

Changing the boundaries of public sector auditing

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Abstract

Purpose – This paper aims at reflecting on the changing boundaries of public sector auditing. In particular the paper focusses on the opportunities and challenges for performance auditing, for sustainable development auditing and digitalised public sector auditing.

Design/methodology/approach – Building from the papers in this special issue, the authors draw on the literature on current development of public sector auditing (such as public sector auditing performance auditing, sustainable development auditing and digitalised public sector auditing) and propose a future research agenda.

Findings – The “changing boundaries” of public sector auditing may influence the difficulty for public sector organisations to manage the uncertainties and risks not only associated to corruption but also the public governance development (collaborative, digital and emergency governance). The authors speculate on the role that the “changing boundaries” of public sector auditing can play.

Originality/value – The paper contributes by setting new research avenues for future studies on public sector auditing in a post-new public management context.

Keywords Public sector auditing, Performance auditing, SDGs auditing, Digital transformation, Corruption

Paper type Conceptual paper

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1. Introduction

At any organisation, auditing plays a pivotal role in shedding light on whether malpractices have occurred in the process of making decisions and deploying resources. In a democratic system, there are checks and balances to assure answerability for decisions made by agents - those who hold public office (Cordery and Hay, 2021). As such, the process of making decisions and disbursing of public funds and other resources by the cabinet of ministers and administrators should be audited (Hay and Cordery, 2018, 2021), as their decisions, and the way of using public funds and resources certainly impact not only on the well-being of the present generation, but also on the well-being of future generations. Auditors of the national audit office conduct a range of audits and publish reports that inspire legislative investigations concerning the issues underscored by the country’s auditor general (Gårseth-Nesbakk and Kuruppu, 2018).

As envisaged in the nascent literature, politicians and administrators could impede auditors’ ability to conduct audit investigations that could pinpoint malpractices and contentious decisions in the government sector (Gårseth-Nesbakk and Kuruppu, 2018). Such endeavours have been noticeable since the adoption of performance auditing by the national audit office in different countries (Gårseth-Nesbakk and Kuruppu, 2018; Parker *et al.*, 2021). Our paper sheds light on the changing boundaries of public sector auditing, in particular the opportunities and challenges for performance auditing, for sustainable development auditing, and digitalised public sector auditing. The papers also provide directions for scholars to conduct further research on this theme. Similarly, this paper underscores the need to conduct audits on initiatives made by governments in a post-new public management (NPM) context characterised by the need to monitor the implementation of sustainable development goals (SDGs) and explore opportunities and challenges of digital transformation for public sector auditing and auditors (Grossi and Argento, 2022). In addition, the papers published in this special issue are summarised and direction for further studies are highlighted.

The set of papers (see Table 1) of this special issue attempt to bring back to public sector auditing practices and institutions the contextual complexities of national Supreme Audit

Article	SAI context	Methodology	Finding
Ferry <i>et al.</i> (2023)	125 Full Members INTOSAI	Surveys, documentation review, and workshops	Audit and accountability arrangements of SAIs are influenced by INTOSAI’s global voice, SAI organization, the regulatory context
Hancu-Budui and Zorio-Grima (2023)	28 National SAIs and the ECA.	multidimensional scaling and regressive ordinary least square (OLS) and logistic models	Several distinct clusters of similar SAIs across Europe
Kontogeorga and Papapanagiotou (2023)	SAIs of the 37 OECD member states	Categorise SAIs into two groups: judicial and nonjudicial. Apply the Mann–Whitney U test to test for differences in the two categories	The control of corruption is stronger and the perceived level of corruption is lower in countries with the nonjudicial model SAIs. No significant difference in the confidence in national government between the two groups
Uman <i>et al.</i> (2023)	ECA from inception to 2019	Visual Accounting Methodology	ECA positions itself as a social and human actor and opts for a social actorhood over a professional actorhood
Dionisijev <i>et al.</i> (2023)	The SAI in the Republic of North Macedonia	Surveys, and secondary data collected from the website of the SAO of the Republic of North Macedonia	The State Audit Office in the Republic of North Macedonia has grown substantially over the last 20 years. However, a considerable number of audit recommendations are not being implemented

Table 1. Overview of the papers included in the Special Issue

Source(s): Author’s own creation

Institutions (SAIs) and global institutional settings. The comparative paper of [Ferry *et al.* \(2023\)](#) related to 125 Full Members of INTOSAI shows that public sector auditing audit and accountability arrangements of SAIs are influenced by INTOSAI's global voice, SAIs organisation, the regulatory context. The European comparative paper of [Hancu-Budui and Zorio-Grima \(2023\)](#) shows that the European Court of Auditors and national SAIs play an important role in ensuring the transparency, ethics, gender equality, integrity and sustainability engagement of public institutions. The comparative paper of [Kontogeorga and Papapanagiotou \(2023\)](#) based of 37 OECD countries seeks to understand whether the organisational structure of SAIs affects the perceived level of corruption and trust in government. The visual study of [Umans *et al.* \(2023\)](#) finds that the European Court of Auditors (ECA) positions itself as a social and human actor and opts for a social actorhood over a professional actorhood. Finally, [Dionisijev *et al.* \(2023\)](#) portrays the complexity of the institutional context in the Republic of North Macedonia and how it affected the efforts to increase public trust driven by the national State Audit Office.

In the next section, we will briefly describe the specific challenges for performance auditing. In [section 3](#), we discuss the growing need for SDGs auditing and challenges for SAIs and auditors. [Section 4](#) briefly discuss about the opportunities and challenges of digital transformation for public sector auditing and auditors. [Section 5](#) presents a brief overview of contributions made by papers included in this special issue. The authors highlight how sophisticated auditing and accountability practices associated with new public governance development (collaborative, digital and emergency governance) could enable supranational and national audit institutions to curb corruption and to sustain performance and public trust in government. In the final section, we conclude our paper by highlighting key lessons one can learn from this special issue and by indicating some areas for further research on the changing boundaries of public sector auditing.

2. Challenges for performance auditing

Performance auditing is an area where the public sector audit function is very effective and has contributed significantly to public accountability ([Cordery and Hay, 2021](#)). Many Supreme Audit Institutions (SAIs) engage in performance auditing. However, performance auditing in the public sector faces substantial challenges.

The development of public sector auditing has contributed both to financial accountability to a wide range of stakeholders, and to management control on behalf of the executive function ([Hay and Cordery, 2018](#)). Public sector accounting, and auditing, is based upon a complex set of agency relationships in which there is a chain of agency relationships “from citizen to politician to bureaucratic subordinate and on down the hierarchy to the lowest-level bureaucrats who actually deliver services to citizens” ([Moe, 1984](#)). An audit can be expected to contribute to both forms of accountability. A performance audit is also expected to provide both public accountability and management control, and is relevant to a wide audience.

Performance auditing is sometimes said to be an outcome of the New Public Management (NPM) reforms ([Pollitt and Summa, 1997](#); [Cordery and Hay, 2021](#), p. 3). Like NPM, performance auditing was adopted to a differing extent in each jurisdiction ([Barzelay, 1997](#)), and has been affected by the constitution on each setting and by subsequent changes in government activities or structure ([Johnsen, 2019](#)). In many countries there are not sufficient resources available to the public audit function for this activity to be conducted ([Cordery and Hay, 2021](#), p. 17). Nevertheless, more than 90% of countries have a SAI that reports that it carries out performance auditing ([Ferry *et al.*, 2023](#)) and they tend to be countries with higher education levels and where governmental effectiveness is rated more highly ([Cordery and Hay, 2021](#)).

The use of performance auditing has increased in recent decades (Ferry *et al.*, 2023, p. 13). Performance auditing in the public sector is strong in settings where there is already a well-developed financial auditing function, and where the auditing function is well resourced (Cordery and Hay, 2021). Its effectiveness can also depend on the model of SAI adopted in a country.

Performance auditing is the most widely researched area of public sector auditing (Mattei *et al.*, 2021). In line with the two functions of a public audit function in providing assurance of information either for a wide public group (public accountability), or mainly for the executive (management control) there are variations in the extent with which performance audits are reported to the public (e.g. in Korea) or to the cabinet (e.g. in Japan) (Yamamoto and Kim, 2019).

The challenges faced by the function of performance audit include questions about its claims of neutrality, observations of the limitations to its effectiveness, and outright accusations that it is subject to political influence.

Auditors aim for performance auditing to be perceived as a neutral evaluation of policies vis-à-vis their stated objectives (Barrett, 1996). However, it is often viewed as a potentially political activity that either supports or opposes government policy. Performance audits can be seen as a form of investigation that operates within constraints to avoid challenging the government, ultimately legitimising its activities (Broadbent and Laughlin, 2003). As noted by Funnell (2015), the choice of audit topics is influenced by the government itself. Additionally, Mattei *et al.* (2021) argue that performance auditing is sometimes utilised to legitimise government activities. Furthermore, Morin (2016) comments that performance auditing may give citizens a false sense of security. Critics have gone so far as to contend that performance audits merely serve to placate taxpayers, creating an illusion of change without substantial impact (Morin, 2001). Notably, Norway has experienced an increasing debate surrounding performance audits in recent years (Gårseth-Nesbakk and Kuruppu, 2018). While performance audits can potentially influence civil servants, the extent of their influence depends on how the audited civil servants perceive the audit process (Reichborn-Kjennerud, 2013).

At an extreme, some participants attack performance auditing, seeing it as part of the political process, that places the audit function within a political conflict. According to Basu *et al.* (1999) the United States Government Accountability Office is influenced by the relative power of external groups with which the GAO interacts, including political parties. Basu *et al.* (1999) report how the GAO was criticised by the minority party (the Republicans) as being a “lackey” for the Democrats (Basu *et al.*, 1999, p. 516) and that when the Republicans later gained a majority then the GAO’s budget and staffing were reduced (Basu *et al.*, 1999, p. 517).

As a result of these threats, there is a potential for performance auditing to be undermined by political conflict, or to be seen as fundamentally flawed as a means of legitimising government policies. The extent to which there are threats to performance auditing occur is a continuing issue for researchers.

3. Need for SDGs auditing and challenges for auditors

In the corporate sector, financial auditing has particularly been concerned with the task of expressing its opinion about fair presentation of a business entity’s financial position and performance. Therefore, stakeholder groups have started requesting business entities to furnish reports about environmental and wider societal impact(s) of operational activities since the early 1970s (Gray, 2000; Khan, 2017). In response to the increasing demand from a range of stakeholders, environmental audit (Hillary, 1998) and social audit (Khan, 2017) reports were made available from the mid-1970s. Environmental auditing was initially adopted by manufacturing entities to demonstrate that environmental legislations and

regulations have not been violated (Goodall, 1995; Sinclair-Desgagné and Gabel, 1997). Social auditing envisages whether the business entity complies with its corporate mission statement on employment conditions and maintains a healthy working environment for employees in developing countries as well (Gray, 2000). Similarly, information about eco-justice and ecological footprint failure, and the social and environmental cost of operational success is also revealed (Gray, 2000).

The trend underscored in the foregoing discussion indicates that stakeholders are conscious about negative consequences generated by operational activities of business entities. The publication of the report, namely “Our Common Future” in 1987 by the United Nations’ World Commission on Environment and Development (WCED) further emphasised the need of minimising or avoiding waste of resources, and negative environmental and societal consequences of human activities. In the late 1980s, Supreme Audit Institutions (SAIs) discussed their responsibility for auditing the environment and environment policy in addition to conducting audits about the regularity of the government’s expenditure and revenues (Van Leeuwen, 2004). The International Organisation of Supreme Audit Institutions (INTOSAI) disseminated knowledge about environmental auditing amongst its members. Therefore, such audit reports are published by its members (Van Leeuwen, 2004; Cordery and Hay, 2021).

As pinpointed by the WCED’s report, the present generation should not attain its wellbeing at the cost of future generations’ wellbeing and existence. In other words, the UN emphasises the importance of sustainable production and consumption to assure the conservation of renewable and non-renewable natural resources (see Bebbington and Unerman, 2018). As such, the report urged entities to be accountable for intergenerational equity that is concerned with the alleviation of poverty through a fair distribution of natural resources and manmade wealth amongst individuals, while assuring ecological sustainability (Lamberton, 2000). No democratic government would oppose the idea of sustainability and intergenerational equity. However, any sustainability state can be maintained only through interaction between organisations, individuals, societies, and governments (Gray, 2010). Such a state should be reflected in accounts. Accordingly, a discussion centred around accounting for sustainable development (Lamberton, 2000; Gray, 2010; Bebbington and Larrinaga, 2014; Bebbington and Unerman, 2018) and sustainability auditing emerged (Watson and Emery, 2003).

It is certainly necessary to have authentic dedication and initiatives by all the member countries of the UN to assure sustainability of resources. This means that all the tiers of government, including individuals and institutions should play a crucial role in this respect. As such, accounting for sustainable development reveals financial consequences as well as environmental and social consequences of a government’s decisions and policy execution (see for example, Bebbington and Unerman, 2018). Such a form of accounting is particularly expected to demonstrate how the present generation preserves the right of future generations to reap benefits of natural resources - intergenerational equity (Lamberton, 2000). The publication of 17 Sustainable Development Goals (SDGs) and 169 targets by the UN in 2015 further reinvigorates the need of being responsible for intergenerational equity.

As elucidated in the nascent literature, measuring the progress of attaining the SDGs is a challenging and complex task (Bebbington and Unerman, 2018; Celone *et al.*, 2022). Nevertheless, accounting professionals possess a wealth of knowledge and skills in assessing the possibilities and pitfalls in governance (Bebbington and Unerman, 2018). Similarly, governments in both developed and developing countries have attempted to use different budgeting approaches and accounting systems to govern the public sector under the rubric of NPM. As such, humans are particularly governed by – and through – accounting and auditing practices (for example see, Shore and Wright, 2015). The adoption of SDGs further promotes governance by numbers, as the accountability, efficiency, effectiveness, education

quality, gender equality, quality of life and intergenerational equity are embedded in such discussions. This is evident by the UN's General Assembly resolutions adopted in December 2011 and in December 2014. Both resolutions underline the importance role of SAIs in advocating efficiency, accountability, effectiveness, and transparency of public administration that is necessary for attaining national development goals and internationally agreed development goals. In addition, its SDG – 16 emphasises a substantial reduction of corruption and bribery in all their forms and a requirement of developing effective, accountable, and transparent institutions at all levels. Therefore, a SAI of a democratic country wields a legitimate mandate to oversee and report the success or failure of attempts to implement the SDGs (Montero and Le Blanc, 2019) and to what extent the respective country has achieved its SDGs (Cordery and Hay, 2021).

It is necessary to delegate power to regions and local governments (municipalities) by the central government in a liberal democratic nation. Such a complex governing system requires the involvement of multiple governing tiers in implementing programmes for achieving the SDGs. As the 2030 agenda for sustainable development is anchored on the pledge of leaving none behind, the authentic participation of corporate entities, nongovernmental organisations, international financial institutions, and individuals, including donor nations is also essential to attain the SDGs. Thus, the SDGs are concerned about social, economic, and environmental dimensions (Bebbington and Unerman, 2018), whilst a single SDG is intertwined with one or more SDGs. This means that strives are made to execute the agenda 2030 in a complex and problematic context in which different forms of accountabilities could exist, but invisible (for example, see Bebbington *et al.*, 2017) or blurred. Therefore, a SAI should conduct its audit investigations on the involvement of stakeholders and the implementation of the SDGs to make politicians and administrators answerable to the legislature and the public. As argued by Cordery *et al.* (2022), audits by a SAI should be conducted to make a government accountable for its commitment to the SDGs and development of policies and programme to reach the SDGs.

The Inter-Parliamentary Union (see for example, 2016; 2019) has underlined the key role of its members in accomplishing the SDGs. Parliaments are urged to make significant strides towards sustainable development by enacting national laws to enforce the SDGs, aligning the SDGs with the specific nation's development priorities, adopting a national budget to finance the implementation of the SDGs, and ensuring accountability of the government for the country's progress towards reaching the SDGs amongst others. Therefore, national Parliaments should actively involve in the implementation and oversight of the whole SDG framework (Fitsilis and De Vrieze, 2020). As an agent of Parliament, SAI is obliged to help the legislature or its committee(s) scrutinise the use of public funds and other resources (for example see Gårseth-Nesbakk and Kuruppu, 2018; Parker, 2020). It is necessary to conduct SDG audits to elucidate successes and limitations of government attempts to execute specific SDG targets from the perspective of whole-of-government (Le Blanc and Montero, 2020). Some of the SAIs initially conducted a performance audit about the preparedness of individual nation to implement the 2030 agenda with the support of the INTOSAI Development Initiative and its knowledge sharing and knowledge services committee (see INTOSAI, 2019). Such audits should elucidate policy adoption and execution issue and the progress made by the country towards the SDGs. Nevertheless, a SAI may struggle to undertake such audits in addition to financial, performance and compliance audits in the absence of necessary financial and professionally qualified experts.

The UN's 2030 Agenda is a plan consists of actions for people, planet, prosperity, peace, and partnership. This agenda strives to assure well-being of all inhabitants and to strengthen the voice of vulnerable in the social strata. For example, whereas its SDG – 16 underscores the necessity of ensuring responsive, inclusive, participatory, and representative decision-making at all levels, the SDG – 5 pinpoints the requirement of achieving gender equality and

empowering all women and girls. Similarly, the SDG – 6 is about ensuring the availability and sustainable management of water and sanitation for all. In addition, the SDG – 10 demands to empower and promote the social, economic, and political inclusion of all without any discriminative biasness. Moreover, under the auspices of SDG – 11, it is urged to enhance capacity for participatory, integrated, and sustainable human settlement planning and management. The grassroots political institutions and their leadership could play a particular role in this respect. However, it is not possible to reach the SDGs without adopting appropriate accounting and budgeting practices amongst others.

4. The opportunities and challenges of digital transformation for public sector auditing

Digital transformation is a “socioeconomic change across individuals, organizations, ecosystems, and societies that are shaped by the adoption and utilisation of digital technologies” (Dabrowska *et al.*, 2022). Digital technologies can disrupt organisations of every type, size, and level, leaving decision-makers with a considerable challenge: finding the right digital technology to boost system efficiencies (Hinings *et al.*, 2018). However, harnessing the power of connected technologies and capturing their potential benefits – indubitably many – comes at a price, which tends to remain largely unaccounted for. Because under the surface, digital innovation can be rife with injustice and inequality, which expose the dichotomic nature of digital transformations (Wang *et al.*, 2021).

Intergovernmental organisations and national governments, for example, recommend designing technological innovation policies by adopting also a digital governance approach. Digital governance refers to the use of different forms of information and communication technologies (ICT) that offer the possibility of more efficient, transparent and effective government, whilst challenging traditional models of public administration, management, organisation, accountability and engagement (Margetts and Dunleavy, 2013; Gil-Garcia *et al.*, 2018). But these digital governance trends entail the risk that more prosperous industrial sectors continue to prosper, whereas slow-emerging but promising technological niches suffer from the presence of an adverse technological regime (Geels, 2014).

Public sector organisations increasingly embrace innovative principles and implement digital governance strategies to improve service delivery (Grossi and Argento, 2022). Increased transparency, improved efficiency, and better communication with and engagement of users are amongst the key advantages of introducing smart services (Argento *et al.*, 2020; Spicer *et al.*, 2021). Nevertheless, these services are not for all; factors such as low literacy and income levels, geographical restrictions, and lack of physical access to technology power a divide that forces many individuals to remain excluded. Also, digital transformation is changing company cultures to be more agile, risk-tolerant, and experimental. Teleworking technologies are an excellent example of this phenomenon. As we witnessed during Covid-19 pandemic, digital solutions have helped many workers in different sectors to maintain their jobs and reduce commuting time. Online technologies have also supported educational services to face social distancing measures (Agostino *et al.*, 2021) while helping us remain connected with our families and friends worldwide, by reducing geographical barriers. But these positive opportunities have overshadowed those segments of society who have remained underserved due to growing digital divides, whereas some online users have started experiencing negative psychological effects – such as irritability, worry, and guilt – that have endangered their mental health (Andrew *et al.*, 2020; Parker, 2020). Segregation and loneliness prosper in our society as never before, with growing numbers of social media users who feel alone even when connected (Blankespoor, 2018; Knudsen, 2020). A mix of business transformations and human relationships in the digital space leads to the production of an increased amount of data and information to be handled by decision-makers (Kornberger *et al.*, 2017; Martinez, 2011).

To face the growing digital challenges Supreme Audit Institutions (SAIs) are now considering how to take the next initiatives on the path of utilising digital technologies and evolving new auditing practices (Lahdelma and Gullichsen, 2020). Technological transformation requires that organisations to continuously modify and transform ever since. However, the relevance of digitisation, digitalisation, and digital transformation was recently reinforced by the COVID-19 outbreak. Digital transformation of public sector audit can strengthen public sector auditors' investigative powers, increase transparency in their work (Antipova, 2019), and help prevent fraud and corruption in public sector organisations (Mattei *et al.*, 2021; D'Andreamatteo *et al.*, 2022). However, in the public sector auditing literature on digital transformation remains a black box with just a few studies bringing empirical insights into this emerging issue (e.g. Cordery and Hay, 2021; Busanelli de Aquino *et al.*, 2022; Otia and Bracci, 2022). Cordery and Hay (2021) recognised that there is a lot of potential for change in auditing technology. They recognised that auditors and SAIs are moving to take advantage of it, but there are still several obstacles, and it is reasonable to query whether they be able to adapt to the digital transformation. The study of Busanelli de Aquino *et al.*, 2022 provide practical evidence developed by Courts of Accounts in Brazil on how digital infrastructures afford their practices while showing that auditors are not fully aware of how their skepticism and autonomy are being affected by the introduction of such devices and by the reinforcement of remote audit practice. The comparative paper of Otia and Bracci (2022) analyses and discusses how different SAIs perceive and define the digital transformation trended. The results show that most SAIs in Europe (Belgium, Norway and the Netherlands) and elsewhere (Brazil and USA) still are not familiar with the concept of digital transformation, notwithstanding a great majority acknowledges the need for DT but lacks the right strategy and resources in place. Digital transformation also stands out as a big opportunity for SAIs but also comes with challenges. Many SAIs are, for instance, working towards digitalization and using big data. From the first empirical studies on digitalised public sector auditing, we can also see that few SAIs are considering audits of the national IT infrastructure in the post-pandemic based on the weaknesses and vulnerabilities exposed. We do however see that drawing on the benefits of rapid digital transformation is a challenge for the weaker SAIs where the reality for instance during the current crises is that many SAIs have been prevented from conducting audits due to a lack of access to government data (Gørrissen, 2020). In light of the preliminary experiences of remote auditing during COVID 19, it would be relevant for scholars and practitioners to have further research on how SAIs currently are drawing on IT in their audit work and in terms of ensuring continuity of their own auditing practices during and post crises.

5. Summary of the accepted papers in the special issue

In a broad review of SAIs, Ferry, Hamid and Dutra (An international comparative study of the audit and accountability arrangements of supreme audit institutions) survey the 196 SAIs that are full members of the International Organization of Supreme Audit Institutions (INTOSAI) on their audit and accountability arrangements. 125 SAIs (64%) completed the survey with responses organised around the themes of organisation, capacities, and audit scope, products and reporting. In terms of organisation, 83% of SAIs are an independent body, 78% report annual on financial statements of government entities, and 70% of SAIs are headed by an auditor general. In terms of capacities, 92% of SAIs implement a strategic plan and 75% independently assess their own performance. Finally, related to audit scope, products and reporting. 78% of SAIs independently set the standards for their audits and 94% of SAIs are responsible for financial, compliance and performance audit. Overall, the study concludes that the audit and accountability arrangements of SAIs are influenced by INTOSAI's global voice, SAIs organisation, and the regulatory context.

Two papers attempt to group SAIs across Europe. Hancu-Budui and Zorio-Grima (Supreme audit institutions in Europe: synergies, institutional transparency, gender equality and sustainability engagement) find there are several distinct clusters of similar SAIs across Europe. Notably, clusters exist amongst Eastern-European countries, Western and Nordic countries, and West Mediterranean countries. They find the European Court of Auditors (ECA) is generally similar to the European countries' SAIs. They also find that SAIs with younger staff are more transparent. SAIs play an important role in ensuring the ethics and integrity of public institutions. Kontogeorga, and Papapanagiotou (Auditing ethics and corruption: old challenges and new trends for Supreme audit institutions in turbulent times) seek to understand whether the organisational structure of SAIs affects the perceived level of corruption and trust in government. They classify SAIs into judicial model or nonjudicial model based on whether SAIs organised as courts or not. Of the 37 OECD Member states in the sample, seven are classified as judicial. SAIs categorised under the judicial model represent the following countries: Italy, Belgium, France, Greece, Portugal, Spain, and Turkey. They find the control of corruption is stronger and the perceived level of corruption is lower in countries with the nonjudicial model SAIs. However, there is no statistically significant difference in "confidence in national government" between countries with judicial model SAIs versus countries with nonjudicial model SAIs. The authors do caution that a change in the model structure of SAIs alone will be insufficient to overcome the challenges of corruption.

Finally, two studies explore a specific SAI. Uman, Argento, Mattei, and Grossi (Actorhood of the European Court of Auditors: a visual analysis) utilises visual analysis to explore ECA's actorhood from its inception to 2019. The ECA plays an important role in monitoring European Union institutions. By examining the images on the front cover of the ECA journal, this study finds that the ECA positions itself as a social and human actor and opts for a social actorhood over a professional actorhood. Dionisijev, Lazarevska, Trpeska and Atanasovski (The supreme audit institution in the Republic of North Macedonia-two decades of building public trust) take a more detailed dive into the SAI of one specific country. They examine the development of the State Audit Office (SAO) in the Republic of North Macedonia over the past twenty years and find the SAO has grown substantially both in terms of number of employees and financial resources. Interestingly, they find that a considerable number of audit recommendations not being implemented suggesting stronger regulatory enforcement may be necessary.

6. Conclusions and future research agenda

The five papers included in this special issue examine a broad range of Supreme Audit Institutions (SAIs). *Ferry et al. (2023)* takes the broadest perspective by reviewing the survey results of 125 full members of INTOSAI. They find several factors influence the audit and accountability arrangements of SAIs including INTOSAI's global voice, SAIs organisation, and the regulatory context. Both *Hancu-Budui and Zorio-Grima (2023)* and *Kontogeorga and Papapanagiotou (2023)* review SAIs across Europe. *Hancu-Budui and Zorio-Grima (2023)* find notable distinct clusters of similar SAIs while *Kontogeorga and Papapanagiotou (2023)* find the control of corruption is stronger and the perceived level of corruption is lower in countries with the nonjudicial model SAIs. Finally, two studies examine a specific SAI. *Uman et al. (2023)* finds the European Court of Auditors positions itself as a social and human actor and opts for a social actorhood over a professional actorhood. *Dionisijev et al. (2023)* examines the SAI in the Republic of North Macedonia and find that while it has grown substantially over the last 20 years, a number of audit recommendations are not being implemented. Collectively, the studies in this special issue help inform us of the current state of SAIs.

Building from the papers in this special issue and the existing literature on current development of public sector auditing, this paper also proposes a future research agenda on public sector auditing performance auditing, sustainable development auditing, and digitalised public sector auditing).

The challenges faced by the function of performance audit include questions about its claims of neutrality, observations of the limitations to its effectiveness, and outright accusations that it is subject to political influence. The research opportunities include finding ways to examine the extent to which it is being used, its effectiveness, and the nature of political threats. The research that exists concentrates on a performance auditing in a very limited number of settings, particularly settings in developed countries, often are settings that use a Westminster model of SAI and where governments and the public audit function are relatively open. The challenge therefore for researchers is to examine performance audits in a wider range of geographic and institutional settings, and to give serious consideration to its political context, including political threats that might impact its use, and the underlying issue of whether an independent auditor ought to be carrying out investigations of this kind. At least 80 countries state that they conduct performance audits of some kind (Cordery and Hay, 2021), and there ought to be opportunities to examine this function in countries that are substantially different from the previous research settings in the UK, Europe, Australia and New Zealand. More case studies of instances where performance auditing has been called into question as way for governments to exploit SAIs as a way to legitimise their activities.

Since the 1970s, the demand for environmental and social auditing to disclose negative consequences from activities of business entities has prevailed. Nevertheless, the UN's report on "Our Common Future" has underscored the need of undertaking audits to reveal what has been done by individual nations to assure the sustainable consumption of renewable and non-renewable resources. Similarly, as the SDGs anchored on the principle of leaving none behind focus their attention on wellbeing of the present generation and future generations, national SAIs should perform additional audit examinations to report whether the political executive and the bureaucracy make authentic efforts to attain the SDGs prioritised by the government. In addition, the SDGs are intertwined and dealing with people, planet, prosperity, peace and partnership. Because of such a complexity, the auditor general office of developing countries could experience the challenge of undertaking such audits in the absence of knowledge, skills and competence. Moreover, the political executive may tend to impede such audits by not allocating necessary funds, as negative findings could tarnish its image and may entail unintended consequences. As such, we urge to explore how the national audit office attempts to address challenges of conducting SDG audits and how the political executive and administrators obstruct or facilitate such audits. Similarly, scholars need to study how international financial institutions determine conditions of their aid packages for developing countries based on the findings of SDG audits by the national audit office.

There is a need to explore empirically possible positive and negative processes, actors and outcomes of the application of digital technologies in the public sector auditing. We call for a closer look at the opportunities and costs of digitalisation, digital technologies and big data for public sector auditing, auditors and audit institutions. However, many questions remain about how technological change will shape public sector auditing in the future. What kinds of technologies are likely to exist and how will they affect the field going forward? What are the potential benefits and risks for auditors, auditees and audit institutions? Ultimately, new digital technologies will require audit institutions and auditors to adapt quickly in the face of significant digital transformation.

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