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WHAT ATTRIBUTES OF AN INTERNAL AUDITING DEPARTMENT SIGNIFICANTLY
INCREASE THE PROBABILITY OF EXTERNAL AUDITORS RELYING ON THE
INTERNAL AUDIT DEPARTMENT?

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by

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What Attributes of an Internal Auditing Department Significantly Increase the Probability of External Auditors Relying on the Internal Audit Department?

Statement on Auditing Standards (SAS) No. 9 describes how to review the competence and objectivity of the internal auditors and how to evaluate their work to determine the appropriate extent of external auditor reliance. The review process is expected to include an evaluation of the practices and procedures of the internal audit department. Numerous articles have been written regarding the various means by which internal audit departments might be evaluated (for example, see Schroeder, 1977; Sayers, 1978; Jaenicke and Glazer, 1979). However, existing literature has not empirically investigated which attributes of an internal audit department, post facto, appear to be systematically related to the external auditor's decision to rely upon internal auditing. Such an empirical investigation is the purpose of this article.

Potentially Relevant Characteristics of Internal Audit Departments

In order to empirically examine those attributes of an internal auditing department that are related to external auditors' reliance decisions, a set of potentially relevant attributes had to be identified. Exhibit 1 summarizes the

INSERT EXHIBIT 1

attributes selected for study based on existing literature. As suggested by the subheadings in Exhibit 1, the determinants relate to a broad number of general characteristics, some of which are organizational related, while others are attributes of the professional staff.

The Data Base

The data base to be analyzed is composed of 117 companies, all of which have internal auditing departments. A profile of this sample is presented in Exhibit 2.

This sample was obtained by circularizing the population of internal audit directors who are members of The Institute of Internal Auditors, and its characteristics are similar to those reported in past empirical work (for example, see The Institute of Internal Auditors, 1976 and 1979).

Note that the number of respondents for each of the descriptive statistics in Exhibit 2 is less than 117. This reflects the fact that some respondents were private companies that would not provide financial statistics, while others simply did not retain certain information that was requested. The average (μ) and standard deviation (σ) are reported to suggest the presence of very large entities within the sample; however, the median is likely to be the more representative measure of the sample, since it indicates the half-way point, or more typical entity within the data base. The industry breakdown suggests the breadth and heterogeneity of the sample and also serves to explain the rather large standard deviations reported in Exhibit 2.

Findings

All of the attributes presented in Exhibit 1 were analyzed, and those relationships which were significant at a .10 level for the total sample are reported in Exhibit 3. A number coding is utilized in the first column to tie the results to the attributes outlined in Exhibit 1. Both nonparametric and parametric statistics are reported to ensure against the potential effects of inappropriate distributional assumptions for the data base. The external auditors' reliance on internal audit departments is observed more frequently when a reporting relationship exists with the audit committee, whereas a relationship to either the audit committee or the board does not have a statistically significant correlation with the reliance decision. Since many would assume that the size of an entity could be an intervening factor in the relationship, since large companies are expected to be more likely to have audit

committees, the total sample was divided into two subsamples based on total operating revenue. It is of particular interest that the smaller entities within the sample are driving the statistical results. The existence of a reporting link to the audit committee is not systematically related to external auditors' decision to rely upon the internal audit department for larger entities. The Cramer's V statistic can be interpreted as "eta", with reliance as the dependent variable; in other words, 23.4% of the variability in external auditors' decisions to rely upon internal auditors for those entities with operating revenue less than \$250 million is explained by the presence or absence of a reporting link to an audit committee.

The subsamples will be analyzed for all of the attributes outlined in Exhibit 1 in order to discern whether size effects seem to influence the extent to which particular factors relate to external auditors' reliance decisions.

Limitations placed upon the scope of internal audit activities (coded 3 in Exhibit 1) are not statistically correlated with the reliance decision. Keep in mind the possibility that a significant net relationship might exist, once other variables have been controlled; this analysis only considers 1 to 1 or bivariate relationships, controlling for size effects by forming subsamples. Two plausible reasons for the limitations having only a slight effect are (1) their infrequency and (2) their nature. Only 14 entities out of the total sample of 117 indicated that any limitation was imposed. Of these, 4 limitations related to restrictions placed upon the internal audit departments to perform only financial audits versus operational audits, 2 referred to budgetary or hiring limitations for staffing purposes, 1 cited an acquired company with its own auditors being outside of its responsibilities, and 1 noted that executives' payroll was not subject to internal audit review. Hence, over half of the 14 limitations would not be expected to influence the external auditors' decision to rely upon internal audit. The absence of a direct relationship to the reliance decision is not as surprising, once the sample's characteristics are considered.

Audit coverage when measured in asset and income terms is not significantly associated with the incidence of reliance, whereas its measurement in terms of cost of sales is statistically relevant. The smaller number of respondents analyzed reflects the substantial number of financial and service entities in the sample that could not provide information related to cost of sales. Once again, the subsample results are particularly interesting. The greater the extent of audit coverage for smaller entities, the more likely the external auditor is to rely on internal audit, while no such relationship is detected for larger entities. The total sample reported an average percent of coverage of 58.5, with a standard deviation of 30.5 and a median of 55.5. The range was a full 98 percent. It is likely that the variability of coverage is far greater for smaller entities, giving it a higher likelihood of having a systematic relationship to reliance decisions.

Existing literature has emphasized the importance of internal auditors allocating time to audit activities, and Exhibit 3 clearly demonstrates that the higher the percentage of time allocated to financial and operational audits, as well as the testing of internal accounting controls, the higher the probability of reliance. This relationship holds for both subsamples, and over 75 percent of the variability in reliance decisions is explained by the allocation of man-hours to audit activities.

Variables coded 8 and 9 are size attributes that suggest the magnitude of the entities' investment in the internal audit function. While both are significantly related to the reliance decision, man-hours is more highly related for smaller entities, while expenditures are more highly related for larger entities.

Internal auditors' salaries, graduate degrees, and experience level (for managers) are not observed to be statistically significant. However, undergraduate degrees, certification, and internal auditing experience levels for staff auditors are significantly related to reliance decisions in larger entities. At a .12 level of significance, only the availability of EDP specialists and public accounting

experience within the internal audit department statistically relate to the external auditors' reliance decision in smaller entities. The relative lack of importance of EDP specialists for larger entities may reflect the consistency with which such expertise is available both in the internal audit department and in a separate EDP department.

All of the internal audit department's policies and procedures outlined in Exhibit 1 are significantly associated with reliance except the existence of follow-up procedures to evaluate actions on audit reports. Since this was the second most common policy within the sample, with 87 percent of the 108 respondents to this question indicating that they had such a policy in place, it may be that follow-up activities are presumed to exist by external auditors and therefore, have little incremental influence on their reliance decision.

While most of the policies are significantly related to the incidence of external auditors' reliance for both subsamples, smaller entities, at a .12 level, do not observe more frequent reliance when they assume a key role in testing new and existing computer-based systems or when they establish a mandatory reply process, whereby auditees must formally respond to internal auditors' reports. Empirically, these attributes are important only in larger entities. This finding may be due to

- the lesser role of EDP in smaller entities,
- the greater demands placed upon internal auditors to perform ongoing audit activities, with the result that no resources are available for EDP testing, and
- the preference for less formality in smaller entities with regard to policies such as replies from auditees.

Larger entities do not observe more frequent reliance by the external auditor (at a .12 level of significance) when the internal audit department uses formal audit manuals or requires statistical sampling procedures. The prevalence of these practices in larger entities may make the attributes of little use to external auditors

in discriminating departments on which reliance is to be placed from those on which no reliance is to be placed. In contrast, the use of these more formal and sophisticated auditing tools may signal an above-average quality dimension for smaller entities' internal audit groups.

An examination of Cramer's V statistics suggests that the establishment of formal performance evaluation procedures and the formal meeting with external auditors to coordinate activities are the two actions by internal auditors that explain the greatest percent of the observed variation in external auditors' decision to rely upon internal audit departments. The implication for entities that are striving to get external auditors to rely upon internal audit departments is that they can improve their chances by formalizing both their internal evaluation procedures for professional staff and their coordination activities with the external auditors.

The final attribute analyzed in Exhibit 3 is the percentage of suggestions by internal auditors that are accepted by the auditees. While significant for the total sample, the nonparametric results are not significant at a .12 level for either subsample. Chi-square statistics (nonparametric measurements of associations, with no directional implication) were computed for the two subsamples and found to be 6.64₃, significant at a .084 level for smaller entities and 2.95₃, significant at only a .400 level for larger entities. It would appear that acceptance is of greater importance within smaller entities. However, the diverse results for the total sample and the two subsamples probably reflect the relative lack of importance of the size of an entity when the acceptance variable is analyzed. Given the acceptance variable is measured in "% of suggestions accepted" terms, the absence of any size effect is intuitively appealing. Of interest is the distribution of the respondents across the 4 percentage groupings presented in Exhibit 1:

0 to 25% Adoption	6%
26 to 50 % Adoption	7%

51 to 75% Adoption	16%
Over 75%	71%

It appears that the majority of respondents have fairly good experience with auditees accepting their recommendations.

Implications

Most of the attributes of an internal auditing department that have been suggested in the literature as potential determinants of external auditors' reliance on internal audit activities have been demonstrated to be empirically related with entities' self-reported experience. However, several of the attributes are influenced by the size of the entity being audited. It is important to recognize that this research does not identify what ought to affect external audit decision-making, but merely reflects which of those factors previously prescribed have been affecting decisions. Of course, the findings are encouraging in their support of past prescriptive literature. Practice appears to be in line with existing pronouncements and guidelines as to those attributes of an internal audit department that ought to influence the external auditor's decision process.

The findings in Exhibit 3 have implications for both external and internal auditors. The former group has a benchmark to which it can compare individual CPA firms' reliance practices to determine whether they are making decisions that are similar to other professionals' assessments. Since an external audit is likely to be more efficient, the greater the extent to which reliance can be placed upon internal auditing, cost savings may result from CPAs (1) being informed of attributes on which their colleagues are relying that have not been evaluated by them in past audit settings and (2) considering the integration of such attributes in their reliance decisions for future examinations.

Internal audit departments are similarly provided direction as to which of their

operating characteristics seem to have influenced external auditors' decisions to rely on internal audit. Efforts to improve upon those attributes found to be statistically significant can be expected to increase the likelihood of reliance. If the department has not adopted some of the policies and procedures outlined, the empirical findings may both explain past problems in getting the external auditors to rely upon the internal audit function and provide the necessary encouragement to the entities for top management to allocate sufficient resources to enable the department's development of such practices.

The research analyzes the reliance decision based on auditees' perceptions of whether or not the external auditors placed reliance on their activities. While the auditees' perceptions were frequently documented in correspondence from the external auditors, future research should direct its attention to auditors' reported decisions as to the extent of their reliance on particular auditees. This is a sensitive area in which to gain CPAs' cooperation, since few external auditors desire to tell a third party that it has not relied upon a particular internal audit department. Obviously, client rapport could be damaged by such an assessment. Yet, if the profession is to progress in its ability to effectively coordinate internal and external audit activities, such inquiries are critical. Academicians and practitioners should work hand-in-hand to maintain the confidentiality of sensitive data bases and yet promote our understanding of existing practice and opportunities for improvement.

References

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EXHIBIT 1

Potential Determinants of External Auditors' Reliance on Internal Audit Activities

Reporting Level

- * Level to Which Internal Auditor Reports Administratively
 - (1) - Audit Committee
 - (2) - Audit Committee or Board of Directors versus Other Organizational Levels

Scope of Internal Audit Activities

- (3) - Limitations Are Placed Upon the Scope of Internal Audit Activities
- * Estimated % of Company Operations Audited
 - (4) - % of Total Assets
 - (5) - % of Total Income
 - (6) - % of Total Cost of Sales
- * Time Allocated to Audit Activities
 - (7) - Percentage of Total Internal Audit Man-Hours Allocated to Financial Audits, Operational Audits, or the Testing of Internal Accounting Controls.

Relative Size

- (8) Total Internal Audit Man-Hours
- (9) Total Expenditures by the Internal Audit Department

Personnel-Related Characteristics

- (10) Salary Level for the Staff Auditor
- * Educational Background
 - (11) - Number of Staff Members Holding BBAs or BAs
 - (12) - Number of Staff Members Holding MBAs
- * Certification
 - (13) - Number of Staff Members Holding CPAs

* Experience

- Number of Years of Experience in Internal Auditing
- (14) - For Managers
- (15) - For Staff Auditors
- (16) - Number of Staff Specializing in EDP
- (17) - Number of Staff With Public Accounting Experience

Internal Audit Department's Policies & Procedures

- (18) New Internal Audit Staff Personnel Participate in Formal Training Programs
- (19) Formal Performance Evaluation Procedures Have Been Established
- (20) Formal Audit Manuals Are In Use
- (21) Formal Audit Programs Are Developed and Used
- (22) Formal Audit Schedules and Work Assignments Are Used
- (23) The Use of Statistical Sampling Procedures is Required
- (24) Internal Audit Has a Key Role in Testing New and Existing Computer-Based Systems
- (25) A Mandatory Reply Process Has Been Established Whereby Auditees Must Respond to Internal Auditors' Reports
- (26) Follow-Up Procedures Exist to Evaluate Actions on Audit Reports
- (27) The Objectives of Internal Auditing Are Formalized in a Responsibility Statement
- (28) Internal Auditors Formally Meet With the External Auditors to Coordinate Activities of the Internal and External Auditors

Acceptance of Findings and Recommendations By Auditees

- (29) Percentage of Suggestions Adopted

- 1 = 0 to 25%
- 2 = 26 to 50%
- 3 = 51 to 75%
- 4 = Over 75%

Adapted from SAS No. 9 (1975), Gibbs and Schroeder (1979), and Said and Grinaker (1980).

EXHIBIT 2

DESCRIPTIVE STATISTICS FOR THE SAMPLE

<u>1981 Figures</u>	<u>μ</u>	<u>σ</u>	<u>Median</u>	<u>Number of Respondents</u>
Total Assets	\$3.4B	9B	431M	95
Operating Revenue	\$2.1B	4.6B	360M	91
Net Income	\$160M	337M	26M	83
Total Number of Employees	501,114	4.7M	4,000	97
Total Internal Audit Man-Hours	30,289	51,110	9,998	92
Total Expenditures for the Internal Auditing Department	\$967,886	1.8M	200,278	87
Number of Professional Personnel Holding BBAs	17	40.3	4.3	99

Industry Breakdown:

Manufacturing, Mining, Oil & Contractors
(SIC codes 10 to 39)
40 entities

Transportation, Communications & Utilities
(SIC codes 40 to 49)
16 entities

Wholesale, Retail, Hotels & Computer Software
(SIC codes 50 to 59, 70, 98)
9 entities

Banking, Credit, Insurance & Real Estate
(SIC codes 60 to 67)
26 entities

Health, Education, Membership Groups, Government & Nonclassifiable
(SIC codes 80 to 99, except 98)
16 entities

EXHIBIT 3

Those Attributes of An Internal Auditing Department That Are
Significantly Related to External Auditors'
Decision to Rely on Internal Audit

Coding Reference to Exhibit 1	Kendall Correlation Coefficient* (Significance) [number of cases] Cramer's V** [Pearson's Correlation***; Sign.]		Entities With Operating Revenue Less Than \$250 Million		Entities With Operating Revenue More Than \$250 Million	
1	(.080) .146	.1459 [109] [.146; .065]	(.061) .234	.2337 [57] [.234; .049]	(.486) .006	-.0064 [52] [-.006; .482]
6	(.075) .596	.1596 [63] [.198; .06]	(.064) .742	.2474 [31] [.309; .046]	(.385) .333	.0491 [32] [.093; .306]
7	(.004) .768	.2331 [97] [.285; .002]	(.047) .822	.2039 [50] [.216; .066]	(.008) .907	.335 [47] [.473; .004]
8	(.003) .949	.2503 [89] [.212; .023]	(.034) .967	.2384 [44] [.223; .073]	(.092) 1.00	.179 [45] [.190; .105]
9	(.003) 1.00	.263 [86] [.122; .132]	(.237) 1.00	.092 [45] [.115; .226]	(.038) 1.00	.269 [41] [.180; .130]
11	(.002) .441	.2609 [94] [.162; .059]	(.126) .356	.154 [48] [.106; .236]	(.037) .685	.238 [46] [.201; .090]

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Coding Reference to Exhibit 1	Kendall Correlation Coefficient* (Significance) [number of cases] Cramer's V** [Pearson's Correlation***; Sign.]	Entities With Operating Revenue Less Than \$250 Million	Entities With Operating Revenue More Than \$250 Million
13	.209 (.024) [75] .372 [.207; .037]	-.195 (.156) [29] .391 [-.003; .494]	.221 (.057) [46] .400 [.176; .121]
15	.214 (.024) [89] .251 [.196; .033]	.139 (.199) [44] .245 [.103; .262]	.255 (.053) [48] .268 [.244; .048]
16	.280 (.014) [56] .365 [.127; .175]	.372 (.083) [17] .365 [.127; .175]	.167 (.156) [39] .323 [.088; .297]
17	.359 (.001) [73] .455 [.235; .023]	.219 (.113) [32] .425 [.193; .144]	.359 (.007) [41] .526 [.224; .080]
18	.266 (.005) [105] .266 [.266; .003]	.229 (.055) [55] .229 [.229; .046]	.200 (.113) [50] .200 [.200; .082]
19	.426 (.001) [108] .426 [.426; .001]	.336 (.011) [56] .336 [.336; .006]	.557 (.003) [52] .557 [.557; .000]

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Coding Reference to Exhibit 1	Kendall Correlation Coefficient* (Significance) [number of cases]		Entities With Operating Revenue Less Than \$250 Million		Entities With Operating Revenue More Than \$250 Million	
	Cramer's V**	[Pearson's Correlation***; Sign.]				
20	(.056) .163	.163 [107] [.163; .047]	(.114) .175	.175 [55] [.175; .101]	(.218) .131	.131 [52] [.131; .177]
21	(.002) .347	.347 [109] [.346; .000]	(.039) .287	.287 [57] [.287; .015]	(.019) .479	.479 [52] [.479; .000]
22	(.001) .413	.413 [109] [.413; .000]	(.024) .288	.288 [57] [.288; .015]	(.002) .640	.640 [52] [.640; .000]
23	(.035) .182	.182 [108] [.182; .03]	(.075) .202	.202 [57] [.202; .066]	(.243) .112	.112 [51] [.112; .216]
24	(.068) .149	.149 [109] [.149; .061]	(.469) .011	.011 [57] [.011; .468]	(.057) .264	.264 [52] [.264; .030]
25	(.007) .257	.257 [107] [.257; .004]	(.191) .125	.125 [56] [.125; .179]	(.009) .443	.443 [51] [.443; .001]

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Significantly Related to External Auditors'
Decision to Rely on Internal Audit

Coding Reference to Exhibit 1	Kendall Correlation Coefficient* (Significance) [number of cases] Cramer's V** [Pearson's Correlation***; Sign.]		Entities With Operating Revenue Less Than \$250 Million		Entities With Operating Revenue More Than \$250 Million	
27	(.015) .230	.230 [105] [.230; .009]	(.084) .204	.204 [55] [.204; .068]	(.090) .25	.250 [50] [.250; .040]
28	(.001) .508	.508 [107] [.508; .000]	(.001) .524	.524 [55] [.524; .000]	(.008) .445	.445 [52] [.445; .001]
29	(.063) .278	.158 [98] [.214; .017]	(.161) .364	.143 [50] [.236; .050]	(.323) .248	.086 [48] [.140; .172]

* The Kendall rank-order correlation coefficient is nonparametric, depending neither upon a normal distribution or the metric quality of interval scales. The Kendall results are consistent with the results obtained for the Spearman rank-order correlation coefficients; the Kendall coefficients are reported herein due to the large number of tied ranks.

** Cramer's V quantifies the strength of association, lying between 0 to +1, with larger values suggesting a greater degree of association. (The phi statistic is reported for 2 x 2 tables; it is interpreted in the same manner).

***The Pearson product-moment correlation coefficient measures the strength of relationship between two interval-level variables and is a parametric test, requiring assumptions of a normal distribution and interval scales.

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