



Are internal auditing practices related to the age of the internal audit function?

Internal auditing practices

Exploratory evidence and directions for future research

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Abstract

Purpose – This study seeks to analyze and explore whether the organizational profile, the size of the internal audit function (IAF) and internal audit (IA) practices are related to the age of the IAF.

Design/methodology/approach – This study is based on data collected from the Common Body of Knowledge study conducted by the Institute of Internal Auditors Research Foundation in 2006. In total, 9,366 practitioners completed the questionnaire, representing 92 countries.

Findings – This study has identified three clusters of IAF based on their age. The findings show that: the organizational profile is significantly different between these three clusters; the current size of the IAF is related to the age of the IAF; those IAFs that were set up in the early days of the IIA (established in 1941) are more likely to use the IIA Standards and have more internal auditors with internal auditing qualifications; a quality assurance and improvement program is more common within older IAFs; and older IAFs have a more diversified IA agenda and more frequently perform advanced IA activities.

Research limitations/implications – This paper does not allow conclusions to be reached on causality: the results in this paper are based only on univariate association tests. Given that age of the IAF is not a proxy for its maturity, a multidimensional measure of the maturity of an IAF could be developed.

Practical implications – The results reported in this paper can be useful for practitioners who wish to benchmark their IAF and for the IIA to continue implementing their mission “progress through sharing”.

Originality/value – This is the first large-scale study focusing on the age of the IAF. The results of this study have resulted in interesting directions for future research.

Keywords Internal auditing, Organizational profiles

Paper type Research paper



Introduction

A review of recently conducted research on internal auditing shows great variation in internal audit (IA) practices worldwide (see Allegrini *et al.*, 2006; Cooper *et al.*, 2006;

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Gramling *et al.*, 2004; Hass *et al.*, 2006 for detailed literature reviews). The existing literature on IA provides fragmented evidence and discussion on the reasons why these differences exist.

At macro (country) level, Sarens and Abdolmohammadi (2010a) show that there is a great variability in the maturity of the IA profession when comparing countries worldwide. They provide evidence that this variability at country level can partially be explained by cultural differences. Furthermore, Abdolmohammadi and Tucker (2002) show that the degree of economic development of a country (measured by its gross national product) has an impact on IA practice in that country. Two other studies (Cenker and Nagy, 2004; Page and Spira, 2004) found out that corporate governance requirements, which differ between countries, also have an impact on IA practice.

The majority of these studies focused on the micro (organizational) level, namely on the individual internal audit function (IAF) or department. One group of studies in this stream investigated the reasons why firms set up an IAF (Adams, 1994; Arena and Azzone, 2007; Carey *et al.*, 2000; Goodwin-Stewart and Kent, 2006; Pforsich *et al.*, 2006, 2008; Wallace and Kreutzfeldt, 1991) as well as what factors determine the size of the IAF (Carcello *et al.*, 2005a, b; Goodwin-Stewart and Kent, 2006; Sarens and Abdolmohammadi, 2010b). A second group of studies investigated IA practices in more detail (Abdolmohammadi, 2009; Melville, 2003; Selim *et al.*, 2003, 2009). Evidence has also been found to demonstrate that IA practices are related to, for example, the IA clients (Flesher and Zanzig, 2000; Goodwin and Yeo, 2001; Mihret and Yismaw, 2007; Sarens and De Beelde, 2006; Sarens *et al.*, 2009) or risk management and internal control practices (Selim and McNamee, 1999; Allegrini and D'Onza, 2003). It has to be noted that these studies at micro level did not take into account when exactly the IAF was set up. In other words, they study the existence and size of an IAF or specific IA practices irrespective of when the IAF was set up. In other words, it could be that part of the variability in terms of IAF size or IA practices is explained by the age (in terms of years of existence) of the IAF at micro (organisational) level. This argument is supported in a recent report published by The IIA Research Foundation (2009) that proposes a tool called the "internal auditing capability model" for assessing the level of maturity of the IAF (in terms of sophistication and experience) in the public sector and identifying a path for managing the growth of internal auditing capabilities in the organization. This study identifies five progressive levels (initial, infrastructure, integrated, managed, and optimizing) that differ in term of services and roles played by the IAF, principles for staff management, professional practices and other aspects.

Therefore, this study investigates and explores whether or not the IAF size and IA practices are related to the age of the IAF at micro (organisational) level. If a significant relationship does exist then future research in this area will have to take this factor into account.

While accounting and external auditing professions have a long history in many countries and are usually mandated by governments and regulated by professional bodies or governmental entities, IA is a more recent phenomenon with the establishment of the IIA as recently as 1941. Unlike accounting bodies IA is not normally mandated by government though the IIA Inc. acts as regulator for IA worldwide through local chapters and institutes. Driven by demands for more corporate accountability following the corporate scandals in the 1970s and 1980s, IA has gained increasing acceptance as a profession. Despite the apparent short history of IA there is evidence that in reality

the profession has a much longer history. Ramamoorti (2003) states that the first reference to "IA kind of tasks" goes back to the fifteenth century when double-entry bookkeeping emerged. Companies in the railroad, defense, and retail industries had long recognized the value of IA services (Whittington and Pany, 1998). It follows then that there are also IAFs with a very long history. In this study, we hypothesize that IA practices are different within recently established IAFs (in the last two to three decades) compared to IAFs with a longer history.

This study is based on data from the Common Body of Knowledge (CBOK) study conducted by the IIA Research Foundation in, 2006 (Burnaby *et al.*, 2007). In total, 9,366 IA practitioners completed the questionnaire, representing 92 countries[1]. For every country, one or more usable responses were received. Every respondent represented his/her IAF (full details of this worldwide research project can be found in Burnaby *et al.* (2006, 2007).

Initially, we performed a cluster analysis based on the age of the IAF. Second, we tested whether the organizational profile, IAF size and IA practices were significantly different between the identified clusters. Finally, we interpret the results and present some directions for future research.

Cluster analysis on the age of the IAF

Of the 9,366 respondents, 1,619 were excluded because they did not provide the age of their IAF. The remaining 7,747 respondents were included in a K-means cluster analysis based on the age of the IAF which identified three significantly different clusters ($F = 9,995.611$; $p = 0.000$). Table I provides for each cluster the average age of the IAF (including the standard deviation), minimum, maximum, and the number of IAF in every cluster.

Cluster 1 is the smallest ($n = 56$), representing the oldest IAF (average age = 155 years). The very limited number of IAFs in this cluster have the longest history and were set up long before the IIA was established in 1941. The oldest IAF in this study was set up in 1641. About 70 percent of the IAFs in this cluster were set up in the nineteenth century (between 1810 and 1893). In this period, business activities grew in size, scope, and complexity, and therefore, a critical need for a separate internal assurance function that would verify the (accounting) information used for decision making by management emerged. The establishment of a formal IAF to which these responsibilities could be delegated was seen as the logical answer (Ramamoorti, 2003).

Cluster 2 contains 995 IAFs with an average age of 52 years. About 70 percent of the IAFs in this cluster were formed between 1936 and 1973. In other words, these IAFs were set up in the period when the IIA was under construction. Arthur E. Hald, one of the IIA's charter members at that time, stated that:

Cluster	Number of IAF	Minimum	Maximum	Mean	SD
1. IAF with longest history	56	104	365	154.95	41.34
2. IAF set up in the early days of the IIA	995	32	103	51.57	18.13
3. IAF set up in past three decades	6,696	0	31	11.91	8.79

Note: $n = 7,747$

Table I.
Three clusters based on age of the IAF

Necessity created internal auditing and is making it an integral part of modern business. No large business can escape it. If they haven't got it now, there will have to have it sooner or later, and if events keep developing as they do at present, they will have to have it sooner (Flesher, 1996).

Cluster 3 contains the remaining 6,696 IAFs which have an average age of 12 years. About 70 percent of the IAFs were set up between 1985 and 2003 which clearly confirms the young age of the IA profession. This cluster represents the IAFs that were created after the first boost of the profession in the 1970s when the certified internal auditor (CIA) professional qualification was launched. This was an examined qualification and was based on a formal body of specialized knowledge (the so-called CBOK). At this time, the standards for the professional practice of internal auditing (Standards) were approved. Moreover, the Foreign Corrupt Practices Act, published in 1977, particularly, its emphasis on internal controls, can be considered as an important sign that the public interest in the work that IA perform increased significantly. There was no doubt that, by the late 1970s, the field of internal auditing had earned the right to be called a "full-fledged profession" (Ramamoorti, 2003).

Organizational profile

We have analyzed the current profile, namely industry, listing, status, and firm size in 2006 of the organizations in each cluster and tested whether this profile is significantly different between the clusters. Panel A of Table II shows the four industries in which the differences between the clusters are significantly different. More than half of the firms in cluster 1 belong to the banking and financial services industry. In other words,

	Cluster 1: IAF with longest history	Cluster 2: IAF set up in the early days of the IIA	Cluster 3: IAF set up in past three decades	Overall	χ^2 or F-value	p-value
<i>Panel A: industry (%)</i>						
Banking and financial services	58.9	36.4	23.2	25.1	114.574	0.000
Communication and telecommunication	3.6	4.8	7.8	7.4	10.042	0.007
Hospitality, leisure, and tourism	0.0	2.1	3.8	3.5	9.034	0.011
Utilities	5.4	10.9	7.7	8.1	12.450	0.002
<i>Panel B: listing (%)</i>						
Listed	51.8	47.9	36.9	38.4	49.124	0.000
<i>Panel C: status (%)</i>						
Local	5.6	8.2	11.8	11.3	40.477	0.000
State/provincial	3.7	11.8	10.4	10.5		
Regional	3.7	10.4	9.0	9.2		
National	35.2	24.0	29.8	29.1		
International/multinational	51.9	45.6	39.0	40.0		
<i>Panel D: firm size (in thousand USD)</i>						
Total assets	20,700,000	16,100,000	30,100,000	28,200,000	0.030	0.971
Total revenues	1,120,000	2,260,000	3,440,000	3,260,000	0.108	0.897

Table II.
Organizational profile

the IAFs with the longest history can be found in the banking and financial services industry. Even in cluster 2 (those IAFs that were set up in the early days of the IIA), the banking and financial services industry is more than averagely represented. Although this result clearly shows that the banking and financial services industry has the longest IA tradition, almost no studies have been published that focus on the maturity of IA practices in this industry. Researchers have always (implicitly) assumed that IA practices in this industry were mature. However, the recent financial crisis (2007-2008) has reduced the credibility of this implicit assumption. Therefore, we encourage future research to study how IA practices in this specific industry have evolved and whether they are sufficiently adapted to the complex nature of this industry. In other words, can we still keep on considering the IAFs in this industry as the “most mature”, as the “leaders of the profession”?

Relatively, “new” industries such as communication and telecommunication and hospitality, leisure and tourism are more than averagely represented in cluster 3 representing the most recently established IAFs. Utility firms are more than averagely represented in cluster 2. In other words, IAFs within utility firms were, on average, set up in the early days of the IIA which correspond to the expansion of these firms after the Second World War.

Panel B of Table II shows that firms that are currently listed are more than averagely represented in clusters 1 and 2. More than half of the firms that have an IAF with a long history (cluster 1) are currently listed. We do not know whether these firms were also listed at the time they set up their IAF so we cannot conclude whether listing has encouraged these firms to set up an IAF or whether the establishment of an IAF was part of the preparation for an initial public offering (IPO). Future research is needed on the direction of this relationship.

Panel C of Table II shows that the current status of the organizations (scope of operations) in the three clusters is significantly different. The results show a clear trend, namely IAFs in organizations operating on a larger scale have a longer history whereas IAFs in organizations operating on a more local level turn out to have a shorter history. It has to be noted that we do not know the status of the organizations at the time their IAF was set up so we cannot investigate whether status has an impact on establishing an IAF. In other words, future research could test this basic agency theory hypothesis: the more (less) dispersed the operations of an organization are, the more (less) the need to set up an IAF as monitoring mechanism. Furthermore, it could be that their status has changed since then. An interesting issue for future research would be to investigate to what extent the existence of an IAF facilitates organizational expansion.

Finally, Panel D of Table II shows that there is no significant relationship between current firm size and age of the IAF. An additional correlation analysis between both variables (irrespective of the cluster) confirms this result. Firm size (at the time of the establishment of the IAF) has an impact on the decision to set up an IAF as found by previous studies in this area, but firm size has nothing to do with how long ago this IAF was set up which is an innovative finding.

Size of the IAF

Table III provides data on the current average size of the IAF (number of internal auditors in full time equivalent (FTE) in every cluster. The ANOVA test clearly shows

that the current average size of the IAF is significantly different between the three clusters. The IAFs with the longest history (cluster 1) are, on average, the largest ones whereas the youngest IAFs (cluster 3) are, on average, the smallest ones which seem plausible. This result suggests that the current size of the IAF is also driven by the age of the IAF. The opposite relationship (current IAF size drives IAF maturity) seems unlikely. In other words, the longer the IAF exists, the more the IAF has had the chance to prove its added value, and thus the more the organization (including senior management, the board of directors, and/or the audit committee) has benefited from the services of this internal assurance function, and thus the more they have supported an expansion of the IAF. Given that we could not find any study on IAF size (measured by the absolute or relative number of internal auditors or the IAF budget) that took into account the maturity of the IAF, we strongly encourage future research in this area to take this variable into account.

IA practices

Use of the IIA Standards

Panel A of Table IV shows that the proportion of IAFs that uses the IIA Standards in whole or in part differs significantly between the three clusters. The results show that a larger proportion of the older IAFs (clusters 1 and 2) use the IIA Standards compared to the younger IAFs (cluster 3). More specifically, the highest proportion of IAFs that use

Table III.
Size of the internal audit
function (FTE)

Cluster	Minimum	Maximum	Mean	SD	F-value	p-value
1. IAF with longest history	1.00	549.00	118.21	144.59	78.349	0.000
2. IAF set up in the early days of the IIA	1.00	1,800.00	82.88	158.98		
3. IAF set up in past three decades	1.00	2,100.00	35.60	108.83		

Table IV.
IIA Standards, IA
qualifications and quality
assurance and quality
improvement program

	Cluster 1: IAF with longest history	Cluster 2: IAF set up in the early days of the IIA	Cluster 3: IAF set up in past three decades	Overall	χ^2	p-value
<i>Panel A: IIA standards (%)</i>						
Use of the Standards	83.3	86.6	82.0	82.6	12.231	0.002
<i>Panel B: IA qualifications (%)</i>						
General IA qualification (e.g. CIA, MIIA, PIIA)	39.3	46.6	38.6	39.7	23.124	0.000
Information systems auditing qualification (e.g. CISA, QiCA)	14.3	15.4	9.4	10.2	34.445	0.000
Financial services auditing qualification (e.g. CFSA)	1.8	5.6	3.3	3.6	13.455	0.001
<i>Panel C: quality assurance and improvement (%)</i>						
Quality assurance and improvement program currently in place	55.8	49.2	29.7	32.3	161.749	0.000

the IIA Standards is found in cluster 2, namely those IAFs that were set up in the early days of the IIA. Does this mean that the IIA has been most influential in the first decades after its establishment and that its influence has decreased since then? In other words, are more recently established IAFs less influenced by the IIA compared to IAFs with a longer history (especially IAFs that were established in the same time period as the IIA)? If so, why is this? Intuitively, one would say that the longer a professional organization exists, the more influence it gets. However, our results suggest the opposite. We encourage researchers in this area to find an answer to this research question as it could be relevant for the future strategy of the IIA:

RQ. why the IIA has more influence on older IAF compare to younger IAF?

Internal auditing qualifications

Panel B of Table IV indicates that the proportion of respondents with an internal auditing qualification varies significantly between the three clusters. Respondents working in an IAF that has been established in the early days of the IIA (cluster 2) have, on average, more internal auditing qualifications, especially when compared with cluster 3 representing the youngest IAFs. This result is consistent with our previous finding that raised the question of whether the impact of the IIA on individual IAFs (namely imposing the use of the Standards as a framework and requiring its members to become certified) is the highest for those IAFs that were set up in the early days of the IIA. If future research confirms that this is the case, this would mean that those IAFs that were created in the same period as the IIA continue to feel more attached and committed to the IIA and that more recently created IAFs operate in a more self-regulated way, meaning that they may be less influenced by what the IIA recommends.

Quality assurance and improvement program

The most recent version of Standard 1300 strongly recommends that an IAF set up a quality assurance and improvement program (QAIP) including internal and external quality assessments. Panel C of Table IV clearly shows that the proportion of IAFs that have such a QAIP currently in place is significantly different between the three clusters. It is clear that a QAIP is more common within older IAFs (clusters 1 and 2) compared to more recently created IAFs. More than half of the IAFs with the longest history (cluster 1) have such as QAIP currently in place. This proportion goes down to slightly less than half for the cluster of IAFs that were created in the early days of the IIA (cluster 2). Further research could investigate why IAFs with a longer history invest more in quality assurance and improvement. Is it because they are more convinced of the need for quality assurance and improvement in order to become or remain an important player in the corporate governance field compared to younger IAFs? Given that continuous assessment and improvement of the IAF's quality (via a QAIP) has become a minimum requirement for the profession to stay at the forefront, the IIA has to promote compliance with Standard 1300 especially within the group of young IAFs. The group of IAFs with a longer history can act as a benchmark and example for the younger IAFs. Given that the IIA's slogan is "Progress through sharing", there are certainly interesting learning effects to be created between older and younger IAF with respect to the establishment of a QAIP.

Internal audit activities

Table V provides for every cluster the proportion of IAFs that perform each IA activity thereby making a distinction between traditional and advanced IA activities. It has to be noted that this table only indicates whether or not the IAF performs a certain IA activity without indicating what percentage of their working time they spend on this activity. In other words, the data do not say anything about the relative importance or the quality of each activity. Traditional IA activities are frequently performed by a large majority of the IAFs in this study regardless of the cluster. Nevertheless, there are some significant differences between the three clusters. More specifically, external audit assistance and financial auditing seem to be more common within older IAFs. This could be explained by the fact that in that period, IA was perceived as a closely related extension of the work of external auditors (Moeller and Witt, 1999). We encourage future research to investigate whether older IAFs collaborate more with their external auditors. Our results suggest that their activities are more adapted to the work of the external auditor, but further research is needed why this is the case. The International Standards on Auditing (more specifically, ISA 610) stipulate that when obtaining and performing an assessment of the IA function (by the external auditors), the important criteria are:

- organizational status;
- scope of function;
- technical competence; and
- due professional care (IFAC, 2010).

	Cluster 1: IAF with longest history	Cluster 2: IAF set up in the early days of the IIA	Cluster 3: IAF set up in past three decades	Overall	χ^2	<i>p</i> -value
<i>Panel A: traditional activities (%)</i>						
Administrative	89.1	94.0	92.5	92.6	3.323	0.190
Control framework monitoring and development	71.7	68.0	67.6	67.6	0.407	0.816
External audit assistance	54.3	59.0	49.3	50.5	29.027	0.000
Financial auditing	71.7	75.0	64.0	65.5	43.744	0.000
Internal control testing/systems evaluation	76.1	88.3	86.4	86.6	6.599	0.037
Operational audits	84.8	89.9	86.6	87.0	7.246	0.027
<i>Panel B: advanced activities (%)</i>						
Business viability assessments	34.8	30.0	23.6	24.5	19.561	0.000
Compliance with company privacy policies	63.0	55.5	47.0	48.2	26.221	0.000
Corporate takeovers/mergers	23.9	16.2	10.4	11.3	32.722	0.000
IT department assessment	69.6	67.7	50.5	52.8	96.688	0.000
Investigations of fraud and irregularities	80.4	79.5	71.6	72.6	25.432	0.000
Management effectiveness audit	65.2	59.3	51.7	52.7	20.653	0.000
Project management	37.0	38.8	29.3	30.6	32.962	0.000
Security issues	47.8	52.8	40.9	42.5	44.646	0.000
Social and sustainability audits	39.1	30.6	21.5	22.8	42.747	0.000
Special projects	60.9	62.5	52.1	53.4	34.505	0.000

Table V.
Activities currently
performed by the internal
audit function

Future research could investigate whether older IAFs score higher on these four factors (in the eyes of the external auditor) and whether this leads to a more intensive collaboration between the two. This would be an important contribution to the stream of auditing research focusing on the collaboration between both professions.

With respect to the advanced IA activities, we see a clear pattern. More specifically, all advanced IA activities are significantly more performed by the older IAFs (clusters 1 and 2). This not only means that IAFs with a longer history have a more diversified IA agenda, but also that older IAFs perform more commonly advanced IA activities whereas in younger IAFs, the IA agenda is often limited to the more traditional IA activities. This suggests that younger IAFs are still in the process of setting up a basic audit agenda whereas older IAFs are pioneers with respect to advanced IA activities. A first important research opportunity lies with longitudinal research on the IA agenda to test whether the IA agenda changes when the IAF becomes older. Of course, this kind of study also has to control for the impact of evolutions in the corporate governance context (for example, the impact of the Sarbanes-Oxley Act) as well as the IAF budget. A second research opportunity is a more critical evaluation of whether traditional IA activities are still sufficient to meet the current needs of organizations. If they are not, this would mean that younger IAFs are less able to fulfill the needs of their organization compared to older IAFs which has important implications for the profession. This kind of study has of course to control for the fact that certain types of organizations need more advanced IA activities than others.

Summary of findings

This paper reports the results of a study that has investigated and explored whether or not the organisational profile, the IAF size and IA practices are related to the age of the IAF at micro (organisational) level. This study is based on data from the CBOK study conducted by the IIA Research Foundation in 2006.

We have identified three clusters based on the IAF age: cluster 1 represents the oldest IAFs, those that were set up long before the IIA was established; cluster 2 contains the IAFs that were set up in the early days of the IIA; and cluster 3 contains the majority of IAFs, namely those that were set up in the past two to three decades.

With respect to the organizational profile, we can conclude that:

- the IAFs with the longest history can be found in the banking and financial services industry;
- more than half of the firms that have an IAF with a long history are currently listed;
- IAFs in organizations currently operating on a larger scale have a longer history whereas IAFs in organizations currently operating on a more local level turn out to have a shorter history; and
- that there is no significant relationship between current firm size and age of the IAF.

With respect to the IAF size (number of internal auditors in FTE), we have found that the IAFs with the longest history are, on average, the largest ones whereas the youngest IAFs are, on average, the smallest ones. In other words, the current size of the IAF is driven by the age of the IAF. We have also found that the highest proportion of

IAFs that use the IIA Standards is found in cluster 2, namely those IAFs that were set up in the early days of the IIA. Furthermore, respondents working in an IAF that has been established in the early days of the IIA have, on average, more internal auditing qualifications, especially when compared with the youngest IAFs. With respect to the existence of a QAIP, we have found a QAIP is more common within older IAFs compared to more recently created IAFs.

Regarding the IA activities, our study has shown that traditional IA activities are frequently performed by a large majority of IAFs in this study regardless of the cluster. Nevertheless, external audit assistance and financial auditing seem to be more common within older IAF. With respect to the advanced IA activities, it was found that all advanced IA activities are significantly more performed by the older IAFs. This does not only mean that IAFs with a longer history have a more diversified IA agenda, but also that older IAFs perform more commonly advanced IA activities whereas in younger IAFs, the agenda is often limited to the more traditional IA activities.

Summary of directions for future research

- (1) Researchers have always (implicitly) assumed that IA practices in the banking and financial services industry were mature. However, the recent financial crisis (2007-2008) has reduced the credibility of this implicit assumption. Therefore, we encourage future research to study how IA practices in this specific industry have evolved and whether they are sufficiently adapted to the complex nature of this industry.
- (2) Does listing encourage firms to set up an IAF or can the establishment of an IAF be considered as a part of the preparation for an IPO?
- (3) Does the status of an organization (dispersion of operations) have an impact on establishing an IAF? In other words, future research could test this basic agency theory hypothesis: the more (less) dispersed the operations of an organization are, the more (less) the need to set up an IAF as monitoring mechanism.
- (4) Does the existence of an IAF facilitate organizational expansion?
- (5) We strongly encourage future research on IAF size (measured by the absolute or relative number of internal auditors or the IAF budget) to take into account the age of the IAF.
- (6) Has the IIA been most influential (e.g. imposing to use the Standards as framework and requiring its members to become certified) in the first decades after its establishment and has its influence decreased since then? In other words, are more recently established IAFs less influenced by the IIA compared to IAFs that were set up in its early days of the IIA? If so, why is this?
- (7) Why do IAFs with a longer history invest more in quality assurance and improvement?
- (8) Do older IAFs collaborate more with the external auditor? Our results suggest that their activities are more adapted to the work of the external auditor, but further research is needed why this is the case. The International Standards on Auditing (more specifically, ISA 610) stipulate that when obtaining and performing an assessment of the IA function (by the external auditors), the important criteria are:

- organizational status;
- scope of function;
- technical competence; and
- due professional care (IFAC, 2010).

Future research could investigate whether older IAF score higher on these four factors suggested by ISA 610 and whether this leads to a more intensive collaboration between the external and internal auditors.

- (9) We encourage longitudinal research on the IA agenda to test whether the IA agenda changes when the IAF becomes older, thereby controlling for the impact of evolutions in the corporate governance context as well as the IAF budget.
- (10) We wait for a critical evaluation of whether traditional IA activities are still able to meet the current needs of organizations.

This paper is subject to some limitations. First, this paper has only discussed significant associations and thus, did not conclude on causality or direction of the relationship between the variables studied. Second, the age of the IAF cannot be considered as an exhaustive proxy for the maturity of the IAF. Future studies could develop a multidimensional measurement of maturity based on the insights of this study. Classifying IAFs according to the aspects discussed in this paper (completed with other aspects) would allow researchers and practitioners to position the IAF on a maturity scale. It should be noted that the IIA has recently published this kind of maturity model for IAFs in the public sector. The insights from this study could provide input for a more generic model that is applicable to all kinds of industries.

Note

1. Algeria, Argentina, Aruba, Australia, Austria, Azerbaijan, Bahamas, Bangladesh, Barbados, Belgium, Bermuda, Bolivia, Botswana, Brazil, Bulgaria, Cameroon, Canada, Chile, China, Chinese Taiwan, Colombia, Congo, Costa Rica, Cyprus, Czech Republic, Denmark, Dominican Republic, Ecuador, Egypt, Estonia, Ethiopia, Finland, France, Germany, Ghana, Greece, Guatemala, Hong Kong, Iceland, India, Indonesia, Ireland, Israel, Italy, Jamaica, Japan, Kenya, Korea, Latvia, Lebanon, Lithuania, Luxembourg, Malawi, Malaysia, Mexico, The Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Oman, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Puerto Rico, Qatar, Romania, Russia, Singapore, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Thailand, Trinidad and Tobago, Tunisia, Turkey, Uganda, Ukraine, UAE, UK, USA, Venezuela, Zambia and Zimbabwe.

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