Internal auditing (IA) serves as an important link in the business and financial reporting processes of corporations and not-for-profit providers (Reynolds 2000). Internal auditors play a key role in monitoring a company’s risk profile and identifying areas to improve risk management (Goodwin-Stewart and Kent 2006). The aim of internal auditing is to improve organisational efficiency and effectiveness through constructive criticism. IA has four main components: (1) verification of written records; (2) analysis of policy; (3) evaluation of the logic and completeness of procedures, internal services and staffing to assure they are efficient and appropriate for the organisation’s policies; and (4) reporting recommendations for improvements to management (Eden and Moriah 1996).

The subject is worthy of attention because internal auditors are important, even crucial, in an economy that relies upon independently produced information (Van Peursem 2005). Indeed, IA has become an indispensable management tool for achieving effective control in both public and private organisations (Eden and Moriah 1996). Control mechanisms are those processes set up to monitor and to direct, promote or restrain the various activities of an enterprise for the purpose of seeing that enterprise objectives are met (Sawyer 1988; Coram, Ferguson and Moroney 2008). By detecting weaknesses in management operations, IA provides a basis for correcting deficiencies that have eluded the first line of defence before these deficiencies become uncontrollable or are exposed in the external auditor’s report (Eden and Moriah 1996). As an example, Coram et al. (2008) found in a sample of 324 Australian and New Zealand organisations that those with an internal audit function are more likely to detect and self-report fraud through misappropriation of assets than those who do not.

The current study looks at the effectiveness of IA, an important concept rarely examined in the scientific literature. Of the few studies dealing with IA’s effectiveness, most take as a starting point the perceptions of the external auditor and whether the external auditor uses the internal auditor’s work (Eden and Moriah 1996; Coram et al. 2008). While Eden Internal auditing (IA) has become an indispensable control mechanism in both public and private organisations. Yet very few academic studies have been conducted on the effectiveness of IA. The current exploratory study aims to build a conceptual understanding of the effectiveness of IA in organisations. Towards this end it develops a scale to measure the effectiveness of IA and a model of its determinants. One hundred and eight Israeli organisations that employ IA participated in the study (a 37% response rate). Data on the effectiveness of IA were collected from the organisations’ general managers and data on the determinants from their internal auditors. The findings reveal good psychometric properties for the scale developed in this study. The correlation and regression analyses show support from top management to be the main determinant of IA effectiveness, with some effect also found for the organisational independence of IA. The effect of the predictors was consistent between the public and private sectors. The research model explained a large amount of variance of IA effectiveness. The findings are discussed in terms of how they can help guide and encourage the continuation of research on this issue.

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and Moriah (1996) develop and test an explanatory model of IA effectiveness, they are nearly alone in doing so. Moreover, while a number of authors develop scales or measures for assessing the effectiveness of IA (for example, White 1976; Glazer and Jaenike 1980; Schneider 1984; Albrecht, Howe, Schueler and Stocks 1988; Lampe and Sutton 1994; Ditthenhofer 2001), very few have examined this question using valid scales for both dependent and independent variables. This study contributes to the literature by developing a conceptual understanding of IA effectiveness in organisations and by developing and validating a scale with which to measure that effectiveness.

The current study also contributes to the literature by exploring the determinants of IA effectiveness. Understanding the factors that determine IA effectiveness is important because effective IA can improve four important processes in the organisation: learning (teaching members how to do their job better), motivation (auditing leads to improved performance as deficiencies will have to be explained), deterrence (knowing that an audit is imminent may discourage abuse), and process improvements (IA may increase the likelihood that the right things are done and that they are done right) (Eden and Moriah 1996).

In this regard, it should be remembered that internal auditors – like other professionals such as accountants, scientists, attorneys and engineers – have two competing loyalties and identities: to their profession and to the organisation for which they work. This issue of profession versus organisation has been an ongoing concern in organisational theory and the sociology of professions for a couple of decades. One of the most common conceptualisations of the question was advanced by Gouldner (1957, 1958) and is known as the cosmopolitan–local distinction. In Gouldner’s view, individuals whose identification is local see as their frame of reference the institution in which they work. They have strong loyalty towards their employing organisation and low identification with their profession. By contrast, cosmopolitans are committed to maintaining the skills and values of the profession to which they belong. They tend to use external professional groups as their frame of reference, and are less loyal to the specific organisation that employs them.

The cosmopolitan–local distinction has been applied to several professions in a variety of settings, such as faculties in universities, scientists in non-academic work settings, police chiefs in large cities and military personnel (see, for example, Larwood, Wright, Desrochers and Dahir 1998). The current study considers the behaviour of internal auditors in light of this construct. It explores how determinants that represent professional versus organisational characteristics (and vice versa) are related to the performance of internal auditors, and how the effectiveness of IA can be informed by these different loyalties.

Considering that IA is among the least scientifically studied topics in management research, this study attempts to advance and stimulate more scientific interest in this important profession. The findings of this exploratory study will shed preliminary light on the effectiveness and functioning of IA in organisations. The study will be a springboard from which to generate future research on IA, and will suggest directions for such studies.

**Conceptual Framework**

**IA effectiveness**

As noted above, only a few academic studies have examined the effectiveness of IA, and even fewer have dealt with the issue empirically. In one of the very few studies that examined the effect of internal auditing on organisational performance, Eden and Moriah (1996) assigned 224 bank branches to experimental conditions (audited or not audited) and monitored their performance for a year. Their findings showed that performance significantly improved during the half year following the audit in the experimental branches, while the control branches experienced a decline due to poor general business conditions. It should be reiterated that Eden and Moriah are nearly alone in developing and testing an explanatory model of IA effectiveness. While that study offers a useful jumping-off point for understanding how good auditing can improve a company’s performance, it does not go far enough in explaining when and why IA works, and the conditions that facilitate or impede it. Helping to bridge this gap will be one of the main contributions of this study.

There are two main approaches to the concept of IA effectiveness. According to the first approach, the effectiveness of internal auditing is determined by the fit between the audit and some set of universal standards extrapolated from the characteristics of IA (White 1976). Such an approach was presented by Sawyer (1988), who advanced five standards for internal auditing: interdependence, professional proficiency, the scope of work, the performance of the audit and management of the internal audit department. This approach was also followed by Anderson (1983) and Glazer and Jaenike (1980).

The second approach, which will be used here, follows the arguments of Ransan (1955) and Albrecht et al. (1988) that the effectiveness of internal auditing is not a computable reality, but rather is determined by the subjective evaluations assigned to this function by management. In other words, the success of any internal audit can only be measured against the expectations...
of the relevant stakeholders (Albrecht et al. 1988). This approach requires the development of systematic and generally valid measures by which to gauge IA effectiveness (Schneider 1984; Dittenhofer 2001). One of the early efforts in this regard is that of Hoag (1981), who designed a questionnaire designed to elicit managerial feedback for each internal auditing activity in an organisation. The questionnaire covered four issues: planning and preparation; the quality of the audit report; the timing of the audit; and the quality of communication between the relevant actors. Based on managers’ responses, an average score was calculated for the effectiveness of a given auditing task.

Albrecht et al. (1988), in a study sponsored by the Institute of Internal Auditors (IIA), identified 15 criteria used by 13 large private organisations to evaluate the effectiveness of internal auditing. They concluded that effectiveness is determined mainly by the fit between the auditing work and the goals set by managers, the qualifications of the internal auditor, management support for the internal auditing staff, and several characteristics of the internal auditing department. Lampe and Sutton (1994) identified 15 factors that contribute to an effective audit and categorised them into three stages of the auditing process: planning, fieldwork, and reporting and review. They suggested measurements they considered valid and reliable for these factors. More recently, Ziegenfuss (2000) developed a questionnaire that includes 84 criteria for effectiveness categorised into four main areas: the environment of the internal audit, input into the audit, the auditing process and the output of the audit.

This brief review shows the need for a more comprehensive study of the issue of internal audit effectiveness. The papers noted above may deal with the issue qualitatively (White 1976; Glazer and Jaenike 1980), quantitatively (Schneider 1984), or both (Dittenhofer 2001). But only Lampe and Sutton (1994) and Albrecht et al. (1988) attempt to design a comprehensive scale that can be validated by examining its factor structure and reliability, or by exploring its relationship to conceptual correlates. Yet even those studies did not test their suggested scales empirically using valid and reliable scales. The current study takes this line of research a step further by designing and testing such a scale. However, before moving on to this goal, we must first present the explanatory model advanced here.

**Determinants of internal audit effectiveness**

**Sector – private versus public**

The first variable considered here is the sector of the organisation. This study anticipates that the effectiveness of IA will be influenced by whether the organisation is private or public. This variable will be treated here as a control variable, but its effect is also conceptual. Therefore, it was necessary to examine the possibility that, in addition to its main effect, this variable will interact with the other conceptual determinants in how it affects the effectiveness of internal auditing.

The categorisation of public versus private sector is based on the goals of the organisation. Private organisations are generally interested in maximising their profits, while public organisations focus on improving their services. Goodwin (2003, 2004), in two studies dealing with internal auditors in Australia and New Zealand, identified several important differences between IA in the private versus the public sector. Goodwin (2004) notes two main points where public and private organisations diverge. First, public sector agencies operate in a rigid framework where the organisation’s activities must be authorised by legislation. Second, these agencies are service-oriented, and hence attach lower priority to cost factors and issues associated with profitability. In the earlier of the two studies, examining the relationship between the audit committee and the internal audit function, Goodwin (2003) found several differences between the public and the private sectors, and recommended further examination of sector differences in IA.

Sprakman (1985) argued that internal auditing is both more common and perceived as more important in public organisations than in private ones—a finding supported by Goodwin (2004), who similarly found that public sector IA functions have a higher status than their private sector counterparts. However, other arguments point to the opposite conclusion. There are grounds for saying that private organisations, in general, have greater need for the control and supervision that internal auditing entails. Pfeffer and Leblebici (1973) argued that organisations which operate in a competitive business environment face more pressure than public ones, and one way they react to this pressure is by strengthening their systems of internal control. While the environment of the 1970s is far different from that of today, more recent studies offer similar reasoning. For instance, Thomas (1996) argues that control systems play a more important role in private organisations because of their dynamic and complex environments, which generate more risks for the organisation. Therefore, internal auditing should be both more important and more effective in private than in public organisations.

**Hypothesis 1:** The sector to which an organisation belongs (that is, public versus private) will be related to the effectiveness of internal auditing. The function will be more effective in private organisations than in public organisations.


**Professional proficiency of internal auditors**

Appropriate staffing of an internal audit department and good management of that staff are keys to the effective operation of an internal audit. An audit requires a professional staff that collectively has the necessary education, training, experience and professional qualifications to conduct the full range of audits required by its mandate (Al-Twaijry, Brierley and Gwillian 2003). Auditors must comply with minimum continuing education requirements and professional standards published by their relevant professional organisations and the IIA (2008). Bou-Raad (2000) argued that auditors must have a high level of education in order to be considered a human resource. The diversity of skills required, according to Bou-Raad, represents a major challenge to professional bodies, tertiary institutions and management.

The few studies that have looked into this issue have found that the greater the professional qualifications of the internal auditors in a given department, defined by the length of their professional training and educational level, the greater the effectiveness of this department (Albrecht et al. 1988; Ratliff 1996). Nanni (1984) found that auditor experience had a positive effect on evaluations of internal accounting control.

*Hypothesis 2: Greater professional proficiency on the part of the internal auditors will be related to greater auditing effectiveness.*

**Quality of audit work**

Glazer and Jaenike (1980) argued that performing auditing work according to internal auditing standards contributes significantly to the effectiveness of auditing. Ridley and D’Silva (1997) found in the UK that complying with professional standards is the most important contributor to IA’s added value.

Standards for audits and audit-related services are published by the IIA (2008) and include attribute, performance and implementation standards. In general, formal auditing standards recognise that internal auditors also provide services regarding information other than financial reports. They require auditors to carry out their role objectively and in compliance with accepted criteria for professional practice, such that internal audit activity will evaluate and contribute to the improvement of risk management, control and governance using a systematic and disciplined approach. This is important not only for compliance with legal requirements, but because the scope of an auditor’s duties could involve the evaluation of areas in which a high level of judgement is involved, and audit reports may have a direct impact on the decisions or the course of action adopted by management (Bou-Raad 2000). It can thus be argued that greater quality of IA work – understood in terms of compliance with formal standards, as well as a high level of efficiency in the audit’s planning and execution – will improve the audit’s effectiveness.

*Hypothesis 3: Greater quality of the auditing work will be related to greater auditing effectiveness.*

**Organisational independence**

The role of IA in organisations is complex. Van Peursem (2004) identifies strong potential for confusion in the relationship between internal auditors and management: internal auditors are expected to aid managers in doing their jobs, and at the same time to independently evaluate management’s effectiveness. Internal auditors are charged with upholding the best interests of their employer, but they may be reluctant to counter management, regardless of the consequences.

Bou-Raad (2000) argued that the strength of an IA department must be assessed with respect to the level of independence it enjoys from management and from operating responsibilities. The IIA, the American Institute of Certified Public Accountants (AICPA) and others have likewise identified organisational independence as crucial to the viability of the internal audit function (Brown 1983). Auditors should be sufficiently independent from those they are required to audit that they can both conduct their work without interference, and – equally important – be seen to do so. Coupled with objectivity, organisational independence contributes to the accuracy of the auditors’ work and gives employers confidence that they can rely on the results and the report.

Mautz and Sharaf (1964) differentiate among three dimensions of independence: programming independence, investigative independence and reporting independence. They found the last of the three to be crucial in the work of internal auditors in municipalities in the US. Montondon (1995), Rittenberg (1977) and Chambers, Selim and Vinten (1988) differentiate between organisational independence, based on organisational support, and individual independence, based on individual factors. They argue that organisational independence is more crucial to the effectiveness of internal auditors, as it protects the auditor from pressure or intimidation, and increases the objectivity of the auditing work. Courtemanche (1986) identifies four objective and independent auditing factors: access to information or people, objectivity, freedom and responsiveness of the system.

Van Peursem (2005), based on interviews with Australian internal auditors, concluded that independence from management is a dominant feature of successful auditing programs. Those auditors able to set their own
agenda seem to be the most powerful in this respect because their selection of what to audit and when they can include assessments of senior managers as well as assessments for them. Similarly, Clark, Gibbs and Shroeder (1981) found that the independence of the internal audit department and the level of authority to which the internal audit staff report are the two most important criteria influencing the objectivity of their work.

It can thus be argued that organisational independence will increase the internal auditor’s effectiveness. This independence both lessens the conflict between loyalty to the employer and loyalty to specific managers, and gives auditors a supportive work environment in which they can conduct their tasks objectively and without pressure.

Hypothesis 4: Greater organisational independence will be related to greater auditing effectiveness.

Career and advancement

The determinants described so far – especially the professional proficiency of the auditors, the quality of auditing work and the organisational independence of auditing departments – represent instances where the auditor’s interests are those of the profession, rather than the employing organisation. The following two determinants represent the opposite case, where the interests of the organisation take precedence. The first of these involves considerations of career and advancement.

Goodwin (2001) argued that, internationally, the practice of staffing the internal audit department with career auditors is becoming less common, with more organisations using the function as a training ground for future management personnel. This practice is designed to help the organisation train well-rounded senior managers. Internal auditors perform a wide variety of activities across different departments within the organisation. They thus have opportunities to learn how these departments function and how they are managed. Furthermore, managers who have had experience in internal auditing should have a better understanding of the importance of internal control. The ability to use internal audit roles as a stepping stone to managerial positions is seen as one of the advantages of having an in-house internal audit function rather than outsourcing IA activities.

The degree to which internal auditing can lead to a managerial career in the organisation may influence the effectiveness of internal auditing. This is perhaps more true today than in the past, given the trends described by Goodwin (2001). Over 20 years ago, Albrecht et al. (1988) found that most participants perceived internal auditing as a gateway to either a managerial position, or a career in internal auditing. In Gouldner’s (1957, 1958) framework described above, the former are local in outlook, emphasising the interests of the organisation, while the latter are cosmopolitan, emphasising the interests of the profession. As noted, career auditors are becoming less common than generalists who are interested in management careers (Goodwin, 2001), and who therefore are more likely to take a local than a cosmopolitan point of view. It can be argued that under these conditions, internal auditors who operate in settings with more organisational career opportunities will invest more effort in their work in order to increase their promotion opportunities. Those with fewer opportunities for organisational advancement will invest less effort in their work, resulting in a lower performance level. This is likely to be true even if the individuals working in such settings are cosmopolitans who place less value on an organisational career, since – given current trends – they have fewer opportunities than in the past for career growth as specialist internal auditors.

Hypothesis 5: More career opportunities for internal auditors in the organisation will be related to greater auditing effectiveness.

Top management support

The management literature offers ample evidence for the key role of top management support in the success of almost all programs and processes within an organisation. Fernandez and Rainey (2006) argued, based on a thorough literature review, that top management support and commitment to change play a crucial role in organisational renewal, as senior managers can mobilise the critical mass needed to follow through on efforts launched by one or two visionary thinkers. A number of empirical studies have found top management support for quality to be a key factor in its improvement (for example, Dale and Duncalf 1985; Ebrahimpour and Lee 1988). Top managers’ attitudes and behaviours have also been found to be related to quality management practices (Flynn, Schroeder and Sakakibara 1994). Takeuchi’s (1981) survey of companies with high-quality performance found that 89% had CEOs who regularly visited the factory floor, participated in training programs and attended company-wide quality-improvement events.

Given this, it is not surprising that management acceptance of, and support for, the internal audit function has long been seen as critical to the success of that function (Sawyer 1973). Several recent studies have demonstrated that support for internal auditing by top management is an important determinant of its effectiveness (Jill 1998; Schwartz, Dunfee and Kline 2005). Funding, of course, is an important measure of such support: IA departments must have the resources
needed to hire the right number of high-quality staff, to keep up-to-date in training and development, to acquire and maintain physical resources like computers, and so on. In a survey of Australian internal auditors, Leung, Cooper and Robertson (2004) found that chief audit executives are generally very positive about the performance of IA. They see themselves as a key part of the management team, and believe they can influence decisions; maintain a sufficient level of objectivity, integrity and competence in their jobs; and provide good support for their own staff. More importantly, they view the support of upper management as a key factor in ensuring the effectiveness of their role. Sarens and De Beelde (2006) have reported on the development of a similar attitude in Belgium, where as a consequence of recent changes in national and international corporate governance regulations, the internal audit function now gets more attention and support from boards and managers.

As discussed above, the relationship between the internal audit staff and the company’s management is clearly important in determining the independence and objectivity of the internal auditor (Al-Twaijry et al. 2003; IIA 2006). Management support for IA is thus important both in the abstract (managers must see the activity of the audit department as legitimate) and in ensuring that IA departments have the resources needed to do their jobs.

*Hypothesis 6: Greater support from top management will be related to greater auditing effectiveness.*

**Research Design**

**The participants**

The target population for this study was managers and internal auditors from all Israeli organisations that conduct internal audits. Questionnaires were mailed to 292 organisations that met this criterion, based on a list compiled by the IIA in Israel. Each organisation received two questionnaires, one for the general manager and one for the internal auditor. The questionnaire for the general manager dealt with the effectiveness of the company’s internal auditing processes, while that for the internal auditor covered the independent variables. The data collection process took about nine months, with numerous reminders sent to each of the organisations. At the end of the collection process, we had 108 organisations whose general manager and internal auditor had both responded to the questionnaires. This response rate of 37% is typical for a mail survey in general and quite good for more complex data collection as was requested in this study.

Of the 108 organisations that participated in the study, 75 were in the public sector and 33 in the private sector. Twenty-three of the organisations employed up to 100 employees, 50 had from 100 to 1000 employees, and the rest had more than 1000 employees. Among the internal auditors who participated in the study, 96% were men. Their average age was 53.1, and their average tenure in the organisation was 7.3 years. About 49% were employed previously as internal auditors, and all had an academic degree.

**Measures**

**Effectiveness of internal auditing**

Given the lack of academic work on the effectiveness of internal auditing, we found no scales in the literature that were validated as well as tested for their reliability which met the requirements of this study. We therefore developed our own scale. We used the 84 internal auditing effectiveness items advanced by Ziegenfuss (2000) as a starting point. These items are based on the 1997 GAIN (the IIA’s Global Auditing Information Network) Questionnaire and Sample Report that was sent to 501 CAEs (Certified Association Executives) participating in GAIN. These items can be categorised into four audit processes: audit environment, input, process and output. In order to reduce the number of items and to adjust them to the Israeli auditing environment, we conducted structured interviews with 10 Israeli business and public sector leaders in top managerial positions. Following these interviews, we removed some items and altered others, based on the recommendations of the interviewees. We then presented the resulting list to a group of Israeli experts in internal auditing, both academics and practitioners in the field, and made further reductions and adjustments based on their comments. The final list included 37 items, which comprised the questionnaire sent to the general managers (the items are presented in the appendix).

We subjected these 37 items to exploratory factor analysis. The findings of the factor analysis revealed three interpretable factors that explained 50% of the variance. The first factor included 12 items that explained 40% of the variance (numbers 4, 9, 10, 11, 17, 18, 20, 21, 23, 29, 31 and 36). The majority of these items dealt with the quality of the auditing work; this factor will be termed ‘audit quality’. The reliability of this scale was 0.846 (Cronbach’s Alpha). The second factor included seven items that explained 5% of the variance (numbers 5, 6, 15, 24, 25, 28 and 33), most of them covering the evaluation of auditees and IA activities. This factor will be termed ‘auditees’ evaluations’ (Cronbach’s Alpha = 0.925). The third factor included three items (numbers 7, 19, 37) that explained 5% of the variance and dealt with the added contribution of IA to the organisation. It will be termed ‘added contribution of
IA’ (Cronbach’s Alpha = 0.772). All the effectiveness items were measured on a 4-point scale (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree). We used the average score for the questions in each factor for each participant.

Independent variables

It should be noted that the data for the six independent variables were collected from the internal auditor in each organisation. Therefore, the independent variables represent the perceptions of the internal auditors regarding these concepts. All the items for the independent variables (except the first sector) were measured on a 4-point scale (1 = strongly disagree to 4 = strongly agree).

- **Sector** – This variable was measured as a dichotomous variable (private = 0; public = 1).
- **Professional proficiency** – Two items measured this variable. The internal auditor was asked whether she or he agreed with the following statements: (1) The organisation allows IA employees to participate in training and development programs in order to maintain their skills and keep up to date in the field; (2) IA employees have the appropriate and relevant education in auditing that allows them to audit all of the organisation’s systems (financial, operational, logistical and computerised) (Cronbach’s Alpha = 0.602).
- **Quality of audit work** – This variable was measured by six items. The internal auditor was asked whether she or he agreed with the following statements: (1) The annual audit plan is determined completely by the internal auditor; (2) The areas audited are very significant to the organisation; (3) The IA is able to cover all organisational units and all issues; (4) The response of auditees to the audit is submitted in writing and is relevant and comprehensive; (5) There is regular follow-up by the IA staff to examine actions taken to correct the problems found; (6) The internal auditor also performs other activities such as developing procedures for regulating their operations; (Cronbach’s Alpha = 0.783).
- **Organisational independence** – Eleven items measured this variable. (1) I have regular and direct working relations with the head of the IA committee; (2) I have regular and direct working relations with the general manager and the managerial team; (3) Terminating the work of the IA requires the approval of the IA committee, and/or the board of directors, and/or the Civil Service Commission; (4) The IA staff has free access to information and data about the organisation, and unrestricted access to its site; (5) All organisational data pools can be downloaded and examined by the IA; (6) Detailed budget proposals and information on staffing are included in the annual work plan of the IA; (7) I rotate the IA staff so that they all cover a variety of assignments; (9) The IA also performs other activities even if they are not defined as its direct responsibility; (10) The IA sometimes takes part in designing systems in the organisation and in developing procedures for regulating their operations; (11) The IA operates totally independently, can audit any issue it considers in need of auditing, and can access any necessary information even if it is classified (Cronbach’s Alpha = 0.638).
- **Career and advancement** – This variable was measured by three items. (1) IA is one stage in training and preparing employees in the organisation; (2) IA is one stage in the promotion process of employees in the organisation; (3) IA is considered a stage in the career development of employees in the organisation (Cronbach’s Alpha = 0.918).
- **Top management support** – Four items measured this variable. (1) Top management does not provide me with the support I expect to have; (2) The number of employees in IA is limited given the amount of auditing work planned and needing to be done in the near future; (3) Management is not sufficiently aware of the needs of IA, as demonstrated by the small budget assigned to this department; (4) Management does not provide enough support and encouragement for training and developing the IA staff – another indication that it does not recognise the importance of this issue. All items for this variable were reverse scored (Cronbach’s Alpha = 0.740).

Data analysis

Correlation analysis was applied first to determine the interrelationships among the research variables and to examine the possibility of multicollinearity. Regression analysis was used to test the other hypotheses. This regression was performed in three steps. In the first step, the dichotomous sector variable was regressed on each of the three effectiveness dimensions. In the second step, the other independent variables were added to the equations. Finally, in the third step, cross-products of the sector with the other independent variables were entered, thereby testing for the differential effects of the independent variables across the two sectors (public versus private). However, rather than entering the interaction terms simultaneously, step three was repeated five times to accommodate the separate entry of each term in order to circumvent the problem of multicollinearity associated with multiple interaction terms. Fifteen interactions were tested for each equation.
Findings

Table 1 presents the basic statistics of the variables and the inter-correlations among them. Results show acceptable reliabilities of the research variables. The correlations among the independent variables were not high and therefore preclude the possibility of multicollinearity. As for the relationships between the dependent (auditing effectiveness) and independent variables, several findings are worth noting. First, there are very high correlations between perceptions of top management support and the three dimensions of auditing effectiveness, providing strong support for hypothesis 6. No significant correlations were found between the variables of professional proficiency and career advancement and auditing effectiveness, thereby rejecting hypotheses 2 and 5. Hypotheses 3 and 4 were supported by the findings in two out of the three effectiveness dimensions. Greater quality of the auditing work and greater organisational independence were positively related to auditing quality and auditees’ evaluations. The correlations were stronger in the case of organisational independence. Hypothesis 1 also received some support in the correlation analysis. Auditees’ evaluations and the added contribution of IA were positive in the private sector, as expected by hypothesis 1. The regression analyses, whose results are presented in Table 2, provide a more comprehensive and accurate examination of the research hypotheses. The regression analysis shows very strong support for hypothesis 6. Perceived top management support was the only variable that was strongly and consistently related to the three auditing effectiveness dimensions. Hypothesis 4 is supported in the case of auditees’ evaluations. Greater perceptions of organisational independence increase positive auditees’ evaluations. Partial support was found for hypothesis 1. Perceptions of auditing quality and the added contribution of IA were stronger in the private sector than in the public sector. However, it should be noted that the sector effect disappears in step 2, which includes the other five independent variables. This result is probably due to the very strong effect of the variable top management support, which also reduced the effect of the other independent variables. The regressions do not support hypotheses 2, 3 and 5. It should be noted that the models here explain 55% of the variance of auditing...
quality, 40% of the variance of auditees’ evaluations and 21% of the variance of the added contribution of IA. Thus, the models provide relatively good predictions of the variances in auditing effectiveness dimensions.

While this was not included in the research hypotheses, we examined the possibility that the sector of the organisation (private versus public) might interact with each of the five independent variables to affect the relationship with the three effectiveness scales. This enables a more thorough examination of the sector as a control variable. Of the 15 interactions that were tested, only one was significant. The interaction of the sector with top management support was significantly related to the effectiveness dimension of the added contribution of IA. The plotting of the interaction reveals that top management support increases the added contribution of IA in the public sector, but has no effect on this dimension in the private sector.

In order to preclude the possibility of multicollinearity in the regression analyses, we examined the variance inflation factor (VIF) of the regressions performed here. In no case was the VIF higher than 2. Therefore, there is very little probability that the findings have been tainted by multicollinearity.

**Discussion**

The importance of IA is demonstrated in the growing demand for this service in all organisations and in the rapid growth of its professional organisation, the IIA. However, despite the meteoric rise of IA, organisational researchers have paid little attention to this function. While its use has not been questioned, its contribution has not been assessed scientifically (Eden and Moriah 1996). The immediate goal of this study was to examine auditing effectiveness in Israeli organisations, but its primary goal should be seen as to stimulate more research on this overlooked scientific issue.

Given the surprising lack of research on this issue, we designed a scale for measuring the effectiveness of internal audits. We also advanced conceptual determinants and developed scales for measuring them. The psychometric properties of the scales developed here were found to be acceptable and as such they can serve as the basis for scales that will replicate or revise them in future research. The findings of the factor analysis showed that IA effectiveness is a multidimensional construct. The quality of the internal auditor’s work, the evaluations of the auditees and the added contribution of IA were found to be the three dimensions that encompass the concept of IA effectiveness. The logic behind the factor structure is quite sound and provides acceptable construct validity. Future research should naturally replicate the findings here in order to establish further the factor structure, enriching the dimension of the added contribution of IA with more items in addition to the three included in the present scale.

From a methodological point of view, one of the strengths of this study is that the data for the independent and the dependent variables were collected from different sources. This precludes the possibility of common method error, a problem that often occurs when all data are collected from the same source. The development of a conceptual model and scales for the independent variables is another contribution of this study. The findings support the effect of some of the independent variables advanced here. Naturally, more research, both conceptual and empirical, is needed to further develop and test models for the determinants of the effectiveness of IA.

As for the conceptual findings, the results of this study emphasise the importance of perceived top management support for the effectiveness of IA. The regression analysis (see Table 2) shows a very strong effect of this variable on the three dimensions of IA effectiveness. This effect was so strong that it reduced the effect of the other independent variables that were significant in the correlation analysis. Moreover, bringing in the conceptual variables – including top management support – eliminated the effect of ‘sector’, which was significant in step 1 in the regressions. These findings indicate that the effect of top management support is strong and consistent regardless of whether the organisation is private or public. It should be noted that Albrecht et al. (1988) also found that management support was important to the success of IA in the organisations they examined.

This finding has both conceptual and practical implications. Conceptually, using Gouldner’s (1957, 1958) typology, this finding shows that management and organisational considerations (local) are superior in comparison to professional ones (cosmopolitan) in terms of IA effectiveness. Most obviously, the support of management is almost crucial to the operation and success of IA. It may even be that all the other determinants of IA effectiveness derive from the support of top management, given that hiring proficient IA staff, developing career channels for IA staff, and providing organisational independence for IA work are all results of decisions made by top management. Future research may provide further insights into this possibility. In any case, it is not surprising that top management support is key to the effectiveness of IA, as this factor has been found to be a crucial element in the success of other organisational processes such as organisational change (Fernandez and Rainey 2006) and quality improvement (Dale and Duncafl 1985; Ebrahimpour and Lee 1988; Flynn et al. 1994). Employees behave as they perceive they are expected to by their supervisors and managers (Wheelwright 1981). When employees at all levels perceive that top management assigns importance to the
function of IA, they will cooperate and support these processes.

Future research should also, however, consider the other two determinants that were found significant in the correlation analysis: perceptions of organisational independence and the quality of the auditing work. These two variables are related to two dimensions of IA effectiveness: auditing quality and auditees’ evaluations. Organisational independence was significant in the regression analysis in the case of auditees’ evaluations (see Table 2). The lack of a relationship between IA effectiveness, career and advancement, and professional proficiency shows that the effectiveness of IA depends more on organisational/managerial characteristics than on the qualifications and work setting of the IA staff.

It should be noted that the findings of this study are based on the Israeli work and IA settings. Therefore, any generalisations of the findings here to other settings should be treated with caution. It is possible that the results would be different in other countries, a possibility that should be examined in future research.

Despite this limitation, this study shows the importance and relevance of a scientific examination of IA’s effectiveness and its determinants. As Eden and Moriah (1996) argued, internal auditing is a multidisciplinary turf awaiting exploration. This study is only one modest step towards a scientific examination of this important function with the hope that it will encourage much more research on this issue.

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References


Appendix: Items of Internal Auditing Effectiveness Scale

1. Internal auditing (IA) provides information on problems in the activity or control systems in the organisation.
2. The work and activities of IA meet the expectations I have from this department.
3. When examining the issues that are audited, IA also covers issues related to effectiveness, performance and savings.
4. IA is aware of and sensitive to the organisation’s needs and operates accordingly.
5. The evaluation of IA reports made by individuals in managerial positions who were audited is positive.
6. The evaluation of IA reports made by individuals in operative positions who were audited is positive.
7. The evaluation of IA reports made by external auditors and other external authorities is positive.
8. The evaluation of IA reports made by the auditing committee is positive.
9. IA identifies risks and properly evaluates control systems, thereby becoming a gatekeeper.
10. IA gets the attention of top management and focuses it on issues audited by IA.
11. The issues to be audited are decided after identifying risks, quantifying them and determining appropriate risk levels.
12. All control and auditing activities in the organisation are performed by IA or are coordinated with IA, including external auditing.
13. IA is an autonomous and independent organisational unit.
14. The IA department and its employees are reliable and behave with integrity.
15. The IA department is valued by management and makes valuable contributions during meetings.
16. The professional qualifications and training of IA employees are high.
17. IA is a source of valuable data and information for the decision-makers in the organisation.
18. The information provided by IA is vital to organisational operations.
19. The costs of IA to the organisation are higher than the benefits and savings that result from its work. (Reverse scored.)
20. The organisation invests consistently in the training and development of IA employees, who in the future will be a source for filling managerial positions in the organisation.
21. The work of IA is performed with modern technology that uses computerised data pools and specific IA software.
22. All auditing functions that were approved in the auditing plans are performed completely.
23. In addition to the issues determined and approved for inclusion in the annual audit, there are requests to the IA department to audit other issues.
24. The number of complaints about the IA department is very low.
25. Those who are audited demonstrate a high level of satisfaction with the work of the IA department.
26. The time that passes between completing the audit and submitting the final report is too long. (Reverse scored.)
27. The findings of internal audits are very significant for the organisation.
28. The findings of internal audits are always based on documents and reliable data.
29. The recommendations of the IA department can be easily implemented.
30. The recommendations of the IA department provide practical, cost-benefit solutions for correcting the problems that were found.
31. Only a small portion of the IA department’s recommendations is implemented. (Reverse scored.)
32. The IA reports are rigorous and accurate.
33. The IA reports are clear and well presented.
34. The IA reports include an introduction, goals, subjects, conclusions and recommendations.
35. The IA reports are professional and of high quality.
36. The management’s decision-making process is strongly affected by the reports and findings of the IA department.
37. The IA department contributes to the organisation above and beyond its costs.