process owners.
The COBIT framework is based on the following principle (**Figure 2.2.4**).

To provide the information that the enterprise requires to achieve its objectives, the enterprise needs to invest in and manage and control IT resources using a structured set of processes to provide the services that deliver the required enterprise information.
Managing and controlling information are at the heart of the COBIT framework and help ensure alignment to business requirements.

Figure 2.2.4 – Basic COBIT Principle



Source: (IT Governance Institute. 2007)

2.2.13.2 COBIT'S INFORMATION CRITERIA

To satisfy business objectives, information needs to conform to certain control criteria, which COBIT refers to as business requirements for information. Based on the broader quality, fiduciary and security requirements, seven distinct, certainly overlapping, information criteria are defined as follows:

- **Effectiveness** deals with information being relevant and pertinent to the business process as well as being delivered in a timely, correct, consistent and usable manner.
- **Efficiency** concerns the provision of information through the optimal (most productive and economical) use of resources.
- **Confidentiality** concerns the protection of sensitive information from unauthorized disclosure.
- **Integrity** relates to the accuracy and completeness of information as well as to its validity in accordance with business values and expectations.
- **Availability** relates to information being available when required by the business process now and in the future. It also concerns the safeguarding of necessary resources and associated capabilities.

- **Compliance** deals with complying with the laws, regulations and contractual arrangements to which the business process is subject, i.e., externally imposed business criteria as well as internal policies.
- **Reliability** relates to the provision of appropriate information for management to operate the entity and exercise its fiduciary and governance responsibilities.

2.2.14 The Role of the IT Auditor

The auditor evaluating today's complex systems must have highly developed technical skills to understand the evolving methods of information processing. Contemporary systems carry risks such as non-compatible platforms, new methods to penetrate security through communication networks (e.g., the Internet), and the rapid decentralization of information processing with the resulting loss of centralized controls.

Auditing the processing environment is divided into two parts. The first and most technical part of the audit is the evaluation of the operating environment, with major software packages (e.g., the operating and security systems) representing the general or environmental controls in the automated processing environment. This part is usually audited by the IT audit specialist. The second part of the processing environment is the automated application, which is audited by the general auditor who possesses some computer skills.

As the use of IT in organizations continues to grow, auditing computerized systems must be accomplished without many of the guidelines established for the traditional auditing effort. In addition, new uses of IT introduce new risks, which in turn require new controls. IT auditors are also in a unique position to evaluate the relevance of a particular system to the enterprise as a whole. Because of this, the IT auditor often plays a role in senior management decision making. **(Senft & Gallegos, 2009, P63)**.

2.3 Internal control

2.3.1 Definition of Internal control:

Internal control system is a process which the management, and not the auditor only, is responsible for designing, implementing and maintaining the entity's internal control, which helps in meeting their objectives beside preparing and providing fairly information to the users.

Internal control may be defined simply as a system's capability to prevent or detect material accounting errors and provide for their correction on a timely basis. **(Robertson, 1996, p34)**

In 1977 the French Institute of Chartered Accountants defined internal control is the set of security measures which contribute to the control of a company. Its aim is to ensure, on the one hand, the security and safeguard of assets and the quality of information, on the other hand, the application of instructions given by Senior Management, and to encourage improvements in performance. It is evidenced through the organization, methods and procedures for each of the company's activities, so as to ensure the continuity of that company." **(AMF report, 1977)**

The Committee of Sponsoring Organizations of the Treadway Commission (COSO), internal control: Integrated Framework (1985), defines Internal Control as a process, effected by an entity's board of directors, management and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in the following categories: **(COSO report, 1992)**

1. Effectiveness and efficiency of operations.
2. Reliability of financial reporting.
3. Compliance with applicable laws and regulations.

The New York state office of the State Comptroller (2004) defined internal control as the integration of the activities, plans, attitudes, policies, and efforts of the people of an organization working together to provide reasonable assurance that the organization will achieve its objectives and mission."

Lander defined internal control as a process designed by, or under the supervision of, the company's principal executive and principal financial officers and implemented by the company's board of directors, management and other personnel to provide reasonable for

the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. **(Hurt, 2007, p52)**

Internal control is a ways, techniques and procedures used by the firm management to protect their assets and properties from tampering, theft, embezzlement, and the firms can get of the accurate accounting data's, which can be relied upon in planning and decision-making processes. **(Jarbou, 2002, p155)**

From the definitions we noticed that internal control is a process, which all the personnel of the entity is involved especially the management and the accountant, to provide a reasonable assurance regarding the achievement of the entity's objective by doing the operation efficiently and effectively, and preparing a reliability financial reports for the users.

2.3.2 The importance of the Internal Control system

A company's internal control system has a key role in the management of risks that are significant to the fulfillment of its business objectives. A sound system of internal control contributes to safeguarding the shareholders' investment and the company's assets.

Internal controls facilitate the effectiveness and efficiency of operations, helps ensure the reliability of internal and external reporting and assists compliance with laws and regulations.

Effective Financial controls, including the maintenance of proper accounting records, are important elements of internal control. They help ensure that the company is not unnecessarily exposed to avoidable financial information used within the business and for publication is reliable. They also contribute to the safeguarding of assets, including the prevention and detection of fraud.

A company's objectives, its internal organization and the environment in which it operates are continually evolving and, as a result, the risk it face are continually changing. A sound system of internal control therefore depends on a through and regular evaluation of the nature and extent of the risks to which the company is exposed. Since profits are, in part, the reward for successful risk-taking in business, the purpose of internal control is to help manage and control risk appropriately rather than to eliminate it. **(The Institute of Charted Accountants in England & Wales)**

2.3.3 Internal Control Components:

The COSO Report identifies five components of internal control that have an impact on an organization's ability to achieve the internal control objectives.

1. Control environment:

Refers to the tone of the organization, it begins at the top of the organization and permeates throughout every level of the entity. **(Hurt, 2007, p57)** The control environment means the overall attitude, awareness, and actions of directors and management regarding the internal control system and its importance in the entity. The control environment has a pervasive influence on the way business activities are structured, the way objectives are established, and the way risks are assessed. The control environment is influenced by the entity's history and culture. It influences the control consciousness of its people. **(Hayes et al, 2005, p232)**

It is the foundation for all other component of internal control. It provides discipline and structure. Control environment factors include the integrity, ethical values, and competence of the company's people. **(Robertson, 1996, 193)** To develop and sustain a strong control environment, managers and other influential people in the organization should

a. Be committed to integrity and ethical behavior.
b. Demonstrate a commitment to competence in carrying out their duties and responsibilities.
c. Actively seek the participation of the board of directors and its audit committee in decision related to internal control.
d. Maintain a consistent, appropriate management philosophy and operating style.
e. Assign authority and responsibility with integrity and the best interests of the organization in mind.
f. Develop and enforce human resource policies and practices that encourage all employees to maintain a sound internal control system.

Internal environment is the foundation for all other components of internal control, providing discipline and structure. **(Hurt, 2007, p57)**

2. Risk Assessment:

Is the identification and analysis of risks that interfere with the accomplishment of internal control? Management must identify the risks by using a business experience, research, and dialogue, and then assess these risks to design appropriate, cost-effective internal control to minimize the possibility that significant losses may arise from various events and circumstance that create risks change.

3. Control Activities:

Refers to the actual internal controls implemented on the basis of the risk assessment. Control Activities are the policies and procedures developed by the organization to address the risks. Control activities include: **(Jarbou, 2008, p87)**

A. Performance reviews are activities involving analysis of performance, for example, by comparing actual results with budgets, standards forecasts, and prior-period data.

B. Information processing A variety controls, applied to AIS applications, are performed to check accuracy, completeness, and authorization of transactions. The two grouping of information systems control activities are General controls and Application controls.

- **General controls** are concerned with the broad structure of the computer department and its relationship to the operating departments. One of the most important controls is the organizational structure of the computer department. General controls commonly include control over the process of developing and maintaining application software.
- **Application Controls** are narrower and apply to the processing of individual applications. These controls help ensure the completeness and accuracy of transaction processing authorization, and validity. The three categories of application controls are Input controls, Processing controls, and Output controls.

C. Physical Controls Activities encompass the physical security of assets, Authorization for access to computer programs and data files, and Periodic counting and comparison with amounts shown on control records.

D. Segregation of duties seeks to prevent persons with access to readily realizable assets from being able to adjust the records that record and thereby control those assets. Duties are divided, or segregated, among different people to reduce the risks of error or inappropriate actions. For instance, responsibilities for authorizing transactions, recording them, and handling the related assets (called custody of assets) are divided.

Segregation of duties entails three fundamental functions that must be separated and adequately supervised:

1. **Authorization** is the delegation of initiation of transactions and obligations on the company's behalf.
2. **Custody** is physical control over assets or records.
3. **Recording** is the creation of documentary evidence of a transaction and its entry into the accounting records.

Control activities can be *Preventive controls* help to prevent errors and irregularities from happening. *Detective Controls* help to stakeholders determine when an error or irregularity has occurred. Finally, *Corrective Controls* focus in fixing a problem, error, or irregularity after it has occurred. **(Jarbou, 2008, p87)**

4. Information and communication:

The company's information system is a collection of procedures (automated and manual) and records established to initiate, record, process, and report the events in an entity's process.

Communication involves providing an understanding of individual roles and responsibilities.

5. Monitoring:

Management should monitor internal control in a systematic manner to make sure that the organization's control is functioning as intended. **(Jones and Rama, 2006, p105)**

Management should assess the quality of its control performance on a timely basis. Monitoring includes regular management and supervisory activities and other actions personnel takes in performing their duties. Errors, irregularities, and internal control deficiencies should be reported to top management and to the audit committee of the

board of directors. Monitoring helps ensure that internal control continues to operate effectively. **(Robertson, 1996, p193)**

2.3.4 Reasons for internal control Evaluation:

A useful, though unofficial, definition of internal control related to a company's financial reporting objectives is "All the policies and procedures a company uses to prevent, detect, and correct errors, irregularities, and frauds that might get into financial statements." You can properly infer that such control enable a company to safeguard its assets from unauthorized disposition and prepare financial statements in conformity with generally accepted accounting principles.

The auditor's task is to assess the control risk association with the control management design and implemented for the period under audit. Control risk is the probability that a company's control will fail to detect errors, irregularities, and frauds, provided any enter the accounting systems in the first place. Control risk is a characteristic of the client's controls. The auditor's assessment is to assign an evaluation to the control risk. Many auditors conclude the internal control risk assessment decision with a descriptive assessment and some auditors put probability numbers on it. **(Robertson, 1996, p191)**

2.3.5 Internal Control Objectives:

Different stakeholders (stockholders, managers, customers, and employees0 may be concerned with different objectives. Stockholders may be primarily concerned with objectives related to share value. The marketing manager may be most interested in objectives related to market share, sales, and customer satisfaction. The COSO report indicates the internal control objectives:

- Effectiveness and efficiency of operations.
- Reliability of financial reporting.
- Compliance with applicable laws and regulations.
- Safeguarding assets.

We can classify the internal control system objectives in four categories: **(Jones, Rama, 2006, p106)**

1. **Execution Objectives:**

   It refers to the delivery of goods or services and the collecting and handling of cash. Accordingly, execution would include activities in which the company is releasing inventory and using other resources (e.g. labor and equipments) for providing services and handling the resulting cash.

2. **Information System Objectives:**

   It focuses on recording, updating, and reporting accounting information. Information system objectives are also important for ensuring effective execution of transactions.

3. **Assets Protection Objectives:**

   Refers to safeguarding assets from theft or loss of assets.

4. **Performance Objectives:**

   Focus on achieving favorable performance of an organization, person, department, product or services.

2.3.6 Roles and Responsibilities:

Everyone in the organization has some role to play in the organization's internal control system. **(AICPA, 2000)**

1. ***Chief executive officer (CEO)***

   The CEO has ultimate responsibility and ownership of the internal control system. The individual in this role sets the tone at the top that affects the integrity and ethics and other factors that create the positive control environment needed for the internal control system to thrive. Aside from setting the tone at the top, much of the day-to-day operation of the control system is delegated to other senior managers in the company, under the leadership of the CEO.

2. ***Chief financial officer (CFO)***

   Much of the internal control structure flows through the accounting and finance area of the organization under the leadership of the CFO. In particular, controls over financial reporting fall within the domain of the chief financial officer. The audit

committee should use interactions with the CFO, and others, as a basis for their comfort level on the internal control over financial reporting.

This is not intended to suggest that the CFO must provide the audit committee with a level of assurance regarding the system of internal control over financial reporting. Rather, through interactions with the CFO and others, the audit committee should get a gut feeling about the completeness, accuracy, validity, and maintenance of the system of internal control over financial reporting.

3. Controller (director of finance)

Much of the basics of the control system come under the domain of this position. It is key that the controller understands the need for the internal control system, is committed to the system, and communicates the importance of the system to all people in the accounting organization. Further, the controller must demonstrate respect for the system though his or her actions.

4. Internal audit

A main role for the internal audit team is to evaluate the effectiveness of the internal control system and contribute to its ongoing effectiveness. With the internal audit team reporting directly to the audit committee of the board of directors and/or the most senior levels of management, it is often this function that plays a significant role in monitoring the internal control system. It is important to note that many not-for-profits are not large enough to employ an internal audit team. Each organization should assess the need for this team, and employ one as necessary.

5. Board of director/audit committee

A strong, active board is necessary. This is particularly important when the organization is controlled by an executive or management team with tight reins over the organization and the people within the organization.

The board should recognize that its scope of oversight of the internal control system applies to all the three major areas of control: over operations, over compliance with laws and regulations, and over financial reporting. The audit committee is the board's first line of defense with respect to the system of internal control over financial reporting.

6. All other personnel

The internal control system is only as effective as the employees throughout the organization that must comply with it. Employees throughout the organization should

understand their role in internal control and the importance of supporting the system through their own actions and encouraging respect for the system by their colleagues throughout the organization.

2.3.7 Types of internal control:

Controls can be preventive, detective, or reactive, and they can have administrative, technical, and physical implementations. Examples of administrative implementations include items such as policies and processes. Technical implementations are the tools and software that logically enforce controls (such as passwords). Physical implementations include controls such as security personnel and locked doors. **(Figure 2.3.1) (Davis & Schiller, 2011, p38)**

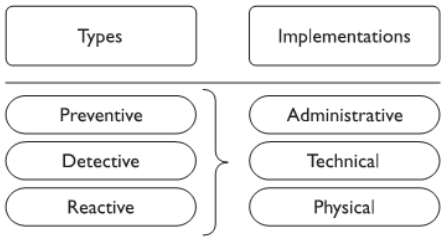
Controls can be classified into: **(Cascarino, 2007, p61-62)**

- ***Preventative controls***, which occur before the fact but can never be 100% effective and therefore cannot be wholly relied upon. These could include controls such as restrictions on users, requirements for passwords, and separate authorization of transactions.
- ***Detective controls***, which detect irregularities after occurrence and may be cheaper than checking every transaction with a preventative control. Such controls could include effective use of audit trails and the use of exception reports.
- ***Corrective controls*** ensure the correction of problems identified by detective controls and normally require human intervention within the IS. Controls in this area may include such processes as Disaster Recovery Plans and transaction reversal capabilities. Corrective controls are themselves highly error-prone because they occur in unusual circumstances and typically require a human decision to be made, and an action decided upon and implemented. At each stage in the process a subsequent error will have a multiplier effect and may compound the original mistake.
- ***Directive controls*** are designed to produce positive results and encourage acceptable behaviour. They do not themselves prevent undesirable behaviour and are normally used where there is human discretion in a situation. Thus, informing all users of personal computers that it is their responsibilities to ensure adequate backups are taken and stored appropriately does not, of itself, enforce compliance. Nevertheless, such a directive control can be monitored and action taken where the control is breached.

- ***Compensating controls*** can be seen to exist where a weakness in one control may be compensated by a control elsewhere. They are used to limit risk exposure and may trap the unwary evaluator. This is particularly true where the auditors are faced with complex integrated systems and the control structures involve a mixture of system-driven and human controls scattered over a variety of operational areas.

In general, then, management and the auditor must always bear in mind that under-control is cheap to implement but may cost you the organization, while over-control is expensive and ultimately paralyzing.

Figure 2.3.1 Types of internal controls and their implementation



(Davis & Schiller, 2011, p38).

2.3.8 How information technology improve the internal control

Most entities, including small, family-owned businesses, rely on IT to record and process business transactions. As a result of explosive advancements in IT, even relatively small business use personal computer with commercial accounting software for their accounting. As business grow and have increased information needs, they typically upgrade their IT systems. The accounting function's use of complex IT networks, the internet, and centralized IT function is now commonplace. **(Arens et al, 2011, P370)**

These several changes in internal control resulting from the integration of IT into accounting systems:

- *Computer control replaces manual controls.* The obvious benefit of IT is the ability to handle large amounts of complex business transaction cost effectively. Because computer process information consistently, IT systems can potential reduce misstatements by replacing manual procedures with automated control that apply

checks and balances to each processed transactions. This reduce the human errors that often occur in manually processed transactions.

Computers now do many internal control activities that once were done by employees, including comparing customer and product numbers with master files and comparing sales transaction amount with preprogrammed credit limits. Online security controls in applications, databases, and operating systems can improve separation of duties, which reduce opportunities for fraud.

- *Higher-quality information is available.* Complex IT activities are usually administered effectively because the complexity requires effective organization, procedures, and documentation. This typically results in providing management with more and higher-quality information, faster than most manual systems. Once management is likely to use the information for better management decisions. **(Arens et al, 2011, P370)**

Chapter 3

Information systems & Auditing in Banks Working in Gaza

Introduction

The banking sector plays a vital role in the development of the local economy in terms of increasing the effectiveness and efficiency of the role of financial intermediation. The Palestinian banking sector evolution after the advent of the National Authority in 1994 where they built the Palestinian Monetary Authority, which serve as the nucleus of the Central Bank. The monetary authority was assigned to rebuild the Palestinian banking system. **(Bahloul, 2004)**

Palestinian banking sector started to grow at a rapid pace and followed the developments of banking management and technology in the surrounding countries, and became efficient and highly qualified. The banking sector consists of the Palestinian Monetary Authority, eighteen banks offering their services in various Palestinian areas which have reached 175 branches and offices at the end of 2010 (appendix 2) divided by 143 branches and offices in the governorates of the West Bank and 32 branches and offices in the governorates of the Gaza Strip **(PMA, 2011)**

3.1 Banking Sector in Palestine:

Banking sector in Palestine is managed by Palestinian Monetary Authority (PMA) which is "The emerging Central Bank of Palestine. Its overall purpose is to ensure the stability and effectiveness of the Palestinian financial system" (PMA, 2011).

"PMA Promote sustained economic and financial growth of the Palestinian economy through the following" (PMA, 2011):

- "Effective and transparent regulation and supervision of Banks operating in Palestinian territory".
- "Development and deployment of Monetary Policy designed to achieve price stability".
- "Overseeing the implementation and operation of modern, efficient payment systems".

"PMA was initially established in 1994 by presidential decree as an independent institution and later by an act of the Palestine Legislative Council PMA Law No. (2) of 1997 which outlined the full authority and autonomy of the PMA" (PMA, 2011).

"Currently, there are eighteen banks operating in Palestine through a network of more than two hundred branches and representative offices. Of this total, there are eight local banks that include two Islamic banks and ten foreign banks that comprise of eight Jordanian banks, one Egyptian bank in addition to one branch for the HSBC. Two of the banks operating in Palestine are Islamic and the remaining are commercial non-Islamic banks" (PMA, 2011).

The Palestinian banking sector is well-regulated and operates in an efficient and effective manner. "Banks are governed by and fully-adhered to the Banking Law No. (2) of 2002 and its explanatory instructions. In addition, banks comply with the best international banking practices, particularly, the Core Principles of Banking Supervision and its methodology, principles of good corporate governance, Basel I accord, and work is underway to apply the revised international capital framework or Basel II accord". (PMA, 2011)

3.2 Classification of banks operating in Palestine:

There are 18 banks working in Palestine (See Appendix 2), and they are divided into two parts **(Journal of banks in Palestine, 2010):**

1- local banks: The banks that have the Palestinian nationality and numbering 8 banks, where only 5 banks are working in the governorates of the Gaza Strip (Bank of Palestine, Arab Islamic Bank, Islamic Bank of the Palestine, Al Quds Bank for Development and Investment, Palestinian investment bank).
2- Foreign banks: There are 10 banks that have a different nationality other than Palestinian, and are divided into Egyptian, Jordanian, and foreign banks.

3.3 Bank of Palestine Audit Committee

Introduction

The following sequence is a summary of the main issues of the committee of auditing in Bank of Palestine: **(Bank of Palestine)**

-Roles and responsibilities of the committee
-The committee formation
-Procedures of the committee work
-Other practices

The regulations in the charter of the auditing committee are obligatory for Bank of Palestine, based on the conditions and requirements mentioned in the guidelines criteria and other regulations from the Palestinian Capital market Commission, the monetary authority and status and rules of procedures of Bank of Palestine.

A. Roles and responsibilities of the committee:

A-1 General Roles and Responsibilities of the committee:

The committee's role is to help the board follow up the tools of financial monitoring of the bank, with focus on:

1. The impartiality of tools of inspect and internal audit and safeguard of the financial audit of the bank, as well as its external audit.

In order to do its role effectively, the committee has the following authority and responsibilities:

- Review the internal monitoring systems of the bank.
- Review the reports of the inspection, monitoring and internal audit section, and the commitment and discipline including the financial and other issues, as well as the corrective actions and ways of controlling the risks that the bank encounter.
- Review the accuracy of the financial lists submitted to the board members, contributors and other users.
- Review the commitment of the Bank towards the rules, regulations, systems and instructions provided by the monetary authority and rules of the bank board, along with the other legislations in Palestine.

- Review the annual and quarterly financial documents of the bank and other financial information submitted to the board members and the contributors.
- Review the plan of the external audit and make sure that the plan has all the bank activities.
- Guarantee the accuracy and impartiality of all accounts and abide by the rules and regulations of the bank.
- Develop the criteria of expressing opinion and criteria of transparency, to be submitted to the board members of the bank for approval.
- Review the notes and comments in the reports of the monetary authority and follow up the procedures implemented, as well as to assure they are being implemented and provide recommendations for the board members.
- Coordinate with the facilitating and risks committee to discuss the financial performance of the bank.
- Do a study of the applied financial system of the bank and provide recommendations for improvements, and to make sure that the recommendations match the situations in a just way and not record any false information.
- Apply a system that allows employees to report secretively their fears and concerns about possible violations, in a way that would allow to investigate those violations independently and to follow them up without those who reported being exposed to abashment or punishment from their boss, or to be treated badly from their colleagues. The monitoring and audit committee is responsible for monitoring the implementation of such procedures.
- Connect the board members with the external audit, and with the internal audit, and connect the internal audit with the external audit.
- Follow up the commitment of the bank to the regulations of the professional behavior.
- Inform the board members of the topics that need an urgent and immediate intervention and provide recommendations for remedial procedures.
- The committee provides reports to the board members regarding everything related to its specialty, so the board members will be able to monitor the bank management and provide authentic and documented information for the contributors.

- Do any activity related to the charter if the board members request or once needed according to the regulations of the bank**.**

A-2 Private and specific responsibilities: The independent external audit.

The committee of the audit monitors the work of the external audit of the bank. The charter includes the main requirements, roles and responsibilities of the external audit and the responsibilities of the committee in this regard as follows:

- Review the preparation and implementation of the annual action program of the external audit in the bank.
- Review the power of the external audit and inform the board members and the general assembly of the recommendations of the committee regarding the fees of the audit and the general conditions of the service provided by the independent external audit.
- Review annually the external audit report, which gives a detailed description of relationships between external audit and the bank, or its management board or its contributors, or any other party related to it that might negatively affect the independency of the audit work.
- Review annually the reports of the external audit that describes the procedures and practices of the external audit for monitoring quality, besides other main issues that can be brought up during the last quality monitoring, and other clarifications or investigations about the processes of auditing of the last 5 years by the governmental authorities or professional criteria councils, besides the procedures applied to deal with such issues.
- Review all conditions of services not apt to audit that the bank administration suggests the external audit performs and evaluates such services according to the bank policy when dealing with the independent external audit, later provides a report to the board members of the committee's opinion if the bank is supposed to delegate the task to the external audit or not.
- Conduct annual assessment for the qualifications, independency and performance of the external audit, and inform the board members and the general assembly of the committee's opinion regarding its efficiency of its performance and its dependency. The report includes the committee's recommendation on re-assigning an external audit or terminate his contract, if

necessary suggesting an alternative company. Later, the report is submitted to the general assembly.

- Annual review for the bank policies regarding choosing the external audit, and the bank policy vis-à-vis the shifts between the external audit and the partners of the audit, and inform the board members of the recommendations of the committee with any modifications on those policies.

- Annual review in coordination with the bank administration, the external audit, and the monitoring and inspection sector on the following:

1. The issues and main regulations of the financial reports that were produced within the financial lists of the bank.

2. The main issues of the accounting principles and practices and auditing of the bank, including the main accounting policies, or any changes in the principles of auditing and accounting suggested by the external audit, the internal audit and the financial monitoring sector in the bank or the bank administration.

3. Any auditing related problems or obstacles the external audit face, including any restrictions on the activities or to have access to the employees or information, or any dispute with the bank administration or the members of the internal audit or inspection and mentoring sector.

4. The accounting principles that the monitoring parties or accounting authorities suggest or adopt to which the attention's external audit, bank administration, internal audit, inspection and mentoring section or the bank board members is drawn.

A-3 Specific Responsibilities: The internal audit and the function of the internal auditing

The committee if review and auditing is responsible for the following:

- Supervise the quality and efficiency of internal monitoring tools in the bank in cooperation with the financial manager of the bank, the internal auditing, the inspection and monitoring section and other related parties.

- Review the preparation, implementation and results of the annual work program of inspection and monitoring section, the internal audit of the bank, besides any activities implemented and not related to the annual program through the cooperation with the internal audit of the bank.

- Review the hierarchy, responsibilities, staff, resources and functions of inspection and monitoring section and the internal audit of the bank in cooperation with internal audit, and to submit a report to the board members concerning the review. The report should include the annual evaluation of the performance and qualifications of the manager of inspection and monitoring section.
- Hire and evaluate the performance of the rest of cadres of the sections mentioned above based on a recommendation from their managers and identify their salaries and annual promotions.

A-4 Specific Responsibilities: Financial Reports.

The committee of review and auditing is responsible for the following:

-Evaluate the impact of any complex or unusual deal- for example the fees details and other issues- on the financial lists of the bank.

-Study received judgments during preparing the financial lists of the bank including evaluating guarantees, products, or environmental responsibilities and legal cautions, or any urgent issues.

-Evaluate the justice of such lists the initial and the temporary ones, as well as the operations of speaking up and getting clarifications from the bank management, and the external audit and the internal audit whether:

1.The actual financial results of the temporary period differs from the incoming or expected results in the budget.

2. The changes in the percentages and financial correlates in the temporary financial lists match with the changes in the bank operations and its financial practices.

3. The international criteria for preparing the financial reports, and the international accounting criteria are applied correctly or not.

4. Initial news and temporary financial lists have enough and appropriate parts of news given.

5. Study the applied financial system in the bank and provide recommendations for improvement, as well as make sure that the recommendations match with the financial situation and not record incorrect information.

Chapter 4

Research Methodology

Data Measurement

In order to be able to select the appropriate method of analysis, the level of measurement must be understood. For each type of measurement, there is/are an appropriate method/s that can be applied and not others. In this research, ordinal scales were used. Ordinal scale is a ranking or a rating data that normally uses integers in ascending or descending order. The numbers assigned to the important (1,2,3,4,5) do not indicate that the interval between scales are equal, nor do they indicate absolute quantities. They are merely numerical labels. Based on Likert scale we have the following:

Item	***Strongly agree***	***Agree***	***Neutral***	***Disagree***	***Strongly Disagree***
Scale	5	4	3	2	1

Test of Normality for each field:

Table (4.1) shows the results for Kolmogorov-Smirnov test of normality. From Table (4.1), the p-value for each field is greater than 0.05 level of significance, then the distribution for each field is normally distributed. Consequently, Parametric tests will be used to perform the statistical data analysis.

Table 4.1: Kolmogorov-Smirnov test

Field	Kolmogorov-Smirnov	
	Statistic	**P-value**
General controls of information systems Auditing	0.915	0.372
Information systems performance	0.987	0.284
All paragraphs of the questionnaire	1.106	0.173

Statistical analysis Tools

The researcher used both qualitative and quantitative data analysis methods. The Data analysis made by utilizing (SPSS 20). The researcher would utilize the following statistical tools:

1) Kolmogorov-Smirnov test of normality.
2) Pearson correlation coefficient for Validity.
3) Cronbach's Alpha for Reliability Statistics.
4) Frequency and Descriptive analysis.
5) Parametric Tests (One-sample T test).

T-test is used to determine if the mean of a paragraph is significantly different from a hypothesized value 3 (Middle value of Likert scale). If the P-value (Sig.) is smaller than or equal to the level of significance, $\alpha = 0.05$, then the mean of a paragraph is significantly different from a hypothesized value 3. The sign of the Test value indicates whether the mean is significantly greater or smaller than hypothesized value 3. On the other hand, if the P-value (Sig.) is greater than the level of significance $\alpha = 0.05$, then the mean a paragraph is insignificantly different from a hypothesized value 3.

Validity of Questionnaire

Validity refers to the degree to which an instrument measures what it is supposed to be measuring. Validity has a number of different aspects and assessment approaches. Statistical validity is used to evaluate instrument validity, which include internal validity and structure validity.

Internal Validity

Internal validity of the questionnaire is the first statistical test that used to test the validity of the questionnaire. It is measured by a scouting sample, which consisted of 30 questionnaires through measuring the correlation coefficients between each paragraph in one field and the whole filed.

Table (4.2) shows the correlation coefficient for each paragraph of the " **Information systems strategy**". The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 4.2: Correlation coefficient of each paragraph of " Information systems strategy "

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	There is a clear definition of the vision and mission of information systems.	.881	0.000*
2.	There is a clear methodology for strategic planning for information systems linked to the overall strategy of the bank.	.896	0.000*
3.	Strategic plan identifies key priorities for information systems, and resources that systems need.	.859	0.000*
4.	Information systems unit is involved in building and implement the overall strategy of the bank.	.619	0.000*

5.	External information system experts should be sought in order to be in accordance and be up to the current constant changes and trends of the information technology.	.601	0.000*

* Correlation is significant at the 0.05 level

Table (4.3) shows the correlation coefficient for each paragraph of the "**General Control Methods**". The p-values (Sig.) are less than 0.05, thus the correlation coefficients of this field are significant at $\alpha = 0.05$, we can conclude that the paragraphs of this field are consistent and valid to measure what it was set for.

Table 4.3: Correlation coefficient of each paragraph of " General Control Methods"

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Internal auditing contributes to finding the weaknesses and providing recommendations of new ways to improve and promote the system.	.698	0.000*
2.	Internal auditing reviews the application and effectiveness of risk management procedures, as well as risk assessment methodologies.	.560	0.000*
3.	Internal auditing contributes to increasing the means of safeguarding assets.	.627	0.000*
4.	Internal auditing contributes to preventing anyone who is not allowed to enter or change the data of the system programs.	.593	0.000*
5.	The internal auditing contributes to set procedures that prevent internal or external hacking attempts.	.541	0.000*
6.	The internal auditing identifies the needs of beneficiaries of the data and the right to access the data and to change the saved data.	.580	0.000*

7.	The accurate, complete and computerized data should be available for improvement.	.300	0.003*
8.	All changes made on main data should be traced and maintained in the system.	.302	0.003*
9.	The system of internal auditing should be able to fill discrepancies that might allow others to access the system.	.296	0.004*

* Correlation is significant at the 0.05 level

Table (4.4) indicates the correlation coefficient for each paragraph of the " **Application Control**". The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 4.4 : Correlation coefficient of each paragraph of " Application Control"

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Bank should use different versions of software during the year.	.658	0.000*
2.	The manual should be available for each item of application software at bank is continuously updated.	.708	0.000*
3.	Software application can be accessed during holidays and non working hours.	.741	0.000*
4.	Protection software is updated periodically dynamically	.751	0.000*
5.	Internal Auditing contributed to the detection of fraud or irregularities due to an imbalance in the computerized system	.686	0.000*

* Correlation is significant at the 0.05 level

Table (4.5) illustrates the correlation coefficient for each paragraph of the " **Output Control"**. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at α = 0.05, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 4.5 : Correlation coefficient of each paragraph of " Output Control "

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Internal auditing contributes in reviewing the accuracy and reliability of the accounting records and financial reports.	.642	0.000*
2.	Internal auditing enables to test the reliability and timeliness of the regulatory reporting.	.709	0.000*
3.	Internal auditing and monitoring system are able to detect fraud and cheating operations, as well as any mistakes that might happen.	.650	0.000*
4.	The results should not conflict with the procedures of the bank in a way that goes in accordance with regulations an processes of the bank.	.513	0.000*
5.	The auditing process of the bank is able to detect any violations and able to correct the mistakes the moment they occur.	.711	0.000*

* Correlation is significant at the 0.05 level

Table (4.6) clarifies the correlation coefficient for each paragraph of the **"Documentation"**. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at α = 0.05, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 4.6 : Correlation coefficient of each paragraph of " Documentation "

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	The bank files and documents all procedures used in data collection.	.509	0.000*
2.	The Bank has a mechanism to make sure that the data collected is in conformity with the procedures adopted by the bank.	.536	0.000*
3.	The Bank writes standards describing where and when the operating procedures perform.	.281	0.005*
4.	Employee's performance is reviewed and documented on regular basis.	.522	0.000*
5.	The performance of information systems performance is Measured by documented standards.	.458	0.000*
6.	There is a standard format for recording data.	.500	0.000*
7.	All models adopted by the bank is dated.	.581	0.000*
8.	The name of person or entity which collect the data is specified on these forms.	.419	0.000*
9.	The auditing of the data recorded should be done by another specialist.	.484	0.000*
10.	The bank assures specific actions are periodically carried out to ensure the accuracy of the information system.	.523	0.000*

* Correlation is significant at the 0.05 level

Table (4.7) concludes the correlation coefficient for each paragraph of the " **Legal controls to protect information systems** ". The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 4.7 : Correlation coefficient of each paragraph of " Legal controls to protect information systems "

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	The Bank uses passwords and smart cards to verify the persons identification and data sources.	.274	0.007*
2.	To protect data against illegal use, the bank determines the responsibilities of those who have access to data and how to deal with it.	.522	0.000*
3.	Protection procedures increase whenever the importance of data Increases.	.355	0.001*
4.	The bank uses the data encryption technology to protect itself from change and replacement.	.265	0.009*
5.	More than one person have access to every screen or software application in the bank.	.582	0.000*
6.	To protect the data, bank uses a system to registration the date and time of the codes, turns it off, suspends, restarts, and cancels.	.443	0.000*
7.	There are deterrent procedures against those who display the system and information that penetrate it and put it t risk.	.447	0.000*
8.	Bank relies on protection standards that go in accordance to international used standards.	.540	0.000*
9.	The bank regulations require that the users of information systems to be experts and competent.	.619	0.000*
10.	Top management places a high priority on establishing and maintaining an adequate system on internal control.	.550	0.000*

* Correlation is significant at the 0.05 level

Table (4.8) illustrates the correlation coefficient for each paragraph of the " **Quality of information provided by systems**". The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 4.8 : Correlation coefficient of each paragraph of " Quality of information provided by systems "

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	The information provided by the systems are Featured with modernity.	.710	0.000*
2.	The information are provided in the right time.	.731	0.000*
3.	The provided information are featured with honesty and consistency.	.751	0.000*
4.	The provided information are featured with the accuracy, and should be realistic and concise.	.659	0.000*
5.	The provided information are featured with the flexibility.	.447	0.000*
6.	Information are provided according to the inquiries of beneficiary using multiple methods.	.319	0.002*

* Correlation is significant at the 0.05 level

Table (4.9) shows the correlation coefficient for each paragraph of the " **Information system contribution to achieving the objectives of the bank** ". The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 4.9 : Correlation coefficient of each paragraph of " Information system contribution to achieving the objectives of the bank "

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	The current information systems are corresponding with requirements of decisions relating to the achievement of the objectives of the Bank in general.	.471	0.000*
2.	The use of bank information systems has its significant effects on accuracy.	.478	0.000*
3.	Information system, which is used in the bank, guarantees providing service to all units and departments in the bank.	.445	0.000*
4.	There is an integration and mutual coordination between the different departments in the Bank, to use information from the placed plans, and to correspond to the unity and stability of the objectives to be achieved.	.434	0.000*
5.	Information system used at the bank, helps to quickly provide information in response to customer inquiries.	.666	0.000*
6.	Information system, which used at the bank, enables to complete doing daily work immediately on-line.	.571	0.000*
7.	The Bank uses a system and a software that fit with the staff operations and Authorities.	.496	0.000*
8.	The bank process formative software and information technology tools that helps manage to retrieve information used needed	.585	0.000*

* Correlation is significant at the 0.05 level

Table (4.10) clarifies the correlation coefficient for each paragraph of the " **The system's ability to adapt to the new changes** ". The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 4.10 : Correlation coefficient of each paragraph of " The system's ability to adapt to the new changes "

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Information system used at the bank is featured with highly efficient of storage, classification, retrieval, and update data and information that I need in my work.	.594	0.000*
2.	Information provided by the information system used at the bank meets the needs of decision makers at all administrative levels.	.613	0.000*
3.	Information system used at the bank is featured with ability to provide the information in spite of the growing size and diversity of operations.	.687	0.000*
4.	The information have the required of accuracy and reliability in spite of the growing size of operations.	.742	0.000*
5.	The Bank System maintains with the develop information systems to keep up with current development in information technology.	.609	0.000*

* Correlation is significant at the 0.05 level

Table (4.11) shows the correlation coefficient for each paragraph of the " **System contribution to bank financial performance** ". The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 4.11 : Correlation coefficient of each paragraph of " System contribution to bank financial performance " and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Information provided by the current Information System provide an idea of the profit compared to the cost.	.754	0.000*
2.	I generally get better results for my decisions when I depend on information provided by the system.	.823	0.000*
3.	Information system helps to strengthen the financial position of the bank by reducing costs.	.452	0.000*

* Correlation is significant at the 0.05 level

Structure Validity of the Questionnaire

Structure validity is the second statistical test that is used to test the validity of the questionnaire structure by testing the validity of each field and the validity of the whole questionnaire. It measures the correlation coefficient between one filed and all the fields of the questionnaire that have the same level of liker scale.

Table (4.12) shows the correlation coefficient for each filed and the whole questionnaire. The p-values (Sig.) are less than 0.05, so the correlation coefficients of all the fields are significant at $\alpha = 0.05$, so it can be said that the fields are valid to be measured what it was set for to achieve the main aim of the study.

Table 4.12: Correlation coefficient of each field and the whole of questionnaire

No.	Field	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Information systems strategy	.615	0.000*
2.	General Control Methods	.734	0.000*
3.	Application Control	.833	0.000*
4.	Output Control	.819	0.000*
5.	Internal auditing on bank performance	.902	0.000*
6.	Documentation	.705	0.000*
7.	Legal controls to protect information systems	.707	0.000*
8.	**General controls of information systems Auditing**	.944	0.000*
9.	Quality of information provided by systems	.730	0.000*
10.	Information system contribution to achieving the objectives of the bank	.860	0.000*
11.	The system's ability to adapt to the new changes	.830	0.000*
12.	System contribution to bank financial performance	.659	0.000*
13.	**Information systems performance**	.794	0.000*

* Correlation is significant at the 0.05 level

Reliability of the Research

The reliability of an instrument is the degree of consistency which measures the attribute; it is supposed to be measuring. The less variation an instrument produces in repeated measurements of an attribute, the higher its reliability. Reliability can be equated with the stability, consistency, or dependability of a measuring tool. The test is repeated to the same sample of people on two occasions and then compares the scores obtained by computing a reliability coefficient.

Cronbach's Coefficient Alpha

This method is used to measure the reliability of the questionnaire between each field and the mean of the whole fields of the questionnaire. The normal range of Cronbach's coefficient alpha value between 0.0 and + 1.0, and the higher values reflects a higher degree of internal consistency. The Cronbach's coefficient alpha was calculated for each field of the questionnaire.

Table (4.13) shows the values of Cronbach's Alpha for each field of the questionnaire and the entire questionnaire. For the fields, values of Cronbach's Alpha were in the range from 0.414 and 0.877. This range is considered a good; the result ensures the reliability of each field of the questionnaire. Cronbach's Alpha equals 0.907 for the entire questionnaire which indicates an excellent reliability of the entire questionnaire.

Table 4.13: Cronbach's Alpha for each filed of the questionnaire

No.	Field	Cronbach's Alpha
1.	Information systems strategy	0.833
2.	Internal auditing on bank performance	0.804
3.	Documentation	0.628
4.	Legal controls to protect information systems	0.614
5.	**General controls of information systems Auditing**	0.877
6.	Quality of information provided by systems	0.617
7.	Information system contribution to achieving the objectives of the bank	0.597
8.	The system's ability to adapt to the new changes	0.661
9.	System contribution to bank financial performance	0.414
10.	**Information systems performance**	0.824
	All paragraphs of the questionnaire	0.907

The Thereby, it can be said that the researcher proved that the questionnaire was valid, reliable, and ready for distribution for the population sample.

Chapter 5

Analysis of Information Systems Audit on the Performance in Gaza banks

Personal data

Qualification

Table No. (5.1) shows that 2.5% of the sample are "Diploma" Degree, 76.5% of the sample are " B.Sc." Degree and 21.0% of the sample are " M.Sc. " Degree. The fact that the employees progress in the bank hold them of looking to get a better college degree. In additional, these figure send a positive sign that the employees will be able to deal with the new technology much more easier.

Table (5.1): Degree

Degree	Frequency	Percent
Diploma	2	2.5
B.Sc.	62	76.5
M.Sc.	17	21.0
Ph.D.	-	-
Total	81	100.0

Specialization

Table No (5.2) shows that the highest ratio of 58.0% is for accounting major, and the second highest ratio of 23.0% is for business administration major. The good sign that the study show is the fact the information technology major has its share in the management positions in the banks, which will directly lead to more use of the new technology.

Table (5.2): Specialization

Specialization	Frequency	Percent
Accounting	47	58.0
Administration	19	23.5
Economics	-	-
Banking and finance sciences	8	9.9
Others	7	8.6
Total	81	100.0

Job Title

Table (5.3) shows that 17.3% of the respondents are accountants, 13.6% are internal controllers, and 12.3% are internal auditors. In addition, the table shows that 13.6% are heads of sections, 14.8 are departments managers and 7.4% are branch managers. The other 21.00% is distributed between other department heads and assistants.

Table (5.3):

Job Title	Frequency	Percent
Accountant	14	17.3
Internal controller	11	13.6
Internal auditor	10	12.3
Head of section	11	13.6
Department Manager	12	14.8
Branch Manager	6	7.4
Others	17	21.0
Total	81	100.0

Period of working at bank

Table No. (5.4) shows that 11.1% of the sample have experience "Less than 5 years",

34.6% of the sample has experience "5 to 10 years "33.3% of the sample has experience "11 to 15 years" and 21.0% of the sample has experience "more than 15 years". The distribution is acceptable since most of the respondents have management position in the banks.

Table (5.4): Period of working at bank

Period of working at bank	Frequency	Percent
Less than 5 years	9	11.1
5 to 10 years	28	34.6
11 to 15 years	27	33.3
more than 15 years	17	21.0
Total	81	100.0

Age

Table No.(5.5) shows that 18.5% of the sample are " Less than 30 years " , 38.3% of the sample are of "30 to 40 years ", 37.0% of the sample are of "41 to 50 years " and 6.2% of the sample are of " more than 50 years ". The difference appears because the study population concentrate on the management position in the banks.

Table (5.5): Age

Age	Frequency	Percent
Less than 30	15	18.5
30 to 40	31	38.3
41 to 50	30	37.0
more than 50	5	6.2
Total	81	100.0

Gender

Table No. (5.6) shows that 80.2% of the sample are Males and 19.8% of the sample are Females. The ratio distributed as seen due to the culture force, and the fact that more get managerial positions than women.

Table (5.6): Gender

Gender	Frequency	Percent
Male	65	80.2
Female	16	19.8
Total	81	100.0

Analysis for each field

1. General controls of information systems Auditing

Table (5.7) shows that:

- The mean of the field "General controls of information systems Auditing" equals 4.14 (82.89%), test value=40.08, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. We conclude that the respondents agreed to the field of "General controls of information systems Auditing".

Where all the banks are depending on computers on all transactions and processes. In additional , the banks have top of the line hardware such as input and output units. Moreover, the new hardware has the ability to store, access, and retrieve more data faster and more efficient. General control apply to all aspects of the IT function, including IT Administration; separation of duties; systems development; physical and online security over access to hardware, software, and related data; backup and contingency planning in the event of unexpected emergencies; and hardware controls.

The findings consistent with Abu Mosa (2008) study, where he concluded that internal auditing for information technology focus on primarily on traditional IT risks and controls, such as IT data integrity, privacy and security, assets safeguarding and application processing.

Table (5.7): Means and Test values for the field "General controls of information systems Auditing"

Field	Mean	Proportional mean (%)	Test value	P-value (Sig.)
General controls of information systems Auditing	4.14	82.89	40.08	0.000*

1.1 Information systems strategy

Table (5.8) shows the following results:

- The mean of paragraph #3 "Strategic plan identifies key priorities for information systems, and resources that systems need" equals 3.89 (77.78%), Test-value = 9.74, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . The researcher conclude that the respondents agreed to this paragraph.
- The mean of paragraph #5 "External information system experts should be sought in order to be in accordance and be up to the current constant changes and trends of the information technology" equals 3.56 (71.11%), Test-value = 5.50, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. The researcher conclude that the respondents agreed to this paragraph.
- The mean of the filed "Information systems strategy" equals 3.77 (75.31%), Test-value = 10.32, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. The researcher conclude that the respondents agreed to field of "Information systems strategy ".

Which means that the information systems strategy is available with high grade and affects the bank performance? The bank use new technology to be able to contribute in building

and implementing the over all of strategy of the banks and have the better communication with branch and with other branches. The researcher conclude that all the banks around the world use new technology, which make it necessary for Palestinian bank to use the same technology to performance better. This study, Olugbode et al (2006) describe how an integrate IT systems was adopted to aid the achievement of the organization's strategic development goals.

Table (5.8): Means and Test values for "Information systems strategy"

	Item	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	There is a clear definition of the vision and mission of information systems.	3.81	76.30	7.83	0.000*	2
2.	There is a clear methodology for strategic planning for information systems linked to the overall strategy of the bank.	3.79	75.80	7.53	0.000*	3
3.	Strategic plan identifies key priorities for information systems, and resources that systems need.	3.89	77.78	9.74	0.000*	1
4.	Information systems unit is involved in building and implement the overall strategy of the bank.	3.78	75.56	10.43	0.000*	4
5.	External information system experts should be sought in order to be in accordance and be up to the current constant changes and trends of the information technology.	3.56	71.11	5.50	0.000*	5
	All paragraphs of the filed	3.77	75.31	10.32	0.000*	

* The mean is significantly greater than 3

1.2 Internal auditing on bank performance

Table (5.9) shows the following results.

- The mean of the field "Internal auditing on bank performance" equals 4.15 (83.08%), test value = 34.37, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. The researcher conclude that the respondents agreed to the field of "Internal auditing on bank performance".

The findings agree with Al Matarneh (2011) study, where he concluded that internal auditors in Jordanian banks consider the competence, objectivity and performance of internal auditors as important factors affecting the internal audit quality. And it was found that "performance" had the highest mean score.

Table (5.9): Means and Test values for the field "Internal auditing on bank performance"

Field	Mean	Proportional mean (%)	Test value	P-value (Sig.)
Internal auditing on bank performance	4.15	83.08	34.37	0.000*

1.2.1 General Control Methods

Table (5.10) shows the following results:

- The mean of paragraph #1 "Internal auditing contributes to finding the weaknesses and providing recommendations of new ways to improve and promote the system" equals 4.37 (87.41%), Test-value = 21.27 and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . The researcher conclude that the respondents agreed to this paragraph.

- The mean of paragraph #6 "The internal auditing identifies the needs of beneficiaries of the data and the right to access the data and to change the saved data" equals 4.05 (80.99%), Test-value = 18.98, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. The researcher conclude that the respondents agreed to this paragraph.
- The mean of the filed "General Control Methods" equals 4.22 (84.31%), Test-value = 37.12, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. The researcher conclude that the respondents agreed to field of "General Control Methods ".

Table (5.10): Means and Test values for "General Control Methods"

	Item	**Mean**	**Proportional mean**	**Test value**	**P-value (Sig.)**	**Rank**
1.	Internal auditing contributes to finding the weaknesses and providing recommendations of new ways to improve and promote the system.	4.37	87.41	21.27	0.000*	1
2.	Internal auditing reviews the application and effectiveness of risk management procedures, as well as risk assessment methodologies.	4.22	84.44	20.08	0.000*	4
3.	Internal auditing contributes to increasing the means of safeguarding assets.	4.23	84.69	17.98	0.000*	3
4.	Internal auditing contributes to preventing anyone who is not allowed to enter or change the data of the system programs.	4.20	83.95	16.33	0.000*	6
5.	The internal auditing contributes to set procedures that prevent internal or external hacking attempts.	4.15	82.96	18.05	0.000*	8

6.	The internal auditing identifies the needs of beneficiaries of the data and the right to access the data and to change the saved data.	4.05	80.99	18.98	0.000*	9
7.	The accurate, complete and computerized data should be available for improvement.	4.33	86.67	20.28	0.000*	2
8.	All changes made on main data should be traced and maintained in the system.	4.22	84.44	15.96	0.000*	4
9.	The system of internal auditing should be able to fill discrepancies that might allow others to access the system.	4.16	83.21	17.37	0.000*	7
	All paragraphs of the filed	4.22	84.31	37.12	0.000*	

* The mean is significantly greater than 3

1.2.2 Application Control

Table (5.11) shows the following results:

- The mean of paragraph #4 "Protection software is updated periodically dynamically" equals 4.17 (83.46%), Test-value = 13.15, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . The researcher conclude that the respondents agreed to this paragraph.
- The mean of paragraph #5 "Internal Auditing contributed to the detection of fraud or irregularities due to an imbalance in the computerized system" equals 3.88 (77.53%), Test-value = 11.05, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . The researcher conclude that the respondents agreed to this paragraph.
- The mean of the filed "Application Control" equals 4.04 (80.79%), Test-value = 17.45, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. The researcher conclude that the respondents agreed to field of "Application Control ".

Application controls described the manual or automated techniques used to control input, processing, and output of information in an application. The purpose of application control is to ensure that the complete processing and integrity of data.

This result agree with Lin & Wang (2011) study that showed the most important auditing software criterion is the system functions, followed by data processing, and technical support and service provided by the software company. In additional to the most important factor of auditing software is cost and system stability, followed by data processing accuracy, technical support, and purchase cost.

Table (5.11): Means and Test values for "Application Control"

	Item	**Mean**	**Proportional mean (%)**	**Test value**	**P-value (Sig.)**	**Rank**
1.	Bank should use different versions of software during the year.	4.01	80.25	12.15	0.000*	4
2.	The manual should be available for each item of application software at bank is continuously updated.	4.06	81.23	14.51	0.000*	3
3.	Software application can be accessed during holidays and non working hours.	4.07	81.48	11.40	0.000*	2
4.	Protection software is updated periodically dynamically	4.17	83.46	13.15	0.000*	1
5.	Internal Auditing contributed to the detection of fraud or irregularities due to an imbalance in the computerized system	3.88	77.53	11.05	0.000*	5
	All paragraphs of the filed	4.04	80.79	17.45	0.000*	

* The mean is significantly greater than 3

1.2.3 Output Control

Table (5.12) shows the following results:

- The mean of paragraph #1 "Internal auditing contributes in reviewing the accuracy and reliability of the accounting records and financial reports" equals 4.26 (85.19%), Test-value = 20.05, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . The researcher conclude that the respondents agreed to this paragraph.
- The mean of paragraph #3 "Internal auditing and monitoring system are able to detect fraud and cheating operations, as well as any mistakes that might happen" equals 4.05 (80.99%), Test-value = 18.09, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . The researcher conclude that the respondents agreed to this paragraph.
- The mean of the filed "Output Control" equals 4.16 (83.16%), Test-value = 27.30, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. The researcher conclude that the respondents agreed to field of "Output Control ".

Table (5.12): Means and Test values for "Output Control"

	Item	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Internal auditing contributes in reviewing the accuracy and reliability of the accounting records and financial reports.	4.26	85.19	20.05	0.000*	1
2.	Internal auditing enables to test the reliability and timeliness of the regulatory reporting.	4.06	81.23	18.79	0.000*	4

3.	Internal auditing and monitoring system are able to detect fraud and cheating operations, as well as any mistakes that might happen.	4.05	80.99	18.09	0.000*	5
4.	The results should not conflict with the procedures of the bank in a way that goes in accordance with regulations an processes of the bank.	4.25	84.94	18.62	0.000*	2
5.	The auditing process of the bank is able to detect any violations and able to correct the mistakes the moment they occur.	4.17	83.46	13.98	0.000*	3
	All paragraphs of the filed	4.16	83.16	27.30	0.000*	

* The mean is significantly greater than 3

1.3 Documentation

Table (5.13) shows the following results:

- The mean of paragraph #1 "The bank files and documents all procedures used in data collection" equals 4.43 (88.64%), Test-value = 23.59, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. The researcher conclude that the respondents agreed to this paragraph.
- The mean of paragraph #8 "The name of person or entity which collect the data is specified on these forms" equals 4.06 (81.25%), Test-value = 18.57, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. The researcher conclude that the respondents agreed to this paragraph.
- The mean of the filed "Documentation" equals 4.22 (84.49%), Test-value = 39.95, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. The researcher conclude that the respondents agreed to field of "Documentation ".

Where documentation is the basis for the review of the quality of the work, because it provides the reviewer with written documentation of the evidence supporting the auditor's significant conclusions.

This finding agree with Harmmersly et al (2010) study that he investigate how the specificity of fraud risk documentation during audit planning influences auditors subsequent audit work. In additional more specific documentation increase their fraud risk assessment and evidence requests.

Table (5.13): Means and Test values for "Documentation"

	Item	**Mean**	**Proportional mean (%)**	**Test value**	**P-value (Sig.)**	**Rank**
1.	The bank files and documents all procedures used in data collection.	4.43	88.64	23.59	0.000*	1
2.	The Bank has a mechanism to make sure that the data collected is in conformity with the procedures adopted by the bank.	4.26	85.19	20.05	0.000*	5
3.	The Bank writes standards describing where and when the operating procedures perform.	4.27	85.43	21.81	0.000*	3
4.	Employee's performance is reviewed and documented on regular basis.	4.10	81.98	15.83	0.000*	8
5.	The performance of information systems performance is Measured by documented standards.	4.30	85.93	21.81	0.000*	2
6.	There is a standard format for recording data.	4.26	85.25	16.85	0.000*	4
7.	All models adopted by the bank are dated.	4.08	81.50	23.22	0.000*	9
8.	The name of person or entity which collect the data is specified on these forms.	4.06	81.25	18.57	0.000*	10

9.	The auditing of the data recorded should be done by another specialist.	4.23	84.50	18.42	0.000*	7
10.	The bank assures specific actions are periodically carried out to ensure the accuracy of the information system.	4.25	85.00	15.15	0.000*	6
	All paragraphs of the filed	4.22	84.49	39.95	0.000*	

* The mean is significantly greater than 3

1.4 Legal controls to protect information systems

Table (5.14) shows the following results:

- The mean of paragraph #1 "The Bank uses passwords and smart cards to verify the persons identification and data sources" equals 4.51 (90.25%), Test-value = 26.90, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. The researcher conclude that the respondents agreed to this paragraph.
- The mean of paragraph #9 "The bank regulations require that the users of information systems to be experts and competent" equals 3.99 (79.75%), Test-value = 13.44, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. The researcher conclude that the respondents agreed to this paragraph.
- The mean of the filed "Legal controls to protect information systems" equals 4.24 (84.80%), Test-value = 37.51, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. We conclude that the respondents agreed to field of "Legal controls to protect information systems ".

In spite of significant advances in the information security area many information systems are still vulnerable to inside or outside attacks.

This finding agree with Suduc et al (2010) study that showed the existence of an internal audit for information system security increases the probability of adopting adequate security measures and preventing these attacks or deceasing the negative consequences.

And Doomun (2008) Study found that IS security risks can be effectively identified, monitored and evaluated by the concept of a layered security model that fits best in the complex outsourcing domain. There are three levels of security, first guidelines of technical security, second risk analysis and, third compliance and evaluation criteria, including managing information security.

Table (5.14): Means and Test values for "Legal controls to protect information systems"

	Item	Mean	Proportional mean	Test value	P-value (Sig.)	Rank
1.	The Bank uses passwords and smart cards to verify the persons identification and data sources.	4.51	90.25	26.90	0.000*	1
2.	To protect data against illegal use, the bank determines the responsibilities of those who have access to data and how to deal with it.	4.38	87.59	19.58	0.000*	3
3.	Protection procedures increase whenever the importance of data Increases.	4.39	87.75	22.07	0.000*	2
4.	The bank uses the data encryption technology to protect itself from change and replacement.	4.26	85.25	20.71	0.000*	5
5.	More than one person have access to every screen or software application in the bank.	4.00	80.00	11.24	0.000*	9
6.	To protect the data, bank uses a system to registration the date and time of the codes, turns it off, suspends, restarts, and cancels.	4.14	82.75	15.63	0.000*	8
7.	There are deterrent procedures against those who display the system and information that penetrate it and put it t risk.	4.36	87.25	21.05	0.000*	4

8.	Bank relies on protection standards that go in accordance to international used standards.	4.21	84.20	17.37	0.000*	6
9.	The bank regulations require that the users of information systems to be experts and competent.	3.99	79.75	13.44	0.000*	10
10.	Top management places a high priority on establishing and maintaining an adequate system on internal control.	4.19	83.70	14.35	0.000*	7
	All paragraphs of the filed	4.24	84.80	37.51	0.000*	

* The mean is significantly greater than 3

2. Information systems performance

Table (5.15) shows the following results.

- The mean of the field "Information systems performance" equals 4.21 (84.25%), test value = 41.60, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. The researcher conclude that the respondents agreed to the field of "Information systems performance".

This findings agree with Bacha (2012) study which concluded that IS have relatively more influence on the performance of the core competence than on the performance of supporting activities, especially on the exclusivity and value creation components of the core competence.

Table (5.15): Means and Test values for the field "Information systems performance"

Field	**Mean**	**Proportional mean (%)**	**Test value**	**P-value (Sig.)**
Information systems performance	4.21	84.25	41.60	0.000*

2.1 Quality of information provided by systems

Table (5.16) shows the following results:

- The mean of paragraph #6 "Information are provided according to the inquiries of beneficiary using multiple methods" equals 4.30 (85.93%), Test-value = 20.12, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . The researcher conclude that the respondents agreed to this paragraph.
- The mean of paragraph #4 "The provided information are featured with the accuracy, and should be realistic and concise" equals 4.16 (83.21%), Test-value = 22.71, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . The researcher conclude that the respondents agreed to this paragraph.
- The mean of the filed "Quality of information provided by systems" equals 4.21 (84.16%), Test-value = 36.96, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. The researcher conclude that the respondents agreed to field of "Quality of information provided by systems ".

This finds agree with Forslund (2007) study that information quality can be measured with variables as in time, accurate, convenient to access and reliable. The scales were found to possess unidimensionality, validity and reliability.

Table (5.16): Means and Test values for "Quality of information provided by systems"

	Item	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	The information provided by the systems are Featured with modernity.	4.21	84.20	23.33	0.000*	3

2.	The information are provided in the right time.	4.17	83.46	23.92	0.000*	5
3.	The provided information are featured with honesty and consistency.	4.19	83.70	21.22	0.000*	4
4.	The provided information are featured with the accuracy, and should be realistic and concise.	4.16	83.21	22.71	0.000*	6
5.	The provided information are featured with the flexibility.	4.22	84.44	20.08	0.000*	2
6.	Information are provided according to the inquiries of beneficiary using multiple methods.	4.30	85.93	20.12	0.000*	1
	All paragraphs of the filed	4.21	84.16	36.96	0.000*	

* The mean is significantly greater than 3

2.2 **Information system contribution to achieving the objectives of the bank**

Table (5.17) shows the following results:

- The mean of paragraph #3 "Information system, which is used in the bank, guarantees providing service to all units and departments in the bank" equals 4.38 (87.65%), Test-value = 19.34, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . The researcher conclude that the respondents agreed to this paragraph.
- The mean of paragraph #5 "Information system used at the bank, helps to quickly provide information in response to customer inquiries" equals 4.01 (80.25%), Test-value = 18.70, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . The researcher conclude that the respondents agreed to this paragraph.
- The mean of the filed "Information system contribution to achieving the objectives of the bank" equals 4.22 (84.44%), Test-value = 36.70, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the

mean of this field is significantly greater than the hypothesized value 3. The researcher conclude that the respondents agreed to field of "Information system contribution to achieving the objectives of the bank ".

This findings agree with Olugbode et al (2006) study that concluded that there is greater management control, all departments have greater access to information, enabling them to function more effectively and efficiently, and since projections are more accurate or now available, management can make long-term strategic plans.

Table (5.17): Means and Test values for "Information system contribution to achieving the objectives of the bank"

	Item	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	The current information systems are corresponding with requirements of decisions relating to the achievement of the objectives of the Bank in general.	4.35	86.91	25.31	0.000*	3
2.	The use of bank information systems has its significant effects on accuracy.	4.16	83.21	20.43	0.000*	5
3.	Information system, which is used in the bank, guarantees providing service to all units and departments in the bank.	4.38	87.65	19.34	0.000*	1
4.	There is an integration and mutual coordination between the different departments in the Bank, to use information from the placed plans, and to correspond to the unity and stability of the objectives to be achieved.	4.15	82.96	18.05	0.000*	6
5.	Information system used at the bank, helps to quickly provide information in response to customer inquiries.	4.01	80.25	18.70	0.000*	8

6.	Information system, which used at the bank, enables to complete doing daily work immediately on-line.	4.11	82.22	18.26	0.000*	7
7.	The Bank uses a system and a software that fit with the staff operations and Authorities.	4.37	87.41	18.16	0.000*	2
8.	The bank process formative software and information technology tools that helps manage to retrieve information used needed	4.25	84.94	15.66	0.000*	4
	All paragraphs of the filed	4.22	84.44	36.70	0.000*	

* The mean is significantly greater than 3

2.3 The system's ability to adapt to the new changes

Table (5.18) shows the following results:

- The mean of paragraph #5 "The Bank System maintains with the develop information systems to keep up with current development in information technology" equals 4.23 (84.69%), Test-value = 19.29, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . The researcher conclude that the respondents agreed to this paragraph.
- The mean of paragraph #1 "Information system used at the bank is featured with highly efficient of storage, classification, retrieval, and update data and information that I need in my work" equals 4.15 (82.96%), Test-value = 18.05, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . The researcher conclude that the respondents agreed to this paragraph.
- The mean of the filed "The system's ability to adapt to the new changes" equals 4.18 (83.60%), Test-value = 26.67, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. We conclude that the respondents agreed to field of "The system's ability to adapt to the new changes ".

Information systems sometime require at least some modification after development, because the failure to anticipate all requirements during systems design or from changing requirement. So this findings concluded that information systems used at bank is featured with high efficient and effectiveness.

Table (5.18): Means and Test values for "The system's ability to adapt to the new changes"

	Item	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Information system used at the bank is featured with highly efficient of storage, classification, retrieval, and update data and information that I need in my work.	4.15	82.96	18.05	0.000*	5
2.	Information provided by the information system used at the bank meets the needs of decision makers at all administrative levels.	4.17	83.46	17.98	0.000*	3
3.	Information system used at the bank is featured with ability to provide the information in spite of the growing size and diversity of operations.	4.19	83.70	16.81	0.000*	2
4.	The information have the required of accuracy and reliability in spite of the growing size of operations.	4.16	83.21	15.38	0.000*	4
5.	The Bank System maintains with the develop information systems to keep up with current development in information technology.	4.23	84.69	19.29	0.000*	1
	All paragraphs of the filed	4.18	83.60	26.67	0.000*	

* The mean is significantly greater than 3

2.4 System contribution to bank financial performance

Table (5.19) shows the following results:

- The mean of paragraph #3 "Information system helps to strengthen the financial position of the bank by reducing costs" equals 4.38 (87.65%), Test-value = 22.20, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . The researcher conclude that the respondents agreed to this paragraph.
- The mean of paragraph #2 "I generally get better results for my decisions when I depend on information provided by the system" equals 4.12 (82.47%), Test-value = 17.48, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . The researcher conclude that the respondents agreed to this paragraph.
- The mean of the filed "System contribution to bank financial performance" equals 4.25 (85.02%), Test-value = 28.93, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. We conclude that the respondents agreed to field of "System contribution to bank financial performance ".

This Findings agree with Wang et al (2008) study IT can significantly improve financial performance and there are complementarity and plateau effects of influencing financial performance between IT advantage and executives' involvement in both IT and business strategy planning.

Table (5.19): Means and Test values for "System contribution to bank financial performance"

	Item	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Information provided by the current Information System provide an idea of the profit compared to the cost.	4.25	84.94	19.30	0.000*	2
2.	I generally get better results for my decisions when I depend on information provided by the system.	4.12	82.47	17.48	0.000*	3
3.	Information system helps to strengthen the financial position of the bank by reducing costs.	4.38	87.65	22.20	0.000*	1
	All paragraphs of the filed	4.25	85.02	28.93	0.000*	

* The mean is significantly greater than 3

Research Hypothesis

1- There is a significant relationship between general controls of IS auditing and improving the quality of information provided by the systems.

Table (5.20) shows that the correlation coefficient between general controls of IS audit and the quality of information provided by the systems equals .417 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$. We conclude there exists significant relationship between general controls of IS auditing and the quality of information provided by the systems .

We conclude that general control play a role on improving the quality of information which are featured with the accuracy and flexibility. These information will help managers in making decision.

Table (5.20) Correlation coefficient between general controls of IS auditing and the quality of information provided by the systems

Hypothesis	Pearson Correlation Coefficient	P-Value (Sig.)
There is a significant relationship between general controls of IS auditing and improving the quality of information provided by the systems	.417	0.000*

* Correlation is statistically significant at 0.05 level

2- There is a significant relationship between general controls of IS auditing and increasing the contribution of IS to achieve the objectives of the bank.

Table (5.21) shows that the correlation coefficient between general controls of IS auditing and the contribution of IS to achieve the objectives of the bank equals .498 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$. We conclude there exists a significant relationship between general controls of IS auditing and the contribution of IS to achieve the objectives of the bank .

General control of information systems contribute in achieving the objective of bank. Which conclude that there is an integration and manual coordination between departments in banks, to use the information from the placed plans, and to correspond to the unity and stability of the objective to be achieved. This findings agree with Olugbode et al (2006) study that an integrated IT system was adopted to aid the achievement of the organisation's strategic development goals.

Table (5.21) Correlation coefficient between general controls of IS auditing and the contribution of IS to achieve the objectives of the bank

Hypothesis	Pearson Correlation Coefficient	P-Value (Sig.)
There is a significant relationship between general controls of IS auditing and increasing the contribution of IS to achieve the objectives of the bank.	.498	0.000*

* Correlation is statistically significant at 0.05 level

3- There is a significant relationship between general controls of IS auditing and facilitating the adaptation of systems with the latest changes.

Table (5.22) shows that the correlation coefficient between general controls of IS auditing and the adaptation of systems with the latest changes equals .414 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$. We conclude there exists significant relationship between general controls of IS auditing and the adaptation of systems with the latest changes .

The researcher conclude that the purpose of systems maintenance review is to check and modify the systems so that it continues to meet changing business needs.

Table 5.22 Correlation coefficient between general controls of IS auditing and the adaptation of systems with the latest changes

Hypothesis	Pearson Correlation Coefficient	P-Value (Sig.)
There is a significant relationship between general controls of IS auditing on facilitating the adaptation of systems with the latest changes.	.414	0.000*

* Correlation is statistically significant at 0.05 level

4- There is a significant relationship between general controls of IS auditing and system contribution to bank financial performance.

Table (5.23) shows that the correlation coefficient between general controls of IS auditing and system contribution to bank financial performance equals .361 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$. We conclude there exists significant relationship between general controls of IS auditing and system contribution to bank financial performance .

This findings are consistent with Wang et al (2008) study that concluded the alignment between IT strategies and business strategies with higher IT advantage can achieve better financial performance.

Table (5.23) Correlation coefficient between general controls of IS auditing and system contribution to bank financial performance

Hypothesis	**Pearson Correlation Coefficient**	**P-Value (Sig.)**
There is a significant relationship between general controls of IS auditing and system contribution to bank financial performance	.361	0.000*

* Correlation is statistically significant at 0.05 level

There is a significant statistical effect of General controls of information systems auditing on Information systems performance.

We use Stepwise method to run the regression and we obtained the following results:

R Square = 0.448, this means 44.8% of the variation in the Information systems performance by " Legal controls to protect information systems and Documentation ".

Table (5.24) shows the Analysis of Variance for the regression model. Sig. = 0.000, so there is a significant relationship between the dependent variable "Information systems

performance " and independent variables " Legal controls to protect information systems and Documentation " .

Table (5.24) ANOVA for Regression

	Sum of Squares	**Df**	**Mean Square**	**F**	**Sig.**
Regression	2.468	2	1.234	31.666	.000
Residual	3.040	78	0.039		
Total	5.508	80			

Table (5.25) shows the regression coefficients and their P-values (Sig.). Based on the standardized coefficients, the significant independent variables are " Legal controls to protect information systems and Documentation " .

The regression model is:

Information systems performance = 1.174 + 0.407*(Legal controls to protect information systems) + 0.311*(Documentation).

Table (5.25):The Regression results

	Unstandardized Coefficients		**Standardized Coefficients**	**T**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	1.174	0.388		3.028	0.003
Legal controls to protect information systems	0.407	0.082	0.462	4.967	0.000
Documentation	0.311	0.088	0.327	3.514	0.001

Chapter 6

Conclusions and Recommendations

6.1 Conclusions:

The research investigates the role Information Systems audit in achieving the objective and enhancing bank's performance and summarizes the following conclusions based on the data analysis and findings:

1. 82.89% of the respondents agree that the technology and IS audit are available in the bank, and that its availability affect on the performance, depending on the following results. All the banks are depending on computers on all transactions and processes. Moreover, the banks have top of the line hardware such as input and output units. In addition, the new hardware has the ability to store, access, and retrieve more data faster and more efficient. The software used by the banks minimizes the over use of papers between the banks‘ departments due to the present of automated communication processes such as e-mail. In addition, the new software ease the retrieval of stores information, and with the presence of high secures systems the banks‘ management is not afraid to store all kind of information on the system. The banks also depend on computers to execute the transactions because the new software improves the flexibility of the system, and perform in a more efficient way.
2. There is a strong positive relation (0.417) between general controls of IS auditing and improving the quality of information provided by the systems.
3. The IS audit and its effect on performance in additional to the positive relationship between IS and performance, the study conclude that IS audit has a positive role in improving the IS performance.
4. 83.08% of the respondents agree that the internal auditing are important in the banks, and they effect on the IS performance depending on the result. The Internal

auditing contributes to finding the weaknesses and providing recommendations of new ways to improve and promote the system, increase the means of safeguarding assets and internal auditing and monitoring system are able to detect fraud and cheating operations, as well as any mistakes that might happen.

5. There is a strong positive relationship (0.902) between the internal audit and the IS performance of banks.
6. The internal audit and its effect on the performance in additional to positive relationship between internal audit and the IS performance, the study conclude that internal audit has a role in the IS performance.
7. 84.49% of the respondents agree that the documentation are available and important in the banks, and they effect on the IS performance depending on the result. Audit documentation is the basis for the review of the quality of the work, because it provides the reviewer with written documentation of the evidence supporting the auditor's significant conclusions.
8. There is a strong positive relationship (0.705) between the internal audit and the IS performance of banks.
9. Audit documentation and its effect on the performance in additional to positive relationship between documentation and the IS performance, the study conclude that documentation has a role in the IS performance.
10. 84.80% of the respondents agree that the legal control are available and important in the banks, and they effect on the IS performance depending on the result. Legal control facilitate the effectiveness and efficiency of operations, helps ensure the reliability of internal and external reporting and assists compliance with laws and regulations.
11. There is a strong positive relationship (0.707) between legal controls in protecting information systems and the IS performance of banks.
12. Legal controls and its effect on the performance in additional to positive relationship between legal control and the IS performance, the study conclude that legal control has a role in the IS performance.
13. 84.16% of the respondents agree that the quality of information is a great help in bank performance.
14. 84.44% of the respondents agree that the information systems contribute in achieving bank objective.

15. 83.60% of the respondents agree that the system contribute in improving financial performance.

6.2 Recommendations

According to the findings of this study we can give some suggestions, might be they can help managers in the banks that listed at Gaza if they use them effectively.

1- Banks at Gaza highly encouraged illustrating the strong relationship between general controls of information systems auditing and information systems performance.
2- Banks at Gaza highly encouraged to develop a clear strategy allow them to increase the role of general controls of information systems auditing in improvement quality of information provided by systems, and the system's ability to adapt to the new changes.
3- Reinforcing the role of general controls of information systems auditing in raising information system contribution to achieve the objectives of the bank, and the system contribution to bank financial performances.
4- The management must spend more effort in protecting and safeguarding their assets and to ensure the efficient and effectiveness of operation.
5- The management of bank should build strong systems security to prevent any internal or external hacking attempts.
6- The banks should improve the quality exchanging information among the different users in the bank.
7- The banks have to train the employees on using the analytical programs available to them.
8- More sophisticated programs and newer technology must be added to the current systems in the bank.
9- The information systems should be updated and developed or acquiring, using a structured system development approach and should be completely tested prior to implementation.
10- The information systems should be fully documented including operation, program and user documentation.
11- All changes to computer programs should be properly authorized and documented.

12- Password and physical security should be in place for programs, databases and data files.
13- Backup and recovery processes should be in place to ensure continuity of operation.
14- Employees should be properly trained for appropriate response to emergency situations.
15- Employees should receive appropriate information on managing and protecting confidentiality of password.

6.3 Suggestions for future research:

- The reliability of information systems audit on making decision.
- The important of information technology on internal auditing.
- The impact of information technology on the audit process.
- The Role of information systems in achieving the organization's goals.

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Appendices

Appendix (1)

Refereeing and refining After designing and revising the questionnaire several times, it was refereed and refined by university Professors and Doctors. Finally the final copy was ready to be distributed to the study population.

Referees:

1. Prof. Yousef Jarbou Gaza University - Gaza
2. Dr. Sabri Mushtaha Al Quds University - Gaza
3. Dr. Ali Shaheen Islamic University - Gaza

Appendix (2)

Bank Name	# Of West Bank Branches	# Of Gaza Strip Branches	Total
Bank of Palestine P.L.C	24	10	34
Palestine Investment Bank	9	1	10
Palestine Commercial Bank	3	1	4
Al-Quds Bank	11	2	13
Al Rafah Microfinance Bank	6	0	6
Arab Palestinian Investment Bank	1	0	1
Arab Islamic Bank	7	2	9
Palestine Islamic Bank	9	6	15
Cairo Amman Bank	15	5	20
Arab Bank	21	1	22
Jordan Kuwait Bank	2	0	2
Jordan Ahli Bank	5	0	5
Bank of Jordan	11	2	13
HSBC Bank Middle East Limited	1	0	1
Egyptian Arab Land Bank	4	2	6
Union Bank	1	0	1
The Housing Bank for Trade & Finance	10	2	12
Jordan Commercial Bank	3	0	3
TOTAL	143	34	177

Appendix (3)

Questionnaire

This questionnaire is part of a study, (**The Impact of Information systems audit on improving performance of Banks "Applied Study at Banks Listed in Gaza"**), to complete the requirements for obtaining the Master degree in Accounting and Finance from the Islamic University in Gaza.

Also, this is for evaluating the Information systems Audit, and its effect on the performance in detecting errors and frauds to prevent them from happening and avoid, in case if any, them in the future. In additional achieving the Bank objectives.

The collected information is just only used for the Scientific Researches and studies purposes.

We are gratefully thankful for your cooperation and supports

With All Respects

General Information

1. Degree

☐ High school ☐ Diploma ☐ B.Sc. ☐ M.Sc. ☐ Ph.D.

2. Specialization

☐ Accounting ☐ Administration ☐ Economics

☐ Bank finance science ☐ others

3. Job title

☐ Accountant ☐ Internal Controller ☐ Internal Auditor ☐ Head of section

☐ Department Manager ☐ Branch Manager ☐ Other, ……

4. Period of working at bank

☐ 5 years and less ☐ 6 to 10 years ☐ 11 to 15 years

☐ 16 and more

5. Age

☐ Less than 30 ☐ 30 to 40 ☐ 41 to 50 ☐ more than 50

6. Gender

☐ Male ☐ Female

Level	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Scale	SA	A	N	D	SD

Questionnaire

1. General controls of information systems Auditing

1.1 Information systems strategy

No.	Statements	SA	A	N	SD	D
1	There is a clear definition of the vision and mission of information systems.					
2	There is a clear methodology for strategic planning for information systems linked to the overall strategy of the bank.					
3	Strategic plan identifies key priorities for information systems, and resources that systems need.					
4	Information systems unit is involved in building and implement the overall strategy of the bank.					
5	External information system experts should be sought in order to be in accordance and be up to the current constant changes and trends of the information technology.					

1.2 Internal auditing on bank performance

1.2.1General Control Methods

No.	Statements	SA	A	N	SD	D
1	Internal auditing contributes to finding the weaknesses and providing recommendations of new ways to improve and promote the system.					
2	Internal auditing reviews the application and effectiveness of risk management procedures, as well as risk assessment methodologies.					
3	Internal auditing contributes to increasing the means of safeguarding assets.					
4	Internal auditing contributes to preventing anyone who is not allowed to enter or change the data of the system programs.					
5	The internal auditing contributes to set procedures that prevent internal or external hacking attempts.					
6	The internal auditing identifies the needs of beneficiaries of the data and the right to access the data and to change the saved data.					

7	The accurate, complete and computerized data should be available for improvement.					
8	All changes made on main data should be traced and maintained in the system.					
9	The system of internal auditing should be able to fill discrepancies that might allow others to access the system.					

1.2.2 Application Control

No.	Statements	SA	A	N	SD	D
1	Bank should use different versions of software during the year.					
2	The manual should be available for each item of application software at bank is continuously updated.					
3	Software application can be accessed during holidays and non working hours.					
4	Protection software is updated periodically dynamically					
5	Internal Auditing contributed to the detection of fraud or irregularities due to an imbalance in the computerized system					

1.2.3 Output Control

No.	Statements	SA	A	N	SD	D
1	Internal auditing contributes in reviewing the accuracy and reliability of the accounting records and financial reports.					
2	Internal auditing enables to test the reliability and timeliness of the regulatory reporting.					
3	Internal auditing and monitoring system are able to detect fraud and cheating operations, as well as any mistakes that might happen.					
4	The results should not conflict with the procedures of the bank in a way that goes in accordance with regulations an processes of the bank.					
5	The auditing process of the bank is able to detect any violations and able to correct the mistakes the moment they occur.					

1.3 Documentation

No.	Statements	SA	A	N	SD	D
1	The bank files and documents all procedures used in data collection.					
2	The Bank has a mechanism to make sure that the data collected is in conformity with the procedures adopted by the bank.					
3	The Bank writes standards describing where and when the operating procedures perform.					
4	Employee's performance is reviewed and documented on regular basis.					
5	The performance of information systems performance is Measured by documented standards.					
6	There is a standard format for recording data.					
7	All models adopted by the bank is dated.					
8	The name of person or entity which collect the data is specified on these forms.					
9	The auditing of the data recorded should be done by another specialist.					
10	The bank assures specific actions are periodically carried out to ensure the accuracy of the information system.					

1.4 Legal controls to protect information systems

No.	Statements	SA	A	N	SD	D
1	The Bank uses passwords and smart cards to verify the persons identification and data sources.					
2	To protect data against illegal use, the bank determines the responsibilities of those who have access to data and how to deal with it.					
3	Protection procedures increase whenever the importance of data Increases.					
4	The bank uses the data encryption technology to protect itself from change and replacement.					
5	More than one person have access to every screen or software application in the bank.					

6	To protect the data, bank uses a system to registration the date and time of the codes, turns it off, suspends, restarts, and cancels.					
7	There are deterrent procedures against those who display the system and information that penetrate it and put it t risk.					
8	Bank relies on protection standards that go in accordance to international used standards.					
9	The bank regulations require that the users of information systems to be experts and competent.					
10	Top management places a high priority on establishing and maintaining an adequate system on internal control.					

2. Information systems performance

2.1 Quality of information provided by systems

No.	Statements	SA	A	N	SD	D
1	The information provided by the systems are Featured with modernity.					
2	The information are provided in the right time.					
3	The provided information are featured with honesty and consistency.					
4	The provided information are featured with the accuracy, and should be realistic and concise.					
5	The provided information are featured with the flexibility.					
6	Information are provided according to the inquiries of beneficiary using multiple methods.					

2.2 Information systems contribution in achieving bank objective

No.	Statements	SA	A	N	SD	D
1	The current information systems are corresponding with requirements of decisions relating to the achievement of the objectives of the Bank in general.					
2	The use of bank information systems has its significant effects on accuracy.					
3	Information system, which is used in the bank, guarantees providing service to all units and departments in the bank.					
4	There is an integration and mutual coordination between the different departments in the Bank, to use information from the placed plans, and to correspond to the unity and stability of the objectives to be achieved.					

5	Information system used at the bank, helps to quickly provide information in response to customer inquiries.					
6	Information system, which used at the bank, enables to complete doing daily work immediately on-line.					
7	The Bank uses a system and a software that fit with the staff operations and Authorities.					
8	The bank process formative software and information technology tools that helps manage to retrieve information used needed					

2.3 The system's ability to adapt to the new changes

No.	Statements	SA	A	N	SD	D
1	Information system used at the bank is featured with highly efficient of storage, classification, retrieval, and update data and information that I need in my work.					
2	Information provided by the information system used at the bank meets the needs of decision makers at all administrative levels.					
3	Information system used at the bank is featured with ability to provide the information in spite of the growing size and diversity of operations.					
4	The information have the required of accuracy and reliability in spite of the growing size of operations.					
5	The Bank System maintains with the develop information systems to keep up with current development in information technology.					

2.4 System contribution to bank financial performance

No.	Statements	SA	A	N	SD	D
1	Information provided by the current Information System provide an idea of the profit compared to the cost.					
2	I generally get better results for my decisions when I depend on information provided by the system.					
3	Information system helps to strengthen the financial position of the bank by reducing costs.					

With My Best Wishes

Appendix (4)

الاستبانة

بسم الله الرحمن الرحيم

الاخ الكريم .. الأخت الكريمة ،،،،،،،،

تحية طيبة وبعد ،،،،،،،،

يقوم الباحث رزق خليل حرب بعمل دراسة بعنوان " **تأثير تدقيق نظم المعلومات على الاداء، دراسة تطبيقية على المصارف العاملة في قطاع غزة** ".

كلنا أمل أن تكونوا خير معين لهذه الدراسة، وذلك من خلال الاجابة على الاستبانة

المرفق مع هذا الطلب، ولا يفوتنا أن نؤكد لسيادتكم أنه ليس لموضوع البحث أية أضرار قد تحدث لمؤسستكم، لكن البحث سيقدم لكم رؤية عن تأثير تدقيق نظم المعلومات على الاداء.

وأود أن أؤكد لكم أن البيانات أو المعلومات التي ستزودننا بها أو الاستبيان الذي ستقومون بتعبئته سيكون في إطار كامل من السرية المطلقة و لن يتم استخدام هذه المعلومات إلا لغايات البحث.

شاكرين لكم حسن تعاونكم معنا لما فيه من رقي لمجتمعنا،،،،

رزق خليل حرب

Email: Rezeqkh@Gmail.com

Mobile: 0598193322

معلومات عامة

1 -المؤهل العلمي

دبلوم ☐كالوريوس ☐اجستير ☐ دكتوراة ☐

2- التخصص

محاسبة ☐ ادارة أعمال ☐أقتصاد ☐ علوم مالية ومصرفية ☐ أخرى ☐

3- المسمى الوظيفي

محاسب ☐اقب داخلي ☐فق داخلي ☐يس قسم ☐مدير دائرة ☐

مدير فرع ☐رى، حدد.....

4 - سنوات الخبرة

1-3 سنوات ☐6 سنوات ☐10-7 سنوات ☐ل من 11 سنوات ☐

5- سنوات الخبرة في البنك

أقل من 5 سنوات ☐10 سنوات ☐15-11 سنوات ☐كثر من 16 سنوات ☐

6 - العمر

أقل من 30 ☐0 أقل من 40 ☐0 ☐قل من 50 ☐ثر من 50 ☐

7 - الجنس

ذكر ☐ أنثى ☐

موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة

1- ضوابط عامة لتدقيق نظم المعلومات

1.1 استراتيجية نظم المعلومات

#	البيان	موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة
1	هناك تعريف واضح لرؤية ورسالة نظم المعلومات.					
2	هناك منهجية واضحة للتخطيط الاستراتيجي لنظم المعلومات و التي ترتبط بالاستراتيجية العامة للبنك.					
3	الخطة استراتيجية تحدد الأولويات الأساسية لنظم المعلومات والموارد التي تحتاجها النظم.					
4	تشارك وحدة نظم المعلومات في مجال بناء وتنفيذ الاستراتيجية العامة للبنك.					
5	يتم الاستعانة بخبراء أو مستشارين خارجين لنظم المعلومات وذلك لمواكبة التغيرات و التطور المستمر في تكنولوجيا المعلومات.					

1.2 أثر التدقيق الداخلي على أداء المصرف

1.2.1 أساليب الرقابة العامة

1	يساهم التدقيق الداخلي في ايجاد مناطق الضعف وتوصي بطرق جديدة لتعزيز النظام.					
2	التدقيق الداخلي يعيد النظر في تطبيق وفعالية اجراءات ادارة المخاطر ومنهجية تقييم المخاطر.					
3	يساهم التدقيق الداخلي بوضع اجراءات ووسائل تمكن المصرف من المحافظة على اصولها.					
4	مساهمة التدقيق الداخلي في منع الغير مصرح بهم الادخال تعديلات على برامج النظام.					

5	مساهمة التدقيق الداخلي بوضع اجراءات في منع الاختراقات الغير قانونية من جهات داخلية أو خارجية.					
6	يقوم التدقيق الداخلي بتحديد احتياجات كل مستفيد من البيانات وحق الوصول و التعديل على البيانات المخزنة.					
7	البيانات المحوسبة الصحيحة والكاملة متاحة للمعالجة.					
8	جميع التغيرات على المعلومات الرئيسية يتم تتبعها وتسجيلها في النظام.					
9	نظام التدقيق الداخلي قادر على اغلاق الفجوات التي تمكن من الدخول الى النظام.					

1.2.2 الرقابة على التطبيقات

1	يستخدم البنك نسخ مختلفة من البرمجيات خلال السنة.					
2	هناك دليل متاح لكل بند من تطبيق البرمجيات في المصرف ويتم تحديثه باستمرار.					
3	يوجد صلاحيات للوصول الى تطبيقات البرامج خلال الاجازات وعند انتهاء ساعات العمل المحددة من قبل المصرف.					
4	يتم تحديث برامج الحماية بشكل دوري ديناميكي.					
5	ساهم التدقيق الداخلي في كشف عمليات الاحتيال أو المخالفات بسبب خلل في النظام المحوسب.					

1.2.3 الرقابة على المخرجات

1	مساهمة الدقيق الداخلي في دقة و موثوقية السجلات و التقارير المالية.					
2	التدقيق الداخلي قادر على اختبار موثوقية التقارير التنظيمية و تحديد الوقت المناسب لذلك.					
3	نظام الرقابة الداخلية قادر على كشف عمليات الغش و الاخطاء الجوهرية و المحتمل وقوعها.					
4	تتطابق النتائج و الاجراءات الموجودة لدى المصرف بشكل معقول مع هيكلية و عمليات المصرف.					
5	عملية التدقيق لدى المصرف قادرة على كشف المخالفات من قبل المستخدمين وقادر على تصحيح الاخطاء لحظة حدوثها.					

1.3 التوثيق

1	المصرف يوثق جميع الإجراءات المستخدمة في جمع البيانات المحوسبة في تاريخ الحصول عليها.					
2	المصرف لديه آلية للتأكد من أن البيانات المحوسبة التي تم جمعها قد تمت للإجراءات المعتمدة من قبل البنك.					
3	للبنك معايير مكتوبة توصف أين و متى تنفيذ اجراءات التشغيل.					
4	يراجع و يوثق أداء الموظفين على أساس منتظم.					

5	يتم قياس أداء نظم المعلومات وفقاً لمعايير مكتوبة.					
6	هناك شكل موحد لتسجيل البيانات المحوسبة					
7	كل النماذج التي تم اعتمدها من البنك مؤرخة.					
8	يتم تحديد اسم الشخص أو الجهة التي تتولى جمع البيانات المحوسبة عن هذه النماذج.					
9	يتم تدقيق البيانات المحوسبة المسجلة من جانب آخر متخصص.					
10	البنك يعتمد إجراءات محددة و تنفذ دورياً لضمان دقة نظم المعلومات.					

1.4 الضوابط القانونية لحماية نظم المعلومات

1	يستخدم البنك كلمات السر والبطاقات الذكية للتحقق من هوية الأشخاص ومصادر البيانات المحوسبة.					
2	لحماية البيانات المحوسبة ضد الاستخدام غير المشروع يحدد البنك مسؤوليات الوصول إلى البيانات المحوسبة والتعامل معها.					
3	تزيد إجراءات الحماية كلما زادت أهمية البيانات المحوسبة.					
4	يستخدم البنك تكنولوجيا تشفير البيانات المحوسبة لحمايتها من التغيير والاستبدال.					
5	أكثر من شخص له سلطة الوصول الى كل شاشة أو تطبيق البرمجيات في البنك.					
6	لحماية البيانات المحوسبة ، يستخدم البنك نظام لتسجيل التاريخ والوقت من الرموز وإيقاف تشغيله وتعليقه وإعادة تشغيله وإلغاءه.					

7	هناك إجراءات رادعة ضد من يعرض النظام والمعلومات للاختراق والخطر.					
8	البنك يعتمد معايير حماية مماثلة للمعايير الدولية المستخدمة.					
9	تشترط لوائح البنك على مستخدمي نظم المعلومات أن يكونوا على قدر من الخبرة والاختصاص.					
10	تضع الإدارة العليا أولوية عالية في إنشاء وصيانة نظام ملائم للرقابة الداخلية.					

2 أداء نظم المعلومات

2.1 جودة المعلومات التي توفرها الأنظمة

1	المعلومات المزودة تمتاز بالحداثة.					
2	يتم توفير المعلومات في الوقت المناسب.					
3	المعلومات المزودة تمتاز بالصدق وثبات المبدأ.					
4	المعلومات المزودة تمتاز بالدقة، الواقعية، والإيجاز.					
5	المعلومات المزودة تمتاز بالمرونة.					
6	المعلومات تزود طبقا لمتطلبات المستفيد الأول باستخدام طرق أو وسائل متعددة.					

2.2 مساهمة نظام المعلومات في تحقيق أهداف البنك

1	نظم المعلومات الحالية متوافقة مع متطلبات القرارات فيما يتعلق بتحقيق أهداف البنك بشكل عام.					
2	استخدام نظم المعلومات لدى البنك له آثاره الهامة على دقة القرارات.					

3	نظم المعلومات التي تستخدم في البنوك تضمن توفر الخدمة الى جميع الوحدات والدوائر في البنك.					
4	هناك تكامل وتنسيق مشترك بين الإدارات المختلفة في البنك لاستخدام المعلومات من الخطط الموضوعة والمتوافقة مع وحدة واستقرار الأهداف التي ينبغي تحقيقها.					
5	نظم المعلومات التي تستخدم في البنك تساعد على توفير المعلومات بسرعة بالاستجابة لمتطلبات العملاء.					
6	نظم المعلومات التي تستخدم في البنك تتيح استكمال أداء الأعمال فورا و بشكل يومي.					
7	يستخدم البنك نظام وبرامج تتناسب وفقا للعمليات أو الصلاحيات.					
8	البرنامج التكويني للعمليات المصرفية وأدوات تكنولوجيا المعلومات تساعد ادارة البنك لاسترجاع المعلومات المستخدمة عند الحاجة.					

2.3 قدرة النظام على التكيف مع التغييرات الجديدة

1	انظمة المعلومات التي تستخدم في البنك تمتاز بكفاءة عالية (مرتفعة) من التخزين، التصنيف، استرداد المعلومات، وتحديث البيانات المحوسبة والمعلومات التي أحتاج إليها في عملي.					
2	المعلومات المزودة من نظم المعلومات والتي تستخدم في البنك تلبي احتياجات صانع القرار على جميع المستويات الإدارية.					
3	نظم المعلومات المستخدمة بالبنك تتميز بالمقدرة العالية على الرغم من حجم واختلاف خطوات الوصول للمعلومات.					
4	المعلومات لديه المطلوب من الدقة والموثوقية على الرغم من تزايد حجم العمليات.					
5	نظام البنك يحافظ على تطوير نظم المعلومات لمواكبة التطور الحاصل في مجال تكنولوجيا المعلومات.					

2.4مساهمة النظام للأداء المالي لدى البنك

1	فوائد المعلومات المتولدة من نظم المعلومات الحالية بالمصرف تفوق تكلفتها.					
2	ساهمت المعلومات المتولدة من نظم المعلومات في تغيير العديد من القرارات المالية و التي يمكن أن يكون لها أثر سلبي على الاداء المالي المصرفي.					
3	نظم المعلومات تساعد في تعزيز المركز المالي للبنك عن طريق خفض التكاليف.					

مع تحيات الباحث

رزق خليل حرب