

Karagiorgos, Theofanis; Drogalas, George; Giovanis, Nikolaos

**Article**

## Evaluation of the effectiveness of internal audit in Greek hotel business

International Journal of Economic Sciences and Applied Research

**Provided in Cooperation with:**

International Hellenic University (IHU), Kavala

*Suggested Citation:* Karagiorgos, Theofanis; Drogalas, George; Giovanis, Nikolaos (2011) : Evaluation of the effectiveness of internal audit in Greek hotel business, International Journal of Economic Sciences and Applied Research, ISSN 1791-3373, Kavala Institute of Technology, Kavala, Vol. 4, Iss. 1, pp. 19-34

This Version is available at:

<https://hdl.handle.net/10419/66594>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

## **Evaluation of the Effectiveness of Internal Audit in Greek Hotel Business**

**Theofanis Karagiorgos<sup>1</sup>, George Drogalas<sup>2</sup> and Nikolaos Giovanis<sup>3</sup>**

### **Abstract**

*There is currently considerable interest in the topic of internal audit and its contribution to exact management of any business economic resources. Within this framework of extremely fluid business environment, the research tested the hypothesis about the role of internal auditing for the business success. The main purpose of the present paper is not only to examine the issue in a theoretical level, but also to present empirical evidence for the interaction between components of internal control system and performance of internal auditing in Greek hotel business. According to up-to-date theoretical and empirical literature, the results point out that all components of internal audit are vital for the effectiveness of internal audit and consequently in the business survival and success.*

**Keywords:** Internal auditing, Internal Auditing, Accounting, Management, Hotel

**JEL Classification:** M40, M41, M10.

### **1. Introduction**

The globalization of economy, technological advancements, complexity of business and allegations of fraudulent financial reporting have recently sharpened the ever-increasing attention to internal controls and internal auditing (Karagiorgos et al., 2009). This developing role of the internal auditing is also reflected in its current definition, i.e. “internal auditing is an independent, objective assurance and consulting activity designed to add value and improve a company’s operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to

---

<sup>1</sup> Associate Professor and Head of the Department of Business Administration, University of Macedonia, Greece, e-mail: karagth@uom.gr

<sup>2</sup> Adjunct Professor, Department of Accounting, Technological Educational Institute of Serres, Greece, e-mail: georgedrogalas@yahoo.gr

<sup>3</sup> Adjunct Professor, Department of Business Administration, Technological Educational Institute of Serres, Greece, e-mail: ng@teiser.gr

evaluate and improve the effectiveness of risk management, control and governance processes” (Savcuk, 2007).

In accordance with the above, today businesses face considerable difficulties and problems when they try to identify their strengths, assess their risk and manage uncertainties. These difficulties are more obvious in particular business sectors, such as the hospitality sector, which is one of the most growing sectors worldwide (Politis et al., 2009). The Greek hotel industry provides the context for this research as it constitutes the basic factor of Greece’s economic growth and has important contribution in the overall balance of exterior transactions. Tourism is one of Greece’s three biggest industries, along with construction and shipping. The Greek tourism sector is a growth market and represents 18 per cent of the country’s Gross Domestic Product (GDP), with annual arrivals projected at 20 million by 2010 (Pavlatos and Paggios, 2009).

Despite the aforementioned perspectives of the researchers regarding the crucial role of internal auditing for the business success and the growing importance of hotel sector in Greece, there is no such a study examining the factors that improve internal audit performance in hotel businesses. According to Priporas and colleagues (Priporas and Poimenids, 2008; Priporas and Mylona, 2008; Priporas et al, 2005) a research topic constitutes a desirable one when is generally a new research area at international level and on a national basis in Greece. Due to the fact that only a limited number of studies exist especially in services, where hospitality is considered a significant part of this sector (Kamenidou et al, 2009), this makes the theme a desirable for research. In this context, the purpose of this paper is to highlight the interaction between elements of internal audit and effectiveness of internal auditing in Greek hotel business, in particular. To accomplish its goal, the study uses survey data from chief internal auditors from 52 hotel businesses, which are listed as the biggest ones in terms of Greece. Consistent with the predictions, the results indicate that the success of internal auditing is associated with the five elements of internal control system (Messier, 1997; Candreva, 2006): Control environment, Risk assessment, Control activities, Information and communication and Monitoring.

The remainder of the paper is organized as follows. The next section reviews the related literature and provides the focus of the study by examining the conceptual framework of internal auditing and its effectiveness. The third section presents the research design by providing information on the sample, the development of the survey and the methodology for data analysis. The results of the study are reported and discussed in the fourth section. Then, the fifth section summarizes the paper, presents major findings of the study and forwards the ensuing conclusions. Finally, the paper concludes by limitations of the study and future research directions.

## **2. Literature Review**

### **2.1 Theoretical Framework of Internal Auditing**

In order to determine internal audit efficiency evaluation principles it is important to analyze the concept of internal audit (Savcuk, 2007). Undoubtedly, the large amount of definitions that is given by many researchers depicts the great importance of internal auditing. More specifically, the Institute of Internal Auditors, (IIA, 1991; Taylor and Glezen, 1991; IIA, 1995, Konrath, 1996) defined internal auditing as “an independent appraisal function, established within an organization to examine and evaluate its activities as a service to the organization”. By measuring and evaluating the effectiveness of organizational controls, internal auditing, itself, becomes an important managerial control device (Carmichael et al., 1996), which is directly linked to the organizational structure and the general rules of the business (Cai, 1997).

In the same period, the Committee of Sponsoring Organization’s (COSO) model developed by the American Institute of Certified Public Accountants, the American Accounting Association, the Financial Executives Institute, the Institute of Internal Auditors, and the Institute of Management Accountants has been adopted as the generally accepted framework for internal control and is widely recognized as the definitive standard to assess the effectiveness of internal control system. In this context, the COSO model defines internal control as follows: “Internal control is a process, effected by an entity’s board of directors, management and other personnel designed to provide reasonable assurance of the achievement of objectives in the following categories: effectiveness and efficiency of operations, reliability of financial reporting and compliance with applicable laws and regulations” (Drogalas et al., 2005).

Similarly, the U.S. Government Accountability Office noted that internal auditing is “an integral component of an organization’s management that provides reasonable assurance that the following objectives are being achieved: effectiveness and efficiency of operations, reliability of financial reporting, and compliance with applicable laws and regulations” (GAO, 1999).

A more specific definition is given by Sawyer (2003) who stated that internal auditing is “a systematic, objective appraisal by internal auditors of the diverse operations and controls within an organization to determine whether (1) financial and operating information is accurate and reliable, (2) risks to the enterprise are identified and minimized, (3) external regulations and acceptable internal policies and procedures are followed, (4) satisfactory operating criteria are met, (5) resources are used efficiently and economically and (6) the organization’s objectives are effectively achieved – all for the purpose of consulting with management and for assisting members of the organization in the effective discharge of their governance responsibilities”.

## **2.2 Effectiveness of Internal Auditing**

The growing importance of internal auditing as an economic factor has led to systematic research into the factors that improve the performance of internal auditing. In line with this, Albercht et al. (1988) investigated a theoretical framework in regard with the effectiveness of internal audit. Basic output was the existence of four areas that the directors of internal audit departments could develop to enhance effectiveness: an appropriate corporate environment, top management support, high quality internal audit staff and high quality internal audit work.

Hence, Asairy (1993) evaluated the effectiveness of internal audit in Saudi joint stock companies. The researcher used a questionnaire, which he sent to the directors of internal audit departments, senior company management and external auditors from 38 companies. The author argued that internal audit was affected by the support they received by the external auditors. Regarding the effectiveness of internal audit, Asairy stated that education, training, experience and professional qualifications of internal auditors influenced the effectiveness of internal audit.

Unlike the aforementioned researchers, Dittenhofer (2001) assessed the effectiveness of internal audit via a new technique, which is named “results examination”. This method involves identifying the auditee’s objectives, establishing the criteria that could signify their achievement and using the established criteria to determine whether and to what degree the auditee’s actions have resulted in the achievement of objectives. Despite the fact that this approach is more results-oriented, its success depends on the measurability and subjectivity of the criteria chosen (Balzan and Baldacchino, 2007).

Moreover, a four-step internal audit evaluation program developed by Cangemi and Singleton (2003). This evaluation method is based in compliance with the department, corporate and professional internal audit standards. For example, this evaluation program involves making a summarised review of all internal audit assignments, a detailed review of randomly selected assignments, an annual self-assessment conducted by the quality assurance coordinator and a tri-annual external review.

In the same period, Papastathis (2003) investigated the factors that led to internal audit success. In his comprehensive review, the author concluded that the effectiveness of internal control system is determined by the activities, their complexity, the specialisation of personnel and the will of Administration.

Similar to other studies, Van Gansberghe (2005) also examined the effectiveness of internal audit. According to his perspective, perceptions and ownership, organization and governance framework, legislation, improved professionalism, conceptual framework and resources are revealed as basic factors influencing internal audit effectiveness.

In contrast to previous findings, Mihret and Yismaw (2007) attempted to introduce a new approach for the evaluation of the internal audit effectiveness by identifying factors within an organization that has an impact on audit effectiveness. As a result, the model considered four potential factors – internal audit quality, management support,

organizational setting, and auditee attributes to describe audit effectiveness, and revealed the way the interaction of these factors improves audit effectiveness.

More recently, Boța-Avram and Palfi (2009) examined the efficiency and the effectiveness of internal audit. The main output from their research was the fact that there is a large amount of methods and instruments that could combine qualitative with quantitative elements. However, the researcher stated, “the choice of used method depends on the settlement of the main objective of trying to obtain the best reflection of internal audit’s relevancy and efficiency, in order to obtain a good developing of internal audit department”.

To be more comprehensive, Table 1 depicts a short review of the literature by presenting the authors, the scopes and the basic outputs of the aforementioned studies.

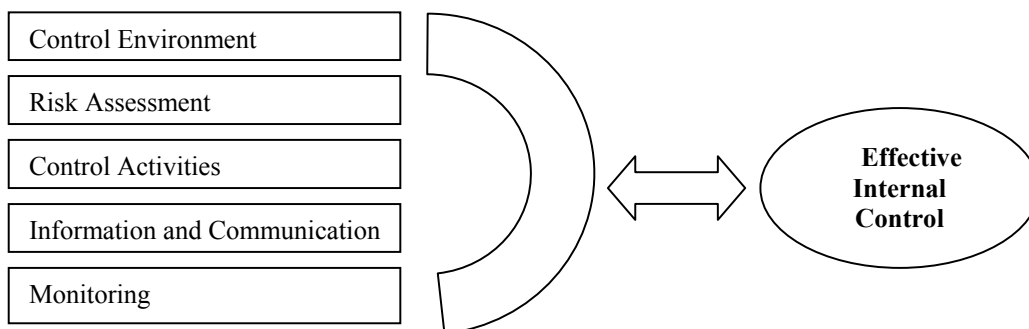
**Table 1: Short Review of the Literature**

| <b>Authors</b>                | <b>Scope</b>   | <b>Basic Output</b>   |
|-------------------------------|--|---|
| Albercht <i>et al.</i> (1988) | Effectiveness of internal audit                                | There are four areas that the directors of internal audit could develop to enhance effectiveness:                                   |
| Asairy (1993)                 | Effectiveness of internal audit in Saudi joint stock companies | education, training, experience and professional qualifications of internal auditors influenced the effectiveness of internal audit |
| Dittenhofer (2001)            | Assessment of the effectiveness of internal audit              | A new technique, which is named “results examination” assess internal audit effectiveness   |
| Cangemi and Singleton (2003)  | Evaluation of internal audit                                   | A four-step internal audit evaluation program was developed   |
| Papastathis (2003)            | Success of internal audit                                      | The activities, the specialisation of personnel and the will of Administration affects the success of internal audit.               |
| Van Gansberghe (2005)         | Effectiveness of internal audit                                | Basic factors that influence the effectiveness of internal audit are presented  |
| Mihret and Yismaw (2007)      | Effectiveness of internal audit                                | Four potential factors attributes to describe audit effectiveness   |
| Boța-Avram and Palfi (2009)   | Effectiveness of internal audit                                | There is a large amount of methods and instruments that could combine qualitative with quantitative elements                        |

Based on the institutional environment, just described, one can conclude that many standards can be used in order to assess the effectiveness of internal auditing. This paper extends the above studies by presenting empirical evidence that highlight the counteraction between the components (as described by the COSO Report) of internal auditing and its efficacy. In line with the above, the five interrelated components (or criteria) are the following: (Rezaee, 1995; Yang and Guan, 2004):

- ✓ Control Environment,
- ✓ Risk Assessment,
- ✓ Control Activities,
- ✓ Information and Communication and
- ✓ Monitoring.

**Figure 1: Five Components of Internal Control System**



Specifically, control environment is a major part of managing an organization. In other words, control environment reflects the attitude and the policies of management in regard with the importance of internal audit in the economic unit. On the one hand, control environment is influenced by the history and the culture of economic unit, on the other hand it has a pervasive influence on the way business activities are structured that sets a positive and supportive attitude toward internal control and conscientious management (Aldridge and Colbert, 1994). In accordance with the above, the control environment can be evaluated based on the following factors: Integrity and Ethical Values, Board and Audit Committee, Management Philosophy and Organizational Structure.

In regard with risk assessment, it can be claimed that it is the identification and analysis of relevant risks associated with achieving the business objectives (Karagiorgos et al., 2009). In this context, management must determine how much risk is to be prudently accepted, and strive to maintain risk within these levels. Therefore, the risk assessment component of control can be evaluated based upon the following factors: Process-Level Objectives and Risk Identification.

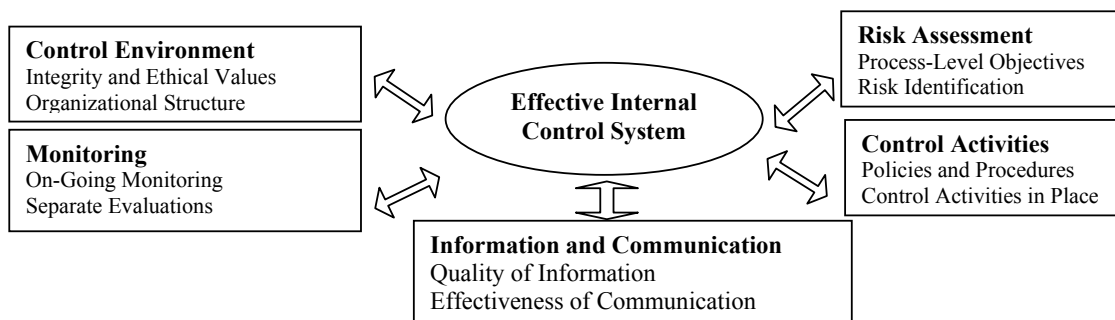
Hence, control activities are the policies, procedures and mechanisms that enforce management's directives (Hevesi, 2005). Indeed, control activities occur throughout the organization, at all levels and in all functions. To evaluate the control activities component of control the following factors are used: Policies and Procedures and Control Activities in Place.

In line with the above, on the one hand the information and communication component refers to the identification, capture, and communication of pertinent information in an appropriate form and timeframe to accomplish the financial reporting objectives (Aldridre and Colbert, 1994). On the other hand, effective communications should occur in a broad sense with information flowing down, across, and up the organization. To assess the information and communication component the following factors are used: Quality of Information and Effectiveness of Communication.

Finally, it is commonly acceptable that internal control systems need to be monitored in order to assess the quality of the system's performance over time. Hence by monitoring, it is ensured that the findings of audits and other reviews are promptly resolved (Rezaee et al., 2001). In this respect, the monitoring component of control is evaluated based upon the following factors: On-Going Monitoring and Separate Evaluations.

From the aforementioned factors that are used, in order to assess the effectiveness of the five components (of internal control), the researchers selected two for each component of internal control. The final selection of the factors is illustrated graphically in Figure 2.

**Figure 2: Factors that are selected to evaluate the five components of internal control system**





### **3. Research Design**

#### **3.1 Sample**

To describe more realistically the importance of internal audit in the hotel enterprises, the sample of research was selected with multiple criteria. From the author's point of view, it is important to mention that internal audit as service that offers added value has also a high cost of operation (Karagiorgos et al., 2009). This implies that internal auditing is used only in "big" hotel business. To avoid confounding effects, the sample was judgmental and the basic criteria that characterize "big" hotel enterprise are: Net Turnover (sales), Net Results (profit), Grand Total Assets, Total Capital and Reserves and Number of employees. For each criterion and its year from 2005 to 2009 the first one hundred hotels were selected. Therefore twenty groups were generated. From these groups the hotels which were at least in eight groups were chosen and constitute the final sample.

#### **3.2 Survey Development**

To achieve its objective the research uses the exploratory research methods of research questionnaires. This method of data collection was considered appropriate because the information sought is not publicly available and internal auditors are in a good position to know the answers to the questions asked. To enhance the survey response rate preliminary contact was made with potential respondents ahead of sending the questionnaire. This preliminary contact served to establish whether or not the hotel business had an internal audit department. After identifying those companies not having an internal audit department, the questionnaires were sent to the remaining sample of 85 hotel businesses where it was thought an internal audit department existed. For each of the selected hotel, copies of the survey instrument were sent to: the director of internal audit and the chief finance officer. Cover letters and surveys, along with postage paid return envelopes, were mailed directly to each of the business executives at each of the 85 hotel businesses. Hence, correspondence was personalized as far as possible; cover letters were hand signed and envelopes were individually addressed with the name and title of the business executive. Additionally, respondents were guaranteed anonymity. Approximately three weeks after the initial mailing a second mailing was made to all business executives in the sample. The research was conducted in the period from May to October 2010.

#### **3.3 Methodology for Data Analysis**

Respondents were asked to indicate their degree of agreement or disagreement with each of the ten statements on a five-point Likert response scale (Likert, 1932) that ranged from "strongly agree" (scored as 5) to "strongly disagree" (scored as 1). A large amount

of researchers use this methodology, because it is relatively easy for respondents to use, and responses from such a scale are likely to be reliable (Nunnally, 1978; Myers and Gramling; 1997, Balzan and Baldacchino, 2007; Lam and Kolic, 2008). For all ten statements, mean responses are obtained from the full sample. A positive mean response more than 2,5 suggests agreement with the statement, a positive mean response less than 2,5 implies disagreement and a mean response close to 2,5 indicates indecision or offsetting differences. All of the statements are coded in such a way that a positive mean response more than 2,5 displays that this component of internal control system influences positively the effectiveness of internal auditing, while a positive mean response less than 2,5 reveals that this component of Internal Control System does not influence positively the effectiveness of internal auditing.

#### **4. Results**

Finally, out of the 85 questionnaires distributed, 52 completed usable questionnaires were returned for a response rate of 61.1 percent. As mentioned, in this study the effectiveness of internal auditing is assessed via the five criteria that are provided by COSO report (COSO, 1992; Roth and Espersen, 2002; Bowrin, 2004). Hence, for the estimation of each characteristic are used data that comes from two questions. To evaluate each component of internal control, the calculation of coefficient “Cronbach a” is needed (Norusis, 1990). The results of “Cronbach a” are shown in Table 2: «Reliability Statistics «Cronbach a» in regard with components of Internal Audit.

**Table 2: Reliability Statistics «Cronbach a» in regard with Components of Internal Control System**

|                                       | Cronbach's Alpha | N of Items |
|---------------------------------------|------------------|------------|
| Evaluation.Control Environment        | ,835             | 2          |
| Evaluation.Risk Assessment            | ,858             | 2          |
| Evaluation.Control Activities         | ,911             | 2          |
| Evaluation. Information Communication | ,703             | 2          |
| Evaluation.Monitoring                 | ,886             | 2          |

Coefficient alpha estimates the reliability of this type of scale by determining the internal consistency of the test or the average correlation of items within the test (Cronbach 1951; Dafermos, 2005). From the Table 2, it appears that prices of coefficient «Cronbach a» are accepted (Norusis, 1990; Carver and Nash, 2000). Then from the questions that concern the evaluation of each component of Internal Control, a new variable is exported that combines the answers of the two questions (of each component).

**Table 3: Descriptives Statistics**

|                                      | N  | Range | Min  | Max  | Mean   | Std. Deviation |
|--------------------------------------|----|-------|------|------|--------|----------------|
| Evaluation.Control Environment       | 52 | 3,00  | 2,00 | 5,00 | 4,0385 | ,85661         |
| Evaluation.Risk Assessment           | 52 | 3,00  | 2,00 | 5,00 | 3,7692 | ,77625         |
| Evaluation.Control Activities        | 52 | 3,00  | 2,00 | 5,00 | 3,9904 | ,88279         |
| Evaluation.Information Communication | 52 | 2,50  | 2,50 | 5,00 | 3,9904 | ,68949         |
| Evaluation.Monitoring                | 52 | 3,50  | 1,50 | 5,00 | 3,7019 | ,95106         |

Table 3 shows the descriptive statistics of the entire sample of 52 hotel businesses. Regarding the Control Environment component of internal control system, it appears that the mean is 4,03, while the standard deviation is 0,85. From the above results, it can be concluded that management recognise the decisive role of internal auditing in the business environment. In regard with the Risk Assessment component of internal control system, the mean is 3,76, while the standard deviation is 0,77. These results also imply that risk assessment plays significant role in the efficient functioning of hotel business. The results for Control Activities component are depicted in line 3. More specifically, the mean is 3,99, while the standard deviation is 0,88. These statistics show that control activities are implemented by internal control system to a large degree. Similar to the above findings, the mean is 3,99, while the standard deviation is 0,68 for Information-Communication component of internal control system. These results affirm that pertinent information and effective communications occur at a large degree in hotel businesses. Finally, regarding the Monitoring component of internal control system, it appears that the mean is 3,70, while the standard deviation is 0,95. These results indicate that internal control system of hotel business is monitored in order to assess the quality of the system's performance over time.

## 5. Conclusions

In response to recent corporate scandals and breakdowns in financial reporting, internal auditing is attracting increasing attention in economic literature (Rittenberg, 2006). In the light of this theoretical and empirical literature, it is observed the growing importance of internal auditing in business success. Within this environment, significant amount of research has been conducted on the effectiveness of internal audit. Unfortunately, there is no such a study for the case of Greece and in particular for the hotel business which is of great importance in Greece (Sigala, 2003). Overall, from the results, it is important to mention that all the components of internal control system are highly rated. More precisely, the Control Environment component of internal control system is the most highly rated item with a mean of 4.03 while Monitoring is the least

rated item with a mean of 4.12. Overall, the results stress the efficient functioning of all components of internal control system and their decisive role in the efficient functioning and consequently success of Greek hotel business.

As with other studies, the findings of this study should be viewed taking into account its limitations. The sampling area of the study was limited to the Greek hotel businesses due to time constraints. Moreover, due to the fact that internal auditing has a high cost of operation, internal auditing is used only in “big” hotel business. Consequently, ton-random selection had to be the choice in this study. A further limitation in carrying out this study, to be taken into account particularly if one is to compare these results to those that may be found in other countries, is the small number of respondents on which the study was necessarily based. Hence, this study provides useful insights on the effectiveness of internal auditing in Greek hotel business, although only the perceptions of management were obtained.

Concluding, this research did not have the intention of concluding the discussions over this matter; however, it is expected to be one more element to help the formation of opinions and to diffuse other discussions on the subject. While we find a number of interactions between components of internal control system and effectiveness of internal auditing, it is important to mention that these results are only descriptive. They do not indicate specific mechanisms to enhance the effectiveness of internal auditing. However, they provide a basis for further experimental and archival research that may lead toward a better understanding of how the components of internal control system can improve the performance of internal auditing.

This study contributes in an area that has received relatively little research attention. On the one hand, internal audit is crucial for the business success. On the other hand, the Greek hotel industry constitutes the basic factor of Greek’s economic growth as tourism is one of Greece’s three biggest industries. Despite the aforementioned perspectives of the researchers, there is no such a study examining the factors that improve internal audit performance in hotel businesses. Thus, this makes the theme a desirable for research. Hence, as mentioned in previous sections unlike the other researchers who examined factors that affect the performance of internal auditing, the authors of this study extend the present literature by highlighting via empirical evidence the interaction between the components of internal control system (as described by the COSO Report) and internal audit quality. For this reason it is recommended further research by examining the matters reported in this paper in different areas of industry or via different methodologies. Furthermore, maybe future research can expand the geographical areas of study. Moreover, survey data for this research need to be confirmed with detailed interviews with a variety of practitioners in all countries. In line with the above, perhaps, a future study could be undertaken to explore the perception of other parties such as employees or external auditors on the performance of internal auditing in Greek hotel units. Undoubtedly, it is clear that internal audit will see its great improvement in many management fields (Power, 2004). As the saying goes, “the future is bright, but the road ahead is tortuous”.

## References

- Albrecht, W.S., Howe, K.R., Schueler, D.R. and Stocks, K.D., 1988, '*Evaluating the Effectiveness of Internal Audit Departments*', Institute of Internal Auditors, Altamonte Spring, FL.
- Aldridge, R. and Colbert, J., 1994, 'Management's Report on Internal Control, and the Accountant's Response', *Managerial Auditing Journal*, 9, 7, pp. 21-28.
- Asairy, S.M., 1993, 'Evaluating the extent of effectiveness of internal auditing: an applied study on Saudi joint stock companies', *MSc dissertation*, King Abdul'aziz University.
- Balzan, L. and Baldacchino, P.J., 2007, 'Benchmarking in Maltese internal audit units', *Benchmarking: An International Journal*, 14, 6, pp. 750-767.
- Boța-Avram, C. and Palfi, C., 2009, 'Measuring and assessment of internal audit's effectiveness', *Economic Science Series, Annals of the University of Oradea*, 18 3, pp. 784-790.
- Bowrin, A., 2004, 'Internal control in Trinidad and Tobago religious organizations', *Accounting, Auditing and Accountability Journal*, Emerald Group Publishing Limited, 17, 1, pp.,121-152.
- Cai, C., 1997, 'On the functions and objectives of internal audit and their underlying conditions', *Managerial Auditing Journal*, 12, 4, pp. 247-250.
- Candrea, P. J., 2006, 'Controlling Internal Controls', *Public Administration Review*, pp. 463 - 465.
- Cangemi, M.P. and Singleton, T., 2003, *Managing the Audit Function: A Corporate Audit Department Procedures Guide*, 3rd ed., Wiley, Hoboken, NJ.
- Carmichael, D.R., Willingham, J.J. and Schaller, C.A., 1996, *Auditing concepts and methods. A Guide to current theory and practice*, 6th edition, McGraw-Hill ed., pp. 217-218.
- Carver, R. and Nash, J., 2000, *Doing Data Analysis with SPSS 10.0*, Duxbury.
- Cronbach, L. J., 1951, 'Coefficient alpha and the internal structure of tests', *Psychometrika*, 16, 3, pp. 297-334.
- COSO, 1992, *Internal Control-integrated Framework*, Committee of Sponsoring Organisations of the Treadway Commission, Coopers and Lybrand, New York, NY.
- Dafermos, B., 2005, *Social Statistic with SPSS*, Ziti, Thessaloniki, Greece.
- Dittenhofer, M., 2001, 'Internal auditing effectiveness: an expansion of present methods', *Managerial Auditing Journal*, 16, 8, pp. 443-50.
- Drogalas, G., Soubeniotis, D. and Fotiadis, Th., 2005, 'Conceptual Framework of Internal Auditing: theoretical approach and case study analysis', *Dioikitiki Enimerosi*, pp. 52-65.
- Government Accountability Office U.S. (GAO), 1999, *Standards for Internal Control in the Federal Government*, Washington, Government Printing Office, GAO/AIMD-00-21.3.1.

- Institute of Internal Auditors-UK, 1991, *Standards and Guidelines for the Professional Practice of Internal Auditing*, IIA-UK ed. (statement of responsibilities).
- Institute of Internal Auditors-UK, 1995, *Standards for the Professional practice of Internal Audit*, Altamonte Springs, FL.
- Kamenidou, I., Balkoulis, N. and Priporas, C.V., 2009, 'Hotel business travellers satisfaction based on service quality: A segmentation approach in inner city 5 star hotels', *International Journal of Leisure and Tourism Marketing*, 1, 2, pp. 152-172.
- Karagiorgos, T., Drogalas, G., Gotzamanis, E. and Tampakoudis, I., 2009, 'The Contribution of Internal Auditing to Management', *International Journal of Management Research and Technology*, 3, 2, Serials Publications, pp. 417-427.
- Karagiorgos, T., Drogalas, G., Eleftheriadis, I. and Christodoulou, P., 2009, 'Efficient Risk Management and Internal Audit', *International Journal of Management Research and Technology*, 3, 2, Serials Publications, pp. 429-436.
- Konrath, L.F., 1996, *Auditing concepts and applications*, 3rd edition, West Publishing Company, United States of America, pp. 730.
- Lam, C. T. and Kolic, M., 2008, 'Effects of Semantic Incompatibility on Rating Response', *Applied Psychological Measurement*, Sage Publications, 32, 3, pp. 248-260.
- Likert, R. A., 1932, 'A technique for the measurement of attitudes', *Archives of Psychology*, pp. 40-52.
- Messier, W. F., 1997, *Auditing. A Systematic Approach*, McGraw-Hill editions, pp. 202.
- Mihret D. G. and Yismaw A. W., 2007, 'Internal audit effectiveness: an Ethiopian public sector case study', *Managerial Auditing Journal*, 22, 5, pp. 470-484.
- Myers, P.M. and Gramling, A.A., 1997, 'The perceived benefits of certified internal auditor designation', *Managerial Auditing Journal*, 12, 2, pp. 70-9.
- Nunnally, J. C., 1978, *Psychometric theory* (2nd ed.), New York, McGraw-Hill.
- Norusis, M., 1990, *SPSS/PC + Advanced Statistics 4.0*, SPSS Inc., United States of America.
- Norusis, M., 1990, *SPSS/PC + Statistics 4.0*, SPSS Inc., United States of America.
- Papastathis, P., 2003, *The Modern Internal Control in Businesses and its applications in them*, Athens, Greece.
- Pavlatos, O. and Paggios, I., 2009, 'Management accounting practices in the Greek hospitality industry', *Managerial Auditing Journal*, 24, 1, pp. 81-98.
- Politis, Y., Litos, C., Grigoroudis, E. and Moustakis, V., 2009, 'A business excellence model for the hotel sector: implementation to high-class Greek hotels', *Benchmarking: An International Journal*, Vol. 16, No. 4, pp. 462-483.
- Power, M., 2004, 'The nature of risk: the risk management of everything', *Balance Sheet*, 12, 5, pp. 19-28.
- Priporas, C.V. and Poimenidis, I., 2008, 'Services managers' awareness of crisis management: Attitudes and preparation', *Innovative Marketing*, 4, 3, pp. 37-45.

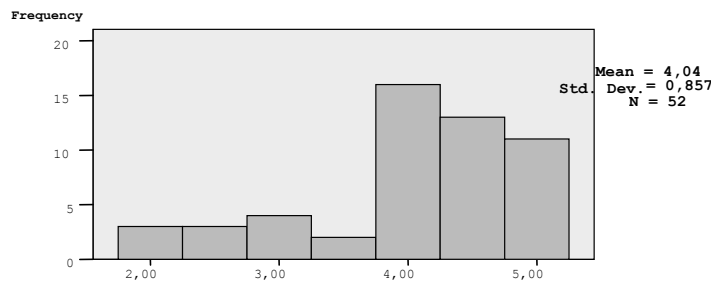
- Priporas C.V. and Mylona, I., 2008, 'Mobile services: Potentiality of SMS as new business communication tool in attracting consumers', *International Journal of Mobile Communications*, 6, 4, pp. 456-466.
- Priporas, C.V., Gatsoris, L. and Zacharis, V., 2005, 'Competitive intelligence activity. Evidence from Greece', *Marketing Intelligence & Planning*, 23, 7, pp. 659-669.
- Rezaee, Z., 1995, 'What the COSO report means for internal auditors', *Managerial Auditing Journal*, 10, 6, pp. 5-9.
- Rezaee, Z., Elam, R. and Sharbatoghlie, A., 2001, 'Continuous auditing: the audit of the future', *Managerial Auditing Journal*, 16, 3, pp. 150-158.
- Rittenberg, L. E., 2006, 'Internal control: No small matter', *Internal Auditor*, 63, 5, pp. 47-51.
- Roth, J. and Espersen, D., 2002, *Internal Auditor's Role in Corporate Governance*, Institute of Internal Auditors Research Foundation, Altamonte Springs, Florida.
- Savcuk, O., 2007, 'Internal Audit Efficiency Evaluation Principles', *Journal of Business Economics and Management*, 6, 4, pp. 275-284.
- Sawyer B.L., 2003, *Sawyer's Internal Auditing The practise of Modern Internal Auditing*, The Institute of Internal Auditors, 5<sup>th</sup> edition, ISBN 0-89413-509-0, 120-121.
- Sigala, M., 2003, 'Developing and benchmarking internet marketing strategies in the hotel sector in Greece', *Journal of Hospitality & Tourism Research*, 27, 4, pp. 375-401.
- Taylor, D.H. and Glezen, W.G., 1991, *Auditing: Integrated Concepts and Procedures*, 5th edition, John Wiley & Sons Inc, U.S., pp. 5-29.
- Van Gansberghe, C.N., 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, pp. 69-73.
- Yang, D.C. and Guan, L., 2004, 'The evolution of IT auditing and internal control standards in financial statement audits The case of the United States', *Managerial Auditing Journal*, 19, 4, pp. 544-555.
- Zain, M.M., Subramaniam, N. and Stewart, J., 2006, 'Internal Auditors' Assessment of their Contribution to Financial Statement Audits: The Relation with Audit Committee and Internal Audit Function Characteristics', *International Journal of Auditing*, Blackwell Publishing Ltd, 10, pp. 1-18.

Appendix

Table 4: Questionnaire

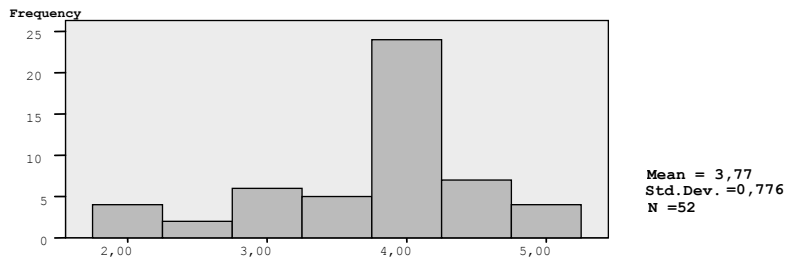
| Evaluate the following proposals marking X<br><br>In the light of internal audit function:                                      | Strongly disagree  | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|---|--|----------|----------------------------|-------|----------------|
|   | 1. Management frequently and clearly communicates the importance of integrity and ethical behavior |          |                            |       |                |
| 2. The organizational structure provides the framework within which the segregation of duties is determined                     |  |          |                            |       |                |
| 3. The objectives are clear and readily understood by all the personnel taking actions and responsibility for their achievement |  |          |                            |       |                |
| 4. Mechanisms are used in order to estimate the obstacles regarding the achievement of business objectives                      |  |          |                            |       |                |
| 5. Appropriate policies and procedures have been developed and implemented for each of your function's major processes          |  |          |                            |       |                |
| 6. The personnel periodically review the functioning and overall effectiveness of controls                                      |  |          |                            |       |                |
| 7. Mechanisms exist for identifying emerging information needs  |  |          |                            |       |                |
| 8. Information is communicated effectively both up and down within your function and across to other functions.                 |  |          |                            |       |                |
| 9. Management has established performance measures for processes in your function   |  |          |                            |       |                |
| 10. Evaluations of the entire internal control system are performed   |  |          |                            |       |                |

Figure 3: Histogram for the variable «Evaluation.Control\_Environment»

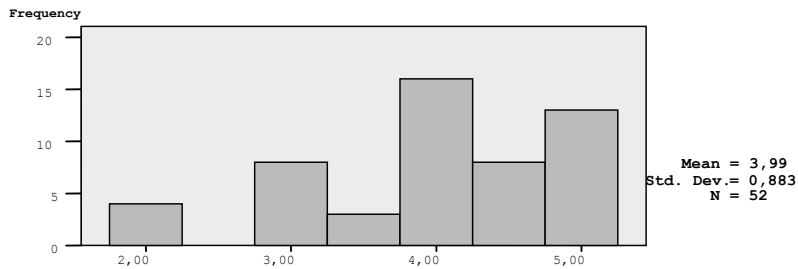




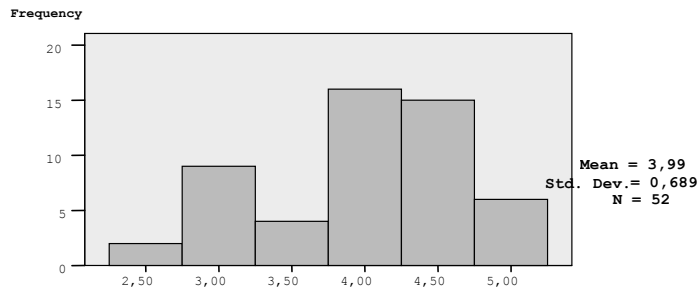
**Figure 4: Histogram for the variable «Evaluation.Risk\_Assessment»**



**Figure 5: Histogram for the variable «Evaluation.Control\_Activities»**



**Figure 6: Histogram for the variable «Evaluation.Information\_Communication»**



**Figure 7: Histogram for the variable «Evaluation.Monitoring»**

