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Editorial

Computer Auditing: The Way Forward

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Welcome to the International Journal of Computer Auditing (IJCA), which is sponsored by the International Computer Auditing Education Association (ICAEA). We are very excited to see the launch of this journal. It is our great honor to serve as the first editors-in-chief.

We broadly define computer auditing as any audit practices that may rely on information technology (IT). Such skill has long been argued and considered to be an important capability for both external and internal auditors for more than two decades though its applications were relatively limited in the past. In recent years, with the advance of information technology, what auditors can achieve with IT has dramatically changed. For example, auditors are now be able to perform both descriptive and predictive analyses, process both numeric and textual data, and apply such capability from assertion testing to compliance and risk assessments. This evolving capability has also brought the new term "audit analytics" to practices. Specifically, analytics focuses more on the business decisions and processes while the traditional computer auditing is mainly about audit. This improved capability and expanded scope have attracted a lot of attention with a wide range of applications. For instance, the PCAOB's new strategic plan (PCAOB 2018) has highlighted that "[i]nnovations in data analytics and technology have great potential to improve the efficiency and effectiveness of financial reporting and the audit process" (p.9). Audit firms and internal audit functions have also engaged in the development and the use of analytics in external and internal audit processes (e.g., Forbes 2018; Deloitte 2016; KPMG 2016), which have potentially changed the role of internal auditors to internal consultants.

Despite of its importance, a search of keywords including "computer auditing," "computer assisted auditing techniques," "CAATs," "audit analytics," "continuous auditing," "robotics," "audit innovation," and "audit automation," in the major accounting journals in the past 20 years, from 1997 to 2018, suggest that studies in this field in major accounting journals are very limited though there seems to be an increasing trend in recent years. These journals are *The Accounting*

Review, Contemporary Accounting Research, Journal of Accounting Research, Journal of Accounting and Economics, Accounting, Organizations and Society, Review of Accounting Studies, Journal of Information Systems, International Journal of Accounting Information Systems, Journal of Emerging Technologies in Accounting, Behavioral Research in Accounting, Journal of Accounting and Public Policy, and Auditing: A Journal of Practice and Theory. These studies cover a wide range of topics such as solutions (e.g, Perols et al. 2016; Cleary and Thibodeau 2005), potential research directions (e.g., Wang and Cuthbertson 2014), conceptual or framework, (e.g., Moffit et al. 2018; Kogan et al. 1999), teaching resources (e.g., Weidenmier and Herron 2011), and determinants or consequences (e.g., Dowling 2009; Janvrin et al. 2009; Dowling and Leech 2014; Rikhardsson and Dull 2016; Vasarhelyi et al. 2012). This limited understanding gives us opportunities to contribute to the development of this field and to provide more implications for professionals, regulators, and educators. Possible future research directions are, but not limit to,

(1) Adoption: First, it is still not clear what tool, e.g., analytics, artificial intelligence, data mining, etc., has been adopted for different business units (i.e., audit, tax, advisory services) or for different tasks. There are some higher-level descriptions but a more detailed understanding can at least set the stage for future works. Second, the adoption processes by audit firms or audit functions are valuable to be documented, which provide insightful information to provide practical implications or a theoretical process model for future audit innovation implementations. Last, the challenges and the corresponding technical solutions are also helpful for future studies.

(2) Solutions: studies can provide solutions and proof of concepts for auditor teams to further leverage the capability and can reduce the burden of adoption.

(3) Audit quality: it has been discussed that the use of these new techniques may help auditors focus more on judgement and assessment issues, which would improve audit quality. However, given the challenging processes to adopt such techniques due to talent and cultural issues, can it really improve audit quality is still an open question.

(4) Robotic process automation, artificial intelligence, and emerging issues: we have started to observe the proposition and the use of robotic process automation and artificial intelligence. However, how can these tools be used in the audit context and what are the corresponding impacts? Furthermore, there have been a wide range of emerging issues that can bring challenges to the field, such as drone, blockchain, fintech, regtech, etc. The interactions between these emerging issues and computer auditing worth investigating in order to provide insightful implications for professionals and regulators.

(5) Teaching materials or instructor training materials: Talent has been identified to be one of the critical factors that limit a wider adoption of these capabilities. It can be our joint efforts to develop instructor training materials and teaching materials to

In light of this trend and the challenges brought by big data and emerging technologies, this journal aims to provide an outlet to support and to advance our knowledge in this field. We welcome studies with different methodologies and from either a theoretical or practical perspective. We look forward to receiving your submissions, suggestions and services. Thank you all in advance.

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