

An Investigation of the Relationships Between Time Invested in Government Internal Audit Projects and Audit Outcomes

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This study investigates the relationships between time invested in performing government internal audits and audit outcomes. The increasingly constrained public sector budgets, coupled with heightened “value for money” expectations call for audit effectiveness and expertise to identify waste, inefficiencies and fraud in budget items. Using benchmarking data from the Association of Local Government Auditors, the study examines the effects of audit hours on projects completed and recommendations issued and implemented. Results show time invested in audit projects is significantly related to the number of projects completed and annualized recommendations issued. Additionally, financial statement and fraud audit projects completed do significantly influence recommendations implemented.

INTRODUCTION

The objective of this research is to investigate the relationships between time invested by government internal audit units in various audit projects, and the outcomes of those projects. For the purpose of this study, time invested is defined as the extent to which internal auditors are able to effectively utilize audit time to discharge their duties and accomplish their goals, such as the extent to which hours spent on audits impact completed engagements. Additionally, audit outcomes refer to not only the audit projects completed, as well as the number of recommendations issued, but also the percentages of those recommendations that are accepted and eventually implemented to address control weaknesses identified in the audit. Internal auditing helps the government organization to accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes (The Institute of Internal Auditors [IIA], 2006). Government internal auditing is at the heart of accountability of public administration, and is a cornerstone of good public sector governance. There is the recognition that internal audit has become an unavoidable control mechanism in both the public and private sectors (Cohen & Sayag, 2010) and that auditors need to add more value and contribute to the overall performance of their organizations. To add value, government internal audit units must demonstrate accountability and effectiveness utilizing audit resources such as time invested in audit projects. Therefore the need to investigate how time invested relates to audit outcome is crucial. The rest of this article is organized as follows: background and contextual significance, theoretical framework, methodology, research results, discussion and conclusion.

BACKGROUND

Some studies of audit outcome (e.g. Larcker & Richardson, 2004; Zhang, 2012) have focused on the private sectors and many argue factors related to audit outcomes include auditor characteristics, engagement-specific characteristics, client characteristics and institutions. Several authors (e.g. Ridley & D'Silva, 2008; Sarens, 2009) have advocated for the need to assess internal audit performance, and several studies have been conducted on internal audit performance from the standpoint of effectiveness in recent years (Aguolu, 2009; Ahmad, et al 2009; Arena & Azzone 2010; Cohen & Sayag, 2010; Chaveerug, 2011; Dominic & Nonna, 2011; Feizizadeh, 2012). Some scholars (e.g. Bogouslouskas et al., 2007) have related internal audit effectiveness to issues such as audit processes and outputs. Others relate audit performance to the quality of internal audit procedures, such as the extent of compliance with the IIA standards or the ability to plan, execute and communicate audit findings (e.g. Fadzil et. al., 2005; Xiangdong, 1997). Although the above-mentioned studies make significant contributions to the literature on audit performance and effectiveness, most of them are private sector focused and, the question of the relationship between audit time investment and audit outcome, especially in governmental settings has been ignored.

Understanding the relationship between time invested in performing audit duties and audit outcome is significant because the efficient use of audit time is an important way to ensure cost-effective and value added audits in an increasingly fiscally constrained public sector. In a recent study of city government chief finance officers conducted by the National League of Cities (NLC), nearly 90 % of respondents reported their cities are "less able to meet fiscal needs in 2010 than in previous year", and 61 % reported decreased state aid to cities as a leading factor affecting their budgets (Hoene & Pagano, 2010). Resource constraint can produce an expectation gap between what citizens expect and what they receive from their government, and increase pressure on public officials to demonstrate a higher level of operational accountability over public funds (Montondon, 1995). The general phenomenon of increasingly constrained public sector budgets, coupled with heightened "value for money" expectations within local governments imply the need for auditing expertise to ensure operational accountability of government. If internal auditors are to be perceived as experts in monitoring government officials to ensure operational accountability over public funds, the audit units have to be able to demonstrate their own operational accountability by showing strong correlation between audit time invested and audit outcome. Despite internal auditors' expertise for assessing the effectiveness of utilizing government financial resources by identifying waste, inefficiencies and fraud in budget items, the extent to which audit resource utilization such as time invested relates to audit outcome has received little attention in public administration research.

This study fills the above-mentioned research gap by determining whether there are statistically significant relationships between hours spent in performing audits and the number of projects completed, as well as recommendations issued, accepted and implemented to help address financial and operational challenges facing government. Additionally, this research seeks to determine whether government internal audit projects completed do significantly influence recommendations accepted and implemented. In the following section, I dwell on the theory of resource based view in order to establish a theoretical foundation for the relationship between audit resource usage and audit outcome.

THEORETICAL FRAMEWORK

In recent years, many public managers and elected officials have called for the need to improve efficiency of public decision-making, service delivery and accountability to the public. This call is based on the assumption that effective performance could lead to evidence-based policy and practice for the overall success of public organizations. Olsson (2007) noted that evidence-based policy and practice call for the use of outcomes data to assess the effectiveness of programs and policies. The importance of the relationship between audit time invested and outcomes of government internal audit can be explained by using the theory of resource-based view (RBV) which is one of the substantial theories in strategic

management. RBV suggests that the resources possessed by a firm are the primary determinants of its performance, and may contribute to sustainable competitive advantage of the firm (e.g. Hoffer & Schendel, 1978; Wenerfelt, 1984). According to Barney (1991), the concept of resources includes all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable it to conceive of and implement strategies that improve its efficiency and effectiveness (Barney, 1991; Daft, 1983). Amit & Schoemaker (1993) suggest resources are stocks of available factors that are owned or controlled by an organization, which are converted into final products or services. Grant (1991) argues resources are inputs into the production process. They include skills of individual employees, finance, capital equipment, time etc.

From the standpoint of government internal audit, resources include audit employees, time invested in audits and audit tools such as planning software, etc. On their own, few resources are productive. Therefore, productive activity requires the cooperation and coordination of teams of resources (Grant, 1991). This implies from the standpoint of internal audit, given that budgeted hours are available resources that can be deployed on audit projects, human resources like audit staff cannot engage in productive activity by completing audit projects unless they invest some time working on those projects. In a study of internal audit that sought to determine the use of resources to monitor internal audit performance and quality assurance, the Global Audit Information Network [GAIN] (2008) found that 59 percent track audit planned versus actual hours spent on audit, and 93 percent track number of audits planned versus executed. This is based on the expectation that time invested should correlate with the number of audits completed. Ziegenfuss (2000) categorized environment of the internal audit, input into the audit, the auditing process and the output of the audit as areas of effectiveness. Inputs into the audit obviously entail deployment of resources such as audit staff and budgeted hours. The audit process entails the actual time invested in completing audit projects, which results in audit deliverables such as the number of projects completed. In this context we predict that:

H1. There is a positive relationship between audit time invested and the number of projects completed.

In his RBV argument, Grant (1991) argues capability is the capacity for a team of resources to perform some task or activity. Amit & Schoemaker (1993) suggest capabilities refer to an organization's capacity to deploy resources, usually in combination, using organizational processes to produce a desired outcome. Audit units have the capability to deploy resources such as audit staff and budgeted hours to invest time in performing and successfully completing audit tasks. Audit capability includes the management of the audit function as well as training and supervising auditors. The time invested in building these capabilities is likely to affect audit outcome. In fact, studies in the private sector (e.g. Ratliff (1996) show auditor professional training and educational level affects the effectiveness of the audit department. The presence of capability enables resources to begin to be utilized, and the potential for the creation of output and outcome arises (Amit & Schoemaker, 1993). Based on the RBV arguments above, if government internal audit staff are able to invest time in audit work and processes, including management and supervision, such efforts could produce desired outcomes such as the number of recommendations issued, the percentage accepted and the percentage implemented. Consequently, we predict that:

H2. There is a positive relationship between audit time invested and annualized recommendations.

H3. There is a positive relationship between audit time invested and the percentage of recommendations accepted.

H4. There is a positive relationship between audit time invested and the percentage of recommendations implemented.

The application of RBV is also important in explaining the relationship between projects completed, and audit outcomes. Audit projects include performance audits, financial statement audits, information technology (IT) audits, compliance audits, contract audits, construction audits, follow-up audits and attestation engagements. Non-audit engagements include such activities as management consulting. The audit engagements and projects completed could also impact the number of recommendations issued, the percentage accepted and the percentage implemented. Performance audits, for example, contribute to

improvements in operational performance by systematically gathering evidence to assess the economy and efficient use of public resources, as well as the effectiveness and the extent of achieving programmatic goals. Financial statement audits play key roles in the public accountability process by expressing an opinion on the presentation of government financial statement, and by examining the reliability of specific financial information, compliance with procedural requirements, or the safeguard of public assets. IT audits have become critical mechanism for ensuring the integrity of information systems by supporting the auditors' judgment on the quality of the information processed by computer systems and the security of the IT infrastructure. Construction projects in the public sector are highly visible, complex undertakings requiring significant financial commitments. Consequently, public sector construction audit projects can play key roles by enabling internal auditors to review pre-construction planning activities to help mitigate financial, operational and compliance risks, and perform post-construction audits and fraud detection to reveal fraudulent, wasteful and unethical construction practices. Due to the significance of all the afore-mentioned audit projects as well as others such as fraud audits/investigations, public sector audit clients are likely to take recommendations from these audits seriously. In this context, we predict:

H5. There is a positive relationship between the number of projects completed and annualized recommendations.

H6. There is a positive relationship between the number of projects completed and the percentage of recommendations accepted.

H7. There is a positive relationship between the number of projects completed and the percentage of recommendations implemented.

METHODOLOGY

This research utilizes data from a 2012 biennial audit benchmarking and best practices survey conducted by the Association of Local Government Auditors (ALGA). The survey was sent to audit heads of 263 audit shop members and 113 returned the survey, yielding a 43 percent response rate. Fifty-two percent of the respondents work for city government, 27 percent work for county government, and 21 percent work for other types of governmental entities, including schools/Universities, utilities and transportation. Twelve percent of the respondents are in the Midwest of the United States, 18 percent in the pacific west, 12 percent in the mountain west, 5 percent in the northeast, 46 percent in the south east and south west and 5% are international. Twenty-five percent of respondents have audit staff of between 1-2, 34 percent have 3-5 staff, 21 percent have 6-10 staff, 11 percent have 11-15 staff, and 9 percent have 16 or more staff.

Based on the profile presented above, the case can be made that the survey respondents constitute adequate and fairly balanced representation of the local governments and regions of the United States, as well as departmental size in terms of the number of audit staff. The areas surveyed include resource inputs and outputs/outcomes in the areas of Time Usage, Projects Completed, Annualized Recommendations and Percentage Accepted as well as Implemented, and Engagements Planned and Completed. This study focuses on the relationships between audit time invested, the engagements and projects completed, the number of recommendations issued, the percentage of recommendations accepted and the percentage implemented. Additionally, the study aims at investigating the relationship between engagements and projects completed, the number of recommendations, the percentage of recommendations accepted and the percentage implemented.

To measure Time Invested, respondents were asked to indicate the number of hours used in each of the following areas: performance audits, attestation engagements, fraud audits/investigations, contract audits (all except construction), construction contract audits, financial statement audits/assists, IT audits, follow-up audits, non-audit engagements (e.g. consulting services) and indirect hours (e.g. hours spent by auditors on management, supervision, training and staff meetings). For the purpose of coding, time invested was measured in the following 7 point scale: 1 = 1,000 or Less Hours; 2 = 1,001-2,000; 3 = 2,001-3,000; 4 = 3,001-4,000; 5 = 4,001-5,000; 6 = 5,001-6,000 and 7 = 6,001 or More.

For Projects Completed, respondents were asked to indicate the number of projects completed in each of the following areas in a typical year: performance audits, attestation engagements, fraud audits/investigations, contract audits (all except construction), construction contract audits, financial statement audits/assists, IT audits, follow-up audits, non-audit engagements (e.g. consulting services). Projects completed was measured in the following 7 point scale: 1 = 10 or Less; 2 = 11-20; 3 = 21-30; 4 = 31-40; 5 = 41-50; 6 = 51-60; and 7 = 61 or More.

The Annualized Recommendations variable was measured by asking for annualized data, realizing that it might be several years before a recommendation comes to a close. For example, in an average year, an audit department might make 185 recommendations, with 95% of those being accepted, and 85% of them being finally implemented or closed over a three to five year period. The annualized recommendations variable was measured in the following 7 point scale: 1 = 40 or Less; 2 = 40-80; 3 = 81-120; 4 = 121-160; 5 = 161-200; 6 = 201-240; and 7 = 241 or More. Percentage of recommendations accepted variable was also measured on 7 point scale as follows: 1 = 15% or Less; 2 = 15-30%; 3 = 31-45%; 4 = 45-60%; 5 = 61-75%; 6 = 76-90%; 7 = 91% or More. The percentage of recommendation implemented variable was also measured on the same scale as the percentage accepted variable.

Descriptive statistics were used to analyze time invested in audit projects, the number of projects completed, as well as the number of recommendations issued, the percentages accepted and percentages implemented. Chi-Square tests were used to analyze the relationships between time invested and projects completed, time invested and recommendations, as well as projects completed and recommendations.

RESEARCH RESULTS

Time Invested

Table 1 shows the descriptive statistics regarding time invested in audit projects and non-audit engagements. As shown in Table 1, more local government auditors invest time in performance audits than any other audits. The details show 46 respondents invest time in performance audits. This is followed by follow-up audits (39), fraud investigations (38), non-construction contract audits (29) and financial statement audits (23).

Table 1 also shows that of the 46 respondents who invest time in performance audits, 12 (26%) spend up to 1,000 hours on these audits, 10 (22%) spend between 1,000 and 2,000 hours, 7 (15%) spend between 2,000 and 3,000 hours and 5 (11%) spend between 3,000 and 4,000 hours. Another 11% spend between 5,000 and 6,000 hours and additional 11% spend more than 6,000 hours on this audit. This shows that the number of ALGA members who spend various hours on performance audits are evenly spread, and the hours spent varies from less than 1,000 to over 6,000 hours.

TABLE 1
TIME INVESTED – NUMBER OF HOURS INVESTED IN VARIOUS AUDIT PROJECTS

Project Name	Time Invested in Projects							N
	1000 or Less Hours	1001-2000	2001-3000	3001-4000	4001-5000	5001-6000	6001 or More	
Performance Audits (Number Responding)	12	10	7	5	2	5	5	46
Attestation Engagements	19	3	0	0	0	0	0	22
Fraud Audits/Investigations	31	4	2	1	0	0	0	38
Contract Audits (all except construction)	19	8	0	0	0	0	0	29
Construction Contract Audits	16	1	2	0	0	0	0	21
Financial Statement Audits/Assists	22	0	0	0	0	0	0	23
IT Audits	24	4	0	0	0	0	0	10
Follow-Up Audits	29	2	0	0	0	0	0	39
Non- Audit Engagements, e.g. Consulting	22	1	2	1	0	0	0	34

Table 1 also shows of the 38 respondents who invest time in fraud investigation audits, 31 (68%) invest up to 1,000 hours in these projects, 4 (11%) spend between 1,000 and 2,000 hours, 2 (5%) spend between 2,000 and 3,000 hours, and 1 (3%) spend between 3,000 and 4,000 hours on these audits. This makes fraud audits the area where the survey respondents spend the second highest amount of their time, after performance. Table 1 also reveals that unlike performance audits on which similar numbers of respondents spend various hours, all the other audit types have the overwhelming majority of respondents spending 1,000 hours or less on them. For example, of the 22 respondents who invest time in attestation engagements, 19 (86%) spend up to 1,000 hours, and 3 (14%) spend between 1,000 and 2,000 hours compared to 26% and 22% respectively for performance audits. In fact, all the 23 respondents who invest time in financial statement audits spend 1,000 or less on this audit.

Projects Completed

Table 2 shows descriptive statistics of projects completed. The results show that to a large extent, the number of projects completed is a reflection of the time invested in each audit area. As indicated in Table 2, a total of 55 respondents stated they execute performance audit projects. Of these, 34 (62%) complete up to 10 projects in a year, 14 (25%) complete between 11 and 20 projects, and four respondents (1%) complete 61 or more performance audit projects in a year. Twenty eight respondents perform attestation engagements, 41 execute fraud investigation projects, 31 execute non-construction contract projects, 23 work on construction contract projects, 32 work on financial statement audit projects and 36 perform IT audits in a year. Additionally, 35 complete follow-up audit and 34 perform non-audit engagements. Of the 41 who perform fraud investigations, 31 (76%) complete up to 10 projects in a year, 3 (7%) complete between 11 and 20 projects, and 4 (10%) complete more than 60 projects in a year.

Of the 32 who perform financial statement audits, 97% complete up to 10 projects in a year. This is not surprising as Table 1 revealed that all respondents who perform financial statement audits spend up to 1,000 hours on these audits. Indeed, an interesting revelation in Table 2 is that with the exception of respondents for performance audits, fraud investigations and attestation engagements, nearly 90% or more of all other respondents complete up to 10 projects annually in all the remaining project areas. This may

be partly due to the time allocated to performance audits, as reflected in the projects completed, and also the size of the audit shops. An important thing to remember though is that since many respondents perform two or more of these projects, the total number of projects completed in a year is likely more than 10 for most of these respondents.

TABLE 2
NUMBER OF PROJECTS COMPLETED IN A GIVEN YEAR

Project Name	Projects Completed							N
	10 Projects or Less	11-20	21-30	31-40	41-50	51-60	61 or More Projects	
Performance Audits (Number Responding)	34	14	3	0	0	0	4	55
Attestation Engagements	24	3	1	0	0	0	0	28
Fraud Audits/Investigations	31	3	0	1	2	0	4	41
Contract Audits (all except construction)	28	3	0	0	0	0	0	31
Construction Contract Audits	23	0	0	0	0	0	0	23
Financial Statement Audits/Assists	31	1	0	0	0	0	0	32
IT Audits	36	0	0	0	0	0	0	36
Follow-Up Audits	32	2	0	1	0	0	0	35
Non- Audit Engagements, e.g. Consulting	31	1	0	2	0	0	0	34

Audit Recommendations

Table 3 shows the descriptive statistics of annualized recommendations in an average year, as well as percentages of recommendations that are accepted and eventually implemented. The analysis shown in Table 3 reveals 19 respondents issue 40 or less recommendations in a typical audit year, 15 issue between 41 and 80 recommendations, 5 issue between 81 and 120, 3 issue between 121 and 160 and another 3 issue between 160 and 200 a year. Additional 3 issue more than 240 recommendations a year. These results imply 70% of respondents issue up to 80 recommendations a year, 80% issue up to 120 recommendations, and 13 percent issue between 160 and 240 recommendations a year. Regarding the percentage of recommendations accepted, Table 3 shows between 91% or more of the recommendations of 42 of the respondents are accepted by the audit clients. Additionally, 16 of the respondents do get between 91% and 100% of their outstanding recommendations implemented in a given year. Furthermore, 12 have between 76% and 90% these recommendations implemented, and 9 have 61-75% of them implemented in a typical year. These results imply 43% of respondents do get between 60% and 90% of their outstanding recommendations implemented in a given year, and 76% have between 60% and 100% of these recommendations implemented.

TABLE 3
ANNUALIZED RECOMMENDATIONS AND PERCENTAGES ACCEPTED AND IMPLEMENTED

Annualized Recommendations		Percentages Accepted and Implemented		
Recommendations	N	Percentages	Accepted	Implemented
			N	N
40 or Less	19	15% or Less	2	1
41-80	15	16-30%	2	1
81-120	5	31-45%	1	2
151-160	3	46-60%	0	2
161-200	3	61-75%	2	9
201-240	1	76-90%	0	12
240 or More	3	91% or More	42	16

Time Invested and Projects Completed

Given the results discussed above, a subject of interest, as noted in research hypothesis 1, is the extent to which time invested in executing audit projects impact the number of projects completed. Table 4 illustrates the result of the Chi-Square test performed to determine the relationship between time invested and projects completed for each of the audit areas. Table 4 shows that with the exception of performance audit and follow-up audit, the test results reveal statistically significant relationships between the hours worked on these projects and the number of projects completed, including non-audit engagements. The Pearson Chi-Square shows $p = 0.001$ for attestation engagement, $p = 0.000$ for fraud audits/investigations, $p = 0.002$ for financial statement audits, and $p = 0.002$ for non-audit engagement. The test also reveal $p = 0.114$ for performance audits and $p = 0.892$ for follow-up audits. Given these results, the question that comes to mind is why do performance audits and follow-up audit hours have least influence on projects completed, considering the fact that they are two areas with the highest numbers of respondents indicating time invested respectively? A closer review of Table 4 reveals follow-up audits constitute the only area where the details of the number of respondents for time invested exceed those for projects completed, and this may account for the weak association. Regarding performance audits, this may be due to the fact that, as stated above, it is the only area on which similar numbers of respondents spend various hours, unlike all the other audit types that have the overwhelming majority of respondents spending 1,000 hours or less on them.

TABLE 4
CHI-SQUARE TEST OF RELATIONSHIPS BETWEEN TIME INVESTED AND PROJECTS COMPLETED

Project Name	Time Invested	Projects Completed	Pearson Chi-Square		
	N	N	Value	df	Assymp. Sig (2 Sided)
Performance Audits (Number Responding)	46	55	24.415	18	0.114
Attestation Engagements	22	28	22.890	6	0.001
Fraud Audits/Investigations	38	41	68.177	20	0.000
Contract Audits (all except construction)	29	31	23.482	4	0.000
Construction Contract Audits	21	23	19.000	3	0.000
Financial Statement Audits/Assists	23	32	12.106	2	0.002
IT Audits	10	36	28.000	2	0.000
Follow-Up Audits	39	35	0.229	2	0.892
Non- Audit Engagements, e.g. Consulting	34	34	31.523	12	0.002

Time Invested and Recommendations

Table 5 shows the Chi-Square test of the relationship between time spent on each audit and non-audit engagement area and annualized recommendations, the percentages accepted and the percentages implemented. As can be noted from Table 5, the test result for the relationship between time invested in follow-up audits and annualized recommendations shows $p = 0.046$. Similarly, the result for the relationship between time invested in audit management, supervision and training, and annualized recommendations is $p = 0.000$. These imply there are statistically significant relationships between time invested in these two areas and annualized recommendations. Therefore, research hypothesis 2 is accepted for these two relationships. This is not surprising, considering the fact that the efforts of audit management is expected to directly result in audit performance, and the fact that follow-up audits are meant to ensure that recommendations for improvements are addressed.

TABLE 5
CHI-SQUARE TESTS OF RELATIONSHIPS BETWEEN TIME INVESTED AND
RECOMMENDATIONS

Project Areas (Hours)	Annualized Recommendation			Percentage Accepted			Percentage Implemented		
	Pearson Chi-Square			Pearson Chi-Square			Pearson Chi-Square		
		df	Assy mp. Sig (2 Sided)	Value	df	Assy mp. Sig (2 Sided)	Value	df	Assym p. Sig (2 Sided)
Performance Audits	41.767 ^a	36	0.235	30.439	24	0.170	31.176	42	0.890
Attestation Engagements	3.431	10	0.969	9.161	4	0.057	3.473	8	0.901
Fraud Audits/Investigations	28.916	24	0.223	8.543	16	0.931	24.398	24	0.439
Contract Audits (all except construction)	9.247	8	0.322	7.381	8	0.496	6.952	8	0.542
Construction Contract Audits	7.732	12	0.806	6.643	6	0.355	6.330	9	0.706
Financial Statement Audits/Assists	6.725	5	0.242	2.215	1	0.137	9.018	4	0.061
IT Audits	4.618	10	0.915	5.267	4	0.261	5.897	12	0.921
Follow-Up Audits	18.558	10	0.046	8.460	10	0.584	17.273	12	0.140
Non- Audit Engagements, e.g. Consulting	24.971	18	0.126	2.100	12	0.999	12.096	21	0.937
Indirect Hours – (Management, Supervision, Training, etc.)	61.742	30	0.001	11.520	20	0.932	22.556	30	0.833

Projects Completed and Recommendations

Given that time invested in the audit projects do not significantly impact percentages of recommendations accepted and percentages implemented, the question that comes to mind is: do projects completed significantly influence the number of recommendations issued and the percentages accepted and implemented? Table 6 shows the results of Chi-Square tests performed to help answer this question. As revealed in Table 6, the relationship between performance audit projects completed and annualized recommendation shows a p value of 0.000 and that between non-audit engagements completed and annualized recommendations shows a p value of 0.023. This confirms research hypothesis 5 and shows that although the time invested in performance audits and non-audit engagements do not significantly impact annualized recommendations, the projects completed in these areas do have statistically significant relationship with annualized recommendations. Table 6 also reveals that projects completed in fraud audit/investigations and in financial statement audits do significantly impact percentages of recommendations implemented, with p values of 0.001 and 0.036 respectively. This result, which confirms research hypothesis 7, is important because the ultimate goal of audit recommendations is to ensure that the identified control weaknesses are rectified.

DISCUSSION

The results stated above reveal that more local government internal auditors invest time in performance audits and more auditors execute performance audit projects than any other types of audit. Besides performance audits, more government auditors invest time in follow-up audits than other audits,

but more auditors execute fraud audits/investigations projects than other audit projects outside of performance audits.

TABLE 6
CHI-SQUARE TESTS OF RELATIONSHIPS BETWEEN PROJECTS COMPLETED AND RECOMMENDATIONS

Projects Completed	Annualized Recommendation			Percentage Accepted			Percentage Implemented		
	Pearson Chi-Square			Pearson Chi-Square			Pearson Chi-Square		
	Value	df	Assy mp. Sig (2 Sided)	Value	df	Assy mp. Sig (2 Sided)	Value	df	Assym p. Sig (2 Sided)
Performance Audits	54.433	18	0.000	14.141	12	0.292	11.148	21	0.960
Attestation Engagements	8.802	15	0.888	15.078	12	0.237	23.253	15	0.079
Fraud Audits/Investigations	22.785	30	0.824	24.620	25	0.484	58.678	30	0.001
Contract Audits (all except construction)	8.296	8	0.405	5.284	8	0.727	10.950	12	0.533
Construction Contract Audits	4.633	5	0.462	6.461	4	0.167	6.458	5	0.264
Financial Statement Audits/Assists	5.867	5	0.319	4.791	3	0.188	11.905	5	0.036
IT Audits	1.491	5	0.914	2.376	3	0.498	2.480	6	0.871
Follow-Up Audits	8.556	10	0.575	4.318	10	0.932	8.119	12	0.776
Non- Audit Engagements, e.g. Consulting	23.655	12	0.023	7.630	6	0.266	14.189	12	0.289

The attention given to performance audits clearly shows that local government auditors who perform these types of audits aim at ensuring their governments get ‘Value-for-Money’ regarding the resources used in operations. Through these performance audits, internal auditors play crucial roles in advancing performance management in state and local government by giving management valuable recommendations for improving program performance, and by aiding public officials in the area of improved decision-making and performance accountability. Devoting resources to both follow-up audits and fraud audits/investigations is important because the former ensures that accepted recommendations are implemented while the latter helps to minimize misappropriation of funds and unethical behavior on the part of government employees and contractors.

The research results also reveal that there are statistically significant relationships between time invested and projects completed in attestation engagements, fraud audits/investigations, contract audits, construction audits, financial statement audits/assists, IT audits, and non-audit engagements. This implies that audit productivity varies directly with the time resources in terms of actual hours invested in these projects. This finding is consistent with the arguments of the RBV theory that resources possessed by an organization are important determinants of performance, and that they enable the organization to conceive of deploying the resources strategically to improve efficiency and effectiveness (Hoffer & Schendel, 1978; Barney, 1991; Draft, 1983). From the standpoint of audit management, this audit information is useful to senior audit executives for evidence-based managerial decision-making in assessing the

effectiveness of government internal audit, especially when it comes to allocation of resources. To the extent that senior audit management relies on the relationship between time invested and projects completed in its decision, such action is consistent with the arguments of Grafton et al. (2010) that performance information is a significant input into an array of managerial decisions and issues. Additionally, the result is consistent with the argument of Olsson (2007) that evidence-based policy calls for the use of outcome data to assess effectiveness.

The research results also reveal that a total of 70 percent of the survey respondents issue up to 80 recommendations a year, 80 percent issue up to 120 recommendations, and 13 percent issue between 160 and 240 recommendations a year. Additionally, 91 percent or more of the recommendations of 86 percent of respondents are accepted, and 60 percent or more of the recommendations of 76 percent of respondents are implemented in a given year. The Chi-Square tests show a statistically significant relationship between time invested in follow-up audits and the number of recommendations issued ($p = 0.046$), as well as between time invested in managing the audit function and the number of annualized recommendations ($p = 0.001$). These findings reflect the fact that the efforts of audit management are expected to directly result in audit performance, and the fact that follow-up audits are meant to ensure recommendations for improvements are addressed. The implication of the results though is that management commitment to training, supervision and quality audit, as well as audit commitment to seeing through resolution of recommended improvements do impact audit productivity. Considering the fact that training and supervision enhances audits capacity to manage the audit function and to deploy audit time and human resources effectively, the audit result is consistent with the arguments of RVB theory that capabilities provide the capacity to deploy resources to achieve desired performance outcome. Additionally, it is consistent with the arguments of Amit & Schoemaker (1993) that the presence of capabilities enable resources to begin to be utilized, and raises the potential for the creation of output.

According to the research results, there is a statistically significant relationship between performance audit projects completed and the number of annualized recommendations ($p = 0.000$), and between non-audit engagement projects completed and annualized recommendations ($p = 0.023$). We may recall from the results in Table 5 that time invested in both performance audits and non-audit engagements do not significantly impact annualized recommendations. Given the above results, it can be argued that government internal audit performance in identifying control weaknesses and recommending improvements is not so much depended on time invested per se but rather on how productive the audit staff are in completing audit projects. These findings also have implications for audit senior executives in terms of evidence-based decision-making in managing audit performance.

An important finding in this research is that there is strong correlation between both projects completed on fraud audit/investigations and financial statement audits, and percentages of recommendations implemented, with p values of 0.001 and 0.036 respectively. With recent research revealing that 90 percent of chief financial officers of municipalities feel their cities are less able to meet their fiscal needs, 61 percent of them reporting decreased state aid to cities, and public administrators looking for ways to improve financial oversight (Hoene & Pagano 2010), this finding is very significant. As stated earlier, financial statement audits play key roles in the public accountability by expressing opinion on the reliability of financial information. Fraud investigations help to uncover and prevent fraudulent activities that result in substantial loss to the government. Together, these two audits help to ensure that taxpayers' resources are utilized judiciously and that government assets are safeguarded. Given the importance of both fraud audit/investigations and financial statement audits in helping to protect the public purse, it is refreshing that recommendations from these audits are taken seriously by audit clients. The results imply that again, audit productivity in these projects is key to audit outcomes, and not just the time invested on projects. Consequently, this result is also consistent with the argument of Grant (1991) that on their own, few resources are productive, and that productive activity requires the cooperation and coordination of teams of resources, such as skilled individual auditors and their ability to effectively invest audit time on audit projects.

This research did not focus on the specific systems for measuring government internal audit performance, neither did it focus on the usefulness of audit performance indicators. Additionally, the

factors accounting for quality internal audits were outside the scope of this study. Furthermore, the 43% response rate does not reflect the views of the entire target population. The study is also limited by the use of ALGA benchmarking data which derives from a predetermined survey design and data set. Despite these limitations, the findings are useful because the effect of time invested on government internal audit projects and recommendations is an area with very little empirical research. Further studies are required to determine whether a larger response rate will make a difference in the research results, and to investigate specific performance indicators of government internal audits as well as their usefulness in helping audit leadership to manage performance.

CONCLUSION

Overall, the research results discussed above indicate that time invested in most audit projects significantly influence projects completed. About seventy percent of auditors issue up to eighty recommendations a year, and about seventy six percent of them have sixty percent or more of their recommendations implemented in a given year. Time invested in managing the audit function as well as in follow-up audits influence the number of annualized recommendations. Additionally, the completion of performance audit projects significantly influences annualized recommendations while the completion of financial statement and fraud audits/investigations impact percentages of recommendations implemented. These findings make a significant contribution to the literature because they are generally consistent with the arguments of resource-based theory that the resources possessed by an organization are important determinants of performance, and that capabilities provide the capacity to deploy resources to achieve desired results.

The results have both theoretical and practical implications for public administration. From theoretical perspective, the results help to conceptualize the relationship between audit resource inputs, outputs, and outcomes as well as its broader managerial implications. From practical perspective, the results suggest that chief audit executives can benefit from evidence-based decision-making and audit management through the use of output data from audit projects completed, and that knowledge about the impact of financial statement and fraud audits could aid in improving financial oversight both during regular times and in periods of fiscal distress. In their managerial decisions, chief audit executives and their designates will be better served if they rely on performance information that could prove crucial in problem identification and in the targeting of critical issues that need to be addressed in order to improve audit performance.

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