

IMPLEMENTATION CONTINUOUS INTERNAL AUDIT: INDONESIA'S PERSPECTIVES

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ABSTRACT

New technologies are changing the way knowledge is managed, requiring inventive knowledge management systems. This study aims to analyse the factors that influence implementation continuous internal audit in Indonesia. This study uses a quantitative method with the unit analysis of internal auditor that working on companies listed on the Indonesia Stock Exchange. The convenience sampling technique was applied. Data was collected using a questionnaire, distributed to respondents using a google form. There were 55 respondent that fill out the questionnaire. The data was processed using Smart-PLS. The result shows that virtual team building has no effect on implementation of continuous audit internal, remote audit has no effect on implementation of continuous audit internal, and investment in audit technology has no effect on implementation of continuous audit internal, while action against cyberattacks variables affect implementation of continuous audit internal, quality assurance affects implementation of continuous audit internal and big data analytics affects implementation of continuous audit internal. The readiness of auditors in increasingly rapid technological advances can even pose risks that can occur to auditors due to the lack of advanced technological knowledge, thus allowing fraud to occur easily, so auditors are required to quickly adapt and change the paradigm to this trend change.

Keywords: Continuous Internal Audit; Virtual Team, Remote Audit, Cyber Attack; Big Data

INTRODUCTION

As the complexity of the global market increases, interrelated risks multiply, increasing the need for timely and accurate audit procedures (Beasley et al., 2005). New technologies are changing the way knowledge is managed, requiring inventive knowledge management systems (Santoro et al., 2018). Along with internet of things such as artificial intelligence, blockchain, big data and cloud computing, the world of audit need to have revolution through development continuous internal audit.

Cybersecurity harms the reputation as well as operational and financial stability of the organization. The need for advanced data protection creates many new audit challenges. The lack of appropriate skills among employees and executives makes the situation worse. Training courses that focus on the use of new technologies, the construction and management of virtual teams as measurements of cybercrime prevention should be a large part of the contemporary business framework (Lin et al., 2019).

Continuous examination promotes real-time control and provides financial information. The integrity of information can be evaluated at some point and constantly verified to avoid errors and fraudulent activity. However, the evaluation time frame largely depends on the frequency of accounting information system updates, which can be deficient due to budget constraints (Lois et al., 2017; Flowerday et al., 2006).

As suggested by Anderson et al. (2012), greater use of audit technology signifies a strong commitment to the quality of internal audits. So, to better meet the ever-changing needs of their organizations, the internal audit function can increase the use of their audit technology in audit performance. Today, the utilization of Big Data is changing the way businesses are run to be more agile, customer-oriented, and effective (Reinsel et al., 2012), also in the audit environment. Some studies highlight that big data analytics techniques have the potential to change the way financial statement audits are conducted, making them more effectively efficient and effective (Arnold, 2018; Gepp et al., 2017; Krahel and Titera, 2015; Zhang et al., 2015). Research on ongoing examination is scarce and available research tends to revolve around Accounting Information Systems and Intelligent Systems to detect financial statement fraud. Some studies highlight that big data analytics techniques have the potential to change the way financial statement audits are conducted, making them more effectively efficient and effective (Arnold, 2018; Gepp et al., 2018; Krahel and Titera, 2015; Zhang et al., 2015).

The novelty that we presented in this study is the use of big data analytics variables that have never been associated with the implementation of continuous internal audit. Previous researchers also suggested to conducting further research on big data analytics on continuous internal audit.

LITERATURE REVIEW

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was first developed by Davis (1986). TAM model modification was made by Venkantesh (2002) by adding variable trust with the title: Trust enhanced Technology Acceptance Model, which examines the relationship between TAM and trust variables. Another TAM modification is the Trust and Risk in Technology Acceptance Model (TRITAM) which uses trust and risk variables alongside TAM variables (Lui and Jamieson, 2003). The Technology Acceptance Model (TAM) developed by Davis (1989) is a successful and highly acceptable model for predicting acceptance of a newly applied technology. TAM is one of the most important theoretical contributions to the acceptance and use of an information system.

Planned Behaviour Theory

Planned behavior theory explains that attitudes to behavior are an important point that can predict an action, although it is necessary to consider a person's attitude in testing subjective norms and measuring control of the person's perceptual behavior. If there is a positive attitude, support from people around and there is a perception of ease because there are no obstacles to behave

then one's intention to behave will be higher (Ajzen, 2005). Someone who has a positive attitude on stock investing, has the support of people around him and there is a perception of ease because there are no obstacles to investing in stocks then one's intention to invest in stocks will be higher.

Virtual team building and implementation of continuous internal audits

The ubiquitous use of accounting information systems has made it a prerequisite for auditing companies to strengthen the technical and analytical skills of their employees, as well as to develop specialized teams capable of assessing the effectiveness of IT (Vasarhelyi and Romero, 2014; Issa et al., 2016; Lois et al., 2017). Virtual project teams are cost-effective, but their management requires skills beyond and above those involved in a co-located project team (Linnet et al., 2019). It is important to raise the standard of business processes and employee skills according to the formation of high-performance virtual project teams with existing resources. Teeter et al. (2010) argue that the formation of virtual teams is an important technological breakthrough for remote interaction because they coordinate control activities between auditors at the audit site and remote audit leader (Oussii and Boulila Taktak, 2018). However, as Alles et al. (2002) stated, one of the main reasons behind the low adoption rate related to continuous auditing is the high cost of implementation. Based on this, the first hypothesis is determined as follows:

H1: The virtual team building has a positive effect on the implementation of continuous internal audit.

Remote audit and implementation of continuous internal audit

The use of modern and specialized software can generally shorten the time required for internal audits. In a subsequent study, Banker et al. (2002) argued that the adoption of information technology increases corporate productivity at the individual and collective levels by streamlining audit procedures. Shaykh (2005) showed that the systematic application of technology increases audit efficiency and increases the productivity of internal auditors while reducing audit time. Teeter et al. (2010) note that the application of technology to remote auditing facilitates the reorganization of internal audit procedures by allowing staff to work virtually. Fast processing and transmission of data from companies to auditors reduces costs and improves performance (Oussii and Boulila Taktak, 2018). Based on this, the second hypothesis is determined as follows:

H2: Remote audit positively affects the implementation of continuous internal audit.

Action against cyberattacks and the implementation of continuous internal audit

As technological innovation evolves, so does the risk of data theft and service disruption, for example, Amin and Muhammad (2016) explore auditors' perceptions within Egypt of the quality challenges of internet-reported financial information, suggesting that ongoing audits can offset the challenges associated with Internet Financial Reporting. Most banks are willing to invest in technology to mitigate cyber threats, defining enhanced cybersecurity as a top business priority. Chan et al. (2018), by studying various modes of continuous auditing, concluded that the methodology requires technological innovation in order to function seamlessly with traditional internal audit practices. The results show that through continuous auditing, financial data can be continuously verified to avoid errors and fraud. Moorthy et al. (2011) argue that it is imperative for today's auditors to acquire the professional skills necessary to respond better and more effectively to their work. They also report that emerging technologies will change business audit techniques and approaches that require a clear understanding by auditors so that they can explain the impact of these changes to company managers and other interested parties. Important work has also been done by Henderson et al. (2013), within the same research framework as Moorthy et al. (2011), highlighting the role of knowledge in information technology for accurate audit assessments. In short, it can be said that knowledge, skills, and technology need to be optimized to adequately defend organizations from cyberattacks. Based on this, the third hypothesis is determined as follows:

H3: Action against cyberattacks positively affects the implementation of continuous internal audit.

Investment in audit technology and implementation of continuous internal audit

As technology continues to evolve and impact all aspects of the organization, the IAF must also evolve. Internal auditors must learn new competencies and change the way they do their jobs (Anderson et al., 2017). As suggested by Anderson et al. (2012), greater use of audit technology signifies a strong commitment to the quality of internal audits. So, to better meet the ever-changing needs of their organizations, the IAF can increase the use of their audit technology in audit performance. By utilizing technology, the function will realize the advantages of proficiency in the delivery of internal audits and provide additional insights to the organization, as well as improve the credibility and relevance of function values (KPMG, 2017). This research is motivated by findings from Deloitte's 2016 Global Audit Chief Executive Survey showing that the IAF needs to strengthen their information technology (IT) tools and skills to meet the expectations of their stakeholders and improve the impact of their functions on organizations (Deloitte, 2016). Based on this, the fourth hypothesis is determined as follows:

H4: Investment in audit technology positively affects the implementation of continuous internal audit.

Quality assurance and implementation of continuous internal audit

The 1300 internal audit attribute standard indicates that "CAE should develop and maintain a quality assurance and improvement program covering all aspects of internal audit activities" (IIA Institute of Internal Auditors, 2017, P. 7). In addition, the quality assurance program aims to assess internal auditors' compliance with the International Standards of Internal Audit Professional Practice and Code of Ethics (IIA Institute of Internal Auditors, 2017). Furthermore, continuous monitoring of the performance of internal audit activities (e.g. auditee satisfaction surveys), periodic self-assessments and external independent assessments are highly recommended under IIA Standard 1300. Previous empirical studies provide evidence of a positive relationship between the use of quality assurance techniques and the quality of financial reporting. The extent to which the IAF incorporates quality assurance techniques into fieldwork helps prevent material shortages from occurring. In a related vein, Sarens et al. (2012) found that the existence of existing quality assurance and improvement programs was positively related to the IAF's role in corporate governance. In Malaysia, Johl et al. (2013) reported that the use of quality assurance techniques reduces opportunistic profit management. Pizzini et al (2015) findings show that the use of quality assurance practices is significantly

associated with reduced audit delays. This argument shows that the use of quality assurance practices is positively related to the quality of internal control. Based on this, the fifth hypothesis is determined as follows:

H5: Quality assurance has a positive effect on the implementation of continuous internal audit.

Big data analytics and ongoing internal audit implementation

Utilizing a literature review, we know that the utilization of BDA in the audit process depends on the success of the legitimacy process that first occurs in the audit professional environment. Studies show that any change in the audit approach must first be authorized by the practitioner himself who must institute the old approach and support audit innovation within their professional service companies and among other practitioners working in the same audit environment (Suddaby et al., 2017). Based on this, the sixth hypothesis is determined as follows:

H6: Big data analytics has a positive effect on the implementation of continuous internal audit.

RESEARCH METHOD

This research is quantitative research. The unit of analysis is the individual (internal auditor). The scale used is the likert scale (1 - 6). In this study, the dependent variabel is the implementation of continuous internal audit (ICIA), which is a stage in the evolution resulting from the integration of traditional audit procedures and new technologies (Lois et. al., 2020). The implementation of continuous internal examination is measured by the duration of implementation of continuous internal examination (Lois et. al., 2020). There are six independent variable in this study such as:

- Virtual team building (PTV) is an important technological breakthrough for remote interaction as they coordinate control activities between auditors present at the audit site and remote audit leaders (Lois et. al., 2020). Virtual team formation (PTV) is measured by participation rate (Lois et. al., 2020).
- Remote audit (PJJ) is the use of modern and specialized software in general shortening the time required for internal audits (Lois et. al., 2020). Remote audit (PJJ) is measured by geographic location (Lois et. al., 2020).
- Action against cyberattacks (SC) is when technological innovation develops, as well as the risk of theft and disruption of service data (Lois et. al., 2020). Action against cyberattacks (SC) is measured by protection levels (Lois et. al., 2020).
- Investment in audit technology (ITA) is an investment made by the company in the audit department (Garven and Scarlata, 2020). Investment in audit technology (ITA) is measured by the use of IT tools, the use of IT techniques and internal audit support (Garven and Scarlata, 2020).
- Quality assurance (JK) is how the level of management risk regarding assurance, audit program quality, internal assessment and external assessment (Oussii and Taktak, 2018; Garven and Scarlata, 2020). Quality assurance (JK) is measured by the level of quality assurance (Garven and Scarlata, 2020).
- Big data analytics (BDA) is analytics that includes a variety of tools that can contribute to any phase of process auditing. Regarding the pre-engagement phase, auditors can use text mining and sentiment analysis techniques to examine press releases and social networks to assess the reputation of potential clients and their key people (Santis and D'Onza, 2020). Big data analytics (BDA) is measured by mining tools, analytic tools, BDA programs and BDA skills (Santis and D'Onza, 2020).

The population of this study is internal auditors who working on companies listed on the Indonesia Stock Exchange. The sampling technique used is convenience sampling technique. This type of data is primary data in the form of questionnaires, while the collection method is through google form. Researchers create questionnaires based on indicators presented by previous researchers, then distribute questionnaires to internal auditors working in companies listed on the Indonesia Stock Exchange. The sampling technique used is convenience sampling because it is more effective and efficient in its application. We do distribution for questionnaire for one month start from August 15 to October 14, 2021.

The analysis technique used is multiple regression analysis. Characteristics of respondents such as age, gender, length of work and field of business. A validity test is a test for the accuracy or accuracy of an instrument in measurement. Reliability test is a test to find out the consistency of the measuring instrument, whether the measuring device used is reliable and remains consistent if the measurement is repeated. The t test is a test to test how the effect of each free variable individually on the bound variable. The coefficient of determination is to test how much ability all free variables are in explaining the variance of their bound variables.

RESULTS AND DISCUSSIONS

Result

Table 1. Respondent Profile

	Respondent	%		Respondent	%
Gender			Work Experience		
Male	27	49,1%	5-10 years	25	45,5%
Female	28	50,9%	11-15 years	20	36,4%
Age			16-20 years	7	12,7%
30-35 years	33	60%	> 20 years	3	5,5%
36-40 years	17	30,9%	Current Education		
41-45 years	5	9,1%	Bachelor Degree	28	50,9%
> 45 years	0	0%	Master Degree	23	41,8%
Business Domicile			Doctoral Degree	4	7,3%

Jakarta	40	72,7%
Outside Jakarta	15	27,3%

Source: Own Elaboration

According to table 1, the respondents based on gender can be seen at 49.1% for male and 50.9% for female and respondents with the most ages are between 30-35 years old at 60% followed by respondents aged 36-40 years at 30.9%. Out of a total of 55 respondents there were 4 people who had a doctoral education background and 23 masters and 28 undergraduates. For respondents who are on average in Jakarta of 40 people and the remaining 15 people are outside Jakarta. The most work experience with a range between 5-10 years is 25 respondents followed by a range of 11-15 years by 20 people, the rest over 16 years there are even 3 respondents who already have more than 20 years of work experience. It can be seen from the work experience that respondents have been quite independent because they have participated in an organization or company for an average of 5-15 years.

Table 2. Validity and Reliability

Variable	Cronbach's Alpha	Composite Reliability	AVE	Items	Outer Loadings	VIF
PTV	0.880	0.943	0.892	PTV.1	0.946	2.605
				PTV.2	0.943	2.605
PJJ	0.481	0.781	0.646	PJJ.1	0.911	1.111
				PJJ.2	0.680	1.111
SC	0.861	0.934	0.877	SC.1	0.922	2.332
				SC.2	0.950	2.332
ITA	0.915	0.959	0.921	ITA.1	0.959	3.451
				ITA.2	0.960	3.451
JK	0.800	0.909	0.833	JK.1	0.899	1.800
				JK.2	0.926	1.800
BDA	0.924	0.946	0.814	BDA.1	0.882	4.335
				BDA.2	0.916	5.179
				BDA.3	0.914	4.183
				BDA.4	0.896	3.680
ICIA	0.890	0.933	0.823	ICIA.1	0.954	8.541
				ICIA.2	0.948	8.217
				ICIA.3	0.813	1.684

Source: Own Elaboration

Based on table 2, all question items show *outer loading* greater than 0.7 which means all indicator of each question is declared feasible or valid to be used in subsequent analysis because the *outer loading* value overcomes the criteria of 0.7 as quoted by Ghozali (2014) the *outer loading* value more than 0.7 is a convergent *validity* eligible value. In addition to observing the value of cross loading, discriminant validity can also be known through other methods, namely by looking at the average variant extracted (AVE) value for each indicator required the value must be > 0.5 for a good model, all question items show an AVE value of more than 0.5 which means all indicators on each question are declared eligible in the *discriminant validity* measurement.

In addition to the validity test, there is also a construct reliability test as measured by composite reliability and cronbach's alpha of the indicator block that measures the construct. Construct is declared reliable if it has a composite reliability value above 0.70 and Cronbach's alpha above 0.60. The output above all constructs has a composite reliability value above 0.70 and Cronbach's alpha above 0.60, so it can be concluded that the construct has good reliability.

Table 3. Direct Effect Test

Variable	Coefficient	T-Statistic	P-Values
PTV → ICIA	-0.166	1.182	0.238
PJJ → ICIA	0.060	0.443	0.658
SC → ICIA	0.206	1.999	0.046
ITA → ICIA	-0.072	0.281	0.779
JK → ICIA	0.354	2.377	0.018
BDA → ICIA	0.639	4.396	0.000

Source: Own Elaboration

In table 3 shows that the PTV variable against ICIA has a coefficient value of -0.166 and t-statistics of 1.182. The probability shows a value greater than 0.05 (0.238), so the first hypothesis is rejected and H0 accepted, then in this study PTV had no effect on ICIA.

Table 3 shows that the variable PJJ against ICIA has a coefficient value of 0.060 and a t-statistic of 0.443. The probability of showing a value greater than 0.05 (0.658), so the second hypothesis was rejected and H0 accepted, then in this study PJJ had no effect on ICIA.

The SC variable against ICIA has a coefficient value of 0.206 and a t-statistic of 1.999. The probability of showing a value smaller than 0.05 (0.046), so the third hypothesis is accepted and H0 is rejected, so in this study SC had an effect on ICIA.

Table 3 shows the ITA variable against ICIA has a coefficient value of -0.072 and a t-statistic of 0.281. The probability of showing a value greater than 0.05 (0.779), so the fourth hypothesis is rejected and H₀ accepted, so in this study ITA had no effect on ICIA.

In table 3, the variable JK against ICIA has a coefficient value of 0.354 and a t-statistic of 2.377. The probability of showing a value smaller than 0.05 (0.018), so the fifth hypothesis is accepted and H₀ is rejected, so in this study JK had an effect on ICIA.

In table 3, it shows that the variable BDA against ICIA has a coefficient value of 0.639 and a t-statistic of 4.396. The probability of showing a value smaller than 0.05 (0.000), so the sixth hypothesis is accepted and H₀ is rejected, so in this study BDA had an effect on ICIA.

R-Squared value of 0.807 so that the magnitude of the effect of in determination is 80.7%. This suggests that the variation of the bound variables that can be explained by the free variable is 80.7% and the remaining 19.3% is explained by other variables not studied in this journal.

Discussion

Teeter et al. (2010) argue that the formation of virtual teams is an important technological breakthrough for remote interaction because they coordinate control activities between auditors at the audit site and remote audit leaders (Oussii and Boulila Taktak, 2015; Oussii and Boulila Taktak, 2018). However, as Alles et al. (2002) stated, one of the main reasons behind the low adoption rate related to continuous auditing is the high cost of implementation. In this study the PTV variable has no effect on ICIA, it can be concluded that the existing team of auditors does not yet have the skills in the rapid development of IT, most likely due to the lack of training provided by their organization.

In this study PJJ had no effect on ICIA. It can be concluded that remote audit can reduce personal interaction directly so that it can open the opportunity for fraud, for example, to convey documents that are it has been falsified and the removal of relevant information will increase. Although in research Abdul Hamid et al. (1993) showed that the use of modern and specialized software can generally shorten the time required for internal audits. In a subsequent study, Banker et al. (2002) argued that the adoption of information technology increases corporate productivity at the individual and collective levels by streamlining audit procedures. Shaykh (2005) showed that the systematic application of technology increases audit efficiency and increases the productivity of internal auditors while reducing audit time. But not with the results of this study, there may be some obstacles that can occur if the audit is done virtually is the signal where the auditee is located. In areas with poor signal and live video is notable to reach the entire audit site.

SC variables affect ICIA, this indicates that continuous audits promote control and sharing of financial information real-time (or near real-time). The integrity of information can be evaluated at some point and continuously verified to prevent errors and fraudulent activity. However, the evaluation time frame largely depends on the frequency of accounting information system updates, which can become less due to budget constraints (Lois et al., 2017). A robust internal audit system can improve audit procedures to prevent cyberattacks and risk-qualified prevention.

Investment in audit technology has no effect on ICIA, these results are not in line with opinions on the utilization of technology, the function will realize the advantages of proficiency in the delivery of internal audits and provide additional insights to the organization, as well as increase the credibility and relevance of the value of the function (KPMG, 2017). It can be concluded that investments in audit technology must have high enough capital so that the quality in the technology can be utilized properly and completely validly, so it is still not affected for the continuous of the internal audit.

The results of this study JK affect ICIA, according to Sarens et al. (2012) found that the existence of quality assurance programs and existing improvements are positively related to the role of IAF in corporate governance. In Malaysia, Johl et al. (2013) reported that the use of quality assurance techniques reduces opportunistic profit management. Pizzini et al (2015) findings show that the use of quality assurance practices is significantly associated with reduced audit delays. It also illustrates that quality assurance in the continuous of internal audits in the form of audit programs, internal assessment and external assessment, signifies good internal control in an organization.

Big data analytics affect the ICIA this shows that the BDA technique has the potential to change the way auditing of financial statements is conducted, making it more effectively efficient and effective (Arnold, 2018; Gepp et al., 2018; Krahel and Titera, 2015; Zhang et al., 2015). Big data implementation requires people who are experts in data analytics, so, many companies outsource from others. The audit profession can also hire a trained and professional in doing big data analytics or even, using a company provider provider of big data analytic services. Big data analytics can be used to identify a client's business patterns and trends, while traditional audit analytics and computer-aided audit techniques can be used to perform more detailed analysis of potential issues, and conventional audit judgment can be used to determine the impact of audit findings on financial reporting.

The findings show that action against cyberattacks, quality assurance and big data analytics have influence to continuous internal audit. Based on these findings, the other country could improve their awareness about cyberattack that might be arise when the auditor did the audit activity. Hence, the auditor needs to rectify their quality assurance. It also need enforcement such as regulation from auditor agency in each country. The auditor agency also could utilize big data analytics as one of audit tools so the audit work will be more effective and efficient.

CONCLUSIONS AND SUGGESTIONS

The conclusion in the study is PTV has no effect on ICIA, PJJ has no effect on ICIA, and ITA has no effect on ICIA, while SC variables affect ICIA, JK affects ICIA and BDA affects ICIA. The readiness of auditors in increasingly rapid technological advances can even pose risks that can occur to auditors due to the lack of advanced technological knowledge, thus allowing fraud to occur easily, so auditors are required to quickly adapt and change the paradigm to this trend change. Suggestions for future research, researchers can add other research variables such as information technology literacy as moderation variables. Researchers can also conduct research on more specific areas.

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Alles, M.G., Kogan, A., & Vasarhelyi, M.A. (2008). Putting Continuous Auditing Theory into Practice: Lessons from Two Pilot Implementations. *J. Inf. Syst.*, 22, 195-214.
- Amin, H.M.G. and Mohamed, E.K.A. (2016), "Auditors' perceptions of the impact of continuous auditing on the quality of Internet reported financial information in Egypt", *Managerial Auditing Journal*, Vol. 31 No. 1, pp. 111-132. <https://doi.org/10.1108/MAJ-01-2014-0989>
- Anderson, U., Christ, M.H., Johnstone, K.M., & Rittenberg, L.E. (2012). A Post-SOX Examination of Factors Associated with the Size of Internal Audit Functions. *Accounting Horizons*, 26, 167-191.
- A. Vasarhelyi, M. and Romero, S. (2014), "Technology in audit engagements: a case study", *Managerial Auditing Journal*, Vol. 29 No. 4, pp. 350-365. <https://doi.org/10.1108/MAJ-06-2013-0881>
- Beasley, M. S., Clune, R., & Hermanson, D. R. (2005). ERM: a status report; A study funded by The IIA Research Foundation reveals how far organizations have come in developing enterprise risk management and internal auditing's role in the process. *Internal Auditor*, 62(1), 67+. <https://link.gale.com/apps/doc/A129977786/AONE?u=anon~19c15f86&sid=googleScholar&xid=fe2651ef>
- Cangemi, M.P. (2016). Views on Internal Audit, Internal Controls, and Internal Audit's Use of Technology. *EDPACS*, 53, 1 - 9.
- Chan, D.Y., Chiu, V., Vasarhelyi, M.A., Byrnes, P.E., Al-Awadhi, A.M., Gullvist, B., Brown-Libur, H.L., & Teeter, R.A. (2018). CONTINUOUS AUDITING: THEORY AND APPLICATION.
- Davis, F.D. (1986) A Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results. Sloan School of Management, Massachusetts Institute of Technology.
- De Santis, F., & D'Onza, G. (2021). Big data and data analytics in auditing: in search of legitimacy. *Meditari Accountancy Research*.
- Flowerday, S., Blundell, A.W., & Solms, R.V. (2006). Continuous auditing technologies and models: A discussion. *Comput. Secur.*, 25, 325-331.
- Garven, S. and Scarlata, A. (2020), "An examination of factors associated with investment in internal auditing technology", *Managerial Auditing Journal*, Vol. 35 No. 7, pp. 955-978. <https://doi.org/10.1108/MAJ-06-2019-2321>
- Gepp, A., Linnenluecke, M.K., O'Neill, T.J., & Smith, T. (2017). Big Data Techniques in Auditing Research and Practice: Current Trends and Future Opportunities. *Research Methods & Methodology in Accounting eJournal*.
- Henderson, D., Gray, W. K., & Booth, L. (2013). Assessment of a reporting radiographer-led discharge system for minor injuries: a prospective audit over 2 years. *Emergency medicine journal: EMJ*, 30(4), 298–302. <https://doi.org/10.1136/emered-2011-200642>
- Issa, H., Sun, T., & Vasarhelyi, M.A. (2016). Research Ideas for Artificial Intelligence in Auditing: The Formalization of Audit and Workforce Supplementation. *Journal of Emerging Technologies in Accounting*, 13, 1-20.
- Krahel, J. P. (2015). Consequences of Big Data and formalization on accounting and auditing standards. *Accounting horizons: a quarterly publication of the American Accounting Association*, 29(2).
- Lin, Q., Verwer, S., Kooij, R.E., & Mathur, A.P. (2019). Using Datasets from Industrial Control Systems for Cyber Security Research and Education. *CRITIS*.
- Lois, P., Tabouratzi, E. and Makrygiannakis, G. (2017), "Accounting Information Systems course: perceptions of accounting and non-accounting students", *EuroMed Journal of Business*, Vol. 12 No. 3, pp. 258-268. <https://doi.org/10.1108/EMJB-11-2016-0032>.
- Moorthy, M.K., Mohamed, A.S., Gopalan, M., & San, L.H. (2011). The impact of information technology on internal auditing. *African Journal of Business Management*, 5, 3523-3539.
- Oussii, A.A. and Boulila Taktak, N. (2018), "The impact of internal audit function characteristics on internal control quality", *Managerial Auditing Journal*, Vol. 33 No. 5, pp. 450-469. <https://doi.org/10.1108/MAJ-06-2017-1579>
- Pizzini, M., Lin, S., & Ziegenfuss, D.E. (2015). The Impact of Internal Audit Function Quality and Contribution on Audit Delay. *Auditing-a Journal of Practice & Theory*, 34, 25-58.
- Santoro, G. & Vrontis, D. & Thrassou, A. & Dezi, L., (2018). The Internet of Things: Building a knowledge management system for open innovation and knowledge management capacity. *Technological Forecasting and Social Change*, Elsevier, vol. 136(C), pages 347-354.
- Sarens, G., Abdolmohammadi, M.J. and Lenz, R. (2012), "Factors associated with the internal audit function's role in corporate governance", *Journal of Applied Accounting Research*, Vol. 13 No. 2, pp. 191-204. <https://doi.org/10.1108/09675421211254876>
- Teeter, R.A., Alles, M.G., & Vasarhelyi, M.A. (2010). Remote Audit: A Research Framework. *Accounting Technology & Information Systems eJournal*.
- Zhang, Y., & Zhao, Y. (2015). Astronomy in the Big Data Era. *Data Science Journal*, 14, 11. DOI: <http://doi.org/10.5334/dsj-2015-01>

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