

On technology, professional judgment and auditors as social animals: FAR-conference 2023

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In June 2023, the annual conference of the Foundation for Auditing Research (FAR) was held at Nyenrode Business Universiteit. The main theme was ‘Auditors and their judgments.’ As a result, also the role of technology was frequently discussed. ‘Is artificial intelligence going to replace the auditor?’ was the obvious, but important, thought-provoking question. This question was mainly discussed regarding the extent to which technology can help the auditor during the conduct of an audit. Routine actions will increasingly be taken over by technology. Also, technology is better able than humans to detect trends and inconsistencies. However, judgment will remain essential.

1. Introduction

There were about 150 conference participants, a record number. Audit practitioners and academic scholars each made up about 40 percent of the attendees. The other 20 percent consisted of regulators and other stakeholders. Henriëtte Prast (FAR-chair) and Jan Bouwens (academic board member of FAR) opened the conference. Prast showed that a clear link exists between current problems in audit practice (including fraud problems and the shortage of auditors) and the research that is conducted via FAR. Bouwens substantiated the choice of the conference theme and talked about developments in the field of audit evidence that auditors are increasingly confronted with: ‘one could ask what is evidence in an era of deep fake, alternative facts, machine learning code that translates into discriminatory artificial intelligence or even exacerbates alternative facts. Can auditors verify that type of data? Where is this judgment going?’ The chairman of the conferences was Philip Wallage (Vrije Universiteit Amsterdam and University of Amsterdam). During his introduction, he indicated that there will always be a distance between science and practice, also in the field of auditing. But he argued that this distance could be reduced through communication, discussion, and mutual understanding, as was subsequently amply applied during the conference. The remainder of this article contains summaries of the conference sessions.¹

2. Is auditor judgment (still) relevant?

The conference keynote speech was delivered by Kathryn Kadous (Goizueta Business School, Emory University). The main question she targeted in her speech was: ‘is auditor judgment still relevant?’ In short, the answer was: ‘yes!’.

For several decades, auditing has provided an excellent breeding ground for examining complex decisions in a dynamic environment. Judgment and decision-making research in auditing is widely considered to have three main purposes: (1) describing how an auditor makes judgments and decisions and what factors influence them; (2) understanding the theoretical processes underlying the judgments and decisions; and (3) developing tools to improve the quality of judgments and decisions. In particular, the second and third goals benefit from conducting experimental research. The advantage of experiments is that experimental research enables us to better reveal causal relationships, instead of just demonstrating associations. The results of experimental research can be used to improve auditor’s decision-making processes. For example, if it turns out that the limited availability of information leads to poorer decisions, then interventions can be developed to stimulate the search for more information.

According to Kadous, two important themes in recent research on auditor judgment and decision-making are:

(1) auditors are flexible decision makers; and (2) auditors are social animals. The research that fits within the first theme, ‘flexible decision-making’, shows that auditors use multiple ways of thinking and that different types of tasks require different ways of thinking. For example, vouching inventory requires a different way of thinking than a complex impairment analysis. Complex tasks require an auditor to combine various types of information from different sources to determine the reasonableness of a valuation. To do this, an auditor must be able to identify inconsistencies and patterns. Previous research has shown that auditors are often not very good at this.

Kadous: *‘auditors tend to try to complete even complex tasks in what seems like a straightforward way, using a piecemeal verification process – looking at one assertion, searching for support for it, then checking the (mental) box and moving on. But this process makes it too easy to miss errors and inconsistencies—a more integrative, analytical process is required to identify inconsistencies, and deep engagement with the task, such as that created by a love of thinking about the problem or love of learning makes auditors more likely to notice and act on these inconsistencies.’* Fortunately, research shows that a critical thinking mode can be activated, for example by an audit manager, which can have positive effects.

Research into the second theme, ‘auditors are social animals’, shows that auditors are largely influenced by the behavior they observe in their environment. This can have negative consequences. For example, auditors can find it difficult to confront intimidating clients or to speak up within their team if they feel unsafe. The good news is that influence through environmental behavior can also be used positively, for example by creating a safe work environment and emphasizing the public interest of auditing: *‘strong, salient identification with the profession can work a number of miracles, including preventing negative effects of client relationships and creating audit quality enhancing behaviors.’*

An important part of the speech was devoted to the role that technology (including artificial intelligence) can play for auditors in the field of judgment and decision-making. Technology is already widely used in the field of routine auditing tasks. Technology is also used for targeting queries regarding auditing standards and the like. Next to these relatively non-complex applications, artificial intelligence is probably better than auditors at identifying trends, patterns and anomalies in data that indicate potential risks, for example in the field of fraud.

When technology takes over routine activities, auditors can devote more time to complex tasks, in which technology again can also play an important role. However, a key question that remains for researchers is to what extent auditors are able to adequately use information (for example, deviations) generated by technology. For the time being, it is still the auditor who acts based on the outcomes of the technology: ‘auditors will still need to make judgments about how important or problematic risk factors are.’ However, according to Kadous, technology probably provides a more neutral way of finding and addressing issues.

3. Fostering audit quality through culture and professional behaviors

Petra Tijmstra (PwC and NBA) and Therese Grohnert (Maastricht University) presented an example of a fruitful integration between practice and theory.²

Although the study involves solving a problem in a stylized situation, it is embedded in the actual strategic change agenda of the involved audit firm. The aim of the project is to better understand how culture and behavior can contribute to adequate judgment. This question is academically interesting, but it now also plays an important role in the revised International Standards on Auditing (ISA 220R and ISA 315R).

The research team developed a realistic team simulation (‘that looks like the real thing’). The simulation involved a challenging task that required cooperation and mutual exchange of information within ad hoc teams. Each of the participating 98 ad hoc teams consisted of five auditors, with different function levels, representing the entire hierarchical spectrum. The task involved a complex going concern assessment for a hypothetical client. Each of the team members was provided with both relevant and non-relevant information items. Collaboration and exchange between the different team members was needed to arrive at an adequate judgment. Team performance was measured by the degree in which the team selected the relevant information items and filtered out irrelevant items.

During their presentation, the researchers showed results on how team performance was influenced by: (1) hierarchical level and perceived psychological safety; and (2) task complexity and whether the team explicitly reflected on their performance (reflexivity).

Lower-level auditors sometimes struggle to speak up to higher-level auditors. Psychology theory posits that they are more likely to speak up if they experience greater psychological safety. However, when it comes to *partners*, the findings of the study reveal that the degree of psychological safety does not affect the selection of the number of relevant items contributed to the final decision. In a high-safety setting, there is no difference between the different job levels in the selection of relevant items, while in the low-safety situation the auditors at the lowest job level contribute only half of the relevant items. The results imply that partners may not perceive lack of psychological safety as a problem, because they will share the same amount of relevant items, regardless of safety-level. Tijmstra outlined how these findings of the study are being used in practice, including increasing perceived safety (for example, by having the partner let others speak first during conversations). Such processes must be implemented continuously: ‘it’s like brushing your teeth: if you stop, you get cavities.’

The second set of presented research findings concerned the impact of task complexity and reflexivity on the number of irrelevant items used to reach the final decision. The teams using the reflexivity approach were asked to discuss four questions: (1) who has previous experience with the task at hand?; (2) what is our goal and what are

the points of attention?; (3) how should we approach the task (and what should we not do)?; and (4) how can we hold each other accountable? The results show that the teams with a reflexivity approach, both in the low- and the high-complex case situation, include fewer irrelevant items in their judgment. The teams that do not apply reflexivity use more irrelevant items than the teams with reflexivity. However, the teams that do not apply reflexivity in the high-complex setting include fewer irrelevant items in the decision than in the low-complex setting. They are apparently more aware of the complexity of the situation, which requires more and careful attention. The researchers also find that the teams that apply reflexivity follow a more interactive group process (even when they are unplanned).

The research study has led to the introduction of planned and unplanned ‘strategic time-outs’ in the firm’s practice. Specific wordings have been formulated that team members can use to start interventions, because interventions are often being experienced as difficult.

This form of co-creation in doing research has been evaluated as a very useful methodology and Tijmstra will certainly take this approach into account in her role as transformation director at the NBA.

4. The effects of expert status on the audit of complex estimates

Justin Leiby (University of Illinois) has been working on a FAR project concerning the effect of expert status on the audit of complex estimates, together with Anna Gold (Vrije Universiteit Amsterdam) and Kathryn Kadous (Emory University). According to Leiby, many factors that affect perceptions of competence are not explicitly mentioned in the auditing standards. One of those aspects is the social *status* of an expert. According to Leiby, the status of an expert (not to be confused with competence, because people with high status are not necessarily the most competent) may have major consequences for the way auditors deal with the advice of that expert. In the study, the expert is an internal valuation specialist of the audit firm.

The study tested three predictions using a fair value case experiment with an ‘aggressive’ client estimation of the discount rate. The first expectation is that experts with high status will be ascribed greater competence and influence by auditors, as a result of which more reliance will be placed on the expert’s advice. The second expectation is that auditors will rely more on the advice of an expert with high status than on the advice of an expert with moderate status, if the expert *disagrees* with the client’s estimate (the auditor is then more likely to contradict the client). The third expectation is that if an expert *agrees* with the client’s estimate, but provides *weak substantiation*, auditors are more likely to agree with experts with high status than with experts with moderate status.

The results show that the first two predictions are supported, but the third expectation is not. Thus, social status increases both the perception of the expert’s influence and

competence. When auditors receive an expert estimate that contrasts with the client’s estimate, they are more likely to use that expert estimate to contradict the client if the expert has high, compared to moderate, status.

The results of the study suggest that auditors do not always act as intended by auditing standards. An expert with high social status leads to a greater perceived competence by the auditor, which in the study leads to more client-friendly, and thus lower discount rates (if the expert agrees with the client and provides a good substantiation). However, the results also show that high expert status leads to a greater perception of the expert’s influence, resulting in less client-friendly discount rates, when the expert disagrees with the client. Assessments of the expert’s competence are unrelated to the auditor’s judgments if the expert disagrees with the client.

The study also examined whether auditors are aware of the way in which they use status signals that are in fact related to competence (relevant certifications) versus signals that are not (i.e., playing tennis with ‘important people’). The results show that auditors are aware that they use expert social status to determine the extent to which they rely on their advice, especially when the specialist disagrees with the client. However, auditors are not aware of the fact that they use status to assess competence.

5. Panel discussion with young professionals: current issues in auditing

During the first panel discussion, chaired by Wendy Groot (PwC and VU), young professionals Robin Beijen (Avans University of Applied Sciences), Therese Grohnert (Maastricht University), Christian Peters (UvT) and Lena Pieper (Maastricht University) spoke about numerous current topics.

The session started with a presentation of the results of a FAR study into what auditors and stakeholders currently consider to be the most important topics in auditing. The responses from nearly 80 survey participants show that the importance (expressed as a percentage) of 11 topics studied, ranged from 7.3 to 10.7 percent (the participants were asked to distribute 100 points). In fact, all subjects are considered to be of approximately equal importance. The top three subjects are: (1) measuring and improving audit quality (10.7 percent); (2) going concern (10.4 percent); and (3) attracting and retaining talent (10.4 percent). The academics surveyed put more emphasis on learning and coaching, while practitioners highlighted diversity, equity and inclusion. The younger respondents put more emphasis on measuring and improving audit quality and the older respondents rather emphasized issues such as root cause analysis, AI and internal control evaluations. The survey also led to suggestions for further research, including a study on the adequacy of the labor supply of auditors (and how to improve it).

Then, a discussion ensued about the definition of audit quality. The well-known analogy of the five blind men and

an elephant came up: they all feel something different, while they all touch an elephant. According to Peters, for many reasons, there should be more clarity about what can be expected of the auditor. According to him, this works two ways: auditors can educate the public about what to expect, for example in the field of fraud, but society itself can also show more interest. According to Beijen, practitioners have a good feeling for what constitutes a proper audit. He proposed a study in which auditors choose a specific audit which they consider to be of high quality. The research question would then be whether researchers also find those audits as being audits of the highest quality in an academic study.

A second important topic is reducing the staff turnover within auditing. According to Pieper, there are many opportunities to investigate how on-the-job training works and how you can encourage people to stay in the profession. According to Grohnert, learning the fundamentals of the profession is very important, but it is essential as a teacher never to forget the practice for which you are educating students. As the education progresses, practice must be increasingly linked with the teaching. 'Due to all current developments, for example in the field of IT, the curriculum has to be adjusted', Peters stated, 'but we shouldn't want to teach too much, either. Perhaps we should evolve towards educating auditors at a basic level, after which they can specialize further.' Beijen underlined the importance of a flexible auditor who can interpret risks. And he stressed that students also want to see that what they learn during their education is also useful in practice. This will improve their motivation.

According to Pieper, young people want to change the world. Of course, auditors can play a role in this. But many students do not sufficiently understand what auditors actually do and how they can contribute. Furthermore, students are afraid that all work will be automated. Pieper: 'Then I say: no, the boring tasks will be automated, the work will only become more fun!'

Wallage concluded with his conjecture that artificial intelligence will eventually take over the entire audit. Grohnert, among others, expressed her doubts about the individual auditor becoming superfluous: 'If we can't even properly define audit quality, how can we instruct a computer to look for it?'

6. Panel discussion on audit innovation and judgment

During the second panel session, Jan Bouwens chaired a discussion on innovation, with James Berridge (Saffery Champness), John Boulton (ICAEW), John Toon (Beever and Struthers and ICAEW) and Caroline Monk (Beever and Struthers). These experts are all involved in the areas of innovation, technology, audit methodology and/or data analytics.

John Toon stated that the adoption of innovative technology is still often seen as a risk by audit partners. He wondered whether partners are the right people to implement these kinds of innovative changes. He also mentioned a contradiction between aspiring auditors'

education, creativity and enthusiasm on the one hand, and the checklist-driven formalized rigid processes within which they have to function, on the other hand. According to Toon, this situation is detrimental for young auditors' curiosity, interest, and enthusiasm. They turn into robots themselves, while there is now a fear that robots will take over the work of auditors. Audit partners are also afraid of the regulator, further hindering the adoption of technology.

John Boulton said he looks at technology in the same perspective as sustainability: it permeates all business processes. The ICAEW ensures that it has a role throughout the qualification process as an auditor. The institute works together with the audit firms on the necessary 'journey' that the auditors take. Boulton: 'but the responsibility for quality management is with the firm, so the use of technology doesn't absolve you from any duty that you may have; technology is just a resource that can help you to better manage that that process.'

Caroline Monk shared her belief that culture is the starting point of a good audit. There is a danger in taking technology as a starting point. 'Curiosity' is the magic word. And technology is the enabler. She also expects routine tasks being taken over by technology, freeing up more time for complex issues. There will be more time to talk to the client. According to Monk, this has been increasingly forgotten over the past few decades: 'you know, to audit means to listen!' Partners must also allow teams to get started with technology. And yes, that also means that sometimes things will go wrong.

James Berridge mentioned that many auditors adhere strongly to the imposed auditing standards and audit methodology. If the regulator does not agree with a judgment made by the auditor, but the auditor acted according to the standards and methodology (and this has been properly documented), then this is more acceptable than when problems arise and actions have not been taken according to the well-defined rules: 'the second someone deviates from that methodology and there's an audit failure, they come down like a ton of bricks.' Nevertheless, innovative technological options are available that provide excellent audit procedures, for example concerning the turnover cycle, while they do not fit well within the rules. In fact, it is then no longer necessary to check invoices, while this is required according to the rules.

Toon stated that audit partners often do not fully understand how technology can contribute to the audit. After all, they never learned that themselves. According to Monk, also clients often do not understand it sufficiently. The result is that people often do what was done the year before ('same as last year').

The future auditor who can adequately deal with technological innovation, also in the context of auditing standards and audit methodology, is therefore a five-legged sheep, in which also matters such as confidentiality and ethics play a role. Monk said that not the individual but the team is the five-legged sheep. And the necessary flexibility will have to be introduced into the education, so that there will be more room for innovation and, for example, also people with a different background can be admitted to the profession.

7. Engaging auditors' innovation mindset to improve auditors' fraud actions in a data-analytic environment

In a recent FAR project, Sara Bibler and Anna Gold (Vrije Universiteit Amsterdam), together with Margaret Christ and Tina Carpenter (University of Georgia), examined the influence of a so-called 'innovation mindset' of auditors on detecting fraud during the audit, in a data-analytic environment. Sara Bibler presented the findings of this study.

Recognizing fraud patterns is essential for designing effective audit procedures. While auditors are able to assess fraud risks reasonably well, they have difficulties to come up with audit procedures that effectively detect fraud. This requires creativity from the auditor, for example when interpreting output from data analytics. Both auditing standards and audit practice emphasize the importance of using an innovation mindset. The idea behind using a creative innovation mindset is that the auditor is enabled to 'think out of the box' and thus can come up with procedures that would more likely lead to fraud detection.

The main research question in this study is whether an innovation mindset leads to planning more effective control procedures to detect fraud. A second research question is whether the number of effective audit procedures decreases if the auditor simultaneously also has to be alert to providing client insights, and whether an innovation mindset mitigates this negative effect.

The study involves an experiment among nearly 100 audit seniors. They were shown a case in which a concealed fraud was embedded. The innovation mindset was stimulated in half of the participants and a neutral mindset was triggered in the other half. Half of each group were tasked with providing client insights and half were not, resulting in four experimental groups. All participants were asked to develop audit procedures. These were coded by the researchers, based on the effectiveness in detecting the embedded fraud. The results show that stimulating the innovation mindset leads to planning a greater number of effective audit procedures for detecting the fraud than the situation in which that mindset is not triggered.

Hence, the study shows that an innovation mindset is important, which is also encouraged by international regulators and audit firms. The innovation mindset also safeguards that being additionally alert to customer insights during the audit does not have to lead to a lower quality audit, as is feared by regulators.

8. Busy Season Talks: measuring the immeasurable

During the Busy Season Talks session, Claudia Marangoni (Tilburg University), Marnix Pouw (Deloitte) and Frank Verbeeten (University of Amsterdam) discussed

the increasing importance of non-financial information and especially about how to measure softer issues like, for example, the 'S' (Social) of ESG.³

The hosts were Charlie Groen (PwC) and Mitchell de Caluwe (EY).

Claudia Marangoni's research focuses on 'myopic' (nearsighted) behavior. Such behavior entails that decision-making focuses on short-term value at the expense of longer-term value. Her research shows that this behavior also has negative consequences for the organizational culture, which in turn negatively affects financial performance in the long term. She views ESG and financial performance as two sides of the same coin.

Marnix Pouw emphasized that non-financial information is already an important part of many annual reports. Its importance will increase further, but according to him the fundamentals of financial auditing still apply to non-financial information. Here, auditors also will have to provide assurance on whether or not material misstatements are present, based on an assessment of the internal control systems and substantive testing. However, it will require the input of specialists, which is already happening regularly.

Frank Verbeeten argued that measuring non-financials and rewarding on the basis of those measures is not necessarily related to the desired outcome. For example, measuring innovation does not mean that the company will actually become innovative. Hence, mandatory compliance with regulations in the field of ESG is also not necessarily associated with long-term value creation. Yet, the emphasis of many companies is on compliance with the rules. Almost all CFOs find ESG very important, but two-thirds of them say they do not have the information they need to make adequate decisions.

The discussion further focused on: auditor's knowledge of business models, fraud risks concerning ESG, measuring the performance of the younger generation based on drivers that they consider important, the use of internal and external surveys as non-financial 'soft' information (for example about organizational culture), and, last but not least, the importance of not measuring everything, everywhere.

9. Internal control quality, audit team composition, and audit quality

What is the influence of internal control risks on audit work and the resulting audit quality? This question is an important part of the FAR study presented by Nina Schwaiger and Sebastian Kuhn, both from LMU Munich.⁴

The starting point of their archival study is the audit risk model. From previous research it is known that audit fees and audit efforts increase (as does the risk premium) when the internal controls are of lower quality. We also know that audit fees are positively related to audit quality. So, the audit risk model seems to work in practice. However, this study looks at how control risk (co-)determines the extent, nature and composition of the audit labor and whether this influences audit quality.

An audit team has several options for approaching an increased control risk. For example, the number of team members can be increased and the team composition can be adjusted (for example, based on experience, rank and diversity). The researchers used data from two audit firms from the years 2017–2019, involving audit-related information from large listed and the largest unlisted Dutch clients (a total of 430 audits). The data include budgeted audit hours and actually spent hours, hourly rates applied and information about the audit team composition (including rank and workload of the team members). The quality of internal control is measured by the number of significant internal control deficiencies. Audit effort is measured by the budgeted and actual hours worked. Audit quality was measured, among other things, on the basis of accruals and the number of errors found.

In the examined audits, an average of three significant deficiencies were found in the internal controls and 66 percent of the audits contained at least one deficiency. On average, the number of actual audit hours is 23 percent above the budgeted number of hours. The extra hours are positively related to the average rank within the team and negatively related to the profitability of the audit client (lower profit is related to more hours spent than planned).

The findings suggest that audit teams indeed respond to lower-quality internal controls (i.e., the presence of more internal control deficiencies). The amount of work per team member increases (but not the size of the team) and the team members with a higher rank do more work. Concerning the effect on audit quality, the researchers refer to a ‘mixed bag’ of findings. The degree of exceeding budgeted hours (if internal control deficiencies are present) leads to a decrease in accruals and in a lower value of errors found, but not to an adjustment of the fees. The researchers derive a rule of thumb, based on the data: ‘there is an average of 15 percent of planned audit hours as overtime needed to keep discretionary accruals constant in the presence of internal control deficiencies.’

10. Professional skepticism and auditor behavior

Kris Hardies (University of Antwerp) presented the latest findings of their long-term FAR-research in

the field of professional skepticism (a project together with Sanne Janssen, Ann Vanstraelen and Karla Zehms). In the presentation, Hardies mainly focused on which factors are associated with skeptical behavior during the audit. The study includes more than 650 auditors who completed a survey about themselves, their audit firm and one of their (researcher-assigned) audit clients.

With respect to the audit client, the participating auditors assessed the extent to which they used eight skeptical behaviors during the audit. These include, for example, the extent to which they questioned management’s information, the extent to which they sought additional evidence and the extent to which they challenged the judgments of their audit team. The assessments were made on a measurement scale of 1–7 per behavior. The total (added) scores thus theoretically range from 8 to 56 points. The results show scores between 24 and 56.

What factors have the strongest relationship with skeptical actions? To study this question, the researchers examined personality characteristics (including trait skepticism, experience, knowledge, and motivation) and environmental factors (such as office culture and customer characteristics). The environmental factors appear to be most strongly associated with skeptical behaviors, with social norms being the most important. Also, the focus of the audit firm on professionalism and serving the public interest are important. These findings are in line with the importance of office culture for maintaining adequate professional skepticism. Influential personality characteristics are skeptical character traits, the attitude and motivation and specific knowledge (but not general experience) – for example regarding auditing standards.

Interestingly, the results do *not* show that issues such as tone at the top and rewarding skeptical behavior play a role. Neither are the interests of the client or time pressure regarded as being important.

Thus, environmental factors show the strongest relationships with skeptical behaviors. Fortunately, according to Hardies, audit firms can exert more influence on these factors than on changing the personality of auditors.

■ **Dr. L. Quadackers** – Luc is schrijver, bedrijfsjournalist en onderzoeker bij Margila.

Notes

1. The live streams of the conference can be found via the Youtube account of the Foundation for Auditing Research (<https://www.youtube.com/@foundationforauditingresea8303>), under the heading ‘Live’.
2. The academic project team further consists of Wim Gijsselaers and Roger Meuwissen.
3. Busy Season Talks is an online ‘living room’ in which young auditors discuss important auditing topics ‘in a fun light-hearted way’. They share experiences, tips and fun stories and speak with students, (former) accountants, directors, supervisors and other interested parties. Or as Wallage put it: ‘what is the audit profession, why are we auditors, and why are we on earth?’
4. Christian Hofmann from the same university and Jeroen van Raak from the University of Amsterdam are also members of the project team.