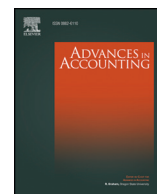




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## Factors that influence the perceived use of the internal audit function's work by executive management and audit committee

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### ABSTRACT

The internal audit function (IAF) is an important component of high-quality corporate governance. We study how the head of internal audit perceives the executive management team and the audit committee to rely on the IAF's work. It is not obvious from prior work or professional anecdotes whether the IAF satisfies the needs of both groups. If multiple factors influence the IAF's work, chief audit executives (CAEs) may find themselves in a situation with competing demands, which could then compromise quality for all stakeholders. Based on a unique dataset from CAEs, two logistic regression models identify factors that influence the degree to which IAF's results are perceived as being used by both executive management and the audit committee. The results show the existence of various factors that are relevant either to both groups (e.g., strategic project reports and IAF quality) or to only one (e.g., only audit committees are interested in risk management reports while only executive management teams are interested in internal control reports), depending on whether the IAF focuses on assurance or consulting work.

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### 1. Introduction

In order to fulfill its duties as an objective and independent provider of assurance and consulting services, the internal audit function (IAF) reports to both executive management and the audit committee, both of whom need specific information provided by the IAF (Abbott, Parker, & Peters, 2010). However, these two stakeholders differ in their specific duties; thus, their intended uses of IAF-provided information and their requests of the IAF differ. For example, executive management likely depends on the IAF's work to help them minimize the company's risks and to improve the operations of the company; that is, they have a managerial focus. On the other hand, the interests of the audit committee are likely more focused on monitoring; that is, they seek stronger internal controls, regulatory compliance, or quality

of financial reporting (e.g., Paape, Scheffe, & Snoep, 2003). The divergent objectives of these two stakeholders present potential confusion and can divide the attention of the IAF.

In recent studies by two Big 4 accounting firms, IAF stakeholders (specifically audit committees, boards of directors, and senior executives) note a decreased satisfaction with their IAFs (KPMG, 2017; PwC, 2017), reporting overall satisfaction at only 44%, the lowest number reported since the measure has been collected. Among those respondents who report some satisfaction with IAF results, more than half still expect more from their IAF (PwC, 2017). Specifically, these stakeholders reported wanting more value in the areas of potential revenue enhancements, cost savings, or smarter capital expenditures. These findings indicate that both executive management and audit committees expect more; however, because both stakeholders have different expectations of IAFs (Lourens & Coetzee, 2018), IAFs might struggle to decide how to satisfy both groups, given their limited resources.

To help internal audit better serve both stakeholders, it is important to understand what each group values about IAF work. Prior research has not examined what factors are associated with greater use of internal audit results by executive management teams and audit committees. To this end, we analyzed questionnaire responses from 683 chief

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audit executives (CAEs) working in Europe about the use of IAF results by executive management and audit committees.<sup>1</sup> Applying the same analysis models to both executive management and audit committees, we compared the factors that influenced their usage of IAF work, as perceived by CAEs.

We group potential factors influencing usage of internal audit results into three categories: (1) the intended use of the IAF's results (efficiency of controls, risk management, and strategic projects), (2) the quality of the IAF (independence and adherence to professional standards,) and (3) the structure of the IAF (use of outsourced internal audit and implementation of quality assurance programs). We find various factors influence the usage of internal audit results by the executive management team and the audit committee.

Our analysis shows that CAEs perceive that both groups use internal audit results more when IAF reports focus on strategic projects. Surprisingly, internal audit perceives that executive management is more likely to use internal audit results that focus on internal controls, whereas the audit committee is more likely to use internal audit results focused on risk management. In terms of internal audit characteristics, respondents perceive that both groups rely more on internal auditors that follow the Institute of Internal Auditors' (IIA) International Professional Practices Framework (IPPF). Interestingly, executive management is perceived as more likely to rely on the IAF's results if the IAF is independent, but no similar effect is noted for the audit committee. Finally, using the IAF as a management training ground or outsourcing of work of the IAF does not influence the perceived usage of internal audit results by either party.

This analysis contributes to recent work on differences between internal audit stakeholders (Abbott et al., 2010; Lourens & Coetzee, 2018) and helps us better understand the interests of and potential conflicts between executive management, the audit committee, and the IAF, sometimes referred to as the "serving two masters" situation. Our results will assist both IAF leaders and researchers in helping increase satisfaction with internal auditors by their various stakeholders.

Our results will also be useful to internal auditors as they make their annual plans. Internal auditors often face budget constraints that limit their ability to satisfy all stakeholders (Anderson, Christ, Johnstone, & Rittenberg, 2012). Understanding what each stakeholder uses most from internal audit work should help CAEs and internal auditors make more informed decisions about where to deploy their scarce resources to more effectively serve their stakeholders.

## 2. Prior research and research questions

The IIA considers an effective IAF to be one of the main pillars of high-quality corporate governance, along with the audit committee, executive management, and external auditors (IIA, 2013; Prawitt, Smith, & Wood, 2009). This is true and relevant for both forms of corporate governance systems: the dualistic (or two-tier) model that is prevalent in parts of Europe and the monistic (or one-tier) model that is prevalent in North America (Hermanson & Rittenberg, 2002; Prawitt et al., 2009).

The purpose of an independent and objective IAF is to create value for the organization through an enhancement of its business processes and the reduction of business risks. Besides the main characteristics of objectivity, competence, and independence, internal auditing is also defined by two main tasks, namely assurance services and consulting services (IIA, 2014). Consequently, the focus of internal auditing's work is on those areas that identify fraud or material weaknesses and that improve performance, risk management, controls, and governance processes (e.g., Anderson, Francis, & Stokes, 1993; Hermanson & Rittenberg, 2002; Lin, Pizzini, Vargus, & Bardhan, 2011; Prawitt et al.,

2009). The design and implementation of the IAF also depends on organizational characteristics like industry, size, scope of international operations, and listing status (Anderson et al., 2012; Wallace & Kreutzfeldt, 1991).

In the two-tier corporate governance system that is prevalent in parts of Europe, executive management is responsible for the establishment and maintenance of the IAF, and the audit committee's supervisory board is responsible for the IAF's supervision and the strategic assignment of its resources. Furthermore, the audit committee has the legal duty to monitor any financial reporting done via management's design and execution of the internal control system as well as monitor risk assessment and management processes. The audit committee also hires and monitors the external auditor. This is different from the one-tier system common in the US where a single governing body (the audit committee) has primary supervisory powers over the IAF even though the IAF still reports to both parties.

Against this background, potential challenges for CAEs arise in practice, specifically when internal auditing has a dual-reporting relationship to both the managing and the monitoring body. First, reporting to two different stakeholders leads to a division of focus and resources for the IAF, which decreases both parties' satisfaction with the performance of the IAF (e.g., Abbott et al., 2010). Second, within the triangle of the three parties, the interests and power of each single party vary over time, creating a potential power gap. This is especially pronounced when circumstances or shared interests yield a cooperation between two of the three actors, at which time asymmetric information may be presented to the third actor. To minimize these potential asymmetries, many advocate a balanced relationship between executive management, the audit committee, and the IAF (Abbott et al., 2010; Hermanson & Rittenberg, 2002; Hoos, Kochetova-Kozloski, & d'Arcy, 2015; Hoos, Messier, Smith, & Tandy, 2014; Lenz & Sarens, 2012; Messier, 2010; Norman, Rose, & Rose, 2010).

### 2.1. Principle-agent problems

From a theoretical point of view, the difficulty of the IAF having two main stakeholders can be explained by principal-agent theory. While this theory traditionally involves a single principal and a single agent (Jensen & Meckling, 1976; Ross, 1973), Tirole (1986) developed a two-stage model of the theory which is extended by an additional independent supervising authority. In such a case, two principals are present, and the agent must strive to satisfy both. Because the principals sometimes have competing incentives, objectives, and needs for information, the principle-agent relationship becomes complicated. This is sometimes referred to as the "serving two masters" problem, and it is not uncommon in business settings. For example, external auditors regularly deal with multiple internal parties such as management and the audit committee as well as external parties such as investors, creditors, and regulators (Almer, Cannon, & Kremin, 2018; Andiola, Bedard, & Kremin, 2018).

IAF is an agent with two major stakeholders or principals: executive management and the audit committee. Internal auditing provides both assurance and consulting activities for these stakeholders and might face a situation in which it has to provide specific information for one of the parties. Or both stakeholders may want both assurance and consulting information but in different quantities. For example, executive management may generally want more consulting and strategic information and less assurance, whereas the audit committee may generally want more assurance and less consulting (Hoos et al., 2014). The IAF's role is to try and satisfy both its major stakeholders—even though potential conflicts and limited resources can cause conflicts (Stewart & Subramaniam, 2010). The difficulty is best summarized by the head of the IIA, Richard Chambers, when he said, "We can audit anything—but not everything" (Chambers, 2014).

<sup>1</sup> To accomplish our goal, we could have also asked both audit committees and senior executives to represent the demand side of IAF report use. However, getting direct access to these two stakeholders is extremely challenging, and focusing on the supply side of IAF reports provided us the added benefit of direct comparison between the two groups.

The next two sections illustrate the scope of the problem in more detail by explaining how the IAF relates to executive management's and the audit committee's interests, respectively.

## 2.2. Executive management's interests and the IAF

Executive management is responsible for monitoring the strategy and performance of a company, minimizing risk to performance, ensuring an appropriate control framework, and providing a reasonable return to the shareholders. Therefore, assurance work offered by the IAF supports effective oversight and internal controls, and it assists executive management in a significant way to improve operations and the overall governance framework (Carcello, Hermanson, & Raghunandan, 2005a). Furthermore, supporting executive management with consulting projects is a natural fit for most IAFs since audit findings can identify specific improvements and add additional value through consulting recommendations.

However, the relationship between executive management and the IAF can also be a tenuous one (Christopher, Sarens, & Leung, 2009; Hoos et al., 2014; Messier, Reynolds, Simon, & Wood, 2011; Prawitt, Sharp, & Wood, 2011). If the relationship between the IAF and executive management prevents objectivity by the IAF, the expectations of executive management could significantly influence the IAF's work (Sarens & Beelde, 2006). This is plausible because executive management has the power to assign tasks to the IAF, influence its budget or audit plan, and use it as a management training ground (Christopher et al., 2009; Messier et al., 2011; Stewart & Subramaniam, 2010).

## 2.3. Audit committee's interests and the IAF

The audit committee's duties focus mainly on the areas of financial reporting, internal controls, risk management, compliance, and external auditing. Especially when the IAF's focus is more on activities related to internal control, the audit committee's oversight of the IAF increases (Abbott et al., 2010). To fulfill the various tasks of the audit committee, its members need specific information, and, therefore, they must sometimes rely on reports by other functions or management. However, when the audit committee interacts closely with the IAF, information asymmetry can be reduced (Raghunandan, Rama, & Read, 2001), and the audit committee can fulfill its monitoring responsibilities more efficiently. Furthermore, because there is some task similarity between internal and external audit, close cooperation between the IAF and the audit committee can lead to both a minimization of audit fees (Felix, Gramling, & Maletta, 2001; Prawitt et al., 2011) and reduction of a potential information overload.

In return for useful information, the audit committee can provide stronger promotion for IAF resources (Arena & Azzone, 2009; Raghunandan et al., 2001). This is one reason why some studies examine the IAF's budget as a function of governance characteristics (e.g., Anderson et al., 2012; Carcello et al., 2005a). Furthermore, when the audit committee is responsible for appointing, dismissing, and evaluating the work of the IAF or CAE, the work of the IAF is influenced (Christopher et al., 2009).

It is reasonable to assume that the IAF's reporting to and informal interactions with one or both stakeholders can lead to information asymmetry (Norman et al., 2010; Sarens, Christopher, & Zaman, 2013) and conflicts (Asare, Davidson, & Gramling, 2008). Further potential threats appear from the disciplinary responsibilities of either the audit committee or executive management. For example, the CAE may be biased in favor of—and thus more likely to satisfy the specific needs of—the stakeholder who holds hiring and firing power over him or her. In this context, Norman et al. (2010) emphasize that the CAE will “beautify” the results to satisfy the “boss.”

## 2.4. Research questions and models

Most of the existing research investigates how executive management and the audit committee affect the IAF from a behavioral perspective (e.g., Abbott et al., 2010; Hoos et al., 2014; Hoos et al., 2015; Messier et al., 2011). We extend this research to examine CAEs' perception of the use of IAF work by the primary stakeholders. We examine three distinct areas by investigating (1) the purpose of the IAF's results, (2) the quality the IAF (as defined by adherence to professional standards), and (3) the structure of the IAF. The following sections discuss each of these variables and formulate the respective research questions.

### 2.4.1. The purpose of IAF results

As discussed above, the results of an internal audit can be used for different purposes. As with all organizational components, the CAE is given a budget and must decide which audits with an assurance focus and which with a consulting focus will be included in the annual audit plan. Although most organizations use a risk-based audit plan, the intended use of IAF results can significantly affect the execution of an audit.

Our models investigate whether the intended use of IAF results has an effect on how much those results are utilized by either executive management or the audit committee. We classify the intended use of IAF results as one of three things: efficiency of internal controls, risk management, and support of strategic projects. These terms are further defined in the Methodology section below.<sup>2</sup> The following research questions drove our research:

**RQ1a.** : Do CAEs perceive executive management of making greater use of IAF work when the work's intended use is for efficiency of internal controls, risk management, or support of strategic projects?

**RQ1b.** : Do CAEs perceive the audit committee of making greater use of IAF work when the work's intended use is for efficiency of internal controls, risk management, or support of strategic projects?

### 2.4.2. The quality of the IAF

The quality and professionalism of an IAF can be observed by different measures (Lampe & Sutton, 1994; Lourens & Coetzee, 2018). Prior research shows two measures—*independence* and *compliance with IIA standards*—as important signals of IAF quality (Abbott, Parker, & Peters, 2012; Abdel-Khalik, Snowball, & Wragge, 1983).

We first investigate whether a higher-quality IAF, as measured by IAF independence, leads to executive management and the audit committee making greater use of IAF work. Previous research has established that a high-quality IAF must be independent; otherwise, assurance services cannot be provided (Christopher et al., 2009; Sarens & Beelde, 2006; Stewart & Subramaniam, 2010). However, it has not been shown empirically whether either stakeholder values IAF independence; therefore, we investigate the following research questions:

**RQ2a.** : Is executive management's use of IAF work associated with internal audit independence, as perceived by CAEs?

**RQ2b.** : Is the audit committee's use of IAF work associated with internal audit independence, as perceived by CAEs?

We next investigate whether a higher-quality IAF, as measured by compliance with IIA standards, leads to executive management and the audit committee making greater use of IAF work. We measure adherence to IIA standards by looking at adherence to the

<sup>2</sup> “Efficiency of internal controls” covers IAF activities with a strong focus on the improvement of internal controls, “risk Management” focuses on aggregated risks in the company, and “support of strategic projects” especially includes consulting activities of the IAF within larger strategy projects.



IIA's International Professional Practices Framework (IPPF). The IPPF serves as a systematic framework to guarantee that the IAF's primary purpose and overarching goal is clearly defined, that the IIA's core principles and code of ethics are introduced, and that company implements an efficient and IIA standards compliant IAF. Thus, following the IPPF is a quality indicator for IAFs. This leads to the following questions:

**RQ3a.** : Is executive management's perceived use of IAF work associated with internal audit's compliance with the IPPF?

**RQ3b.** : Is the audit committee's perceived use of IAF work associated with internal audit's compliance with the IPPF?

#### 2.4.3. The structure of the IAF

We know from prior research that IAF sourcing arrangement (in-house vs. outsource) has an impact on the reporting quality of the IAF (e.g., Ahlawat & Lowe, 2004; Carcello, Hermanson, & Raghunandan, 2005b; Glover, Prawitt, & Wood, 2008). However, it is unclear how that sourcing arrangement will impact either executive management's or the audit committee's use of IAF work. Therefore, we investigate the following research question:

**RQ4.** : How does the IAF sourcing arrangement impact the perceived intensity of report usage by executive management and the audit committee?

We know that IAF quality assurance programs are a value-added proposition (e.g., Sarens, Abdolmohammadi, & Lenz, 2012; Ulvi, 2015). CAEs need assurance that their IAF and each member of the staff conform to all mandatory elements of the IPPF, and they need to demonstrate this conformance to their stakeholders. The only way to meet these needs is with a comprehensive Quality Assurance and Improvement Program (QAIP) that includes ongoing and periodic internal assessments and periodic external assessments by qualified independent parties. These programs include assessments that evaluate IAF effectiveness and efficiency as well as identify opportunities for improvement (IIA, 2017). Although the IIA's professional standards require a QAIP, not every company complies with this standard (DeSimone & Abdolmohammadi, 2016). Presence of these quality assessment programs may be an important factor for perceived usage by IAF stakeholders. We therefore investigate the following research question:

**RQ5.** : How does the IAF quality assurance program impact the perceived intensity of report usage by executive management and the audit committee?

### 3. Research methodology

#### 3.1. Data collection and description of sample

We base our analysis on data collected by an anonymous online questionnaire that was piloted and then distributed by the national IIAs of Austria, Germany, and Switzerland. The questionnaire consisted of 86 open- and closed-response questions, and it sought to identify trends within the internal audit profession and ask respondents about recent developments within internal auditing. The questionnaire was available to 2450 CAEs from November to December 2013 then again from November to December 2017. In total, 865 CAEs gave partial or full responses to the survey; of these, 683 participants answered all of the questions used for our analysis and thus formed our sample. We present the questions used for this study in Appendix A.

Table 1 shows the distribution of samples across years (Panel A) and countries (Panel B). The tables show that approximately 40% of our

**Table 1**  
Sample Distribution.

Panel A: Distribution by Year		
Year	Frequency	Percent
2014	268	39.24
2017	415	60.76
Total	683	100.00
Panel B: Distribution by Country		
Country	Frequency	Percent
Austria	124	18.16
Switzerland	102	14.93
Germany	457	66.91
Total	683	100.00

sample comes from 2014 while 60% of it comes from 2017. They also show that approximately 20% of our responses are from Austria, 15% from Switzerland, and 65% from Germany.

#### 3.2. Models and variables

In order to address our research questions, we use two logistic regression models that have the same independent variable models and a different dependent variable.<sup>3</sup> The two models have a focus either on executive management (Model1<sub>EM</sub>) or the audit committee (Model2<sub>AC</sub>). The following equation shows our research model for Model1<sub>EM</sub>:

$$Y_{intensity\_EM} = \beta_0 + \beta_1(Controls) + \beta_2(Risk\_Management) + \beta_3(Strat\_Projects) + \beta_4(IAF\_independence) + \beta_5(IPPF) + \beta_6(Outsourcing) + \beta_7(SystematicQAProgram) + \varepsilon$$

Using the same logic we change the dependent variable for Model2<sub>AC</sub>:

$$Y_{intensity\_AC} = \beta_0 + \beta_1(Controls) + \beta_2(Risk\_Management) + \beta_3(Strat\_Projects) + \beta_4(IAF\_independence) + \beta_5(IPPF) + \beta_6(Outsourcing) + \beta_7(SystematicQAProgram) + \varepsilon$$

All regressions use robust standard errors, such that single standard errors are estimated and heteroscedasticity can be ignored. The estimated coefficients are constant, but the standard errors will slightly shift. We did not identify any problems with the variance inflation factors (VIFs).

Each model's dependent variable measures CAEs' perception of the usage of IAF work by the two stakeholders (*Intensity\_CLevel* for executive management and *Intensity\_AC* for audit committees) using a five-point Likert-scale from "very low" to "very high."

The models employ several independent variables that relate to the research questions described above. First, three independent variables measure the intended use of IAF results, which are crucial to answering RQ1a and RQ1b. These are *PurposeEffectivenessICS* (indicates the intended use is efficiency of internal controls), *PurposeRiskManagement* (indicates the intended use is risk management), and *PurposeStrategicProjects* (indicates the intended use is support of strategic projects). Next, to characterize the quality of the IAF and provide answers for RQ2a, RQ2b, RQ3a, and RQ3b, the independent variables *Independence* (indicates IAF independence) and *IPPFConformance* (indicates adherence to professional standards) are included. Lastly, to characterize the structure of the IAF and provide answers for RQ4 and RQ5, the independent variables *Outsourcing* (indicates the IAFs sourcing

<sup>3</sup> All included dependent variables are polytomous and have three or more values. The values are ordinal, such that we can use an ordered logistic regression. The ordinal scale has no accurate quantification between the single values; it merely explains the "higher" or "lower" value of the variable.

arrangement) and *SystematicQAProgram* (indicates the presence of a quality assurance program) are included.

We also include several control variables. We include the supervisory relationship between the two stakeholders and the IAF with the variables *AuditplanInputC-Level* and *AuditplanInputAC*. Both are dummy variables to control for which of the different stakeholders have a direct input on IAF's annual audit plan. Lastly, we include organization-related control variables (*Listing\_status*, *Industry\_Dummy*, *ObjectiveMTG*, and *LN\_Size*)<sup>4</sup> and dummy variables to control for country and year effects. The full definition of each variable is given in [Appendix A](#).

### 3.3. Descriptive statistics

[Table 2](#) shows the mean, standard deviation, minimum, maximum, and number of observations for the dependent and independent variables. CAEs report that management uses the IAF's results more intensively than the audit committee does. The descriptive statistics also suggest that use of IAF work is greatest when the work's purpose is for internal controls, then risk management, and finally strategic projects. Most of the CAEs report IAFs as being independent and in reasonable compliance with the IPPF.

[Table 3](#) presents the correlation matrix for all variables. There are no variables with a high cross-correlation; therefore, we conclude that the sample does not appear to have a multicollinearity problem.

## 4. Results and discussion

The results for the logistic regression for both *Model1<sub>EM</sub>* and *Model2<sub>AC</sub>* are presented in [Table 4](#). In the following sections we present these results and discuss their significance in relation to the research questions defined above.

### 4.1. The purpose of IAF results

Research questions 1a and 1b asked about how CAEs perceive executive management and the audit committee using IAF work in relation to that work's intended use. As shown in [Table 4](#), CAEs perceived that executive management teams make greater use of the IAF's results when the purpose of reports relate to effectiveness of internal controls and strategic projects but not risk management. On the other hand, CAEs perceived that audit committees makes greater use of the IAF's results when the purpose of reports relate to strategic projects and risk management but not effectiveness of internal controls.

These results indicate that the overall strategic plan of the company is relevant for executive management as well as for the audit committee; however, the similarity for the IAF purpose ends there. In other words, a complex principle-agent problem is likely to occur for the IAF as they try to provide audits with varied purposes to each interested party.

### 4.2. The quality of the IAF

Research questions 2a through 3b ask about how IAF independence and IPPF conformance influence the use of IAF work by executive management and the audit committee, as perceived by CAEs. As shown in [Table 4](#), CAEs perceived that executive management teams' utilization of IAF work is positively associated with both IAF independence and IPPF compliance. On the other hand, audit committees' utilization of IAF work was not significantly related to IAF independence, and it was only marginally positively associated with IPPF compliance.

<sup>4</sup> *Listing\_status* is a 0/1 dummy variable. *Industry\_Dummy* is also a dummy variable with a value of "1" for the financial industry and "0" for all other industries. *ObjectiveMTG* indicates whether the IAF objective is to act as a management training ground. *LN\_Size* is measured as an absolute number of employees or its logarithm.

**Table 2**  
Descriptive Statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
Intensity_CLevel	658	4.175	0.877	1	5
Intensity_AC	520	3.133	1.395	1	5
PurposeEffectivenessICS	649	4.304	0.834	1	5
PurposeRiskManagement	623	3.480	1.054	1	5
PurposeStrategicProjects	587	2.666	1.082	1	5
Independence	682	0.912	0.283	0	1
IPPFConformance	592	3.807	1.284	1	5
AuditplanInputC-Level	652	3.348	1.157	1	5
AuditplanInputAC	550	2.815	1.532	1	5
ImportanceAuditee	658	4.614	0.671	1	5
ObjectiveMTG	670	2.157	1.278	1	5
SystematicQAProgram	663	0.641	0.480	0	1
Outsourcing	549	1.695	12.053	0	250
ListingStatus	683	0.449	0.498	0	1
Industry_Dummy	683	0.319	0.467	0	1
LN_IAFStaff	662	1.949	1.243	-1.386294	7.20786
LN_Size	661	7.939	1.894	1.098612	13.30468
Country_Dummy	683	0.851	0.357	0	1
Year_Dummy	683	0.608	0.489	0	1

See [Appendix A](#) for variable descriptions.

These results suggest that executive management and the audit committee conceive of IAF quality differently, namely that the audit committee is not as significantly concerned with IAF independence and is only marginally concerned with IPPF compliance, whereas executive management is significantly concerned with both.

### 4.3. The structure of the IAF

Research questions 4 and 5 ask whether the IAF sourcing arrangement and the presence of a quality assurance program influence usage of IAF results, as perceived by CAEs. The results suggest that neither of these structural decisions influence the perceived usage of internal audit results by either executive management or the audit committee. These findings indicate that both stakeholders are either confident in or ambivalent about the source (in-house vs. outsource) of internal audit reporting and to the use of QA programs.

## 5. Conclusion

We identify and discuss variables which influence the perceived intensity of usage of IAF results by the audit committee and the executive management team, respectively. Identifying influential purpose and quality measures is key for IAF teams in the future both because of recent work suggesting that the different stakeholders measure quality differently ([Lourens & Coetzee, 2018](#)) and because it is unlikely that the needs of the two stakeholders will merge and more likely that they will diverge, creating a more troublesome "serving two masters" situation.

### 5.1. Limitations

Our analysis is based on self-reporting of CAE respondents. While we are not aware of any reason why they would intentionally bias their responses about how much executive management or audit committees use their results, future research should study whether executive management teams and audit committees have the same perceptions as internal auditors.<sup>5</sup> Additionally, we did not measure internal auditors' perceptions of stress or tension that may be caused by the different demands of executive management teams and audit committees. We encourage future research to directly examine this issue.

<sup>5</sup> We note one previous study that shows that internal auditors and managers respond similarly when evaluating risks companies face ([Carcello et al., 2018](#)).

**Table 3**  
Correlation Matrix.

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Intensity_CLevel (1)	1																	
Intensity_AC (2)	0.3544*	1																
PurposeEffectivenessCS (3)	0.3518*	0.2396*	1															
PurposeRiskManagement (4)	0.2437*	0.2648*	0.3334*	1														
PurposeStrategicProjects (5)	0.3148*	0.1954*	0.2245*	0.3441*	1													
Independence (6)	0.1233*	0.1179*	0.1087*	0.0926*	0.0353	1												
IPPFConformance (7)	0.1587*	0.3244*	0.1338*	0.1926*	0.1372*	0.1036*	1											
AuditplanInputC-Level (8)	0.1170*	0.1801*	0.0832*	0.0827*	0.0703*	0.0404	0.1013*	1										
AuditplanInputAC (9)	0.1794*	0.5666*	0.1276*	0.1765*	0.1267*	0.0689	0.2741*	0.3500*	1									
ObjectiveMTG (10)	0.1409*	0.2703*	0.0785*	0.1677*	0.1480*	0.1128*	0.1447*	0.1591*	0.2146*	1								
SystematicQAProgram (11)	0.1265*	0.3018*	0.2031*	0.2224*	0.0877*	0.0875*	0.3561*	0.016	0.2429*	0.1969*	1							
Outsourcing (12)	-0.0046	0.0059	-0.0469	0.036	0.0165	-0.0415	0.0339	-0.0099	-0.0116	0.0233	0.0192	1						
Listing Status (13)	0.1087*	0.2487*	0.1306*	0.1844*	-0.0016	0.0417	0.1916*	-0.0224	0.1817*	0.2027*	0.2425*	0.0556	1					
Industry_Dummy (14)	0.0103	0.0322	0.1537*	0.2526*	0.0317	0.1241*	-0.0018	-0.0741*	-0.0116	0.0233	0.1064*	-0.0057	0.0822*	1				
LN_IAFStaff (15)	0.0951*	0.2742*	0.1237*	0.1683*	0.0491	0.0952*	0.1667*	-0.026	0.1529*	0.2873*	0.3246*	0.0416	0.2714*	0.1967*	1			
LN_Size (16)	0.0777*	0.2338*	0.0361	-0.012	0.0091	-0.015	0.1259*	0.046	0.2029*	0.3220*	0.1601*	0.0425	0.2634*	0.3747*	0.5690*	1		
Country_Dummy (17)	0.0354	-0.3928*	0.009	-0.0568	0.0485	-0.0566	-0.2134*	0.0202	-0.3310*	-0.0831*	-0.2077*	0.0119	-0.0921*	-0.1273*	-0.1708*	-0.0637	1	
Year_Dummy (18)	-0.0853*	0.1672*	-0.0206	-0.0809*	-0.0771*	0.0478	0.0971*	0.2572*	-0.0171	-0.029	-0.0782*	-0.0772*	-0.1178*	-0.0287	-0.0527	0.0223	0.0166	1

See Appendix A for variable descriptions.

\*  $p < .10$ .

**Table 4**  
Factors Influencing the Usage of Internal Audit Results.

Variable	Model 1: C-Level	Model 2: AC
	Coef. (Std. Err.)	Coef. (Std. Err.)
PurposeEffectivenessCS	0.393** (0.154)	0.186 (0.161)
PurposeRiskManagement	0.050 (0.121)	0.275** (0.128)
PurposeStrategicProjects	0.599*** (0.113)	0.323*** (0.112)
Independence	1.116** (0.197)	0.367 (0.471)
IPPFConformance	0.248*** (0.093)	0.160* (0.093)
AuditplanInputC-Level	0.073 (0.101)	-0.181* (0.106)
AuditplanInputAC	0.066 (0.081)	0.665*** (0.089)
ObjectiveMTG	-0.02 (0.092)	0.114 (0.094)
SystematicQAProgram	-0.311 (0.264)	-0.145 (0.265)
Outsourcing	-0.005 (0.006)	0.003 (0.006)
Listing_Dummy	-0.201 (0.228)	0.377* (0.227)
Industry_Dummy	-0.023 (0.277)	0.033 (0.287)
LN_IAFStaff	-0.046 (0.120)	0.168 (0.130)
LN_Size	0.115 (0.081)	0.041 (0.084)
Country_Dummy	0.720** (0.286)	-1.729*** (0.305)
Year_Dummy	-0.594*** (0.223)	0.558** (0.224)
Number of observations	373	336
LR Chi <sup>2</sup> (16)	85.13	213.40
Prob > chi2	0.0000	0.0000
Pseudo R2	0.1030	0.2006

See Appendix A for variable descriptions. Significance levels: \*; 10% \*\*; 5% \*\*\*; 1%.

This study contributes to the existing literature in important ways. We analyze factors that influence the intensity of usage of IAF results by executive management and audit committees, respectively. We consider our study and our results a supporting effort in empirically assessing the IAF complex principle-agent problem. Potential future research could focus on various aspects like adding additional countries, the integration of direct measures for the audit committee and executive management perspective, the addition of other IAF stakeholders, or an experimental approach.

**Data availability**

Please contact the authors. This project was sponsored by a national IIA chapter.

**Appendix A. Instrument and variable definition**

Dependent Variables	Variable Name	Scale	Category
How much does senior management (e.g., CEO, COO, CFO, etc.) use the internal audit results?	Intensity_CLevel	1-5	Model 1
How much does the audit committee use the internal audit results?	Intensity_AC	1-5	Model 2
Independent Variables			



(continued)

Dependent Variables	Variable Name	Scale	Category
For which purposes does management use internal audit reports? Effectiveness of controls	PurposeEffectivenessICS	1–5	Purpose
For which purposes does management use internal audit reports? Risk management	PurposeRiskManagement	1–5	Purpose
For which purposes does management use internal audit reports? Monitor of strategic projects	PurposeStrategicProjects	1–5	Purpose
Is your IAF independent? (Following IIA Standards 1100/1110)	Independence	0/1	Quality
Which standards do you follow? IPPF	IPPFConformance	1–5	Quality
Who is giving input on the annual audit plan of the IAF? Executive management	AuditplanInputC-Level	1–5	Quality and Structure
Who is giving input on the annual audit plan of the IAF? Audit committee	AuditplanInputAC	1–5	Quality and Structure
What is the objective of the IAF? Preparing IAF staff for future management positions (e.g. Management Training Ground)	ObjectiveMTG	1–5	Controls
Do you have a systematic QA Program?	SystematicQAProgram	0/1	Structure
How many activities of the IAF were outsourced? (measured in FTEs)	Outsourcing		Structure
Dummy Variable with the Value “1” if listed	ListingStatus	0/1	Controls
Dummy Variable with the Value “1” if from the Financial Industry	Industry_Dummy	0/1	Controls
Natural Logarithm of No. of IAF Staff	LN_IAFStaff		Controls
Natural Logarithm of No. of Employees	LN_Size		Controls
Dummy Variable with the Value “1” if from the Two-Tier Countries Austria and Germany	Country_Dummy	0/1	Controls
Dummy Variable with the Value “1” if from the 2017 Data Collection	Year_Dummy	0/1	Controls

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