European Journal of Accounting, Auditing and Finance Research
Vol.8, No. 9, pp.25-40, October 2020
Published by ECRTD-UK
Print ISSN: 2053-4086(Print), Online ISSN: 2053-4094(Online)

ADOPTION OF AUDIT SOFTWARE BY SMALL AND MEDIUM-SIZED PRACTICES IN EAST AFRICA

Dr. Albert Richards Otete
Doctor of Business Administration, Swiss School of Management

ABSTRACT: *Purpose: Information technology has been implemented by organizations in East Africa with most transactions and records being digital. At end of the financial year, these organizations require their financial statements to be audited. This study was to first take stock of the level of adoption of audit software by Small and Medium-sized Practices (SMPs) in East Africa. This comes at a time where the Covid-19 pandemic has led to even further computerization as organizations implemented health directives on face-to-face contact, paperless environment and work-from-home initiatives, among others. Methodology: A questionnaire comprising seven questions were sent out to sampled firms to respond electronically via the SurveyMonkey® tool. Out of about 1310 firms, the questionnaire was sent out to a random sample of 700. Results: A total of 251 responses were received (36% of the sample). 70% of the SMPs were 1-10 years old in practice. Only one-in-four firms (25%) had adopted audit software. The four most common audit software were CaseWare®, Myaudit, PCAS and DraftWorx™. The three major benefits from using audit software were the improvement in audit quality, audit project efficiencies and IFRS-compliant accounts. The three main challenges faced in adoption of audit software were the high costs of the software licenses, the lack of timely vendor support and the unstable/high cost of internet connectivity. The three main suggestions to increase adoption of audit software by SMPs in East Africa were to compel all the firms to adopt, to lower the cost of the software and probably develop a home-grown solution. Significance of study: The study has helped highlight the extent of adoption of audit software. It has also revealed the most common audit software in use. With this information, the NBAAT, ICPAK, ICPAU, iCPAR and OPC can develop a 3-year roadmap to facilitate the SMPs to gradually acquire the audit software. At each Annual Practitioner's Forum, adoption of audit software and how it enables the firm's business to grow can become a permanent topic. This can supplement the advanced Microsoft Excel® training that is being undertaken by most of the SMPs. Future research: After a 2-year period, further research can include an in-depth interview with a sample of firms that responded to determine the influence of audit software or lack thereof on their competitiveness among fellow SMPs in their respective countries.*

KEYWORDS: audit software, audit quality, efficiency, effectiveness

INTRODUCTION

Many organizations have embraced information technology in their operations. Some have implemented Enterprise Resource Planning (ERP) systems to integrate all the departments with a paper-less environment. The end result is a straight-through posting of accounting transactions into the ledgers and real-time updating of the General Ledger and anytime extraction of a trial balance and financial statements. Licenced accounting

firms are expected to express an opinion on the financial statements in line with International Standards on Auditing (ISAs). Licenced accounting firms are also required by the regulators to demonstrate compliance with each applicable ISA. The SMPs in East Africa are licensed and regulated by their respective Professional Accountancy Organizations (PAO) which are members of the International Federation of Accountants (IFAC). In terms of East Africa, the accountancy regulators are:

i. National Board of Accountants and Auditors of Tanzania (NBAAT) in 1972;
ii. Institute of Certified Public Accountants of Kenya (ICPAK) in 1978;
iii. Institute of Certified Public Accountants of Uganda (ICPAU) in 1993;
iv. Institute of Certified Public Accountants of Rwanda (iCPAR) in 2008; and
v. Ordre des Professionnels Comptables (OPC); not yet an IFAC member.

Every PAO is expected to meet the seven Statements of Member Obligations (SMOs) set out by the IFAC Board in November 2012. According to IFAC (www.ifac.org), the Board developed the set of SMOs that provide clear benchmarks to current and potential IFAC member bodies, to assist them in ensuring high-quality performance by professional accountants." The seven SMOs are:

1. Quality Assurance;
2. International Education Standards and other pronouncements by the International Accounting Education Standards Board (IAESB);
3. International Standards and other pronouncements by the International Auditing and Assurance Standards Board (IAASB);
4. *Code of Ethics* for Professional Accountants issued by the International Ethics Standards Board for Accountants (IESBA);
5. International Public Sector Accounting Standards and other pronouncements by the International Public Sector Accounting Standards Board (IPSASB);
6. Investigations and Discipline; and
7. International Financial Reporting Standards and other pronouncements by the International Accounting Standards Board (IASB).

With regard to SMO 1 – Quality Assurance, IFAC members are mandated to perform quality reviews of the accounting firms they licence in their respective country jurisdictions. The quality assurance is mandatory for accounting firms that undertake audits of financial statements. The other six SMOs are interlinked with the first one and therefore are equally important. The SMPs form the majority of the licensed accounting firms in each country and have faced challenges with the quality of their audit documentation. Therefore, it is inevitable that SMPs are visited more frequently by their regulator to ensure that any gaps in quality assurance are gradually closed so that the standards of the accountancy profession are upheld.

Scope of the study

The study methodology focused on the smaller and medium size accounting firms drawn from the East African countries of Burundi, Kenya, Rwanda, Tanzania and Uganda. This was a cross-sectional study undertaken during the period of August/September 2020. The Big-4 international firms of EY, Deloitte, KPMG and PwC are advanced in terms of information technology. This study excluded the Big-4.

Statement of the problem

A number of SMPs struggle to attain a high score in the quality assurance reviews undertaken by their regulators. Some of the SMPs have not registered any improvement, especially in the area of audit documentation and audit evidence. In addition, some clients of SMPs have computerised their accounting systems and paper-based audit evidence is ever reducing and expect their auditors to either keep audit fees constant or reduce them. The Covid pandemic that swept the world in the year 2020 has heightened calls for most organizations to embrace information technology. Lastly, a number of SMEs do not have sufficient skills to prepare financial statements that comply with the International Financial Reporting Standards (IFRS) and keeping track of any new IFRS applicable for the financial year. There has been heavy reliance on the SMPs to help their clients prepare IFRS-compliant financial statements.

Research objectives

Firstly, to determine the proportion of SMPs that have adopted audit software in their accounting firms and which tools have been the most common in East Africa. The second objective was to find out the benefits that have accrued to those firms that have adopted audit software. The third objective was to identify the challenges or barriers towards the adoption of the audit software so that any recommendations are guided by the views from the practitioners themselves.

Justification for this study

Research on SMPs in East Africa has started to increase in the past three years. However, there are still many areas that have remained unresearched. One of the areas touches on adoption of audit software by SMPs. The study will help the PAO to better understand the scale of adoption so that policy recommendations can be based on empirical evidence.

LITERATURE REVIEW/THEORETICAL UNDERPINNING

Given the advancements and versatility of information technology, a number of organizations have invested in electronic systems to account for their transactions. Consequently, there has been a proliferation of accounting software ranging from the basic to the advanced ERP systems. Therefore, there is more of digital documentation of sales, purchases, expenses and various journal entries that feed into the General Ledger and eventually the financial statements. The digitalization of the electronic audit evidence and the high quality assurance standards set by the regulators has necessitated SMPs to adopt audit software (Ahmi & Kent, 2013; Bradford et al., 2020; Ghani et al., 2016, 2017; Jaber & Wadi, 2018; R. Widuri et al., 2017; Rindang Widuri et al., 2016)

The large volume of accounting transactions and the pressure to complete the audit within tight deadlines have made it imperative for SMPs to adopt Computer Assisted Audit Techniques (CAATs). Audit software helps the auditor accomplish tasks much faster and accurately (Braun & Davis, 2003; Sayana & CISA, 2003). These techniques enable the auditor to detect misstatements in the financial statements and if the whole population of transactions can be covered using CAATs, then the extent of misstatement can be determined more accurately. A number of SMPs struggle with insufficient

manpower (audit staff) and automation of audit tasks using audit software can enable the firm to meet the audit objectives within the limited audit fee budget. Most of the SMPs go for the Generalised Audit Software (GAS) since it is not customised and is readily available and affordable. That notwithstanding, there has been a slow adoption of the audit software by SMPs (Ahmi & Kent, 2013; Katamba et al., 2017).

Some studies on the issue of audit software adoption have been undertaken using different frameworks, one of which is the Technology, Organization and Environment (TOE) model. Others include the DeLone and McLean Information Systems Model (D&M model), the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT)(Curtis & Payne, 2008). In Indonesia, in-depth interview with a number of SMPs revealed that the non-availability of auditors with information technology (IT) skills was one of the factors stifling adoption (Jaber & Wadi, 2018). The authors also highlighted the needs of the client and its size as a second factor. Regarding the environmental factors, the support from the professional body and the firm itself impacted the level of adoption of audit software. However, regulatory pressure was cited as one of the reasons for forced adoption of PCAS audit software in Tanzania after quality assurance of sampled audit files revealed several deficiencies (Katamba et al., 2017)

Studies have shown that those SMPs that had adopted audit software had registered some benefits. These include the ability to detect material misstatements, detect systemic control deficiencies and fraud. However, the tendency was to avail the software to IT auditors as opposed to the entire group of auditors (Bradford et al., 2020) and yet only 3% of the audit teams in SMPs in East Africa possess the Certified Information Systems Audit (CISA) qualification (Otete, 2018) . Training of audit teams should focus on the underlying usefulness of audit software to the audit. Unfortunately, most SMPs focus their training on the International Financial Reporting Standards (IFRS), ISAs and less on IT/CAATs training. Only one-third of the SMPs in East Africa dedicated budget and time on IT/CAATs training (Otete, 2018). If an SMPs accumulates a critical mass of auditors using audit software and are satisfied, the higher the perception that GAS contributes positively to the quality of their audits and the overall rating of the firm (Elefterie & Badea, 2016; Handoko et al., 2018; Kim et al., 2016; Pedrosa et al., 2020)

The adoption of GAS varied from firm to firm with the Big-4 and other medium sized firms implementing the tools better than their smaller counterparts. Big-4 used more complex tools like embedded audit modules, parallel simulation and test data (Ghani et al., 2016). It was noted that financial resources of a firm, the partner's expertise and client nature of operations affect speed of adoption of audit software. However, the gap between the Big-4 and SMPs was closing in terms of automation of the audit file and processes (Lowe et al., 2018; Tarek et al., 2017). The slow adoption by other firms is due to the fact that usage of CAATs and audit software is not compulsory, but encouraged. CAATs help the auditor with accumulation of digital audit evidence, sample selection, testing whole population (if necessary) and reduced hours on the audit assignment. Microsoft Excel® remained the most widely used CAAT, followed by ACL and IDEA. Others software noted among firms that audited financial statements of

banks included CaseWare®, SAS, EMS, PCAS, AutoAudit, GAM-X and TeamMate (Katamba et al., 2017)

Some audit clients do not use any accounting software. Therefore, some SMPs consider the use of CAATs to be non-beneficial. To promote the adoption of audit software and CAATs, the effort expectancy must be reduced significantly. This means that the tools must be easy to learn and apply. Secondly, there should be no performance expectancy gap in that the tool should be seen to improve performance at individual auditor level and the firm as a whole. Thirdly, the SMP (especially its partners) should provide a facilitating environment through acquiring the tools, promoting their use in the firm (appreciation and endorsement) by allowing staff to learn the technology (Lal & Bharadwaj, 2016; Mansour, 2016; Razi & Madani, 2013; Serpeninova et al., 2020; Siew et al., 2020)

METHODOLOGY

The population was the list of all professional accounting firms licenced by their respective regulators to offer auditing services to clients. The firms were obtained from the following websites:

Country	Institute name	Website
Burundi	Ordre des Professionnels Comptables du Burundi	www.opc.bi
Kenya	Institute of Certified Public Accountants of Kenya	www.icpak.com
Rwanda	Institute of Certified Public Accountants of Rwanda	www.icparwanda.com
Tanzania	National Board of Accountants and Auditors of Tanzania	www.nbaa-tz.org
Uganda	Institute of Certified Public Accountants of Uganda	www.icpau.co.ug

The study adopted a digital approach in which a questionnaire (**Appendix 2**) comprising seven concise questions were sent out to the firms using the *SurveyMonkey*® tool. This tool utilises email addresses to transmit the survey in which one response is to be received back from each firm via email. Most of the professional accounting firms have provided their email addresses to their regulators and these are public information. Where email addresses were not available on regulator website, the email addresses were extracted from the firm's website, where available.

A total of 700 surveys were sent out via email to the CPA firms in Burundi, Kenya, Rwanda, Tanzania and Uganda. This was considered a reasonable sample to cover at least half of the population of SMPs in the five countries as of August 2020.

RESULTS/FINDINGS

Table 1: Survey response rates per country

Country	SMP population	Sample	Responses	Rate
Burundi	60	40	11	28%
Kenya	740	340	162	48%
Rwanda	60	40	7	18%
Tanzania	210	140	25	18%

Uganda	240	140	46	33%
TOTAL	**1310**	**700**	**251**	**36%**

Source: Researcher's own analysis, arranged alphabetically by country

Table 2: Age of the firms per country

	Responses	**1-5yrs**	**6-10yrs**	**11-15yrs**	**16-20yrs**	**>20yrs**
Country						
Burundi	11	1	4	2	2	2
Kenya	162	66	55	18	9	14
Rwanda	7	0	4	1	2	0
Tanzania	25	9	5	7	0	4
Uganda	46	15	16	8	3	4
TOTAL	**251**	**91**	**84**	**36**	**16**	**24**
	percentage	37%	33%	14%	6%	10%
Audit software	**64**	**14**	**16**	**19**	**6**	**9**
	percentage	15%	19%	53%	38%	38%

Source: Researcher's own analysis, arranged alphabetically by country

Table 3: Usage of audit software per country

Country	**Responses**	**Usage of audit software**	
		Yes	No
Burundi	11	**3**	8
		27%	73%
Kenya	162	**28**	134
		16%	84%
Rwanda	7	**5**	2
		71%	29%
Tanzania	25	**15**	10
		64%	36%
Uganda	46	**13**	33
		30%	70%
TOTAL	**251**	**64**	**187**
	percentage	**25%**	**75%**

Source: Researcher's own analysis, arranged alphabetically by country

Table 4: Common audit software per country

	No of firms	Burundi	Kenya	Rwanda	Tanzania	Uganda
Software						
CaseWare®	19	2	5	3	3	6
Myaudit	18	0	18	0	0	0
PCAS	11	0	0	0	11	0
DraftWorx™	8	0	0	2	0	6
AUDiT*Desktop*™	1	0	0	0	1	0
Audit*Pro*	1	0	1	0	0	0
CCH	1	0	1	0	0	0
Revis*Audit*	1	1	0	0	0	0
TeamMate®	1	0	1	0	0	0
In-house software	3	0	2	0	0	1
TOTAL	**64**	**3**	**28**	**5**	**15**	**13**
		5%	44%	8%	24%	19%

Source: Researcher's own analysis

DISCUSSION

Question 1: Which countries is your firm located in East Africa?

Overall, there were 251 responses received from the SMPs across the five countries, representing a 36% rate from the 700 surveys administered. Kenyan firms comprised the highest proportion (65%) of responses which was consistent with the fact that there are more SMPs in that country compared to the other four countries. This was followed by Uganda with 18% and then Tanzania with 10%. The responses rate for Kenya was the highest at 48% (out of two sampled firms, one responded), second was Uganda at 33% (out of three sampled firms, one responded) and Burundi at 28%.

Question 2: How long has your firm been in operation in the professional accountancy market in East Africa?

37% of the responses were from firms that had been in existence for 1-5 years. This was followed by firms in the 6-10 years' category at 33%. This means that probably many SMPs in East Africa are indeed relatively new and less than a decade old. The firms that were 16 years and older were 16%. There is no direct correlation between age of firm and adoption of audit software. Nonetheless, it was observed that within the older firms, the level of adoption was higher than the younger firms. For example, in the 11-15 years' category, 53% of the firms had adopted audit software. In the categories of 16-10 years and >20 years, 38% had adopted audit software. On the other hand, among the younger firms of <5 years, only 15% had adopted audit software.

Question 3: Does your firm use audit software?

Of the 251 responses received, 25% (one-in-four) firms stated that they are currently using audit software. From the responses received, Rwandan firms recorded the highest adoption of audit software with 71% (seven-in-ten firms). This was followed by

Tanzania in second position with 64% and Uganda in third place with 30%. Kenyan firm had the lowest level of adoption at 16% (about one-in-five firms).

Question 4: What is the name of the audit software your firm uses?

The most common audit software used by the SMPs in East Africa was CaseWare® with 19 out of the 64 firms that had adopted the tools. In second place was *myaudit* with 18 firms. In third place was PCAS with 11 and then DraftWorx™ in fourth place with 8 user firms. It was revealed that *Myaudit* is only in Kenya as it is a software that is recommended by ICPAK and has not proliferated in the other countries. Likewise, PCAS is only used by Tanzanian firms and was also recommended by NBAAT. Only one firm from Burundi reported use of the Revis*Audit* software developed by a French firm. Some 3 firms developed their own in-house software as opposed to the off-the-shelf versions. The names of their in-house software remained confidential. The rest of the firms simply indicated that they had not yet adopted any audit software. However, all firms use Microsoft Excel® and Microsoft Word® to prepare the reports and financial statements. They also use these common tools for working paper documentation and other calculations. There was no mention of other software like ACL and IDEA which are often stand alone and mainly used for data extraction, interrogation and analysis.
The following table is an attempt by the author to direct practitioners to the website of some of the organizations that provide audit software to SMPs in East Africa. Practitioners are encouraged to visit these websites and read more about the product features and pricing and find out if there is a licenced distributor in country.

Table 5: Common audit software per country

Software	Website	Extract from website about the software
AUDiT*Desktop*™	www.auditdesktop.com	A comprehensive solution combining all tools necessary to automate the complete process of planning, conducting and documenting an audit.
Audit*Pro*	www.omnex.com	AuditPro is a web-based module that takes the worry out of managing audits. Audit Pro automates the audit process to provide easy and effective management of multiple audits.
CaseWare®	www.caseware.com	CaseWare® audit solution provides a streamlined approach for managing and conducting audits without affecting quality, with content provided by major accounting bodies.
CCH	www.wolterskluwer.com	Reduce paperwork, improve efficiency and have the confidence in making a profit from audit work.

DraftWorx™	www.draftworx.com	DraftWorx™ is a fully integrated, compliant, automated drafting and working paper suite designed in collaboration with some of the world's greatest accounting and auditing minds.
Myaudit	www.myaudit.icpak.com	Support for IFRS for SMEs and ICPAK Audit Manual. Online collaboration with your entire audit team. Manage your client files efficiently and securely from a central online database. Easily manage your team members' roles and permissions while auditing.
PCAS	www.library.croneri.co.uk	The Private Company Audit System enables you to efficiently conduct an audit that is compliant with the International Standards on Auditing.
Revis*Audit*	www.revisaudit.fr	Discover the many features of RevisAudit Premium, your audit software created to simplify your statutory audit assignments.
TeamMate	www.wolterskluwer.com	For auditors who are challenged to improve audit productivity while delivering strategic insights, TeamMate provides expert solutions, delivered with premium professional services, to auditors around the globe and in every industry.

Source: Researcher's own analysis, extracted from respective websites as of 4 September 2020

Regarding the adoption of any audit software, the SMPs are encouraged to inquire from their counterparts in their respective countries, especially taking account the popularity of the audit software in your market. This enables a firm to get hands-on experience from a colleague before making a decision. Indeed, majority of the software is developed in Europe and some vendors may not have authorised distributors or representatives in East Africa. Nonetheless, with technology advancements, client support could be readily available online via chat boxes and video conferencing.

Question 5: What benefits has your firm gained from using audit software?

As indicated, a total of 64 firms out of 251 had adopted audit software. It was important to find out what benefits they had accrued. The following table captures the comments from the firms:

Table 6:

	Extract from qualitative comments to the survey			
Common themes	i.	Improved audit quality	xi.	Audit risk minimised
	ii.	Audit project efficiencies	xii.	Digital working papers
	iii.	IFRS complaint accounts	xiii.	Enables working from home
	iv.	Better audit planning	xiv.	Higher degree of accuracy
	v.	Integrated audit evidence	xv.	Digital retention of audit work
	vi.	ISCQ1 compliance	xvi.	Easy for regulator review
	vii.	Team collaboration	xvii.	Better due diligence
	viii.	Automated management letters	xviii.	Uniformity within the firm
	ix.	Structured audit in line with ISAs	xix.	Lean audit workforce
	x.	Standardised audit programmes	xx.	Professionalisation of firm

Source: Researcher's own qualitative analysis

Discussion:
There is no doubt that firms that have adopted audit software have gained some benefits. The main advantage is the reduced paperwork (which is environmentally friendly) but while complying with the ISAs and producing higher quality report and IFRS compliant financial statements. As seen from the **Appendix 1**, there are 38 ISAs starting from ISA 200 to ISA 810 and the audit software would enable the audit team to ensure that each of them has been taken into consideration. This would be inefficient using manual checklists.

One of the important standards is ISA 230 – Audit documentation. The SMP must demonstrate that all the steps in an audit of financial statements are documented, reviewed and signed off by team members based on their respective roles. The other is ISA 500 – Audit evidence. In a paper file environment, the sheer volume of client documentation will make audit evidence untenable. Given that nowadays, the required audit evidence is digital, audit software enables the SMPs to accumulate and store digital audit evidence in a manner that enable easy review and sign off by audit seniors, managers and partner. In addition, the digital audit evidence enables the regulators conduct an efficient quality assurance on a sample of the firm's audit files.

Question 6: What challenges has your firm encountered while using audit software?

The study also aimed to find out what challenges the firms faced in adoption of audit software. The current users may be facing challenges while some firms may have abandoned audit software and no longer using any.

Table 7:

	Extract from qualitative comments to the survey			
Common themes	i.	High cost of the software	xi.	Complexity of the software
	ii.	Lack of timely vendor support	xii.	European vendor/publisher
	iii.	Unstable and high cost of internet	xiii.	Resistance by some auditors
	iv.	Costs exceed the benefits	xiv.	Unsuitable for local entities
	v.	Lack of user friendliness	xv.	Limited customizations
	vi.	Lengthy learning curve	xvi.	Manipulation offline on Excel
	vii.	Challenge for first time users	xvii.	Manual data from some clients
	viii.	High cost of training the staff	xviii.	High staff turnover
	ix.	Software bugs and errors	xix.	Clients paying low fees
	x.	Useful for large listed companies	xx.	Inflexible chart of accounts

Source: Researcher's own qualitative analysis

Discussion:
The majority of the audit software is bought off-the-shelf from vendors based outside East Africa. The only exception is the *Myaudit* audit software developed by ICPAK and mainly used by the Kenyan firms. Consequently, majority of firms that had not adopted audit software sighted costs as one of the major impediments. Typically, the audit software is charged per user licence. The more staff the firm has, the more licences it will require. The SMPs are encouraged to seek a quote from three of the most common vendors and budget for the acquisition in a phased manner. An SMP can seek the services of another SMP that has hands-on experience on the audit software to train their staff. This ensures that the unique situation of serving SMEs is taken into consideration in the training and could be at lower cost. It is understandable that SMPs have low budgets for training and developing staff with an average of less than USD 2000 per annum. In addition, average staff remuneration for SMPs in East Africa was about 40% of revenue (Otete, 2019). To address the challenges, an SMP can gradually develop an in-house expert (among the auditors) to help colleagues in trouble shooting the audit software and customization of audit reports and financial statements.

Question 7: What are your suggestions for increased adoption of audit software by SMPs in East Africa?

Table 8:

	Extract from qualitative comments to the survey			
Common themes	i.	Compel all firms to use software	xi.	Vendors should market widely
	ii.	Lower the cost of software	xii.	Both online and offline mode
	iii.	Home-grown software	xiii.	In-country vendor representative
	iv.	Regulator to provide subsidy	xiv.	Vendors to provide online support
	v.	Firms can collaborate and share		
	vi.	More IT training for staff		
	vii.	More versatile software for firms		
	viii.	Customized for African firms		
	ix.	User friendly software		
	x.	Buy-in by all firms		

Source: Researcher's own qualitative analysis

Discussion:
SMPs cannot afford high investment in computer servers, hence the desktop or cloud version of any audit software would be most suitable. The accountancy regulators have observed the deficiencies in the documentation in SMP audit files. One suggestion is for regulators to make it mandatory for all firms to adopt audit software given that laptops are now readily available. The second suggestion is the development of home-grown software to reduce on reliance on vendors from developed countries.

Implications to Research and Practice
Information technology is an enabler of business, of which an SMP is no exception. The respective Professional Accountancy Organizations in East Africa can assist their members, especially the SMPs to gradually improve the quality of their compliance with SMO 1 – Quality Assurance. ICPAK has already started the journey through the development of a home-grown audit software. ICPAU has promised the provide SMPs with a model audit file before automating the same.

CONCLUSION

SMPs are encouraged to adopt audit software which undoubtedly improve their effectiveness and efficiency. The SMPs should set aside a suitable budget for the audit software, training and internet connectivity. Some of the SMPs can start with one or two licenses and then scale up to provide each and every auditor with his/her license in a couple of years.

Future Research
After a 2-year period, further research can include an in-depth interview with a sample of firms that responded to determine the influence of audit software or lack thereof on their competitiveness among fellow SMPs in their respective countries. That research will include examining the constraints that have been pointed out by the users.

REFERENCES

Ahmi, A., & Kent, S. (2013). The utilisation of generalized audit software (GAS) by external auditors. *Managerial Auditing Journal*.

Bradford, M., Henderson, D., Baxter, R. J., & Navarro, P. (2020). Using generalized audit software to detect material misstatements, control deficiencies and fraud. *Managerial Auditing Journal*. https://doi.org/10.1108/MAJ-05-2019-2277

Braun, R. L., & Davis, H. E. (2003). Computer-assisted audit tools and techniques: analysis and perspectives. *Managerial Auditing Journal*. https://doi.org/10.1108/02686900310500488

Curtis, M. B., & Payne, E. A. (2008). An examination of contextual factors and individual characteristics affecting technology implementation decisions in auditing. *International Journal of Accounting Information Systems*, *9*(2), 104–121. https://doi.org/10.1016/j.accinf.2007.10.002

Elefterie, L., & Badea, G. (2016). The impact of information technology on the audit process. *Economics, Management and Financial Markets*, *11*(1), 303.

Ghani, R., Ismail, N. A., & Saidin, S. Z. (2016). *Adoption of computer-assisted audit*

tools and techniques (CAATTs): an exploratory study in audit firms.

Ghani, R., Rosli, K., Ismail, N. A., & Saidin, S. Z. (2017). Application of Computer-Assisted Audit Tools and Techniques (CAATTs) in Audit Firms. *Journal of Advanced Research in Business and Management Studies*, *1*(1), 67–74.

Handoko, B., Ariyanto, S., & Warganegara, D. (2018). Perception of financial auditor on usage of computer assisted audit techniques. *Proceedings - 3rd International Conference on Computational Intelligence and Applications, ICCIA 2018*. https://doi.org/10.1109/ICCIA.2018.00052

Jaber, R. J., & Wadi, R. M. A. (2018). Auditors' usage of computer-assisted audit techniques (caats): Challenges and opportunities. *Conference on E-Business, e-Services and e-Society*, 365–375.

Katamba, B., Asha, Yee Seow Voon, A., Shi Min, H., & Vonn Seow, H. (2017). Information Systems Utilisation by External Auditors in Tanzania. *Review of Integrative Business and Economics Research*, *6*(4), 377. http://buscompress.com/journal-home.html

Kim, H.-J., Kotb, A., & Eldaly, M. K. (2016). The use of generalized audit software by Egyptian external auditors. *Journal of Applied Accounting Research*.

Lal, P., & Bharadwaj, S. S. (2016). Understanding the impact of cloud-based services adoption on organizational flexibility. *Journal of Enterprise Information Management*. https://doi.org/10.1108/JEIM-04-2015-0028

Lowe, D. J., Bierstaker, J. L., Janvrin, D. J., & Jenkins, J. G. (2018). Information technology in an audit context: have the big 4 lost their advantage? *Journal of Information Systems*, *32*(1), 87–107. https://doi.org/10.2308/isys-51794

Mansour, E. M. (2016). Factors Affecting the Adoption of Computer Assisted Audit Techniques in Audit Process: Findings from Jordan. *Business and Economic Research*, *6*(1), 248. https://doi.org/10.5296/ber.v6i1.8996

Otete, A. (2019). *The influence of human capital strategies on the competitiveness of small and medium-sized practices in East Africa* (Issue August). Swiss School of Management.

Otete, A. R. (2018). The Influence of Human Capital Development Strategies on Competitiveness of Small and Medium-Sized Practices in Uganda. *European Journal of Business and Management*, *10*(20).

Pedrosa, I., Costa, C. J., & Aparicio, M. (2020). Determinants adoption of computer-assisted auditing tools (CAATs). *Cognition, Technology and Work*, *22*(3), 565–583. https://doi.org/10.1007/s10111-019-00581-4

Razi, M. A., & Madani, H. H. (2013). An analysis of attributes that impact adoption of audit software. *International Journal of Accounting & Information Management*. https://doi.org/10.1108/18347641311312320

Sayana, S. A., & CISA, C. (2003). Using CAATs to support IS audit. *Information Systems Control Journal*, *1*, 21–23.

Serpeninova, Y., Makarenko, S., & Litvinova, M. (2020). Computer-assisted audit techniques: classification and implementation by auditor. *Public Policy and Accounting*, *1*(1), 44–49. https://doi.org/10.26642/ppa-2020-1-44-49

Siew, E.-G., Rosli, K., & Yeow, P. H. P. (2020). Organizational and environmental influences in the adoption of computer-assisted audit tools and techniques (CAATTs) by audit firms in Malaysia. *International Journal of Accounting Information Systems*, *36*, 100445. https://doi.org/10.1016/j.accinf.2019.100445

Tarek, M., Mohamed, E., Hussain, M., & Basuony, M. (2017). The implication of information technology on the audit profession in developing country: Extent of use and perceived importance. *International Journal of Accounting and Information Management*, *25*(2). https://doi.org/10.1108/IJAIM-03-2016-0022

Widuri, R., Sari, N., Wicaksono, A., Sun, Y., & Sari, S. (2017). *Perception of internal auditor on the use of Generalized Audit Software*. https://doi.org/10.1109/ICRIIS.2017.8002524

Widuri, Rindang, O'Connell, B., & Yapa, P. W. S. (2016). Adopting generalized audit software: an Indonesian perspective. *Managerial Auditing Journal*. https://doi.org/10.1108/MAJ-10-2015-1247

APPRECIATION

This study was successfully accomplished through co-operation from the sampled accounting firms from Burundi, Kenya, Rwanda, Tanzania and Uganda. We hope that they will find the study findings useful and wish them success in growing their practices.

APPENDIX 1 – List of International Standards on Auditing

Standard	Title
ISA 200	Overall objectives of the independent auditor and the conduct of an audit in accordance with International Standards on Auditing
ISA 210	Agreeing the terms of audit engagements
ISA 220	Quality control for an audit of financial statements
ISA 230	Audit documentation
ISA 240	The auditor's responsibilities relating to fraud in an audit of financial statements
ISA 250	Consideration of laws and regulations in an audit of financial statements
ISA 260	Communication with those charged with Governance
ISA 265	Communicating deficiencies in internal control to those charged with Governance and management
ISA 299	Responsibility of joint auditors
ISA 300	Planning an audit of financial statements
ISA 315	Identifying and assessing the risks of material misstatement through understanding the entity and its environment
ISA 320	Materiality in planning and performing an audit
ISA 330	The auditor's responses to assessed risks
ISA 402	Audit considerations relating to an entity using a service organization
ISA 450	Evaluation of misstatements identified during the audit
ISA 500	Audit evidence
ISA 501	Audit evidence – additional considerations for specific items
ISA 505	External confirmations
ISA 510	Initial Engagements - opening balances

ISA 520	Analytical procedures
ISA 530	Audit sampling and other means of testing
ISA 540	Auditing accounting estimates, including fair value accounting estimates, and related disclosures
ISA 550	Related parties
ISA 560	Subsequent events
ISA 570	Going concern
ISA 580	Written representations
ISA 600	Special considerations - audits of Group financial statements (including the work of component auditors)
ISA 610	Using the work of internal auditors
ISA 620	Using the work of an auditor's expert
ISA 700	Forming an opinion and reporting on financial statements
ISA 701	Communicating Key Audit Matters in the independent auditor's report
ISA 705	Modifications to the opinion in the independent auditor's report
ISA 706	Emphasis of Matter paragraphs and Other Matter paragraphs in the independent auditor's report
ISA 710	Comparative information - corresponding figures and comparative financial statements
ISA 720	The auditor's responsibilities relating to Other Information in documents containing audited financial statements
ISA 800	Special considerations - audits of financial statements prepared in accordance with Special Purpose frameworks
ISA 805	Special considerations - audits of single financial statements and specific elements, accounts or items of a financial statement
ISA 810	Engagements to report on summary financial statements
ISQC1	Quality Controls for firms that perform audits and reviews of financial statements, and other assurance and related services engagements.

Source: www.ifac.org
As of 2020

APPENDIX 2 – Questionnaire which administered to accounting firms
Delivered using *SurveyMonkey*®

August 2020

Dear CPA

The Covid-19 pandemic led to slow down client activities as well as the audits of their books. Small and Medium-sized Practices (SMPs) in Burundi, Kenya, Rwanda, Tanzania and Uganda are now embracing audit software technologies for their firms. Audit of financial statements are conducted in accordance with International Standards on Auditing (ISA 200-810) in addition to the International Standard on Quality Control (ISQC1) and software to automate these activities have become available on the market.

This brief survey of 7 questions will take you about 15-30 minutes. Your decision to participate is entirely voluntary. Your views are very important to this research. Your

responses will be treated in strict confidence and used for academic purposes only. The identity of the firm and respondent will remain anonymous and the analysis of data will be in aggregate and not individual responses. Your email address was obtained from your Institute or your firm's website.

Thank you

CPA Dr. Albert Richards Otete +256772703444
CPAK 2390, CPAU 131, CPAR 389, ACPAT 3499
Doctor of Business Administration
Member of Education and Research Committee, ICPAU
Independent researcher and practitioner since 2013
In 2019, completed book titled "*Human capital and competitiveness of small and medium-sized practices in East Africa"*

1. Which countries is your firm located in East Africa?
2. How long has your firm been in operation in the professional accountancy market in East Africa?
3. Does your firm use audit software?
4. What is the name of the audit software your firm uses?
5. What benefits has your firm gained from using audit software?
6. What challenges has your firm encountered while using audit software?
7. What are your suggestions for increased adoption of audit software by SMPs in East Africa?