

# Factors Affecting the Internal Audit Effectiveness in Tunisian Organizations

Hella Dellai<sup>1\*</sup> Mohamed Ali Brahim Omri<sup>2</sup>

1.Faculty of Economic Sciences and Management of Tunis, University of Tunis El Manar, Campus Universitaire-El Manar II-B.P. 94-Romena-1068, Tunis, Tunisia

2.College of Business Administration, Northern Borders University, P.O. Box:1321, Arar, Saudi Arabia

## Abstract

This study examines factors influencing internal audit effectiveness in the Tunisian context. Data was collected from responses to a questionnaire addressed to chief audit executives of 148 Tunisian organizations. Multiple regression analysis examines the association between the effectiveness of the internal audit function and six principal factors. Results reveal that the effectiveness of internal auditing is influenced by: (1) the independence of internal audit, (2) the objectivity of internal auditors, (3) the management support for internal audit, (4) the use of internal audit function as a management training ground, and (5) the sector of organization. This study provides useful information to practitioners and academics who are interested to identify the determinants of internal auditing effectiveness in developing countries.

**Keywords:** Internal auditing, Internal audit effectiveness, Tunisian organizations

## 1. Introduction

In the recent years, internal auditing (IA) has undergone dramatic changes that have extended its area of involvement in a way that allow it to add more value to a company. Traditionally, the role of IA has focused on compliance assurance, financial control and assets safeguarding. After the corporate financial scandals of the 2000's, many reforms (Sarbanes-Oxley Act 2002; Combined Code 2003; OECD 2004; IFAC 2006) have reinforced the responsibilities of IA in enhancing corporate governance mechanisms. Therefore, IA has become a value creator improving the effectiveness of risk management, control and governance systems (Bou-Raad 2000; Roth 2003; Hass *et al.* 2006; Cohen *et al.* 2010).

The Institute of Internal Auditors (IIA) refers to the new approach of the function in its latest definition of internal auditing (IIA 2004):

“Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.”

Through the extended role of IA, internal auditor has become an essential monitoring mechanism in corporate governance along with the external auditor, audit committee, and executive management (Gramling *et al.* 2004). The aim of IA is to assist an organization in achieving its objectives (Roth 2003; Hass *et al.* 2006). For this purpose, IA can perform a wide variety of activities in the form of assurance or consulting services. First, it can provide assurance that the organization's systems of control are designed properly and operate effectively. Second, it can act as a management consultant to improve risk management (Spira & Page 2003). Third, it can assist the audit committee and external auditors in monitoring the internal control system (Goodwin 2003). Fourth, it can reduce fraud, misappropriation of assets and misreport financial information (Coram *et al.* 2008). Briefly, the internal audit function (IAF) is the cornerstone of the corporate governance, which contributes to improving the productivity, efficiency and performance of the company in both private and public sector (Mihret *et al.* 2010; Gros *et al.* 2016).

In the light of the evolution of internal audit, a new concept began to have a particular attention in the audit literature; it is the effectiveness of AI. Indeed, being effective is the challenge that IAF should successfully overcome to be the key component of good governance. In this context, it is important to explain the concept of IA effectiveness and identify critical factors that contribute to creation of “added value” of IA. Therefore, this study aims to investigate factors that may influence IA effectiveness within Tunisian organizations.

This study is motivated to examine the effectiveness of IA and its determinants owing to the limited academic research in this area. Despite of the increasing emphasis on the role of IAF as a corporate governance mechanism in recent scientific literature, a very few studies have been conducted on the internal audit compared to studies of external audit. While the literature examining the IA effectiveness is moderate in developed countries, very few researchers have investigated this concept in developing countries (Al-Twajjry *et al.* 2003; Alzeban & Gwilliam 2014-Saudi Arabia; Mihret & Yismaw 2007-Ethiopia; Ahmad *et al.* 2009- Malaysia; Sakour & Laila 2015- Lybia).

In fact, Tunisia as a developing country is an interesting case that signifies the importance of exploring the effectiveness of IA for the internal audit profession that is growing since 1981. This study contributes to the

literature in two important ways. First, our study is the first to measure internal auditing effectiveness in the Tunisian context. Second, our study identifies factors that could help improve the effectiveness of internal auditing and the corporate governance of organizations. This study should be interesting to governance bodies and regulators in Tunisia.

The remainder of this paper is organized as follows. Section 2 briefly describes the institutional framework of internal auditing profession in Tunisia. Section 3 provides the literature review and develops the research hypotheses. Section 4 outlines the research method used, followed by the fifth section that provides the empirical results of the study. Finally, Section 6 presents the conclusion, limitations, and future directions for research.

## 2. Internal auditing in Tunisia

Tunisia is a developing country situated in the North central of Africa, between Algeria and Libya. The Islamic religion and Arabic language are two of the main elements that characterize Tunisian culture. Tunisia's economic growth is mainly based on agriculture (olive oil, wheat and animal husbandry), phosphates, car parts manufacturing, and tourism.

The Tunisian economic fabric consists overwhelmingly of small and medium enterprises and 79 companies listed on the Tunis Stock Exchange in 2015. From a regulatory viewpoint, Tunisian companies are governed by the provisions of the Code of Commerce and the Code of Commercial Companies. Regarding the auditing profession in Tunisia, the external auditing is strictly controlled and regulated. However, the IA is indirectly regulated by laws and decrees that aim to strengthen internal control system, such as, (1) Law No. 2005-96 of 18 October 2005 relating to the security reinforcement of the financial relations, (2) Law No. 2006-19 of 2 May 2006 relating to credit institutions, and (3) Circular No. 2011-06 of 20 May 2011 related to the reinforcement of good governance rules in lending institutions.

The development of IA in Tunisia is maintained by the Tunisian Institute of Internal Auditors (IIA Tunisia) which has been affiliated with the IIA since 1981. Today, the IIA-Tunisia has more than 1000 members. It aims to promote the IAF within public and private companies by conducting the following objectives:

- Stimulate public and private institutions to create and develop the IAF.
- Develop relationships with government bodies and universities.
- Organize national and international seminars and conferences in the area of control and internal audit.
- Develop research on internal audit.
- Organize international certification exams.
- Promote the exchange of experiences between internal auditors.
- Disseminate the IIA standards and internal audit best practices among its members.

## 3. Background and hypotheses development

### 3.1 Internal auditing effectiveness

The IA effectiveness is a tricky concept that has been little studied in the accounting and auditing literature. According to Dittenhofer (2001), effectiveness of IA is the achievement of objectives and goals of the IAF. Based on the official definition of IA, the ultimate objective of the internal audit function is the creation of value added to the organization. Therefore, an IAF is effective when it actually contributes to create added value to the organization (Roth 2003; Mihret *et al.* 2010; Gros *et al.* 2016).

Previous studies claimed that an effective IAF aims to add value to the organization by helping its management and board of directors to evaluate and improve the effectiveness of risk management, internal control, and governance processes (Gramling *et al.* 2004; Hass *et al.* 2006; Yee *et al.* 2008; Walter & Guandaru 2012). Al-Twaijry *et al.* (2003) and Spira & Page (2003) confirmed that IA could bring added value by helping organizations to achieve its economic objectives through the implementation of internal audit recommendations by senior management. In addition, Tamosiuniene & Savcuk (2007) argued that the IAF is able to improve the competitive advantage for the company by ensuring high-quality financial reporting and improving the governance process. In this context, Eden & Moriah (1996) showed that the performance of 224 bank branches has significantly improved during the half year following the involvement of IA in the experimental branches.

Moreover, Dittenhofer (2001) pointed out that the effectiveness of IA contributes not only to the adequacy of procedures and operations of each department audited, but also to the effectiveness of the organization as a whole. These findings have also supported other studies revealed that IA brings added value to the organization by improving its organizational performance (Mihret & Woldeyohannis 2008; Cohen & Sayag 2010; Octavia 2013). Some studies have suggested that the effectiveness of IA improves the economic performance of organizations by increasing the rate of return on capital employed (Mihret *et al.* 2010; Aikins 2011). Radu (2012) suggested that the effectiveness of IA helps senior management in fulfilling its governance responsibilities and that good governance in turn allows harmonizing interests of stakeholders and increasing the company performance. To recap, an effective IAF aims to achieve its ultimate goal, which consists in creating

added value for the organization.

### 3.2 Competence of internal audit

Staff competence is an important key to the effectiveness of the internal audit activities (Al-Twaijry *et al.* 2003; Alzeban & Gwilliam 2014). The International Standards for the Professional Practice of Internal Auditing (ISPPIA) highlights the importance of internal audit team who possesses the knowledge, skills, and other competencies necessary to perform their responsibilities (ISPPIA, Standard 1210). Indeed, internal auditors must collectively have the necessary education, professional qualifications, experience and training to be able to add value and improve the organization's operations (Mihret & Woldeyohannis 2008; Ali & Owais 2013). Additionally, internal auditors require good interpersonal skills in communication, persuasion, collaboration, and critical thinking to effectively fulfill their duties (Smith 2005; Fanning & Piercey 2014). Furthermore, external auditors use competencies as a critical criterion to evaluate IA performance (Al-Twaijry *et al.* 2004; Abbass & Aleqab 2013).

Previous studies suggest that competence of internal auditors is a critical determinant of IA effectiveness (Albrecht *et al.* 1988; Van Gansberghe 2005; Al-Matarneh 2011). In the Saudi environment, Al-Twaijry *et al.* (2003) noted that the adequate level of competencies of internal audit staff in terms of training, experience, knowledge, and professional qualifications have a positive influence on the effectiveness of IA. Similar results were obtained in other studies conducted in Malaysia (Ahmad *et al.* 2009), Iran (Alizadeh 2011) and South Africa (Staden & Steyn 2009). Furthermore, Ziegenfuss (2000) ranked the auditor education levels, the staff experience, the percent of certified staff and the training hours per internal auditor among the most important inputs of the internal audit performance. In Taiwan, Hung & Han (1998) found that the training and professional abilities of internal auditors positively and significantly affect the progress of annual auditing plan. Moreover, Abdolmohammadi (2009) has demonstrated that certified internal auditors improve the compliance with the ISPPIA in Anglo-Saxon countries. Other studies suggest that lack of competence of internal auditors is an obstacle to the effectiveness of IA in a number of African countries as Ethiopia, Ghana and Kenya (Mihret & Yismaw 2007; Onumah & Yao Krah 2012; Walter & Guandaru 2012). Against this background, we can formulate the first research hypothesis:

**H1:** Internal auditing effectiveness is positively related to the competence of the internal audit staff.

### 3.3 Independence and objectivity of internal audit

During the last years, professional bodies and standard-setters have emphasized the importance of independence and objectivity of internal auditors for the internal audit quality despite their employment status in the organization. The independence and objectivity are key elements of the effectiveness of IA (Mutchler 2003; Ahmad *et al.* 2009; Al-Akra *et al.* 2016). ISPPIA (Standard 1100) requires that the internal audit department must be independent and internal auditors must be objective in achieving their work to add value to the organization. In order to ensure the appropriate level of independence and objectivity of the internal audit, professional standards and guidance of ISPPIA suggest that the CAE reports administratively to the senior management and functionally to the board. He has unrestricted access to records, personnel, and departments, avoids any conflict of interests, must not perform non-audit work, and be affiliate to the IIA (Goodwin & Yeo 2001; Christopher *et al.* 2009).

The few researchers that have examined this issue have found that the greater the independence and objectivity of internal audit department, the greater the internal auditor's effectiveness. A survey conducted by Alizadeh (2011) has shown that the organizational independence of the IAF is among the five important factors of the effectiveness of IA in Iranian companies. Furthermore, Cohen & Sayag (2010) found that organizational independence was positively related to the auditing quality and the auditees' evaluations, which were the two dimensions of the effectiveness of IA in the Israeli context. Other studies supported these results indicating that there is a positive association between the effectiveness of IA and the organizational status of CAE (Hung & Han 1998; Soh & Bennie 2011; Alzeban & Gwilliam 2014). Moreover, Radzi & Islam (2011) noted that organizational independence of internal audit may reduce earnings management in Malaysian listed companies. Harrell *et al.* (1989), Abdolmohammadi (2009) and Arena & Azzone (2009) revealed that IA effectiveness increases when the CAE is affiliated to the IIA. In fact, internal auditors' members of the IIA are objective and they can manage conflicts between the loyalty of the profession and the organization's requirements. These arguments lead to the following hypotheses:

**H2:** Internal auditing effectiveness is positively related to the independence of the internal audit.

**H3:** Internal auditing effectiveness is positively related to the objectivity of the internal auditors.

### 3.4 Outsourcing of internal audit

A company's internal audit function can be maintained in-house, outsourced or co-sourced. The outsourcing of the internal audit can generate various advantages and disadvantages. On one hand, using the outsourcing can

facilitate the creation of the internal auditors' team that has specialized skills in the audited domain. It also increases the level of objectivity of internal audit, since outsourced internal auditors do not interact on the long term with the managers and employees, which helps eliminate the costs of recruitment and training for the internal audit team. On the other hand, outsourced internal auditors do not know very well the environment and the culture of the company and they are accepted with some reticence by the audited departments, and this do not allow them to access to relevant information and to discover critical facts or issues for the investigation.

Previous studies indicate that internal audit sourcing arrangements have positive and negative effects on IA effectiveness. Ahlawat & Lowe (2004) and Davidson *et al.* (2013) found that external auditors are more likely to rely on the work of outsourced internal audit than the work of in-house internal audit. They suggest that internal audit outsourcing is more competent and more objective than internal audit department. However, external auditors' reliance on outsourced internal audit decreases when the internal audit service provider also provides additional tax and consulting services to the client (Desai *et al.* 2011).

Several studies have demonstrated that outsourcing internal audit improves IA effectiveness and consequently positively influences the organizational performance by reducing the risks and the operating costs (Sudsomboon & Janjaturapat 2011; Prawitt *et al.* 2012). Some researchers found that in-house internal auditors are more likely to detect and self-report fraud than outsourced internal auditors. They confirm that IAF within organization is more effective than internal audit completely outsourced (Coram *et al.* 2008; Salameh *et al.* 2011). Furthermore, Selim & Yiannakas (2000) and Abbott *et al.* (2007) noted that outsourcing routine internal audit tasks threatens independence and quality of internal audit. The discussion above raises the following hypothesis:

**H4:** Internal auditing effectiveness is related to the outsourcing of the internal audit.

### 3.5 Management support for internal audit

Top management support is crucial to the acceptance and appreciation of the IAF within an organization. ISPPA states that internal auditors should be supported from top management and Board of Directors to execute its duties and fulfill its responsibilities. Indeed, the internal audit department should have sufficient resources to improve the effectiveness of its activities.

Previous studies have demonstrated that support for internal auditing by top management is critical to the effectiveness of IA. Albrecht *et al.* (1988) found that management support was the most important determinant of IA effectiveness within the American private sector. In Taiwan, Hung & Han (1998) found that favorable management's attitude toward internal auditors contributes to the progress of annual auditing plan and therefore to the effectiveness of IA.

Reporting on the Malaysian public sector, Ahmad *et al.* (2009) indicated that management support has a considerable influence on the implementation of internal audit recommendations and the internal audit would be well resourced in terms of number of staff and budget. Cohen & Sayag (2010) found that management support was strongly related to the three auditing effectiveness dimensions (auditing quality, auditees' evaluations, and added contribution of IA) in Israeli organizations. Alzeban & Gwilliam (2014) found that management support was the most important factor influencing IA effectiveness within the Saudi Arabian public sector organizations. They noted that IA effectiveness would be enhanced by hiring trained and experienced staff, and providing sufficient resources.

Furthermore, Mihret & Yismaw (2007) found that management support was the second most important factor influencing IA effectiveness within the higher educational institution in Ethiopia, after internal audit quality. In a survey of Ghanaian internal auditors, Onumah & Yao Krah (2012) found that IA effectiveness was mainly hindered by the absence of management support and insufficient resources for the internal audit department. Top management must be truly aware of the importance of the role of IA within an organization and fully support the internal auditors to ensure legitimacy, credibility and authority of the IAF (Van Gansberghe 2005; Sarens & De Beelde 2006). Based on the preceding discussion, we can formulate the fifth research hypothesis:

**H5:** Internal auditing effectiveness is positively related to the management support for internal auditing.

### 3.6 Management training ground

The IAF is used quite extensively as a management training ground (MTG) in Anglo-Saxon countries (Chadwick 1995; Oxner & Kusel 1996; Baker 2010). Generally, there are two approaches to using IAF as a MTG. First, new employees can be hired directly into the internal audit department with the promise that they will be promoted to line management positions after a few years in internal audit. Second, existing (non-IAF) employees can be cycled into the IAF for a period of time before moving them into management positions (Goodwin & Yeo 2001). This practice has many advantages and disadvantages. Some authors argue that using IAF as a MTG improves training of managers. In fact, managers who spend a period into internal audit department will have a better understanding of the importance of internal control and a wide variety of knowledge about the company

(Chadwick 1995). In addition, the practice enables the organization to attract the best candidates into internal audit positions (Burton *et al.* 2012). Other authors view the practice less favorably, arguing that it mitigates internal audit independence and objectivity because internal auditors who operate in settings with more organizational career opportunities will have less willingness to take strong positions that oppose management (Chadwick 1995; Goodwin & Yeo 2001; Christopher *et al.* 2009).

Despite the importance of this prevalent practice, very little research has investigated how using the IAF as a MTG affects the IA effectiveness. According to Albrecht *et al.* (1988), Hung & Han (1998) and Cohen & Sayag (2010), using IAF as a MTG has a positive influence on the effectiveness of IA. Indeed, internal auditors who want to improve their professional career in the organization will invest more effort in their work in order to increase their career advancement opportunities. In a different perspective, Chadwick (1995) argues that internal auditors who spent a short period in internal audit department have no incentive to enhance the quality of the IAF and to take corrective actions for fear of disrupting their relationship with management. Furthermore, Messier *et al.* (2011) found that MTG setting has a negative influence on the external auditor's perceptions of the performance of IAF. The results above provide mixed evidence concerning whether the practice improves or impairs the effectiveness of IA. Hence, our last research hypothesis is:

**H6:** Internal auditing effectiveness is related to the use of the internal audit function as a management training ground.

#### 4. Research method

##### 4.1 Sample and data collection

The data used in this study were collected through a questionnaire sent to chief audit executives (CAEs) of Tunisian organizations which have internal audit functions including banks, insurance companies and financial institutions. A copy of the questionnaire instrument was sent to the CAE in each of 225 companies within the period of March to June, 2015. In total, we received 148 useable responses, representing a response rate of 65.77 percent.

Before administering the questionnaire, we ran a pre-test with two academics based in Tunisian universities and nine CAEs. The feedback led to improvements in construction and understandability of the questionnaire survey.

The questionnaire was structured in three sections. Section (A) gathered general information about demographic profile of respondents. Section (B) assessed IA effectiveness, and section (C) focused on the factors potentially associated with the effectiveness of IA.

Table 1 provides a general overview of the sample surveyed in term of the demographic information.

Table 1. Participant demographics

Demographic object	Items	N	%
Qualifications	PhD	2	1.35
	Master degree	58	39.18
	Bachelor	88	59.45
	CIA <sup>a</sup>	14	9.45
Professional certificate	Tunisia CPA <sup>b</sup>	28	18.91
	Tunisia CPA and CIA	4	2.70
	None	102	68.91
	1-5 years	36	24.32
Experience	6-10 years	48	32.43
	More than 10 years	64	43.24
	1-5	120	81.08
Number of internal auditors in department	6-10	10	6.75
	11-15	16	10.81
	16-20	2	1.35
Gender	Female	34	22.97
	Male	114	77.02

<sup>a</sup> Certified Internal Auditor.

<sup>b</sup> Certified Public Accountant.

The majority of participants held bachelor's degrees in accounting or finance (59 percent). However, only 9 percent held a professional internal auditing certification (CIA). Approximately, 57 percent of the CAEs had less than ten years of work experience in internal auditing. Furthermore, the majority of Tunisian organizations (81 percent) had a small internal audit department comprising less than six internal auditors. This pattern might not be entirely unexpected in a country in which internal auditing profession is not very well developed but it is in growing. Table 1 shows that 22.97 percent of respondents are female. Although this percentage is relatively low, women's participation in internal auditing profession in Tunisia is significant

compared to other Arab countries (Rahahleh 2010).

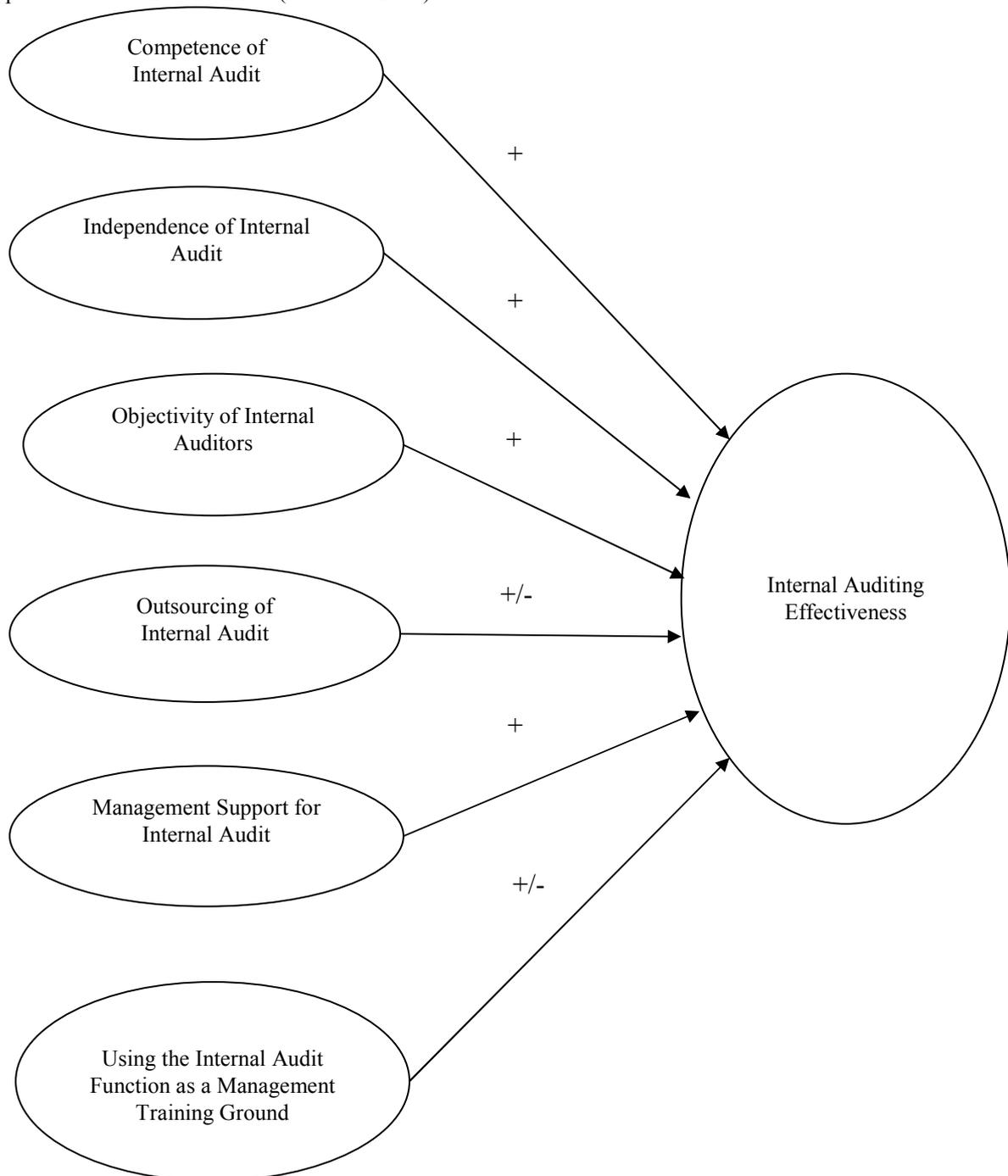


Figure 1. Model of the research.

#### 4.2 Measurement of variables

##### 4.2.1 Dependent variable

The dependent variable was IA effectiveness. It is not easy to assess the effectiveness of IA within an organization because internal audit reports are not available to researchers. Previous studies utilized different approaches to measure the effectiveness of IA.

Some studies focused on process measures (Wang 1997; Ziegenfuss 2000; Fadzil *et al.* 2005). These measures are based on the evaluation of the quality of IA procedures, such as the compliance with ISPPA or the ability to execute internal audit plan. However, that approach has been criticized for focusing on the hypothesis that IA activity is effective if procedures are carried out properly, without taking into account the requirements of the main stakeholders (Lampe & Sutton 1994). Other studies focused on output measures (Frigo 2002; Mihret & Yismaw 2007; Arena & Azzone 2009; Cohen & Sayag 2010). This approach sought to measure the function's

ability to satisfy the needs of its customers, such as top management and audit committee. In this issue, Ziegenfuss (2000) has highlighted that the extent to which internal audit recommendations are implemented is the most suitable measure to evaluate IA effectiveness. Nevertheless, this measure suffers from some limitations, as it is at least partially beyond the control of the internal audit and does not account for qualitative differences between recommendations (Salierno 2000). Finally, there are outcome measures, which tackle the impact of internal audit activities on the audited process and corporate performance. In this context, Dittenhofer (2001) argues that to evaluate IA effectiveness, it should determine the degree of achievement of internal audit objectives. Although this approach is potentially interesting it seems to be a conceptual method that involves inherent difficulties. The main problems are related to the existence of a delay between the time when a certain action is taken and when its impact is comprehensible (Perrin 1998).

Given the limitations of the above three approaches, the problematic of measuring the effectiveness of internal audit presents a significant challenge for practitioners and academics.

This study assesses the effectiveness of IA through an overall measure was obtained by aggregating CAE responses to survey questions on aspects of the IAF including: compliance with IIA Standards, internal audit planning, issuing internal audit reports, implementation of internal audit recommendations, and evaluation and improvement of control, risk management and governance processes.

The respondents were asked to indicate the extent of achievement of each statement on a five-point Likert scale with anchors of 1 “not at all” and 5 “to a great extent”.

Table 2 presents the items of the internal auditing effectiveness.

Table 2. Internal auditing effectiveness

Item
1 Internal audit is performed in accordance with the IIA Standards (ISPPIA)
2 Internal audit develops a risk-based annual plan
3 Internal audit communicates timely the engagement results
4 Internal audit makes appropriate recommendations for improving the organizational processes
5 Internal audit establishes a follow-up process to ensure that corrective actions have been effectively implemented
6 Internal audit reviews the effectiveness and efficiency of operations and programs
7 Internal audit reviews the reliability and integrity of financial information
8 Internal audit evaluates the effectiveness of controls regarding the safeguarding of assets
9 Internal audit evaluates the compliance with procedures, policies, plans and regulations
10 Internal audit improves the effectiveness of internal control process
11 Internal audit assesses that organizational missions are consistent with organizational objectives
12 Internal audit assesses that risk responses are appropriate and align with the organization’s risk appetite
13 Internal audit evaluates the potential for the occurrence of fraud and how the organization manages fraud risk
14 Internal audit improves the effectiveness of risk management process
15 Internal audit evaluates and improves the effectiveness of governance process

#### 4.2.2 Independent variables

The independent variables for this study are:

- Competence of internal audit (COMP).

Following Prawitt *et al.* (2009) and Pizzini *et al.* (2015), we construct a measure of competence of internal audit using four variables, Experience, Education, Certification, and Training.

Experience (EXP) is the average number of years of IA experience of the audit staff. Education (EDU) is the average of the number of years of undergraduate and graduate education (Associate, Bachelor, Master, and Ph.D. degrees are assumed to take 2, 4, 6, and 8 years of study, respectively). Certification (CERT) is the percentage of internal auditors with one or more internal audit certifications. Training (TRA) is the annual hours of training per internal auditor.

We combine these four variables into a single measure by assigning a value of 1 to the variable if it is above the median of our sample for that variable and 0 otherwise. We then divide the sum of the variables by four so that values for competence range from 0 to 1.

- Independence of internal audit (IND).

Following Prawitt *et al.* (2009) and Pizzini *et al.* (2015), we measure independence of internal audit with an indicator variable that equals 1 if the CAE reports administratively to the senior management and functionally to the audit committee and 0 otherwise.

- Objectivity of internal auditors (OBJ).

We measure objectivity of internal auditors by four items. The participants were asked to indicate their agreement to the following statements by using a Likert scale ranging from 1 “strongly disagree” to 5 “strongly agree”: (1) Internal audit staff is free from any interference in performing their professional obligations and

duties, (2) Internal audit staff does not assess specific operations for which they were previously responsible, (3) Internal audit staff does not perform non-audit functions, and (4) Internal audit staff has free access to all information, departments and employees in the organization.

- Outsourcing of internal audit (OUTS).

Following Carey *et al.* (2006) and Wood *et al.* (2013), we measure outsourcing of internal audit with an indicator variable that equals 1 if the work of the IAF is partially outsourced to a third-party provider or 0 if the work of the IAF is performed in house.

- Top management support (TMS).

We measure management support for internal auditing by four items. The participants were asked to indicate their agreement to the following statements by using a Likert scale ranging from 1 “strongly disagree” to 5 “strongly agree”: (1) Senior management provides internal auditors the support that they expect, (2) Internal audit department has sufficient staff to successfully carry out its responsibilities, (3) Internal audit department has adequate budget given the amount of auditing work planned, and (4) Senior management provides sufficient support and encouragement for training and developing the internal audit staff.

- Management training ground (MTG).

Following Messier *et al.* (2011) and Wood *et al.* (2013), we measure management training ground with an indicator variable that equals 1 if the company uses the CAE position as a MTG or 0 otherwise.

- Sector of the organization (SEC).

The sector is the control variable of our study. Prior studies report that the type of the sector (private or public) makes a difference on the goals and activities of IA (Goodwin 2004). In the private sector, organizations operate in a competitive environment which is characterized by a high-risk level. Indeed, private organizations are more interested in monitoring their internal control system and consequently improving their IAF. This study anticipates that IA will be more effective in private organizations than in public organizations. According to Goodwin (2003) the sector of the organization is defined as an indicator variable that equals 1 for private sector organizations and 0 for public sector organizations.

#### 4.3 Model specification

We apply ordinary least squares (OLS) regression to estimate the magnitude of the effect of factors identified above (the independent variables) on the IA effectiveness (the dependent variable). Our regression model and the variables used are given below:

$$IAE = \beta_0 + \beta_1 COMP + \beta_2 IND + \beta_3 OBJ + \beta_4 OUTS + \beta_5 TMS + \beta_6 MTG + \beta_7 SEC + \varepsilon$$

Where:

<i>IAE</i>	Internal auditing effectiveness;
<i>COMP</i>	Competence of internal audit;
<i>IND</i>	Independence of internal audit;
<i>OBJ</i>	Objectivity of internal auditor;
<i>OUTS</i>	Outsourcing of internal audit;
<i>TMS</i>	Top management support for internal auditing;
<i>MTG</i>	Management training ground;
<i>SEC</i>	Sector; and
$\varepsilon$	Error term.

## 5. Empirical Results

### 5.1 Descriptive statistics

Table 3. Descriptive statistics

Variable	Mean	Std.Dev. <sup>a</sup>	Minimum	Median	Maximum	Cronbach's $\alpha$
IAE	3.681	0.632	1.466	3.800	4.600	0.930
COMP	0.331	0.231	0.000	0.250	0.750	
EXP	5.658	2.553	2.000	5.000	10.000	
EDU	4.655	1.468	1.660	4.660	13.000	
CERT	0.042	0.108	0.000	0.000	0.500	
TRA	19.621	13.198	0.000	20.000	50.000	
IND	0.513	0.501	0.000	1.000	1.000	
OBJ	3.317	0.720	1.750	3.500	4.500	0.607
OOTS	0.189	0.392	0.000	0.000	1.000	
TMS	3.297	0.716	1.250	3.500	4.500	0.762
MTG	0.662	0.474	0.000	1.000	1.000	
SEC	0.851	0.356	0.000	1.000	1.000	

*n*=148

<sup>a</sup> Standard deviation.

Table 3 presents descriptive statistics for the dependent and independent variables.

Coefficient of reliability (Cronbach's alpha) was used to determine the association for which the items are maximally correlated with one another and minimally correlated with other variables. Table 3 shows that the Cronbach's alpha values of internal auditing effectiveness, objectivity of internal auditor and top management support exceed the 0.60 threshold generally considered acceptable in regard to scale reliability.

The mean score of the IA effectiveness (3.68) is slightly higher than the mid-point of the range, indicating that on average the IAF in Tunisian organizations is moderately effective.

Furthermore, for independent variables, the mean score of the variable COMP is 0.33, indicating a low level of the competence of internal audit. On average, internal auditors in Tunisia have 5 years of work experience in internal auditing, 4 years of graduate education and 19 hours of training per year. The average percentage of CAEs that have a professional certification is 4.2 percent. In fact, the lack of professionalism and experience of the CAEs has a negative impact on the level of competence of internal audit.

As shown in table 3, 51 percent of the CAEs in our sample report administratively to the senior management and functionally to the audit committee. This result reveals that the internal audit function in Tunisian organizations enjoys an acceptable degree of organizational independence. The mean score of the objectivity of internal auditor (3.31) is slightly above the mid-point of the range indicating a moderate level of objectivity of internal audit staff.

The statistics show that about 81 percent of respondents indicate that internal audit function is performed by in-house internal audit department. This result highlights the increasing recognition of the internal audit function by Tunisian organizations.

The mean score of the top management support (3.29) is slightly higher than the mid-point of the range, indicating that the senior management provides a moderate level of support to the internal audit function. Table 3 indicates that 66 percent of Tunisian organizations use the internal audit function as a management training ground. Finally, 85.1 percent of organizations in our sample belong to the private sector and 14.9 percent to the public sector.

### 5.2 Multivariate statistics

#### 5.2.1 Correlation Analysis

Table 4 presents the Pearson's correlation statistics between dependent and independent variables. As expected, the internal auditing effectiveness (IAE) is positively and significantly correlated with all independent variables ( $p < 0.01$ : IND, OBJ, TMS, MTG, SEC;  $p < 0.05$ : COMP, OOTS). Another observation from Table 4 is that correlations between independent variables do not reach the critical level of 0.50 to cause concern for multicollinearity. Consistent with this conclusion variance inflation factors are lower than 1.30.

Table 4. Correlation matrix

Variable	IAE	COMP	IND	OBJ	OUTS	TMS	MTG	SEC
IAE	1.000							
COMP	0,199*	1.000						
IND	0,282**	0,151	1.000					
OBJ	0,406**	0,272**	0,299**	1.000				
OUTS	0,168*	0,166*	0,056	0,171*	1.000			
TMS	0,302**	-0,026	0,046	0,150	0,053	1.000		
MTG	0,334**	0,034	-0,009	0,137	0,126	0,097	1.000	
SEC	0,263**	-0,018	0,125	-0,040	-0,089	0,387**	0,023	1.000

\*. Statistical significance at the 5% level.

\*\* Statistical significance at the 1% level.

### 5.2.2 Regression analysis

Table 5. OLS Regression results

Variables	Exp. Sign	Unstandardized coefficients		Standardized coefficients	t	Sig.	Collinearity statistics	
		B	SE	$\beta$			Tolerance	VIF
Constant		1.717	0.268		6.404	0.000		
COMP (H1)	+	0.239	0.193	0.088	1.238	0.218	0.900	1.111
IND (H2)	+	0.195	0.090	0.155	2.162	0.032	0.881	1.135
OBJ (H3)	+	0.239	0.066	0.272	3.625	0.000	0.799	1.252
OUTS (H4)	+/-	0.120	0.112	0.074	1.069	0.287	0.933	1.072
TMS (H5)	+	0.132	0.066	0.149	2.003	0.047	0.808	1.238
MTG (H6)	+/-	0.355	0.091	0.266	3.893	0.000	0.962	1.040
SEC	+	0.352	0.132	0.198	2.662	0.009	0.810	1.234
F -value		11.744						
P -value		0.000						
Adjusted R <sup>2</sup>		0.338						
n		148						

Table 5 provides regression results. The overall model is significant (F=11.744, p=0.000), with an adjusted-R<sup>2</sup> of 0.338, indicating that 33 percent of the variance in the effectiveness of internal auditing can be explained by the explanatory factors.

The first research hypothesis predicts a positive impact of competence of internal audit on the IA effectiveness. However, the analysis did not show any significant relationship between the competence of internal audit (COMP) and IA effectiveness (IAE). This result is consistent with the finding in Cohen & Sayag (2010). The lack of an association between these variables can be explained by the low percentage of internal auditors with CIA certification in Tunisian organizations compared to European and American organizations. Our first hypothesis is therefore rejected.

The second hypothesis concerns the independence of internal audit. In this case, the regression analysis showed a positive and significant association between IND and IAE ( $\beta=0.155$ ,  $p < 0.05$ ), thus providing support for H2. This result is consistent with the idea that a dual reporting line of the CAE strengthens the independence of the IAF and improves the effectiveness of IA (Sarens *et al.* 2009; Soh & Bennie 2011).

The third research hypothesis relates to the objectivity of internal auditors. The statistical analysis highlighted a positive relationship between the objectivity of internal auditors and the IA effectiveness. The coefficient of OBJ is positive and significant at 1% level with IAE ( $\beta=0.272$ ,  $p=0.00$ ). This result is consistent with the findings of Mihret & Yismaw (2007), Ahmad *et al.* (2009), Abdolmohammadi (2009) and Al-Matarneh (2011) who found that the objectivity is an important determinant of the effectiveness of IA. The third hypothesis is thus confirmed.

The fourth hypothesis concerns the outsourcing of internal audit. In this case, regression results indicated that the coefficient of OUTS is not statistically significant. Indeed, the outsourcing of internal audit does not significantly affect the IA effectiveness in Tunisian organizations. This contradicts the results of previous researches (Abbott *et al.* 2007; Coram *et al.* 2008; Pop & Bota-Avram 2008; Salameh *et al.* 2011). Hence, the fourth hypothesis is not supported.

The fifth research hypothesis predicts a positive relationship between management support for IAF and IA effectiveness. We find the coefficient for TMS to be positive and significant at 5 % level ( $\beta=0.149$ ,  $p=0.047$ ), thus providing support for H5. This fully supports the notion that support from top management is the key factor for the effectiveness of IA (Cohen & Sayag 2010; Alzeban & Gwilliam 2014).

Finally, the last research hypothesis concerns the use of the IAF as a management training ground. The analysis showed a positive and significant association between MTG and IAE ( $\beta=0.266$ ,  $p=0.00$ ). This result is consistent with the idea that more the internal auditor can lead to a managerial career in the organization, more he is encouraged to enhance the effectiveness of IA in order to prove to senior management that he deserves the promotion opportunities. Our finding is in line with arguments of Hung & Han (1998) and Goodwin & Yeo (2001). The sixth hypothesis is thus confirmed.

While this was not included in the research hypotheses, we examined the possibility that the sector of the organization (private versus public) might interact with each of the six independent variables to affect the IA effectiveness. Table 5 showed that the coefficient of SEC is positive and significant at 1% level with IAE ( $\beta=0.198$ ,  $p=0.009$ ). This result is consistent with the findings of Cohen & Sayag (2010) who found that the IAF is more effective in the private sector than in the public sector.

Overall, our findings indicate that the effectiveness of IA in Tunisian organizations is positively influenced by the organizational independence of internal audit, the objectivity of internal auditor, the top management support, the use of the IAF as a management training ground and the sector of the organization.

This study also provides additional support for Albrecht *et al.* (1988), Al-Twajry *et al.* (2003), Cohen & Sayag (2010) and Alzeban & Gwilliam (2014), who find that management support is the major determinant of the IA effectiveness. In fact, the management support is important to the success of the internal audit function in the organization. Without support from top management, internal auditing is not sufficiently objective and independent, has not enough resources to effectively fulfill its works, and cannot hire proficient IA staff. Furthermore, internal auditors cannot develop their professional careers.

## 6. Conclusion

This study examines the role of IA effectiveness and its determinants in Tunisian organizations. The data used to test our hypotheses were collected through a questionnaire, which was sent to CAEs in 225 Tunisian organizations, generating a response rate of 65.77%.

The findings of our study showed that the effectiveness of IA is positively influenced by the independence of internal audit, the objectivity of internal auditors, the management support for internal audit, the use of internal audit function as a MTG, and the sector of organization.

This study has two limitations. First, due to unavailability and non-publication of information relating to the internal audit function, our sample is relatively small compared to certain studies examining internal audit in developed countries. Second, the data used in this study were collected through a questionnaire survey. This method may generate a response bias.

Despite these limitations, our study shows the importance of the IA effectiveness as a cornerstone of governance in Tunisian context. The study contributes to existing internal audit literature (Albrecht *et al.* 1988; Dittenhofer 2001; Arena & Azzone 2009, Cohen & Sayag 2010) by examining the impact of both professional and organizational factors on the IA effectiveness in Tunisian organizations.

The findings provide information that is potentially helpful to auditing profession, management, audit committees/boards of directors and rulemaking bodies in identifying the key factors that contribute to the improvement of the effectiveness of IA. Given the importance of internal audit in the corporate governance, it is interesting to examine, in future researches, the impact of other mechanisms of corporate on the IA effectiveness such as the audit committee, external audit and ownership structure. Furthermore, future research could use larger sample size and design a scale for measuring the effectiveness of internal auditing.

## References

- Abbass, D.A., & Aleqab, M.M. (2013). Internal Auditors' Characteristics and Audit Fees: Evidence from Egyptian Firms. *International Business Research*, 6(4), 67-80.
- Abbott, L. J., Parker, S., Peters, G. F., & Rama, D. V. (2007). Corporate Governance, Audit Quality, and the Sarbanes-Oxley Act: Evidence from Internal Audit Outsourcing. *Accounting Review*, 82(4), 803-835.
- Abdolmohammadi, M. (2009). Factors Associated with the Use of and Compliance with the IIA Standards: A Study of Anglo-culture CAEs. *International Journal of Auditing*, 13(1), 27-42.
- Ahlawat, S.S., & Lowe, D.J. (2004). An Examination of Internal Auditor Objectivity: In-House versus Outsourcing. *Auditing: A Journal of Practice & Theory*, 23(2), 147-158.
- Ahmad, N., Othman, R., Othman, R., & Jusoff, K. (2009). The effectiveness of internal audit in Malaysian public sector. *Journal of Modern Accounting and Auditing*, 5(9), 53-62.
- Aikins, S.K. (2011). An examination of government internal audits' role in improving financial performance. *Public Finance and Management*, 11(4), 306-337.
- Al-Akra, M., Abdel-Qader, W., & Billah, M. (2016). Internal auditing in the Middle East and North Africa: A literature review. *Journal of International Accounting, Auditing and Taxation*, 26, 13-27.
- Albrecht, W.S., Howe, K.R., Schueler, D.R., & Stocks, K.D. (1988). *Evaluating the Effectiveness of Internal*

- Audit Departments*. The Institute of Internal Auditors Research Foundation, Altamonte Springs, FL.
- Ali, O.A., & Owais, W.O. (2013). Internal Auditors' Intellectual (Knowledge) Dimension in Creating Value for Companies Empirical Study of Jordanian Industrial Public Shareholding Companies. *International Business Research*, 6(1), 118-129.
- Alizadeh, N. (2011). The Criteria of Implementing and Employing the Effectiveness of Internal Auditing. *Australian Journal of Basic and Applied Sciences*, 5(12), 955-962.
- Al-Matarneh, G. F. (2011). Factors Determining the Internal Audit Quality in Banks: Empirical Evidence from Jordan. *International Research Journal of Finance and Economics*, 73, 110-119.
- Al-Twajjry, A. A. M., Brierley, J. A., & Gwilliam, D. R. (2003). The development of internal audit in Saudi Arabia: an institutional theory perspective. *Critical Perspective on Accounting*, 14(5), 507-531.
- Al-Twajjry, A. A. M., Brierley, J. A., & Gwilliam, D. R. (2004). An examination of the relationship between internal and external audit in the Saudi Arabian corporate sector. *Managerial Auditing Journal*, 19(7), 929-945.
- Alzeban, A., & Gwilliam, D. (2014). Factors affecting the internal audit effectiveness: A survey of the Saudi public sector. *Journal of International Accounting, Auditing and Taxation*, 23(2), 74-86.
- Arena, M., & Azzone, G. (2009). Identifying organizational drivers of internal audit effectiveness. *International Journal of Auditing*, 13(1), 43-60.
- Baker, N. (2010). The rotational route. *Internal Auditor*, 67(6), 32-37.
- Bou-Raad, G. (2000). Internal auditors and a value-added approach: The new business regime. *Managerial Auditing Journal*, 15(4), 182-186.
- Burton, F.G., Emmett, S.A., Simon, C.A., & Wood, D.A. (2012). Corporate Managers' Reliance on Internal Auditor Recommendations. *Auditing: A Journal of Practice & Theory*, 31(2), 151-166.
- Carey, P., Subramaniam, N., & Ching, K.C. (2006). Internal audit outsourcing in Australia. *Accounting and Finance*, 46(1), 11-30.
- Chadwick, W. (1995). Tough questions, tougher answers. *The Internal Auditor*, 52(6), 63-68.
- Christopher, J., Sarens, G., & Leung, P. (2009). A critical analysis of the independence of the internal audit function: Evidence from Australia. *Accounting, Auditing and Accountability Journal*, 22(2), 200-220.
- Cohen, A., & Sayag, G. (2010). The effectiveness of internal auditing: an empirical examination of its determinants in Israeli organizations. *Australian Accounting Review*, 20(3), 296-307.
- Cohen, J., Krishnamoorthy, G., & Wright, A. (2010). Corporate governance in the post-Sarbanes-Oxley era: auditors' experiences. *Contemporary Accounting Research*, 27(3), 751-786.
- Combined Code (2003). *The Combined Code on Corporate Governance*. Financial Reporting Council, London.
- Coram, P., Ferguson, C., & Moroney, R. (2008). Internal audit, alternative audit structures and the level of misappropriation of assets fraud. *Accounting and Finance*, 48(4), 1-17.
- Davidson, B.I., Desai, N.K., & Gerard, G.J. (2013). The Effect of Continuous Auditing on the Relationship between Internal Audit Sourcing and the External Auditor's Reliance on the Internal Audit Function. *Journal Of Information Systems*, 27(1), 41-59.
- Desai, N., Gerard, G., & Tripathy, A. (2011). Internal audit sourcing arrangements and reliance by external auditors. *Auditing: A Journal of Practice & Theory*, 30(1), 149-171.
- Dittenhofer, M. (2001). Internal audit effectiveness: an expansion of present methods. *Managerial Auditing Journal*, 16(8), 443-450.
- Eden, D., & Moriah, L. (1996). Impact of Internal Auditing on Branch Bank Performance: A Field Experiment. *Organizational Behavior and Human Decision Processes*, 68(3), 262-271.
- Fadzil, F. H., Haron, H., & Jantan, M. (2005). Internal auditing practices and internal control system. *Managerial Auditing Journal*, 20(8), 844-866.
- Fanning, K., & Piercey, D. (2014). Internal auditors' use of interpersonal likability, arguments, and accounting information in a corporate governance setting. *Accounting, Organizations and Society*, 39, 575-589.
- Frigo, M. (2002). *A Balanced Scorecard Framework for Internal Auditing Departments*. The Institute of Internal Auditors Research Foundation, Altamonte Springs, FL.
- Goodwin, J. (2003). The relationship between the audit committee and the internal audit function: Evidence from Australia and New Zealand. *International Journal of Auditing*, 7(3), 263-278.
- Goodwin, J. (2004). A comparison of internal audit in the private and public sectors. *Managerial Auditing Journal*, 19(5), 640-650.
- Goodwin, J., & Yeo, T. Y. (2001). Two Factors Affecting Internal Audit Independence and Objectivity: Evidence from Singapore. *International Journal of Auditing*, 5(2), 107-125.
- Gramling, A., Maletta, A., Schneider, A., & Church, B. (2004). The role of the internal audit function in corporate governance: A synthesis of the extant internal auditing literature and directions for future research. *Journal of Accounting Literature*, 23, 194-244.
- Gros, M., Koch, S., & Wallek, C. (2016). Internal audit function quality and financial reporting: results of a

- survey on German listed companies. *Journal of Management and Governance*, DOI 10.1007/s10997-016-9342-8
- Harrell, A., Taylor, M., & Chewning, E. (1989). An examination of management's ability to bias the professional objectivity of internal auditors. *Accounting Organizations and Society*, 14(3), 259-269.
- Hass, S., Abdolmohammadi, M., & Burnaby, P. (2006). The Americas literature review on internal auditing. *Managerial Auditing Journal*, 21(8), 835-844.
- Hung, J.H., & Han, H.L. (1998). An empirical study on effectiveness of internal auditing for listed firms in Taiwan. *National Central University*, 4-5.
- IFAC (2006). *Guidance for the Development of a Code of Corporate Governance*. International Federation of Accountants, New York, NY.
- IIA (2004). *Definition of Internal Auditing*, The Institute of Internal Auditors. Altamonte Springs, FL.
- Lampe, J., & Sutton, S. (1994). *Developing Productivity in Quality Measurements Systems for Internal Audit Departments*. The Institute of Internal Auditors Research Foundation, Altamonte Springs, FL.
- Messier, W., Reynolds, J., Simon, C., & Wood, D. (2011). The effect of using the internal audit function as a management training ground on the external auditor's reliance decision. *The Accounting Review*, 86(6), 2131-2154.
- Mihret, D. G., & Yismaw A. W. (2007). Internal audit effectiveness: an Ethiopian public sector case study. *Managerial Auditing Journal*, 22(5), 470-484.
- Mihret, D. G., James, K., & Mula, J. M. (2010). Antecedents and organizational performance implications of internal audit effectiveness: some propositions and research agenda. *Pacific Accounting Review*, 22(3), 224-252.
- Mihret, D.G., & Woldeyohannis, G.Z. (2008). Value-added role of internal audit: an Ethiopian case study. *Managerial Auditing Journal*, 23(6), 567-595.
- Mutchler, J.F. (2003). *Independence and Objectivity: A Framework for Research Opportunities in Internal Auditing*. The Institute of Internal Auditors, Altamonte Springs, FL.
- Octavia, E. (2013). The effects of implementation on internal audit and good corporate governance in corporate performance. *Journal Of Global Business And Economics*, 6(1), 77-87.
- OECD (2004). *The OECD Principles of Corporate Governance*. Available at <http://www.oecd.org/dataoecd/32/18/31557724.pdf>
- Onumah, J.M., & Yao Kraah, R. (2012). Barriers and catalysts to effective internal audit in the Ghanaian public sector. *Research in Accounting in Emerging Economies*, 12, 177-207.
- Oxner, T.H., & Kusel, J. (1996). Trends in the job market. *Internal Auditor*, 53(3), 20-27.
- Perrin, B. (1998). Effective use and misuse of performance measurement. *American Journal of Evaluation*, 19(3), 367-379.
- Pizzini, M., Lin, S., & Ziegenfuss, D. (2015). The Impact of Internal Audit Function Quality and Contribution on Audit Delay. *Auditing: A Journal of Practice & Theory*, 34(1), 25-58.
- Pop, A., & Bota-Avram, C. (2008). The outsourcing of internal audit – it is a Solution in increasing the quality of internal audit? *Annals of the University of Oradea, Economic Science Series*, 17(3), 1399-1402.
- Prawitt, D. F., Smith, J.L., & Wood, D.L. (2009). Internal audit quality and earning management. *The Accounting Review*, 84(4), 1255-1280.
- Prawitt, D.F., Sharp, N.Y., & Wood, D.A. (2012). Internal Audit Outsourcing and the Risk of Misleading or Fraudulent Financial Reporting: Did Sarbanes-Oxley Get It Wrong? *Contemporary Accounting Research*, 29(4), 1109-1136.
- Radu, M. (2012). Corporate governance, internal audit and environmental audit - the performance tools in Romanian companies. *Accounting and Management Information Systems*, 11(1), 112-130.
- Radzi, S., & Islam, M. (2011). Earning Quality in Public Listed Companies: A Study on Malaysia Exchange for Securities Dealing and Automated Quotation. *International Journal of Economics and Finance*, 3(2), 233-244.
- Rahahleh, M.Y. (2010). The constraints and obstacles facing women in auditing profession: the case of Jordan. *The Journal of American Academy of Business*, 16(1), 177-186.
- Roth, J. (2003). How do internal auditors add value? Characteristics common to top-rated audit shops help to shed light on the nebulous concept of adding value. *Internal Auditor*, February.
- Sakour, A., & Laila, N. (2015). Internal Audit Effectiveness in Libyan Public Enterprises: An Approach to the Development of a Theoretical Framework. *Global Business and Management Research: An International Journal*, 7(2), 12-18.
- Salameh, R., Al-Weshah, G., Al-Nsour, M., & Al-Hiyari, A. (2011). Alternative Internal Audit Structures and Perceived Effectiveness of Internal Audit in Fraud Prevention: Evidence from Jordanian Banking Industry. *Canadian Social Science*, 7(3), 40-50.
- Salierno, D. (2000). The right measures. *The Internal Auditor*, 57(1), 41-46.

- Sarbanes-Oxley (2002). *Public Company Accounting Reform and Investor Protection Act*. Available at [www.sarbanes-oxley.com](http://www.sarbanes-oxley.com)
- Sarens, G., & De Beelde, I. (2006). The relationship between internal audit and senior management: An analysis of expectations and perceptions. *International Journal of Auditing*, 10(3), 219-241.
- Sarens, G., De Beelde, I., & Everaert, P. (2009). Internal audit: the expert in providing comfort to the audit committee-the case of risk management and internal control. *British Accounting Review*, 41(2), 90-106.
- Selim, G., & Yiannakas, A. (2000). Outsourcing the internal audit function: a survey of the UK public and private sectors. *International Journal of Auditing*, 4(3), 213-226.
- Smith, G. (2005). Communication skills are critical for internal auditors. *Managerial Auditing Journal*, 20(5), 513-539.
- Soh, D.S., & Bennie, N.M. (2011). The internal audit function: Perceptions of internal audit roles, effectiveness, and evaluation. *Managerial Auditing Journal*, 26(7), 605-622.
- Spira, L. F., & Page, M. (2003). Risk management: the reinvention of internal control and the changing role of internal audit. *Accounting, Auditing & Accountability Journal*, 16(4), 640-661.
- Staden, M., & Steyn, B. (2009). The profile of the chief audit executive as a driver of internal audit quality. *African Journal of Business Management*, 3(13), 918-925.
- Sudsomboon, S., & Janjaturapat, S. (2011). The effects of internal audit outsourcing effectiveness on firm sustainability: an empirical research of ISO 9001 business in Thailand. *International Journal of Business Research*, 11(1), 217-225.
- Tamosiuniene, R., & Savcuk, O. (2007). Internal Audit Subordination Principles for Lithuanian Companies. *Engineering Economics*, 5 (55), 37-43.
- Van Gansberghe, C. (2005). Internal Auditing in the Public Sector: a consultative forum in Nairobi, Kenya, shores up best practices for government audit professionals in developing nations. *Internal Auditor*, 62(4), 69-73.
- Walter, O.B., & Guandaru, K.C. (2012). A study to explore internal auditors' compliance with Quality Assurance Standards: A case of state owned corporations in Kenya. *International Journal of Research Studies in Management*, 1(1), 109-126.
- Wang, X. (1997). Development trends and future prospects of internal auditing. *Managerial Auditing Journal*, 12, 200-204.
- Wood, D., Christ, M., Masli, A., & Sharp, N. (2013). Using the Internal Audit Function as a Management Training Ground: Is the Monitoring Effectiveness of Internal Auditors Compromised? *Working paper*.
- Yee, C.S., Sujan, A., James, K., & Leung, J.K. (2008). The perception of the Singaporean internal audit customers regarding the role and effectiveness of internal audit. *Asian Journal of Business and Accounting*, 1(2), 147-174.
- Ziegenfuss, D. E. (2000). Measuring performance. *The Internal Auditor*, 57(1), 36-40.