FAR Conference 2021

Report of the sixth International Conference of the Foundation for Auditing Research

FOUNDATION FOR AUDITING RESEARCH

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Colofon

This report contains the summaries of the presentations held at the second online conference of the Foundation for Auditing Research (FAR). The summaries in this conference report should not be viewed as a formal research publication. The report should be read as an account from an audience member's perspective.

Lay-out

Bingo! graphicdesign

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FAR Conference 2021: ‘The Human Factor’

On June 21, 2021, the Foundation for Auditing Research (FAR) organized its annual conference. Forced by the global health conditions the conference was organized online. That did not stop professionals and practitioners from signing up, for we welcomed 200 audit research enthusiasts, from all over the world. The audience was comprised of 50 percent academic researchers, 35 percent were practicing auditors and the other 15 percent were a mix of regulators, standard setters, and other interested parties.

The conference consisted of four sessions. The first three presentations were related to FAR studies. The fourth study was about a recent integrity study, based on American data.

The overarching theme of the conference was 'The Human Factor', stressing the important fact that human influence can lead to both improvements as well as deterioration of audit quality.

Ann Vanstraelen and Ulrike Thürheimer reported the first findings of their study on audit differences in the Netherlands. The variation in their results indicates that the human factor plays a strong role, for example in the probability that restatements are implemented at the initiative of the auditor.

Reggy Hooghiemstra presented a study on the relationship between the extent to which an auditor is embedded in a network and the auditor's compensation. The study shows how important it is that accounting firms think about the content of the accountant's work at different points in the career, for example, regarding specialization.

Eddy Cardinaels and Evelien Reusen discussed their study on whether imitation behavior by junior auditors has a positive or negative influence on audit quality. Among their findings, they show that imitation is not always good, even with skilled accountants as managers. This shows that acquiring substantive knowledge is rewarding.

Shane Dikolli presented a study on measuring the integrity of CEOs. One of his conclusions is that current information technology offers attractive possibilities to calculate integrity scores, based on large data sets. This information is important input for the audit because it allows the auditor to make an informed decision about whether the integrity of management warrants further attention.

In this pdf-booklet, we proudly present the summaries of these four conference presentations. At the end of each article, a selection is included of three Q&A's from the Q&A sessions after each presentation.[1] The summaries also include links to the conference presentations and the presented papers.

We hope you will enjoy reading the summaries and viewing the presentations and Q&A's, and we are looking forward to meeting you again 'live' in 2022.

Prof. dr. Olof Bik RA
(Academic Board Member and Managing Director FAR)

Prof. dr. Jan Bouwens
(Academic Board Member and Managing Director FAR)

Prof. dr. Willem Buijink
(Academic Board Member FAR)

1 *Note that for reasons of brevity, the complete references of the papers referred to in the text are not included in the summaries but can be found in the papers of the research teams. Except for the paper presented by Vanstraelen and Thürheimer which is not available online, yet (and therefore their presentation includes a list of references).*

MONDAY 21 June 2021
Auditing – The Human Factor

12:30 – 12:40	**Welcome and opening speech** *Jan Bouwens, FAR Managing Director*
12:40 – 13:10	**Plenary 1 – The auditor's evaluation of misstatements – Exploration, drivers, and consequences** *Ann Vanstraelen, Maastricht University &* *Ulrike Thürheimer, UNSW Sydney*
13:10 – 13:20	Discussant: *Fabian Klar, BDO*
13:20 – 13:40	Q&A Online Audience
13:50 – 14:20	**Plenary 2 – Why some auditors thrive while others struggle – The effects of multiple team membership on audit quality** *Reggy Hooghiemstra, University of Groningen*
14:20 – 14:30	Discussant: *Esmée Hofland, Mazars*
14:30 – 14:50	Q&A Online Audience
14:50 – 15:05	**Break – Podcast with Tjibbe Bosman on "Robotic Process Automation for the Extraction of Audit Information"**
15:10 – 15:40	**Plenary 3 – Imitation behavior of junior auditors: Does it enhance or hamper audit quality?** *Eddy Cardinaels, KU Leuven &* *Evelien Reusen, RSM*
15:40 – 15:50	Discussant: *Sytse Jousma, EY*
15:50 – 16:10	Q&A Online Audience
16:20 – 16:50	**Plenary 4 – CEO behavioral integrity, auditor responses, and firm outcomes** *Shane Dikolli, Darden School of Business, University of Virginia*
16:50 – 17:00	Discussant: *Marnix Pouw, Deloitte*
17:00 – 17:20	Q&A Online Audience
17:20 – 17:30	**Closing reflections** *Jan Bouwens, FAR Managing Director*

The auditor's evaluation of misstatements

Presented by:
Ann Vanstraelen (Maastricht University) and Ulrike Thürheimer (UNSW Sydney), co-authored by Paul Masereel (Maastricht University)

Abstract
Ann Vanstraelen and Ulrike Thürheimer reported the first findings of their study on audit differences in the Netherlands. The results show, among other things, that almost three quarters of the audits contain audit differences. On average, about four audit differences are found per engagement. The fewest audit differences are found in the financial services industry. Seventy percent of the audit engagements contain unadjusted audit differences. In 35 percent of the engagements, all audit differences remain unadjusted. More than 50 percent of all audit differences are not adjusted. It is also worth mentioning that 99 percent of the audit differences are classified as unintentional (i.e. errors). Most of the differences consist of factual inaccuracies. The audit engagements without audit differences concern larger companies (including public interest entities), with better governance (presence of internal audit department, supervisory board and audit committee). The presence of audit differences is positively correlated with the duration of the audit engagement, the provision of non-audit services and the tenure of the partner. The variation in the results indicates that the human factor plays an important role.

The motivation for the project

Our project is about the evaluation of misstatements. With misstatements we mean errors that are detected by the auditor during the financial statement audit, which are sometimes also called audit differences. The reason we care about misstatements is that it allows us to get some insights into the 'black box of auditing'. Outsiders know very little about the audit process and it is difficult to assess audit quality or the value of the audit, based on the work that the auditor has done. Capturing audit quality is difficult, as we are generally limited to proxies that are based on publicly available data, such as restatements, audit opinions, earnings revisions and financial reporting quality. All these measures that have been used in prior academic literature have their limitations. For example, going concern opinions and earnings revisions are relatively rare events. Financial reporting quality is partly determined by the client and its internal controls, which makes it a noisy proxy for audit quality. Hence, the key to understanding audit quality and its determinants and consequences is to open the black box of auditing. We are trying to open that black box through understanding the identification and evaluation of misstatements by the auditor, which directly affects financial statements quality. In other words, the identification and resolution of misstatements provide direct evidence on the value of auditing.

The motivation for our project is threefold. First, audit adjustments matter because they have a direct impact on the financial statements and therefore on the information available to the users of the financial statements. Second, issuing the correct audit opinion also assumes that material misstatements are detected and corrected. Third, regulators have expressed concerns about how auditors and clients resolve questionable accounting matters detected during the engagement. At the same time, it is not in the interest of the auditor or the client to have many audit adjustments, since errors are preventable.

> **For audit quality, we are generally limited to proxies that are based on publicly available data**

Some key insights on what we already know

A lot of the academic literature on misstatements dates back to the 80s and 90s. Nevertheless, some of these findings apply to today's setting as well. One body of this literature is on misstatement detection. Prior studies show a relationship between error detection and inherent

and control risk, and other client characteristics, including company size, industry, the financial condition, profitability, liquidity of the client, as well as ownership (public or private client).

Research also finds that the design of the audit program (the nature, timing and extent of tests) affects whether errors are detected, but also the types of errors that are detected. For example, there is evidence that more detected errors overstate earnings rather than understate earnings (Caster et al. 2000). This might be due to the type of tests designed to detect errors. One shortcoming of this literature on the determinants of errors is, of course, that we can never be certain that all misstatements and errors have been detected by the auditor.

Lastly, some studies also find that error detection depends on the conditions of the audit, as well as on auditor characteristics. For example, there is evidence that auditor tenure matters. Auditors with longer tenure have greater knowledge of the client and knowledge of prior year errors (Houghton and Fogarty 1991).

Once an error has been detected, the question is whether a misstatement will be adjusted or waived. This resolution process has been investigated in a second stream of the academic literature. This is a process that often includes negotiation between auditors and clients, since not all proposed adjustments may be accepted or corrected by the clients. This auditor-client process on the resolution of misstatements has very important economic consequences, for example concerning financial reporting quality. Context matters for this process (Gibbins et al. 2001). For example, external conditions or constraints, such as the presence of clear standards and contractual issues can affect the process of the misstatement resolution. Furthermore, the interpersonal context and incentives are important, such as the past and current relationship between the client and the auditor, the reputation of the client, but also economic incentives of the auditor and the client. Lastly, the auditors' and clients' capabilities and characteristics are important in the resolution process. These include experience, expertise, competence and tenure of the auditor and the client. It is also important to consider that the audit process is repeated. Overall, we conclude that context matters.

> **Auditors are more likely to waive misstatements as the auditor's economic incentives increase**

Recent findings

Using Dutch data from 2005 to 2015, Asare et al. (2019) find that auditors are more likely to waive misstatements as the auditor's economic incentives increase. The auditee's incentives are also important. The likelihood that misstatements are waived increases with the auditee's economic incentives. However, when governance structures are present -for example, an independent supervisory board- the likelihood of waiving misstatements is lower. Ruhnke and Schmidt (2014) use data from one German Big Four audit firm in 2007. They find that audit adjustments vary with inherent and control risk, as predicted by the audit risk model. A recent paper by Choudhary et al. (2020) use data

from firms that were inspected by the PCAOB in the US. They find that auditors are more likely to waive misstatements that were detected when they significantly affect a client's ability to meet or beat analyst earnings forecasts. This reflects an economic incentive for the auditee, who is more likely to negotiate that these misstatements are waived rather than adjusted. Hence, this further confirms that context matters.

The structure of our FAR-project

Our FAR project is structured into three different parts. The first part is an exploratory analysis of the types of misstatements that are identified, as well as how they are resolved: are they adjusted or waived? Next, we plan to conduct an explanatory analysis, on how detected misstatements are evaluated with a specific focus on whether partner characteristics matter in the resolution process. In addition, we plan to investigate the consequences of adjusting or waiving misstatements, including the effect on financial reporting quality. The focus of this paper is the exploratory analysis on identified misstatements. We will summarize with descriptive statistics what we have learned so far about the identified misstatements and adjustments.

Our sample and findings

Our data relate to Dutch statutory audit engagements, during the period 2015-2017. We have 442

engagement-year observations in our sample. These relate to 288 unique audit clients. In total, we have 1702 identified misstatements in our sample. Our data relate to two Big Four and three non-Big Four audit firms. We have 81 engagement-year observations relating to the non-Big Four firms, which is about 18 percent of our sample. The remaining 82 percent of the engagement-year observations relate to the Big Four firms. We have identified the misstatements from the summary of the adjusted and unadjusted audit differences. One limitation of this approach is that some audit differences might not be recorded if they are corrected during the audit. Hence, we likely underestimate identified misstatements. However, this is the only feasible approach for this project.

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The non-Big Four audit firms identify more misstatements on average

Identified misstatements

Despite this limitation, we see that in the pooled sample the percentage of engagements with identified misstatements is 74. There is also some indication that this percentage slightly increased from 2015 to 2017. We also looked at the distribution of misstatements across industries and we see that the financial services industry - which includes financial holdings - is the industry with the highest percentage of engagements with no identified misstatements. Looking at the number of identified misstatements per engagement, we find that for 43 percent of the engagements between one and four misstatements are identified, 19 percent has between five and nine identified misstatements. And for 12 percent of the engagements more than 10 misstatements are identified. Looking at the distribution of misstatements for the Big Four compared to the non-Big Four, we see that the percentage of engagements of the non-Big Four audit firms without any identified misstatements is only 10 percent, compared to 29 percent for the Big Four. The non-Big Four audit firms also identify more misstatements on average, compared to the Big Four. This could potentially be attributed to smaller clients of the Bon-Big four audit firms, which might have weaker internal control systems. The likelihood of an identified misstatement is higher for smaller companies, those without an internal audit department or audit committee present.

We also benchmarked our statistics with some other recent studies. The recent study by Asare et al. (2019), relating to the large sample of Dutch companies over the period 2005-2015, documents that the percentage of engagements with identified misstatements is 65. We have on average 74 percent of engagements with identified misstatements. This could indicate that the percentage of engagements with identified misstatements has increased over time in the Netherlands. But the percentages are lower when compared to the US, where it was documented that misstatements were identified for 81 of PCAOB-inspected companies.

The nature of misstatements

We see that 99 percent of the misstatements are classified as unintentional. Hence, these misstatements are mainly errors. There are only very few identified misstatements that are labeled as fraud. If we consider this at the engagement level, then five percent of the engagements contain a mix of fraud-related and error-related misstatements. If we distinguish between factual, judgmental and projected misstatements, then the large majority of misstatements are factual in nature. These are misstatements for which there is no doubt and where supporting documentation is available. So, you would not expect much discussion on these types of misstatements. The judgmental misstatements relating to differences from the judgment of management on certain accounting entries account for around 10 percent. The projected misstatements, relating to estimates of misstatements in the population account for around three percent. At the engagement level, we see a similar pattern. Sixty-two percent of the engagements relate to factual misstatements only, and 32 percent of the engagements have a mix of factual, judgmental and projected misstatements. The percentage of engagements with only factual misstatements is slightly higher for the non-Big Four audit firms, which might again likely be attributable to smaller client companies with less developed internal control systems. Furthermore, we see that for 23 percent of the engagements, misstatements are identified that relate to disclosure or internal controls. And for 45 percent of the engagements the misstatements relate to a proposed reclassification.

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There are only very few identified misstatements that are labeled as fraud

Magnitude of the misstatements
To assess the magnitude of misstatements, we calculate an aggregate effect of identified misstatements on the P&L and the balance sheet separately. This aggregate effect considers that some errors offset each other. We scale the aggregate effect by overall materiality and present the distribution in a histogram. The aggregate effect on average is relatively small, but we see a distribution of aggregate effects that have either a positive effect -earnings increasing- or a negative effect – earnings decreasing.

Most errors are in the range of plus-minus 50 percent of materiality. Hence, the magnitude is within the materiality range. However, if we look at the distribution of the absolute value of these errors the magnitude is much larger. There are also some engagements that have an aggregate effect where errors that are well above the 50 percent threshold, and up to two times the level of overall materiality.

We find that for non-Big Four firms the proportion of engagements that have an earnings decreasing aggregate effect is much higher, compared to engagements of Big Four firms.

Adjust or waive?
We see that 51 percent of misstatements are waived, while 49 percent are adjusted. There is a relatively big difference between non-Big Four and Big Four firms, where the misstatements of the non-Big Four firms are more likely to be adjusted rather than waived. At the engagement level, we find that all misstatements are adjusted for 30 percent of all engagements, in 35 percent of engagements some misstatements are adjusted, while others are waived. In the other 35 percent of engagements all misstatements are waived. Again, these percentages are quite different for non-Big Four clients compared to Big Four clients, where the percentage of engagements for which all misstatements are adjusted is much higher in the non-Big Four sample.

The aggregate effect of the adjusted misstatements scaled by overall materiality is much higher on average, compared to the aggregate effect of the waived misstatements. Thus, the distribution for the adjusted misstatement is much wider, compared to those that are waived.

In univariate analyses, we also analyzed a number of contextual factors. We find that client characteristics differ between engagements with and without identified misstatements. Engagements without identified misstatements are larger, more of these engagements are public interest entities and more of these engagements have a better governance structure (an internal audit department, an audit committee and/or a supervisory board). We also looked at engagement characteristics and we only find that engagement duration was longer on average when misstatements were identified compared to when no misstatements were identified (283 days compared to 238 days), and that more of the engagements where misstatements were detected purchased non-audit services (48 percent in that sample, compared to 34 percent when no misstatements are detected). We also looked at partner characteristics for these engagements. We find that partner tenure is higher in those engagements with at least one identified misstatement and that the partner works on less engagements in a particular year when he is partner on an engagement with at least one identified misstatement.

> **Partner tenure is higher in those engagements with at least one identified misstatement**

Conclusion
The objective of our project is to improve our understanding about the process and consequences of evaluating misstatements, which is a key part of the audit and determinant of audit quality. The first part of our project, presented here, consists of the exploratory analysis of the identified misstatements and adjustments in a broad sample of private and public audit engagements of several Dutch audit firms. We show that misstatements are identified for the majority of engagements, across different industries. Most misstatements are unintentional and factual. For most engagements, the aggregate effect of all misstatements on the income statement and balance sheet is below materiality. In total, 49 percent of all misstatements are adjusted, relating to 70 percent of engagements.

The next two parts of this project will focus on an explanatory analysis on factors affecting the resolution of detected misstatements and an analysis of the consequences of the decision to adjust or waive misstatements. In particular, we are interested in the role of the audit partner in the resolution of detected misstatements, above and beyond client and audit firm characteristics, and how audit partners affect financial reporting quality of their clients through this process. We expect that our studies will contribute to the emerging academic literature on the resolution process. We further expect to provide insights into the value of auditing which should be of interest to the profession, and other stakeholders.

References

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Choudhary, P., Merkley, K. and K. Schipper. 2021. The Costs of Waiving Audit Adjustments (January 21, 2021). Available at SSRN: *https://ssrn.com/abstract=3112957* or *http://dx.doi.org/10.2139/ssrn.3112957*

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Houghton. C. and J. Fogarty. 1991. Inherent Risk. Auditing: A Journal of Practice and Theory 10 (1): 1-21.

Ruhnke, K. and M. Schmidt. 2014. Misstatements in Financial Statements: The Relationship between Inherent and Control Risk Factors and Audit Adjustments. Auditing: A Journal of Practice & Theory 33(4): 247-269.

The Q&A-session at the end of the presentation was led by Fabian Klar of BDO. Three selected Q&A's are included below.

Apparently, the audit partner tenure increases the likelihood that the audit team will find misstatements. Does this stimulate adjusting regulation to prolong the allowed tenure?
'Based on this univariate finding, it is difficult to draw this conclusion. However, it is in line with prior research that shows that audit quality problems typically occur in the first years of an audit. An auditor will capitalize on knowledge that is built up during the first years. So, especially the first year can sometimes be problematic. We don't see too many audit firm switches in our sample, but partner tenure is definitely an aspect that we want to investigate further in another study that will be mainly related to partner characteristics.'

There are many discussions on disclosing more information in the auditor's report relating to fraud and going concern issues. Would it also be wise to disclose the unadjusted audit differences in the financial statements, to encourage clients to adjust all differences?
'It is unclear whether clients will welcome such a development. But we can investigate these kinds of issues in the last part of our study, in which we look at consequences of the adjusting and waiving of misstatements. For example, we want to look at the impact on the quality of the financial statements, if errors are not adjusted. We could try to relate it to this question. It might be fruitful to be more transparent, since it may increase accountability.'

You use Dutch data. Do you expect that the Dutch experience with misstatements is different from other international settings?
'Overall, the studies that are available with data on misstatements are still limited. Hence, being able to obtain a dataset at all is still quite unique. It is also valuable to study these particularly rich data for the Netherlands. We hope to provide additional contributions to what is already available in terms of research findings. One particular new avenue is investigating partner characteristics. We know from prior research that client incentives may matter. But we want to know more about auditor and client incentives or disincentives to waive misstatements and what the role of the partner is in these decisions. Our data allow us to really get more into the heart of the value of the audit and especially into the value of the audit partner.'

The conference presentation (including the complete Q&A-session) and the slides can be found here:
https://www.youtube.com/watch?v=ERGP7M7Cf8E

https://foundationforauditingresearch.org/files/plenary-1-vanstraelen-pp.pdf

For more information regarding the project, please refer to:
https://foundationforauditingresearch.org/en/research-publications/projects/2016b04-the-auditoras-evaluation-of-misstatements-a-exploration-drivers-and-consequences-prof-dr-vanstraelen/

Network structure and auditor compensation

Evidence from a Bipartite Network

Presented by:
Reggy Hooghiemstra, co-authored by Deju (James) Zhang, Floor Rink and Dennis Veltrop (all affiliated with the University of Groningen)

Abstract
Reggy Hooghiemstra presented a study on the relationship between the extent to which an auditor is embedded in a network and the auditor's compensation. If an auditor has more relationships with other auditors in the office, it leads to greater knowledge, which in turn may lead to higher compensation. Hence, the idea is that a higher salary is an indication of the quality of the work delivered. The findings of this study show indeed that more 'clustering' with other people leads to a higher salary. As a practical implication, it might not be wise to let auditors specialize too early in their careers. This will work against building up a solid network (and thus the acquisition of broad knowledge). Being part of multiple teams has a positive influence on both the network and the knowledge of young auditors. However, too much clustering is also not desirable. It can lead to information overload and excessive coordination costs. The study illustrates how important it is that accounting firms think about the content of the accountant's work at different points in the career, such as specialization.

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Multiple team memberships: demands and resources

Multiple team memberships (mtm's) can be viewed as a double-edged sword. On the one hand, there are certain demands that result from being on several teams. On the other hand, being on multiple teams also leads to resources. Regarding the demands, there is a distinction between task-related demands and social demands. An example of a task-related demand is that a team member must switch between engagements. For example, while working on one team, the auditor is involved in other types of audit tasks on the other audit team. Obviously, when auditors serve on too many teams at the same time, they frequently face a too high workload and a lot of time pressure. In addition, mtm's may come with social demands. For instance, when auditors switch between two teams, the social dynamics within the groups may be completely different, forcing auditors to change the way they work with team members. This implies that auditors must familiarize themselves with their changing roles within the team.

In an earlier mtm-project, we basically find that if an auditor serves on many teams, this will likely impair the auditor's performance. We measured this in the form of quality threatening behaviors. However, we also found that more resilient auditors -auditors that are better equipped to deal with time pressure and are better able to rebound- show less quality threatening behaviors.

In the project that I present today, the idea is that serving on several audit teams can also be seen as a resource. In the literature, it is emphasized that being part of several teams leads to building up a network that comprises information, experiences and knowledge. This also induces learning behavior in terms of more efficient performance. In our project, we align with this idea. We study whether an auditor's team network can explain his or her compensation. The main message of our project is that if auditors are part of several teams, network structures are formed. The network structures facilitate interactions between the team members that stimulate knowledge sharing. These network structures may be particularly important for acquiring so-called tacit knowledge (knowledge that is acquired experientially). Our basic assumption is that auditors, especially the less experienced ones, that have more team ties will benefit from this structure, in terms of knowledge sharing and performance. As a result, they will receive a higher compensation.

Previous research

In the literature on auditor compensation, most of the studies focus on partner compensation. Knechel et al. (2013) use Swedish data and find that partner compensation is positively influenced by the size of the client portfolio, whether an auditor is specializing in a certain industry and his or her revenue generation ability. Vandenhaute et al. (2020) and Bianchi et al. (2019) also study auditor audit partner compensation (for example, audit fees). There is only one study by Hoopes et al. (2018) that focuses on the compensation of the lower ranked auditors. They find that rank is an important variable in explaining non-partner compensation, but also that compensation of audit staff is linked to the region or the cities (in the USA) where they live, since the cost of living differs.

> **Multiple team memberships can be viewed as a double-edged sword**

Our study

In our study, we focus on individual non-partner compensation. We use individual auditor compensation, derived from the personnel records of a Dutch auditing firm. We examine the role of social networks in explaining differences in individual level auditor's compensation. Hence, we extend the recent studies on the use of social networks within auditing.

With a social network, we mean how people form a network in which they work with each other. The formation of social networks has the potential to affect economic outcomes. The current social network research in auditing mainly focuses on 'one mode networks'. This means that researchers only focus on the direct and indirect links between two auditors or between two audit engagements, but not considering auditors and audit engagements simultaneously. In this study, we extend the auditing literature by using the idea of 'two-mode networks', also signaling that links -both via auditors and via audit engagements- are essential when studying networks in an auditing context.

There are two important features of social networks in auditing. The first one is that audit quality and performance depends on knowledge sharing: to do your well work as an auditor, you are dependent on the amount of knowledge that you can share or the amount of knowledge that you have access to. For example, impairment judgments can be very difficult and here it's crucial for an audit team member to have access to other auditors for help. Knowledge sharing is particularly important when you look at tacit audit knowledge. This refers to the deeper understanding and routines within a certain field, which are typically developed experientially by working with others and by sharing information.

Another important element is what we call the duality of auditors and audit engagements. Apart from knowledge sharing, auditors meet different individuals and, in most cases, the individual team members of a team have a common goal (for example, completing the audit before a certain deadline). This develops trust among colleagues and team members. We believe that the contextual embeddedness is a significant determinant for auditors' advice seeking and giving.

For our study, we align with ideas about capitalization: because you have a network and a position within the network, you can derive benefits from it (but perhaps also potentially costs). We see social networks as a representation of the network flow model, meaning that certain individuals in a network possess certain knowledge and they can stimulate coordination and cooperation.

> **If clustering is higher, 'on-site auditors' tend to benefit more**

Expectations and sample

Our main hypothesis is that the greater the tacit knowledge transfer by a certain auditor, the higher his or her compensation. We measure the tacit knowledge transfer by the 'local clustering coefficients'. With local clustering we measure the embeddedness of an auditor within the network. The measure can range between zero and one and is higher if an auditor is more embedded within the network (for details, please consult the paper).

We got data from one audit firm in the Netherlands, concerning 365 individuals. We were able to use worked hours and include several controls like age, gender and rank. We use different clustering coefficients to measure embeddedness.

Our findings

From the results, one key message stands out: the higher the local clustering coefficient (i.e. the more embedded an individual

is in a network) the higher his or her compensation will be, after controlling for rank, age, tenure and whether an individual has obtained his or her cpa-degree. In an additional analysis, we found that the results were only significant for the senior sample (160 seniors).

We also find that if the local clustering coefficient is higher, the 'on-site auditors' (the assistants, the seniors and the managers) tend to benefit more (have higher auditor compensation). For a subset, focusing on seniors and managers, we show that there is a so-called 'mediation' going on, where the effect from local clustering to higher compensation flows through better performance (higher performance evaluations).

Our key contributions

This study adds to an emerging stream within the auditing literature, showing that individual auditor characteristics are associated with audit outcomes. In our case, the outcome is compensation. We specifically add to the emerging use of social network analysis within auditing, by showing that the embeddedness of the auditor in in the network within the audit firm has important implications in the form of higher compensation. Like previous studies, we show that network structures matter. We infer that networks help to share knowledge within the team, from which individual auditors actually seem to benefit.

And last but certainly not least, we think that there are certain important practical implications. For audit firms and planners, it is important to realize that putting people into certain teams (and hence the formal structure that arises) has important implications for performance. Perhaps, when making staffing decisions, it may be especially important to shy away from a too strong specialization at lower ranks. While this may turn out positively at the partner level, our findings show that this might be detrimental to individual performance at lower levels. You should rather put individuals in several diverse teams. To the extent that this is not possible, it's fair that audit firms -when making decisions about promotion and bonuses- keep in mind that network structures can have important implications for individual auditors, beyond their control.

The Q&A-session at the end of the presentation was led by Esmée Hofland (Mazars). Three selected Q&A's are included below.

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Too strong specialization might be detrimental to individual performance at lower levels

Did you find differences between males and females, since -for example- in the US, there exists gender inequality regarding compensation?
'I'm inclined to say that there is no gender pay gap visible in our dataset, for the audit firm that we studied. Given that compensation tends to be relatively comparable across audit firms in the Netherlands, I assume that our findings will be quite similar to other audit firms. So, that is good news.'

There must be some unstated assumptions about why network-belonging matters to audit quality? At present, your data mainly seems to be fitting a human resource management angle. Do you have data available that will allow you to get more into the audit issues?
'Unfortunately, we don't have information on, for instance, the extent to which individual auditors engage in quality threatening behaviors. But as mentioned, we can show that clustering has an impact on performance evaluation. We assume that if auditors make many mistakes, this will lead to bad evaluations. So, there appears to be a relationship via audit quality.'

Do you think there is an optimum number of team memberships that we can apply in practice?
'This study and other research show that the number of team memberships is depending on how resilient an individual auditor is. As a result, the optimum number might shift. If an auditor is well-equipped for dealing with stress, then the optimum level is probably higher than when you are less resilient. But, we don't provide explicit general advice on desired numbers of team memberships.'

The conference presentation (including the complete Q&A-session), the slides, and the presented paper can be found here:
https://www.youtube.com/watch?v=Uul61OqoyAY

https://foundationforauditingresearch.org/files/plenary-2-hooghiemstra-pp.pdf

For more information regarding the project, please refer to:
https://foundationforauditingresearch.org/en/research-publications/projects/2016b02-why-some-auditors-thrive-while-others-struggle-a-the-effects-of-multiple-team-membership-on-audit-quality-prof-dr-hooghiemstra/

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The formation of social networks has the potential to affect economic

Imitation behavior of junior auditors

Does it enhance or hamper audit quality?

Presented by:
Eddy Cardinaels (KU Leuven & Tilburg University) and Evelien Reusen (Rotterdam School of Management), co-authored by Kristof Stouthuysen (KU Leuven & Vlerick Business School) and Viola Darmawan (KU Leuven)

Abstract
On-the-job training and coaching are essential tools for the knowledge transfer from experienced auditors to junior auditors. This is also being recognized by standard setters and regulators. This study examines whether junior auditors show imitation behavior and whether such behavior has a positive or negative influence on audit quality. Junior auditors are expected to imitate more if they have a 'high-diligent' supervisor who also performs their performance assessment, in contrast with a 'low-diligent' supervisor. The results are encouraging in that junior auditors are not susceptible to blindly imitate a 'bad' role model, but instead they are more likely to imitate the 'good guy' in a fair value estimation task. This effect is even greater if the 'good guy' also performs the assessment of the junior, providing evidence for the effect of promotion incentives. Imitating a diligent superior also leads to higher audit quality, but only if juniors are sufficiently familiar with the task.

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Senior auditors can play an essential role in transferring knowledge to junior

The background of the study
The main question that we ask in this study is: does imitation behavior enhance or hamper audit quality? The starting point is the importance of providing appropriate on-the-job training and coaching for junior auditors. We highlight that senior auditors can play an essential role in coaching and transferring their knowledge to the junior auditors who are new in the profession. In that sense, the senior provides a role model for juniors to follow. The senior is an experienced guide who shows the learner (the junior auditor) how to perform tasks. It seems quite natural for junior auditors at the start of their careers to look at their seniors as a role model, when performing similar tasks.

Against this background, we want to investigate such imitation behavior in more detail. Imitation behavior is a common form of human behavior. Also in our daily lives, we look at others to see what they do in in similar circumstances. We often use this as an example to guide our own decisions and behaviors. We want to find out whether this phenomenon plays a role in an auditing context and also what eventually the impact is on judgment quality of the junior auditor.

Theoretical background and expectations
Imitation generally involves the copying and emulation of salient role models. Considering the underlying drivers of such behavior, we distinguish between two perspectives. There is a learning perspective and a strategic perspective. For the learning perspective, we build on social learning and modeling theories. These theories generally indicate that people attend to role models because it is helpful to learn new skills, new practices and new task norms. Translated into an auditing context, junior auditors may be learning the craft of auditing through observing the example of a senior auditor. In addition to that, theory also suggests that the credibility and competence of the observed role model determines someone's tendency to imitate. These factors typically have a positive influence on the level of imitation. Hence, we could expect some selective imitation, where juniors imitate the good example rather than the bad example. At the same time, we consider that imitation could also be strategic behavior. In that case, imitation would not be so much driven by learning or the quality of the observed role model, but more by the reward power of the role model. In an auditing context, juniors may have a reason to follow the example set by their direct superior, if this person is also their performance supervisor and evaluator. Then they may be tempted to make a good impression and potentially try to influence their evaluation positively and enhance their chances for promotion opportunities. This reward power and incentive effect could lead auditors to imitate, even when it may not be desirable.

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We question whether imitating will always result in improved judgment and better audit quality

How do we study this?
For the learning perspective, we look at the working style of a superior and we look at a high- diligent versus a low-diligent auditor. A high-diligent superior would be someone who carefully examines and evaluates all available evidence before reaching a conclusion. A low-diligent auditor would be much more focused on efficiency and getting the job done. We argue that the junior's perception of the superior's diligence, as reflected in his working style, would influence their level of imitation. If selective imitation would be going on, we would logically expect a stronger imitation of the high-diligent superior.

From a strategic perspective, we look at incentives provided via promotion systems. We examine two types of systems. One where the superior has a very strong voice in the junior's promotion decision, and one based on consensus, where there is a promotion committee of which the superior may be part but would have a less decisive voice. Because of the strategic reasons mentioned, we would expect stronger imitation under a superior-based system.

On the one hand, you could argue that auditors always imitate, regardless of the working style. On the other hand, and that's what we argue for, while auditors may be prone to imitation, we think that they will do so with thoughtful consideration. We use two arguments for that. The first one is the value of professional skepticism. Auditors are required to apply sufficient skepticism. Based on that, we think that they also would carefully evaluate the 'model's' behavior, before simply copying the approach that they see. Next to that, juniors do not only need to justify towards their direct superior. They also have a broader accountability and broader judgment justifiability.

This leads to the prediction that junior auditors who are exposed to a high-diligent superior will respond positively to promotion incentives, resulting in higher levels of imitation, whereas we expect auditors that are facing a low-diligent auditor, are less likely to do so.

Hypothesis 1: Junior auditor imitation is higher (lower) when a junior auditor faces a high (low) diligent superior and operates under a superior-based promotion system rather than under a consensus-based promotion system.

The level of imitation will be highest in the case of a high diligent superior combined with a superior-based promotion system.

We extend this hypothesis to predict an impact on audit quality of the junior auditor. We would expect audit quality to be higher in the case of the high diligent superior and that this would be more pronounced under a superior-based promotion system.

Hypothesis 2: Audit quality will be higher (lower) when a junior auditor faces a high (low) diligent superior and operates under a superior-based promotion system rather than under a consensus-based promotion system.

The impact on audit quality seems straightforward. One would expect that imitating a good example would have a positive impact on audit quality and imitating a bad example may have a negative impact. Nevertheless, we question whether imitating a good example from an expert will always result in improved judgment and better audit quality. There are reasons why this may not always be the case. No audit engagement is the same

and also the imitation literature has pointed out that the exact copying of certain practices, especially in complex environments and in different circumstances, may not be effective and even can have negative performance implications. Based on these reflections, we also examine in a more exploratory way what the impact is of imitation on audit quality.

The experiment

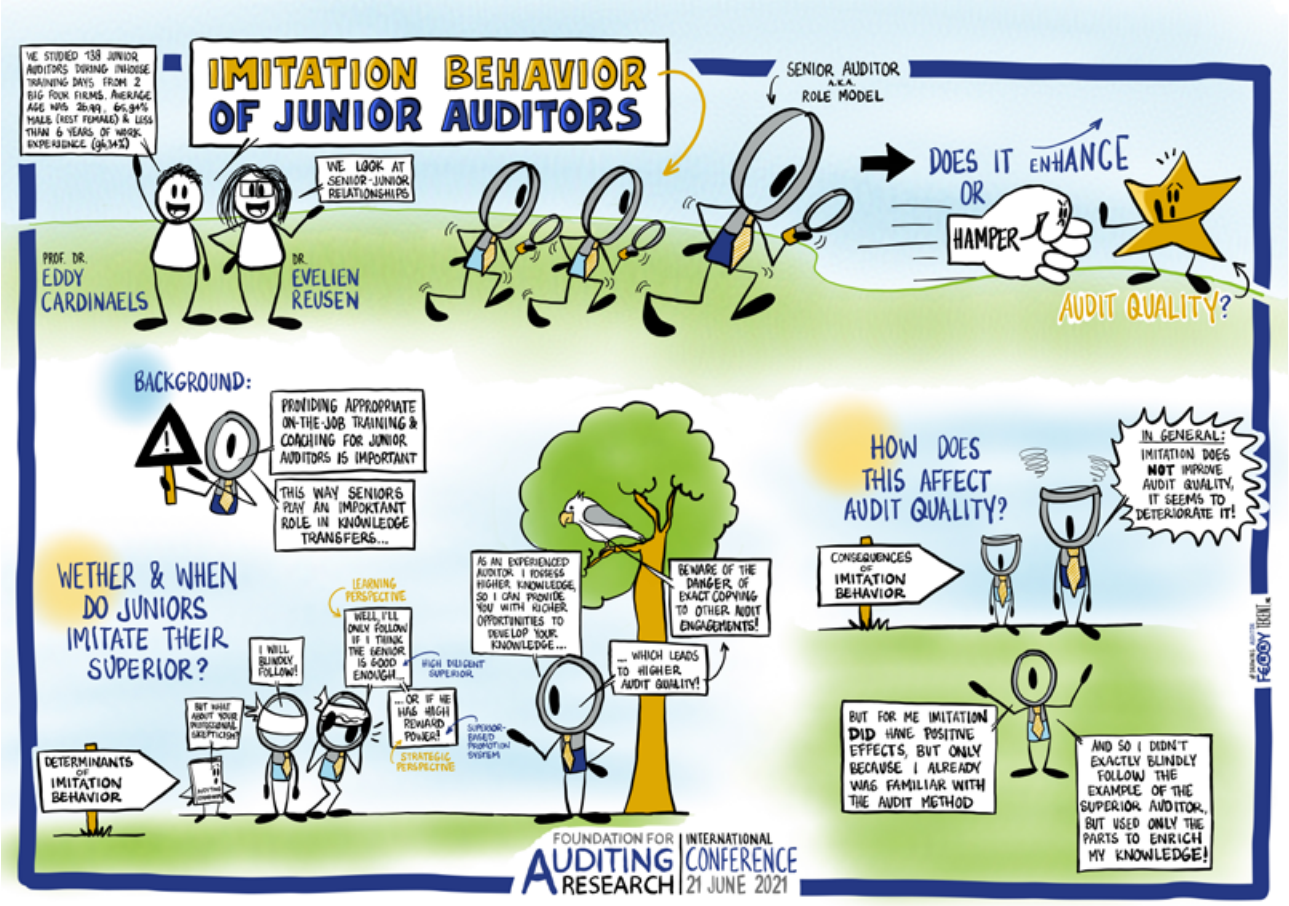
We are particularly interested in how junior auditors learn from a senior's example. Our sample consists of 138 junior auditors with an average age of about 27 years. 65 percent is male. Most of them have between three and four years of work experience with the firm.

To study imitation behavior, we used a task that junior auditors are not very familiar with: a fair value estimation task. Juniors need to judge whether the fair value estimate of management was reasonable and whether an impairment was needed for the specific business unit. With such an unfamiliar task, you would expect that the junior would rely on a senior as an example. In these types of tasks, it is logical for juniors to consider the use of previous working papers of a senior, in which examples of such a task can be found. We model a specific case where a senior supervisor shares a working paper for a business unit similar to the one that the juniors must judge.

The participants first read the company description. Then they read about their lead supervisor. We use four situations in the study, in a '2x2-design'. First, we manipulate whether the juniors receive working papers from a high-diligent auditor for a slightly different business case. The high diligent auditor is described as being careful, critical, thorough, detailed and in favor of impairment whereas the low diligent auditor is described as being efficient, quick, decisive and not very rigorous. Second, we manipulate the promotion system: a superior-based promotion versus a consensus-based promotion. In the superior-based promotion, the promotion decision depends on the judgment of the superior. In the consensus-based system, a broader committee decides on the promotion.

In the financial case information provided for the business case of the junior, there are cues that suggest that the fair value estimate of management is overstated. So, juniors should recognize that an impairment is necessary.

We measure audit quality by the question 'How likely is it that Hybrid's current fair value estimate of 3.2 billion euro is fairly stated?', on a 1-10



scale. This is a reverse coded item: a higher value means that they are less likely to agree with this statement.

Concerning imitation behavior we study how strongly juniors align with the superior in terms of adopting the same procedures or using similar steps as the superior.

Results

We observe that people imitate the high-diligent auditor more than the low-diligent auditor: there is a main effect of superior style. We also see an interaction of superior style and promotion system: the high-diligent auditor is even more copied under a superior-based promotion system, relative to a consensus-based promotion system.

Regarding audit quality, we find that the effect of superior type on audit quality is significant. A high-diligent superior is more likely leading to an improvement of the fair value estimate judgment. The highest audit quality is achieved with a high-diligent auditor and superior-based promotion.

Imitating a low-diligent auditor reduces the audit quality. However, to our surprise, we see that when a junior imitates the high-diligent auditor, this not necessarily improves audit quality. We analyzed this further. It seems that only auditors who are familiar with the task of fair value judgments are able to improve in audit quality through imitation.

> **Sharing working papers can help**

Conclusion

The good news from this study is that auditors are skeptical. Most of the junior auditors don't fully follow the low-diligent auditor. They imitate a high-diligent auditor more, in particular when operating under a superior-based promotion system. However, imitation doesn't always improve audit quality. Audit quality sometimes even deteriorates, when a low-diligent superior is faced. But even imitating the high-diligent auditor might not always lead to better quality. It only leads to better quality when a junior is familiar with the method.

As a practical implication, the practice of sharing working papers can help. If juniors see a good example, they will follow the good example. If there are bad examples, they don't follow them carelessly. However, we also see that imitation does not always improve audit quality. Firms could pay attention to this by offering method workshops. People that are familiar with a judgment task are apparently more critical. They realize better audit quality through guidance of a superior.

The Q&A-session at the end of the presentation was led by Sytse Jousma (EY). Three selected Q&A's are included below.

Do you have practical guidance on how to improve the diligence of superiors within an audit team?
'It is a given that all auditors differ in their diligence. However, it's good to see that junior auditors are able to distinguish between good and bad examples. It's probably wise for the audit firms to focus on best practices concerning working papers, for example. Changing the diligence of auditors is a different story. It may be an indirect way to improve judgments and quality. Also, in a way, the low-diligent auditor provides opportunities for learning, because junior auditors will probably not follow their example. It may help them to critically evaluate their boundaries of what they would see as acceptable or unacceptable behaviors or what would be appropriate approaches.'

Have you considered whether there are tensions between imitation behavior and team diversity?
'The extent to which you follow someone also depends on how similar you are to that person. This has been shown in previous literature. Hence, it could be that there is some influence of the fact that the superior in our study is a male. This is an interesting point, which deserves further consideration. We will look further into this issue.'

Working from home implies that role models are less visible. What is the impact of remote working on the results of your study?
'In these situations, role models will probably be less prominent in terms of building social relationships between seniors and junior auditors. This may impact the imitation tendencies. However, the presence of best practice working papers would still allow for some imitation. And even in a remote environment, there will job coaching and training. This is also a very interesting and important area to examine.'

> **Only auditors who are familiar with the task are able to improve in audit quality through imitation**

The conference presentation (including the complete Q&A-session) and the slides can be found here:
https://www.youtube.com/watch?v=B5eCgFKgLn4

https://foundationforauditingresearch.org/files/plenary-3-cardinaels-reusen-pp.pdf

For more information regarding the project, please refer to:
https://foundationforauditingresearch.org/en/research-publications/projects/2018b01-how-auditors-internal-and-external-interactive-relationships-impact-their-judgment-and-decision-making-prof-dr-cardinaels/

CEO behavioral integrity

Auditor responses and firm outcomes

Presented by:
Shane Dikolli (Virginia Darden), co-authored by Thomas Keusch (INSEAD), Bill Mayew (Duke) and Thomas Steffen (Yale).

Abstract
Shane Dikolli presented a study on measuring the integrity of CEOs (published in The Accounting Review in 2020). According to Dikolli, integrity in the accounting profession has received too little attention in the literature. Although, there is a growing body of research into the way executives behave verbally during earnings calls with analysts, Dikolli's research team takes a broader view. They examined more than 30,000 letters to shareholders. In the texts of these letters, they analyzed the words used to indicate causality, such as 'because', 'result' and 'based on'. The underlying idea is that a CEO will use more of those words when s/he needs to justify things. CEOs with a lower integrity will then need more explanation for the way in which they have behaved. The researchers have mapped out this type of causal construction for a large set of shareholder letters. They then examined statistically to what extent the factors that could logically explain the use of causation words actually do so. The part that is not explained by the formula gives an indication of the integrity (or rather: the lack of it). In their study, the researchers look, among other things, at whether the integrity scores are related to the employees' opinion regarding the integrity of the CEOs in question. There appears to be a correlation. An encouraging result of the study is that audit fees go up when the integrity score of the CEO decreases. Also, the integrity score is not related to lawsuits. The conclusion can be that auditors respond adequately to a reduction in integrity. Current information technology offers attractive possibilities to calculate these types of integrity scores, based on large data sets. This information can be an important input for the audit.

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The importance of integrity
There's been found some survey and field evidence on CEO integrity. Back in 2010, IBM did a very large survey of CEOs. Behind creativity, integrity was the second most important characteristic that CEOs should have in leading a company. More recently, a paper by Graham et al. (2017), shows that integrity is valued by investors and that the integrity of the current CEO plays a very important role in determining corporate culture. More anecdotal, Warren Buffet, for example, stresses the importance of integrity and suggests that intelligence and energy are very important for management, but if you don't have integrity, then the first two will kill you.

We've also had discussions with board members and CEOs. Inevitably, they suggest that CEO integrity is important for firm value. In particular, boards need to rely a lot on trusting the CEO. So, picking a CEO with high integrity is critical. Boards seek someone to develop the right tone at the top. That can build the right corporate culture and enhance shareholder value. However, given this survey type research and anecdotal research, we've noticed at the time we started this paper -back in 2012- that integrity was not a focus in the accounting, auditing and finance literature. Reasons might be that integrity is a 'soft' characteristic. We firstly have to figure out if we can define integrity in a way that can be measured. Secondly, we have to look at whether we can measure it and whether we can agree that the measurement captures the key elements of the concept that we're trying to measure. And ultimately: does it really matter? Can we develop falsifiable hypotheses about whether integrity has outcomes that are of interest to auditors and to management?

A definition of integrity
In terms of defining integrity, we started with a dictionary definition: the quality of being honest and fair. The idea of honesty is associated with the notion of integrity. However, we realized that it's more about whether or not the CEO acts in the way that he or she says that they're going to act. In other words, it's a perception of the alignment between the CEO's words and deeds, which is known in the literature as behavioral integrity.

We rely on this paper on an organizational science definition by Simons concerning the notion of behavioral integrity. He says that CEOs who have high behavioral integrity are more trustworthy and therefore need to give fewer explanations. We look at what the CEOs actually say in terms of their explanations.

So, ultimately, it boils down to perceived word-deed congruence: do people 'walk the talk'? We take a new measure, which is based on the abnormal number of causation-related words that CEOs use in their shareholder letters. The short story is that causation-related words relate to explanations. Our conjecture was that the more that CEOs over-explain, relative to other CEOs facing similar circumstances, then those over-explainers tend to be ones who are not trusted by the market and are less credible.

> **Intelligence and energy are very important, but if you don't have integrity, then the first two will kill you**

What did we study, and how?
We study whether our measure of low integrity is associated with unfavorable employee perceptions, higher audit fees, bad tone at the top, stock options back dating and lower Tobin's Q (which indicates the future financial performance).

To operationalize behavioral integrity, first we take the number of shareholder letter causation words. Then, we regress that on all factors that could create a demand for those types of words in the shareholder letters: anything to do with the news about the firm, firm characteristics and CEO characteristics other than integrity. We try to pick up all the things that could determine the use of causation or explanation type words. The part of the causation words that cannot be explained by the formula (the error) is a very noisy measure of integrity.

Then, we look at how that's associated with perceptions from employees, auditors and implied in audit fees. We look specifically at outcomes associated with fraud and the bankruptcy score, whether the CEO got sued, option back dating and Tobin's Q. For each of those outcomes, we look at already established determinants. We're looking at the incremental effect of the behavioral integrity factor that we're able to pick up.

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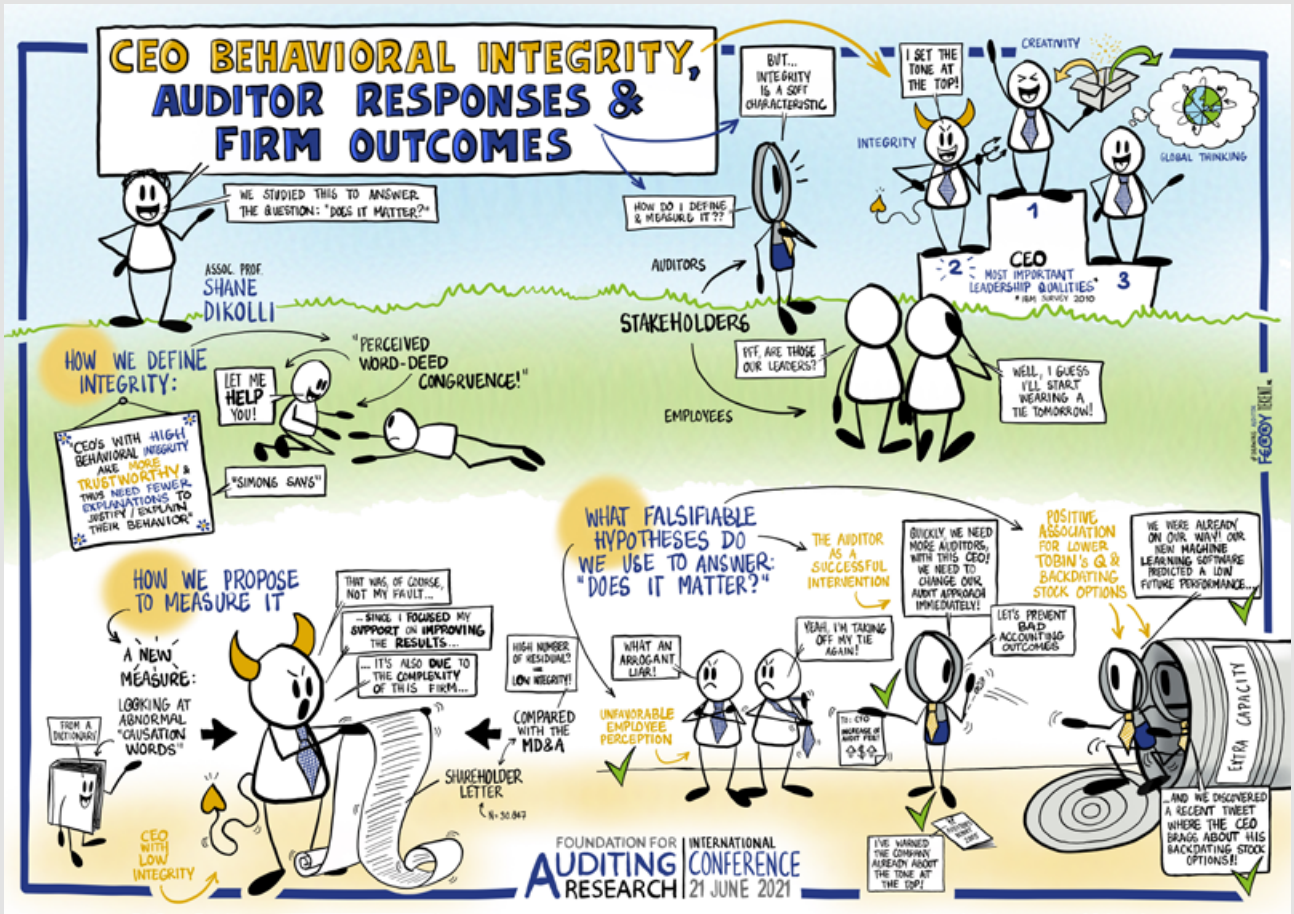

We pick shareholder letters because they're less regulated than other types of communications. The shareholder letter is signed personally by the CEO. It focuses on the performance of the firm and so we can filter out all the news that is related to the MD&A.

We surveyed investor relations professionals to study over which document the CEO has the most influence. We also asked how involved the different officers are with the annual shareholder letter and the MD&A. These analyses provided some comfort that with the annual shareholder letter, the CEO tends to be heavily involved and that their level of involvement is quite different relative to their involvement with the MD&A.

The empirical model and measurement

We used 30,000 shareholder letters that we downloaded from the internet. We counted the causation words and regressed that on the number of causation words in the MD&A to filter out information about the firm, as well as a several other demand proxies. As already mentioned, we are interested in the residuals (the error in the model predictions). If it's a low number, we interpret that as higher integrity. If it's a higher number, we interpret it as low integrity.

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Audit fees are higher with a low integrity CEO

Results, based on our data

The integrity measure seems, for example, to be correlated with integrity examples of CEO behaviors. Furthermore, we also used a small sample from a consulting firm where they measured the integrity of CEOs directly. Employees were asked 12 integrity-based questions, such as: does the CEO do what he/she said he/she was going to do? In this small sample, we find that there's an extremely strong correlation with our linguistic score. In other words, the low integrity CEOs (the ones with the higher causation scores) matched up with the integrity scores that came out of the small sample. Hence, we could validate that the measure that we were getting as a residual from our regression was strongly associated with an actual integrity score.

With respect to auditor's response, we show that in the 2004-2005 years (which is just after SOx) auditors would identify more worked hours linked to our integrity score. We also see that audit fees are related to our integrity score. We show a very strong robust effect that audit fees are higher when we've got a low integrity CEO. We're arguing that the integrity is known by the auditors and they make adjustments accordingly.

In addition, we see that low integrity CEOs have lower future performance. Low integrity CEOs are more likely to have lucky stock grants. But we don't show any effects with, for example, the probability of the CEO being sued.

Further studies based on our data show that high integrity is related to better treatment of employees and employees are more satisfied, and vice versa. And it appears that high integrity CEOs are associated with lower cost loans. This implies that the banks screen on the intent of the CEO when they provide debt financing.

Conclusion

It is good to see that the auditor apparently assesses management integrity and adjusts testing accordingly, which prevents misstatements. Current information technology, like machine learning, offers attractive possibilities to calculate these types of integrity scores, based on large data sets. This information can be an important input for the audit.

> **It boils down to perceived word-deed congruence: do people 'walk the talk'?**

The Q&A-session at the end of the presentation was led Marnix Pouw (Deloitte). Three selected Q&A's are included below.

Your study shows that CEO integrity is positively correlated with doing more audit work. In practice, would that also imply that auditors will perform less work if CEO's integrity is high?
'Mechanically speaking the answer would be yes. But I think in practice, if there is a new CEO, auditors will typically do their background checks and standard types of work in this area. Our measure could then supplement that. If there is low integrity, then the auditor would do more work. But if there is high integrity, I don't think the auditor will necessarily do less work. They will probably not do anything different from planned. But we will need to ask auditors about this. If an auditor would have an indication from a machine learning algorithm that there is a high integrity CEO in place, would his/her gut instinct tell them to do less work?'

Wouldn't a low-integrity CEO who wants to mimic a high-integrity CEO simply use fewer causation words in his or her shareholder letter?
'My initial reaction to that is that I don't know to what extent CEOs have detailed knowledge about audit work, which is probably a necessary requirement. However, theoretically they could change their behavior and try to remove the number of causation related words and use fewer explanations. I think, though, that the next version of this type of work is going to get into machine learning algorithms rather than the more manual process that we used. Maybe CEOs will develop a machine learning algorithm that could learn the academic machine learning algorithms. But I don't know if they will go to those lengths and whether it's worth it.'

> **Current information technology offers attractive possibilities to calculate integrity scores**

It might also be interesting to see the consistency between what CEOs say via less formal social media (such as tweets) and in more formal channels like shareholder letters?
'That would be a very interesting study. It would be great to examine the social media communication of people like Elon Musk, calculate the integrity score and then compare that with outcomes.'

The conference presentation (including the complete Q&A-session) and the slides can be found here:
https://www.youtube.com/watch?v=0eRBLrTT1O8

https://foundationforauditingresearch.org/files/plenary-4-dikolli.pdf

The link to the publication (SSRN-version):
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2131476

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