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THE RELATIONSHIP BETWEEN ORGANISATIONAL ATTRIBUTES AND INTERNAL AUDIT EFFECTIVENESS¹

ZWIĄZEK MIĘDZY CECHAMI ORGANIZACJI A SKUTECZNOŚCIĄ AUDYTU WEWNĘTRZNEGO

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Summary: Prior studies show that the degree of internal audit effectiveness tends to vary with country- and organisation-level dynamics in an internal audit environment. The antecedents of internal audit effectiveness appear not fully explored as yet. This study, based on institutional theory, is aimed at investigating the relationship of internal audit effectiveness with two organisational attributes, i.e. organisational category and organisational size. To this end, a postal survey and an online survey were conducted among internal auditors in Poland. The research results show that although internal audit effectiveness does not significantly differ between public sector and private sector organisations, larger organisations in private sector have established more effective internal audit departments than their counterparts in smaller organisations. However, in the public sector the size of organisations is not related to internal audit effectiveness.

Keywords: effectiveness, internal audit, public sector, private sector.

Streszczenie: Z wcześniejszych badań wynika, że stopień skuteczności audytu wewnętrznego zależy od jego otoczenia, w tym od specyfiki organizacji i kraju. Czynniki skuteczności audytu wewnętrznego wydają się dotąd nie w pełni zbadane. Na bazie teorii instytucjonalnej badanie to miało na celu poznanie relacji między skutecznością audytu wewnętrznego a dwoma cechami organizacji, tj. rodzajem i wielkością organizacji. W tym celu przeprowadzono badanie ankietowe za pomocą ankiety pocztowej oraz ankiety online, które zostały skierowane do audytorów wewnętrznym w Polsce. Wyniki tego badania pokazują, że chociaż skuteczność audytu wewnętrznego nie różni się znacząco między organizacjami sektora publicznego i prywatnego, to większe organizacje w sektorze prywatnym ustanowiły bardziej skuteczne działy audytu wewnętrznego niż ich odpowiedniki w mniejszych organizacjach. Jednak w sektorze publicznym rozmiar organizacji nie wykazuje związku ze skutecznością audytu wewnętrznego.

Słowa kluczowe: skuteczność, audyt wewnętrzny, sektor publiczny, sektor prywatny.

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1. Introduction

This study touches upon the subject of determinants of the internal audit effectiveness. The basic research question is: does organisational size has a positive influence on the internal audit effectiveness both in the private and the public sectors.

Internal audit is expected to play a value-adding role by providing a wide range of services that help improve organisational processes. The validity of the notion that IA could add value to organisations rests on the implied assumption that internal audit is effective. Nevertheless some of the limited literature in this area suggests that the function may not always be effective. Prior studies, some of which are informed by institutional theory, show that the degree of IA effectiveness tends to vary with country- and organisation-level dynamics in an internal audit environment. The antecedents of IA effectiveness appear not fully explored as yet. Some scholars have advocated future research on IA effectiveness and related issues. For example, Goodwin [2004] called for a study to examine variations in IA practices between government and private organisations. Anderson [2003, p. 105] pointed out the need to identify organisational attributes influencing IA's ability to add value. Likewise, Mihret et al. [2010] suggested the need to examine antecedents of IA effectiveness. Badara and Saidin [2013] noticed that several studies have been conducted on IA effectiveness in public sector organisations and called for more research in public sector organisations. Bednarek [2015a, p. 292] implied that more research was needed on the factors which determine IA's ability to add value, in particular self-assessment and performance measurement systems for IA departments in public sector entities.

In response to these calls, this study based on institutional theory, aimed to confirm the relationship of IA effectiveness with two organisational attributes, i.e. organisational category and organisational size. In the further part, a concise review of basic research in this field was presented and the choice of research hypotheses was justified. Next, the population, research method and obtained results were presented. In the conclusion inferences drawn from the study were presented together with its limitations.

2. Theory development

2.1. Internal audit effectiveness

Though many researchers have attempted to measure the internal audit effectiveness, we have not seen yet the commonly accepted methods for measuring it. Most researchers agree with Zieleniewski [1969], who calls 'effective' an activity that to some extent leads to an outcome intended as a target. The measure of effectiveness is the distance to the target, whereas in evaluating the performance one does not take into consideration the cost, and only the foreseeable effects are considered of the

useful effects. However, what brings about more concern is defining what are the objectives of the analysed activity.

Due to the fact that internal audit has a considerable level of independence regarding the development of annual plan of its performance, all researchers agree as to the fact that the internal audit effectiveness should not be understood solely as conducting planned or unplanned assurance and consulting engagements. One ought to refer to the possibly most objective criteria for determining the objectives of internal audit activity.

Some claim that the objective can be to perform the audit in a way specified by the commonly accepted standards, obeying of which ensures achieving the audit objectives. Such a way of understanding effectiveness was proposed by Sawyer [1988] and was used also by Anderson [1983], Glazer and Jaenike [1980], and Dittenhofer [2001]. A measure of effectiveness is a degree to which the process of conducting an audit engagement complies with internal audit standards. Though this method of measurement was repeatedly applied in former studies, it has one serious limitation. Internal audit is assumed to be effective if audit procedures are executed properly. The needs of key stakeholders regarding each audit engagement are not taken into account.

Others claim that internal auditors, being members of organisation, aim at satisfying their clients. Audit committee and senior management most often expect audit engagements to be carried out to a specific standard, including good quality of audit reports, nevertheless, apart from this, they value also the choice of audit engagements that will add value to the organisation and the final audit findings. If we understand then effectiveness as a level to which an organisation obtains desired results regardless of how the audit is performed [Pincus et al. 1999], then the degree of compliance of the internal audit process with the standards may prove an incorrect measure of the internal audit effectiveness.

Many researchers claim that the internal audit effectiveness can be measured only in relation to expectations of its key stakeholders [Ransan 1955; Albrecht et al. 1988]. The degree in which this objective is achieved can be measured both with use of general measure: “the client’s satisfaction with internal audit”, and with use of systemic measures studying various quantitative and qualitative aspects of audit engagements performance. The qualitative aspects is usually measured with use of a survey addressed to the management pertaining to engagements performed by internal auditors. The scope of measurement may cover not only field work, where internal auditors interact on the auditees, but also planning, reporting and assessment, and even the environment, the input and the output of internal audit [Ziegenfuss 2000].

Among numerous possible measures particular attention is paid to the ability of the audit to react to the auditees’ needs. Nachmias and Barzalai [1998] studied the audit effectiveness by evaluating the degree to which irregularities were corrected. The researchers list three measures of internal audit effectiveness. The first consists

in testing whether the audited department responded to the audit report. The problem caused by this measure is the audited department may declare to correct disclosed irregularities, yet in fact nothing will change. The second measure consists in estimating the number of recurrent audit findings. The implicit assumption is that when a given irregularity does not appear again in an audit report, it was probably eliminated and thus the internal audit effectiveness is proven. However, this measure also poses problems, since the fact that the irregularity is not present in the report may be resulting from the change in audit policy regarding the scope of investigated areas, and the irregularity still does occur in reality. The third measure concerns monitoring of the implementation of audit recommendations. The implementation degree of recommendations can vary from partial to complete implementation.

The study of Ziegenfuss [2000] suggests that the results of the survey pertaining to the auditees' satisfaction and the implementation degree of recommendations are performance measures considered by chief audit executives most appropriate for assessing the internal audit effectiveness. The first of measures, though potentially interesting, may be difficult to employ in a large-scale survey, as it requires engagement of a representative sample of auditors from every organisation. The second measure has certain limitations as well, since it is at least partially out of the internal audit control and does not reflect qualitative differences between recommendations, nevertheless, it is more suitable for a survey.

2.2. Organisation size and internal audit effectiveness with the moderating role of the sector to which an organisation belongs

The second variable considered here is the sector of the organisation. This study anticipates that the relationship between organisation size and IA effectiveness will be influenced by whether the organisation is private or public. This variable will be treated here as a moderating variable. Therefore, it was necessary to examine the possibility that, in addition to its main effect, this variable will interact with the organisation size 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.

Spraakman [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 also found that IA functions in public sector 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. This expectation is supported by the results of three studies. Goodwin [2004] found that the mean size of the internal audit budget for public sector organisations in Australia and New Zealand was lower than mean internal audit budget for private sector organisations in these countries. Moreover, the number of internal audit employees mean for the public sector (6.44) was also lower than for the private sector (7.56). Although these results may suggest that internal audit is more important in private in comparison to public sector organisations, these differences were not statistically significant. Cohen and Sayag [2010], who measured IA effectiveness in three dimensions (auditing quality, auditees' evaluations and added contribution of IA), found some support that internal audit functions in Israeli organisations were more effective in private as opposed to public organisations. Bielińska-Dusza [2011, p. 68] similarly found that the internal audit effectiveness in Polish organisations measured by the implementation degree of recommendations was higher in the private sector (88%) than in the public sector (77%).

The third variable considered in this study is the size of an organisation. As the size of an organisation increases, the complexity of the necessary organisational controls as well as the regulatory requirements imposed on it are also likely to increase. Increased complexity and regulation may mean greater demands from internal audit regarding IA's services relating to the control systems of organisations [Arena et al. 2006]. Consistent with this notion, Carcello et al. [2002] find that audit committees are likely to make reviews of IA results in large companies. They also note that large companies are likely to allocate more resources to IA activity. Furthermore, Raghunandan and Mchugh [1994] point out that company size is positively associated with the strength of internal control systems.

Although Carcello et al. [2005] and Anderson et al. [2012] found evidence that internal audit function size is positively associated with organisation size, the other two studies do not let us conclude that this fact has an influence on IA effectiveness. Mihret and Yismaw [2007], who conducted a case study in Ethiopian public sector organisation, suggested that internal audit effectiveness was not strongly influenced by budgetary status of internal audit office. In similar vein, Arena and Azzone [2009] did not find support that effectiveness of internal audit in private sector was positively related to the size of the IA team.

However Van Gansberghe [2005] emphasized that resources availability is among the factors that influence internal audit effectiveness. Arena and Azzone [2009] studied provided evidence that internal audit effectiveness increases in particular when the ratio between the number of internal auditors and employees grows. Without suitable budgets and manpower, the internal auditor cannot fulfil his functions, even if given independent status. Limited resources inhibit auditor's ability to suggest corrections and investigate errors and abuses. The study by Friedberg and Lutrin [2001] shows that there is little relationship between the size of U.S. local government budgets in the 1990s and the resources given to the internal audit. The results of their study suggest that the budget and staff resources made available to many of the internal audit departments in local government in the United States do not enable the maintenance of internal audit at a suitable frequency and reasonable level. Moreover, the analysed data suggest that the effectiveness of the process for correcting errors and abuses was in many cases doubtful. All this raises substantial questions as to the effectiveness of internal audit in many local governments.

Basing on the above considerations, it can be expected that large organisations in private sector establish more effective internal audit departments than their counterparts in smaller organisations. Whereas in public sector the size of organisations is not related to internal audit effectiveness. These expectations are summarized by hypotheses H1 and H2, respectively.

H1a: Number of employees in the private sector organisations is positively associated with the implementation degree of internal audit recommendations.

H1b: There is no relationship between the number of employees and the implementation degree of internal audit recommendations in the state and local government organisations.

H2a: Annual costs or expenses in the private sector organisations are positively associated with the implementation degree of internal audit recommendations.

H2b: There is no relationship between the organisation's annual costs or expenses and the implementation degree of internal audit recommendations in the state and local government organisations.

3. Research method

3.1. Data collection

The basic method used for performing the empirical research was a postal survey and an online survey. In both surveys the same questionnaire was employed, which was filled in by heads and staff of internal audit departments in public and private sector organisations. The questionnaire comprised open-ended, semi-open and close-ended questions. These questions concerned several aspects of internal audit, such as: performance measurement, self-assessment, effectiveness, change in internal audit performance, rewarding auditors and the activity of audit committees. In this article only the part of questions that pertained to organisational size and internal audit effectiveness was used. In the course of constructing the survey, the literature on internal audit effectiveness was explored.

The data were collected from June to September 2013. The study was addressed to 2077 internal auditors, from which 1057 worked at public finance sector entities and 1020 in the private sector. The internal auditors listed in the up-to-date address database of the Ministry of Finance received the questionnaire by mail. The internal auditors who are members of the Polish internal auditors' association of IIA were sent four times an electronic mail containing a link to the survey at the SurveyMonkey website.

A total number of 500 filled questionnaires was received, yet not all respondents of the online survey provided answers to the questions pertaining to internal audit effectiveness. Hence, a total number of 428 questionnaires was subject for analysis with the response rate at 20.6%. This includes units of state government administration, which accounted for 48%, local governmental units and their organisational units – 45%, and private companies – 7%. 21 types of entities from the public finance sector of different tasks and organisational and legal forms took part in the study. This group included commune offices (22%), district offices (12%), city halls and city country halls (7%), government budgetary units (7%), universities (6%) and ministries (4%). What is more, the sample included also companies from 10 industries, mainly those conducting financial and insurance activity (3%). The respondents were internal auditors employed on a full time basis (71%), heads of internal audit departments (25%) and other control experts (4%). Audit micro-departments (up to 2 full-time auditors) were the most numerous to be examined – 69%. The study included 10% of small departments (from 2 to 5 full-time auditors) and 9% of large departments (over 5 full-time auditors). A considerable number and variety of organisations that took part in the study allows for concluding that it represents the actual state of internal audit activity in Poland in 2013.

Statistical and descriptive analyses of the collected data allowed for the verification of the research hypotheses proposed in this paper and achieve research objectives. For the purpose of statistical analyses Microsoft Excel was employed.

Apart from simple descriptive statistics, such as medians and structure ratios, Spearman's rank correlation coefficients (sr) were estimated in the case of data measured with use of ordinal scales.

3.2. Measurement of variables

In order to meet the main research objective, three variables were developed for verifying the research hypotheses proposed in the study. The list of variables developed is presented in Table 1. The OC variable specifies whether the organisation is from public or private sector. The NOE variable measures the number of employees as of 31st of December, 2012. The ACE variable informs of the organisation's annual costs or expenses in 2012.

Table 1. List of variables with a description of adopted measurement scales

No.	Variables	Description of variables and measurement scales
1	Organisational category (OC)	The variable specifies whether the organisation is from public or private sector. The variable is measured in nominal scale.
2	Number of employees (NOE)	The variable measured the number of employees on 31 st of December, 2012. The variable was measured in an ordinal scale from 1 to 5, where: 1 stands for less than 150 employees, 2 – from 151 to 300 employees, 3 – 301 to 600 employees, 4 – 601 to 1200 employees, 5 – more than 1200 employees.
3	Organisation's annual costs or expenses (ACE)	The variable informs of the organisation's annual costs or expenses in 2012. The variable was measured in an ordinal scale from 1 to 5, where: 1 stands for less than 20 mln zł, 2 – from 26 to 50 mln zł, 3 – 51 to 100 mln zł, 4 – 101 to 200 mln zł, 5 – more than 200 mln zł.
4	Implementation degree of recommendations (IDR)	The variable expresses the opinion of the internal audit heads and staff regarding the implementation degree of recommendations in a given internal audit department in 2012. The variable was measured in an ordinal scale from 1 to 4, where: 1 stands for less than 20%, 2 – from 20 to 50%, 3 – 50 to 80%, and 4 – above 80% of implemented recommendations.

Source: own study based on the survey results.

The IDR variable informs of the degree to which the management implemented the recommendations of internal audit resulting from the approved findings of audit engagements in 2012.

4. Results

4.1. Size of organisations with internal audit departments

Table 2 presents the percentage of respondents that were representing organisations from the private sector, state and local government which have different number of employees.

Table 2. Comparison of the number of employees in the private sector, state and local government organisations (in %)

Number of employees	Private sector	State government	Local government
Less than 150	28.1	21.0	58.6
151 to 300	6.3	12.2	19.4
301 to 600	3.1	23.4	10.5
601 to 1200	9.4	20.5	8.4
More than 1200	53.1	22.9	3.1

Source: as provided under Table 1.

The results of the conducted comparative analysis showed that about 50% of private sector organisations have more than 1200 employees, which is over twice as many as in state government organisations and 17 times as many as in local government organisations. Almost 60% of local government organisations that established internal audit department employ less than 150 people, which is about twice as many as in private sector organisations and three times as many as in state government organisations. State government organisations have the most varied number of employees.

Table 3 presents the percentage of respondents that were representing organisations from the private sector, state and local government which have different annual costs or expenses.

Table 3. Comparison of the annual costs or expenses in the private sector, state and local government organisations (in %)

Organisation's annual costs or expenses	Private sector	State government	Local government
Less than 20 mln zł	53.1	21.0	5.8
26 to 50 mln zł	3.1	13.7	8.4
51 to 100 mln zł	3.1	16.6	38.2
101 to 200 mln zł	3.1	20.0	24.1
More than 200 mln zł	37.5	28.8	23.6

Source: as provided under Table 1.

The descriptive statistics showed that more than 50% of private sector organisations have annual costs less than 20 mln zł, which is over twice as many as in state government organisations and nine times as many as in local government organisations. Almost 40% of local government organisations that established internal audit department have annual costs or expenses between 51 and 100 mln zł, which is more than twice as many as in state government organisations and 12 times as many as in private sector organisations. About 30% of state government organisations have annual costs or expenses more than 200 mln zł.

4.2. The internal audit effectiveness

Table 4 presents the internal audit effectiveness in the private sector, state and local government organisations, measured with the use of the implementation degree of IA recommendations in 2012.

Table 4. Percentage of respondents' indications concerning the implementation degree of IA recommendations in the private sector, state and local government organisations in 2012 (in %)

Implementation degree of IA recommendations	Private sector	State government	Local government
Over 80%	53.1	61.0	51.3
50–80%	31.3	23.4	31.9
20–50%	12.5	12.2	13.6
Less than 20%	3.1	3.4	3.1

Source: as provided under Table 1.

The descriptive statistics showed that the highest number of internal audit departments (about 60%) achieved the highest effectiveness, i.e. more than 80% recommendations implemented in the state government organisations. In local government organisations and in the private sector organisations this number of internal audit departments was about 10% lower. As for the range 50–80% of recommendations implemented, the highest number of organisations (31.9%) was in local government, somewhat fewer (31.3%) was in private sector and by far the lowest number concerned the state government – only 23.4%. The percentage of organisations in which this ratio was lower than 50% is similar in all three sectors. In order to examine whether a correlation between the implementation degree of recommendations (IDR) and the sector to which an organisation belongs, Cramer's V was calculated. The Cramer's V was equal to 0.07, which attests to the lack of significant differences in the implementation degree of recommendations between the group of departments in state government, local government and private sector organisations.

4.3. The influence of organisational size on the internal audit effectiveness

In order to examine the existence of correlation between the number of employees (NOE) and the implementation degree of recommendations (IDR) or organisation's annual costs or expenses (ACE) and the implementation degree of recommendations (IDR), the Spearman's rank correlation coefficients were estimated as presented in Table 5.

Table 5. Correlations for the following variables: the number of employees (NOE), organisation's annual costs or expenses (ACE) and the implementation degree of recommendations (IDR)

Implementation degree of recommendations (IDR)	Number of employees	Organisation's annual costs or expenses
	Spearman's rank correlation coefficient	
In the private sector	0.18	0.20
In state government	0.05	0.01
In local government	0.04	0.16

Source: as provided under Table 1.

The Spearman's rank correlation coefficient for variables specifying the number of employees (NOE) and the implementation degree of recommendations (IDR) in the private sector is 0.18, which attests to the lack of correlation between these variables. Values of the Spearman's rank correlation coefficients for variables specifying number of employees (NOE) and the implementation degree of recommendations (IDR) in state and local government organisations also prove the lack of correlation.

The Spearman's rank correlation coefficient for variables specifying the organisation's annual costs or expenses (ACE) and the implementation degree of recommendations (IDR) is 0.2 for organisations in the private sector. These results attest to the existence of a very weak, still positive correlation between these variables. Values of the Spearman's rank correlation coefficients for variables specifying the number of employees (NOE) and the implementation degree of recommendations (IDR) in state and local government organisations prove the lack of correlation.

Thus, the study results allow for a positive verification of the research hypothesis H2a, according to which the greater organisation's annual costs or expenses, the greater the internal audit effectiveness in the private sector organisations. The same relationships were not confirmed in the state and local government organisations.

5. Conclusions

The results of this study imply that managers of large organisations in terms of annual costs or expenses in private sector appreciate the support of internal audit in managing the complex setting and thus establish more effective internal audit departments than their counterparts in smaller organisations. However, this study showed that organisational size in public sector is not related to internal audit effectiveness. There may be a few explanations. Firstly, support from top management for internal audit function regardless the sector to which organisation belongs [Cohen, Sayag 2010] and sufficiency of resources in comparison to the auditable universe [Arena, Azzone 2009] are found to be the important determinants of IA effectiveness, so we can suppose that managers in public sector in Poland do not appreciate the support of internal audit in managing the complex setting and/or do not provide internal audit function enough resources in relation to the audit universe. Secondly, based on the findings of the study of a large public sector higher educational institution in Ethiopia [Mihret, Yismaw 2007] and Italian companies [Arena, Azzone 2009], we can also expect that internal audit quality or internal auditors' competencies may be higher in larger organisations in private sector, but the same relationship may not be existent in the public sector organisations. This can be the result of incentive systems for internal auditors, which are in the public sector organisations insufficiently related to performance in comparison to private sector organisations [Bednarek 2015b] and as a consequence the difficulty of attracting and keeping adequately qualified internal auditors in public sector organisations. Thirdly greater internal audit effectiveness in larger organisations in private sector may be related to greater organisational independence [Cohen, Sayag 2010] or audit committee involvement [Arena, Azzone 2009; Carcello et al. 2002], whereas the same association may not exist in the public sector organisations, because of different organisational settings. Further qualitative research into what are the determinants of the internal audit effectiveness in public sector organisations is warranted.

It ought to be also stressed that a survey of this sort has its limitations. Although all internal auditors were invited to take part in this survey, eventually less internal auditors from private sector responded compared to internal auditors from public sector. This may suggest that we have too little knowledge about the first group.

It is worthy to mention that using the implementation degree of recommendations as a measure of IA effectiveness has certain limitations. This measure is at least partially out of the internal audit control and does not reflect qualitative differences between recommendations.

It should be noted that the findings of this study are based on the Polish internal audit settings. Thus any generalisations of the findings 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.

Moreover, the data pertaining to the number of employees, organisation's annual costs or expenses and implementation degree of recommendations were all measured in an ordinal scale. In the future, a ratio scale for estimating the average values can be used.

Lastly, the showed results pertain to only one moment in time and do not show the process of changes that have occurred in the private and the public sectors. The obtained information soon becomes out of date in the course of the conduct of the proper, yet often time-consuming statistical analysis. Nevertheless, as long as we notice these limitations, the cross-sectional analysis allows us to give the study results a value that is not otherwise obtainable.

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