AUTOMATION OF AUDIT PROCESSES, AND WHAT TO EXPECT IN THE FUTURE

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ABSTRACT

This study attempts to discuss the impact of processes automation in the audit function, as automation is not limited to specific industries, in fact, almost all disciplines are adopting digital strategies partially, or even fully automated processes. Also, this study reviewed some of the most valuable perspectives on the matter in hand, in a form of a deep literature review, followed by a short summary regarding the importance of audit, as well as the audit function in general. Later in the paper, a study conducted by (Betti, Sarens & Poncin, 2021) based on a survey conducted with 82 chief audit executives based in the USA and members of the institute of internal auditors, discussing the relationship between the level of automation in the organizations, and the utilization of data analytics in the auditors firms, while touching on the rates of accuracy and error when digital methods are adopted properly. Eventually the results and conclusion are presented in the end of the study explaining the research results as well as a few recommendations on how organizations need to adopt new cutting-edge technological strategies in order for them to compete and thrive the current market.

Keywords: Audit, Automation, Digital, Data Analysis, Future, RPA

INTRODUCTION

Processes automation can be seen and noticed in almost every discipline and major, whether it's business, engineering, medicine, and industrial fields, so accounting is no different, that's why this paper attempts to discuss the current effect of automating audit process, and what can the auditing services providers, and clients expect in the upcoming years from digitalizing and automating the routinely and non-routinely practices that are usually conducted by auditors, or even artificial intelligence.

Audit cannot be easily contained in one general definition, or one solid clear term, due to the potential controversy that surround this rich concept, in result, a deep literature review contains different viewpoints on the audit processes, and its relationship with different disciplines.

The automation of the business climate and the developing utilization of digital technologies work with the unifying of auditing processes (Zhang, 2019) and the take-up of competitive advantages for associations (McKinsey, 2016). Nonetheless, digitalization likewise brings difficulties and dangers for associations (Cohen & Rozario, 2019). Digitalization is related with significant degrees of unpredictability, vulnerability, intricacy and uncertainty (Moffitt, Rozario & Vasarhelyi, 2018) and initiates arising chances that the audit processes assist with overseeing. Based on such point of view, audit plays a part to contribute to support firms with confronting these arising hazards. Throughout the long term, auditing has advanced to meet the prerequisites of the changing industry climate (Lombardi, Bloch & Vasarhelyi, 2014) and its organizations in counseling exercises is exceptionally bantered in the literature (Alles & Gray, 2020). Furthermore, many studies call attention to the significance of the auditing processes being nearer to strategic dangers (Huang & Vasarhelyi, 2019). The fast growth of digitalization brings up issues about the role of auditing in this evolving climate. As indicated by (PwC, 2018), its capacity ought to advance and incorporate new technologies and digital information. according to this viewpoint, proper audit

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could carry more worth to firms by assisting them with confronting the dangers that comes with digitalization (Coleman et al., 2018) and to switch the upsides of such technologies in their internal audit missions (PwC, 2018). Despite the fact that automation has turned into a basic subject for auditing lately, apparently the auditing processes doesn't generally adjust their exercises and their job to the digitalization of the business climate. Computerized ability has become basic for internal auditors, yet many firms are inadequate with regards to these sorts of abilities (IIA, 2018). Firms actually look for the assistance of external service providers to fill the gap of digital abilities and knowledge in internal audit offices. In the current digitalized setting, the Internal Audit Function (IAF) should construct its exercises around IT and digital difficulties. Moreover, automation additionally addresses a chance for the IAF to develop. Advanced platforms offer different opportunities for the IAF and the auditing processes to work on their method of working. Information analytics are instances of digital tools that the auditors could utilize. Late reports demonstrate that high performing audit providers are utilizing these sorts of technologies. Nonetheless, they additionally demonstrate that internal audit divisions don't utilize new technologies enough, in spite of their adoption in different departments (PwC, 2019). Earlier study has primarily examined the automation of associations outside the review field (Omoteso, 2016). Albeit a new qualitative study by (Betti & Sarens, 2020) investigated how the audit advances in a digitalized setting, and explicitly how its extent of work has developed, its job and the functioning acts of auditors, there is an absence of empirical research on the advancement of the audit activities and practices (Roussy & Perron, 2018). In this way, (Betti & Sarens, 2020) call for additional examination to test the connection between the degree of automation of the association and audit working processes. To resolve these issues, this study attempts to explore how the audit adjusts its exercises and processes according to the association's degree of automation.

LITERATURE REVIEW

In a competitive climate, firms consider digital technologies and the techniques got from them as source of competitive advantage and as a way to build profit edges (AlSharif & Al-Slehat, 2021). Advances, for example, data analytics empower them to automate and work with everyday work (Eilifsen, Kinserdal, Messier & McKee, 2020). Data analytics is characterized as "the utilization of data, IT, statistical analysis, quantitative techniques, and mathematical or computer-based models to assist managers with acquiring further developed understanding with regards to their tasks, and improve, fact-based decisions" (Kogan, Mayhew & Vasarhelyi, 2019). In particular, firms utilize such techniques to dissect enormous, unstructured arrangements of data and to perform progressed analyses (Julia Kokina & Stephen Kozlowski, 2016) that empower them to assess previous occasions and foresee future occasions (Kend & Nguyen, 2020) fully intent on further developing decision-making processes (Michael & Dixon, 2019).

Late reports demonstrate that internal auditors have started to accept new technologies, for example, data analytics, to automate internal audit processes (PwC, 2018,). When discussing data analytics for the audit work, the American Institute of Certified Public Accountants alludes to "the science and specialty of finding and investigating designs, recognizing inconsistencies, and removing other helpful data in information basic or identified with the topic of an audit through analysis, demonstrating, and visualization of planning or playing out the audit" (AICPA, 2017). Albeit the utilization of data analytics is extending in internal audit departments, the IAF actually battles to bridle its maximum capacity (PwC, 2018 & 2019). Digitalization could lead the IAF to incorporate data analytics in its functioning practices, yet IAFs face hindrances in the execution of digital digitalization of firm technologies like the expenses of execution and use, essentially with respect to the digital abilities needed by internal auditors to utilize data analytics technologies (Betti & Sarens, 2020). Nonetheless, the Literature proposes that utilizing this technology could carry

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accuracy and usefulness worth to the audit work (Tang et al., 2017; Wang & Cuthbertson, 2015). Data analytics could, for example, support internal auditors all through their missions during the danger appraisal and testing stages by processing higher volumes of information and performing nonstop auditing (Chambers & Odar, 2015). Such a strategy could work with prescient or prescriptive analyses dependent on verifiable information and give more exact experiences and suggestions (Shanasirova, 2018).

There are various executions of blockchain, and it will probably require some investment before the scholarly, corporate, and technology people group choose a solitary authoritative rendition of this technology, in case they at any point do (Rooney, Aiken & Rooney, 2017). Chedrawi & Howayeck (2018) portray blockchain as "an appropriated Database that keeps a persistently developing rundown of data records that are solidified against tampering and correction, even by administrators of the information store's hubs". In this way, as a decentralized public ledger, blockchain may possibly fill in as a solid auditing information system. Maleh, Shojafar, Alazab & Romdhani (2020) clarify: The major benefit of blockchain technology is that once an exchange is supported by the hubs in the organization, it can't be turned around or re-sequenced. The failure to alter an exchange is fundamental for the blockchain's honesty and guarantees that all gatherings have exact and indistinguishable records. Since blockchain is a disseminated framework, all progressions to a ledger are transparent to every one of the individuals from an organization. Henceforth, auditing transparency is critical, carrying out blockchain might assist with upgrading an organization's competitive advantage, and it ought to positively assist with developing trust between market members (Lee, Fiedler & Mautz, 2018). In blockchain, the transactions verification process isn't overseen midway. Rather, it includes every one of the computers in the organization, so blockchain doesn't experience the ill effects of point of disappointments occasions. Nor would individuals be able to connive to abrogate controls or illegally change or erase official accounting records (Brender, Gauthier, Morin & Salihi, 2018). Organizations that join blockchain into their auditing frameworks thusly may decrease their danger of fraud (Yu, Yan, Yang & Dong, 2019). Utilizing blockchain may likewise mean more transactions can be automated, less information is lost, exchanges can be followed better and clients' necessities all through the cycle can be detected all the more effectively (Gomaa, Gomaa & Stampone, 2019). In any case, the essential and most important distinction between customary databases and blockchain is its clever answer for control by which transactions can't be deleted or changed (Vincent, Skjellum & Medury, 2020). Despite the fact that, for most enterprises, blockchain is as yet a new and not yet grounded technology, the World Economic Forum assesses that, by 2025, essentially 10% of GDP will depend on blockchains. Also, by 2030, blockchains will have made $3.1 trillion in business esteem (Cangemi & Brennan, 2019). It ought to accordingly be obvious to consider that this upset will begin to change the idea of accounting and, thus, crafted by its specialists and scholars (for example Smith & Castonguay, 2020). Thusly, a literature review on the situation with blockchain in accounting is both effective and timely. The experiences gave into this arising technology will have suggestions for the auditing systems some advantageous (Tiron-Tudor, Deliu, Farcane & Dontu, 2021).

Audit

The term audit alludes to a financial statement audit. A financial audit is a true assessment and evaluation of the financial statements of an association to ensure that the financial records are a reasonable and exact portrayal of the exchanges they guarantee to address (Cahan & Sun, 2015). The audit can be directed internally by workers of the association or externally by an outside entity.

The purpose of an audit is to form a view on whether the information presented in the financial report, taken as a whole, reflects the financial position of the organization at a given date.

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When examining a financial report, auditors follow auditing standards set by a government body of the country where the audit process takes place. Once auditors complete their audit, they provide an audit report, explaining what they have done and giving an opinion resulted from their work. And finally, the organization's directors review the financial report (Vasarhelyi & Romero, 2014).

Audit Types

Two of the main types of audits: external audit, and internal audit. Internal audits serve as a managerial method to enhance processes and internal controls. External audits are usually performed by CPA firms and result in an auditor's opinion which is included in the audit final report. The internal and external audit capacities are integral and may have to work intently together, their motivations and spaces of center vary. The Institute of Internal Auditors (IIA) accentuates that the two capacities don't contend or compete; rather, the two of them add to successful governance (Alhababsah, 2019). Internal auditors take a fabulous view on their association's governance, risk, and control frameworks, while external auditors are either stressed over the accuracy of business accounts and the association's financial condition or, in specific ventures, the association's consistency with Laws and rules (Eilifsen, Messier, Glover & Prawitt, 2014). Internal audit intends to take apart and additionally foster hierarchical controls and performance, upgrade and guarantee authoritative worth, while external audit gives a perspective on the association's financial condition and financial reporting risks or evaluate the association's consistency with material government/state or industry-unequivocal rules, laws, and standards and to present a sensible depiction of financial statements or confirmation of regulatory consistence.

The Future of Audit

Albeit most associations are ready to deal with a healthy degree of progress and disturbance, the Covid-19 pandemic shook ordinary business procedure to say the least. Firms all throughout the planet had to prepare themselves, hurrying to set up a generally remote labor force, and react to financial plan cuts, While numerous associations have semi-acclimated to this new typical over the most recent 2 years, these progressions set new assumptions for the universe of audit (De Vincentiis, Carr, Mariani & Ferrara, 2021). Audit capacities are currently entrusted with exploring new dangers welcomed on by the pandemic while limiting business disturbances and satisfying executive needs, all in a socially removed climate. With change comes creativity, and with 2021 practically done, Firms need to plan ahead to get ready for what might be expected of the audit world throughout the impending years. The following are some of the most promising trends to look for in the near upcoming years (Taran, Lazareva & Uzdenova, 2020).

Internal Audit Adopts Cybersecurity Strategies

Firms top managements are requesting more knowledge into cyber hazard, as cyberattacks increment and crush organizations across the globe. Because of their significant level comprehension of an association's danger scene and the technology utilized across the venture, internal audit is in an ideal situation to survey cybersecurity processes and approaches and report on the adequacy of the security program to administration, just as opportunities for headway. Indeed, even before the Covid-19 pandemic hit, cybersecurity was at that point a relentless threat to firms. An ever-increasing number of organizations are beginning to perceive the need to make an additional a line of guard, one that can give a free survey of security gauges and recognize opportunities to strengthen assurance measures.

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Working Remotely is Only Increasing

As countries started presenting quarantine conventions and social distancing necessities to slow the spread of Covid-19, numerous associations immediately progressed to completely remote activities. This transition to a remote labor force introduced a large group of new difficulties and dangers to audit groups, who needed to change their audit processes to work in a remote setting. Yet, with technology like videoconferencing, secure document sharing stages, VPNs, etc. Many audit departments had the option to work with this change. And keeping in mind that technology has assisted review with turning to a remote audit design, it has additionally introduced new dangers and difficulties. Numerous organizations immediately provided remote access devices, yet as a rule, neglected to appropriately test and secure them. Since representatives should now utilize shared home or public Wi-Fi networks, the probability of this sort of cyberattack has developed. Studies have shown under half of individuals secure their association while depending on open Wi-Fi networks. Furthermore, many audit pioneers are battling to keep group bonds solid and find regulating crafted by colleagues to be a battle in these remote work courses of action. Numerous remote laborers are additionally wrestling with diminished usefulness because of the deficiency of design and socialization. An audit is a capacity that can intensely depend on close to home interactions to explore chances and foster solutions. In spite of the way that there are many advantages related with remote work, this shift will keep on introducing new difficulties for audit departments all through 2022.

Audit Automation

This is basically a main touch point in this study, by 2022, it is expected that 90% of big firms will have embraced Robotic Process Automation (RPA) in some structure. Frequently audits can be hesitant to accept technological advances and the dangers they can bring, yet in 2021 it was noticed many firms accounted for intelligent automation all the more reliably. With automation technologies, audit can assume a bigger part in checking controls, administrative consistence, approaches, and reporting exercises while as yet staying free. By adopting automation and other technological tools, audit can drive productivity in monitoring controls, provide greater coverage across large data, time and cost savings that can be redirected to higher priority tasks, and allow for enhanced transparency inside an organization (Lacurezeanu, Tiron-Tudor & Bresfelean, 2020).

Study Method

Betti, Sarens & Poncin (2021) conducted a study back in 2017 in addition to another research that was done by D'Onza & Sarens (2018), a survey was conducted with the assistance of the institute of internal auditors to put many of the study hypotheses to the test. The questionnaire consisted of three sections. In the first section, participants were asked to answer questions related to their IAF. In the second section, participants answered questions related to the level of digitalization of their organizations. The third section included questions related to the sector of their organization and the size of their IAF. The survey was submitted to a total of 5,922 chief audit executives. 160 respondents provided answers, a response rate of 2.7%. As 78 answers were eliminated due to missing data. The final sample was 82 respondents for a response rate of 1.4%. Organizations from the financial and non-financial sectors were included in the sample. Due to incomplete answers, and premature submissions, this study may suffer from non-response bias (Neuman & Sheu, 2021). The organization's level of digitalization was measured in which the respondents worked with a four-item scale: the organization follows a strategy mainly based on digital developments; the automation of business processes; the organization viewpoint regarding

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digital solutions to enhance their processes; the organization utilization of digital solutions. These items were measured on five-point Likert scales. Scale anchors were: 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree) and 5 (strongly agree). Table 1 presents the scores for each item. Using the Principal Component Analysis (PCA), we grouped these four items under one factor (*i.e.*, D'Onza & Sarens, 2018; Svanberg et al., 2018). The Cronbach's alpha of this ad hoc scale was above the critical value of 0.7 (score=0.781) and the percentage of the explained variance was 60.584%. Consequently, we could group these four items under one factor describing the organization's level of digitalization.

Table 1
SCORES OF EACH ITEM INCLUDED IN THE DIGITAL VARIABLE

Items	N	1	2	3	4	5	Mean	SD
The organization follows a strategy mainly based on digital developments	82	7	30	24	17	4	2.77	1.034
The business processes automation	82	6	20	24	29	3	3.04	1.024
The organization viewpoint regarding digital solutions to enhance business processes	82	0	18	27	32	5	3.29	0.882
The organization utilization of digital solutions	82	3	36	22	18	3	2.78	0.956

- The DIGITAL variable defines Organization's level of digitalization, as its measured by the variable with a value between 1 (low level of digitalization) and 5 (high level of digitalization).
- The CONSUL variable defines the performance of consulting activities and its measured by the percentage of the internal audit planning dedicated to consulting activities.

- The DATA_AN variable defines the utilization of data analytics as its measured by the percentage of the planning for which the internal audit department uses data analytics in its missions.

- The IAFSIZE variable defines the size of the IAF as it's measured by the number of full-time equivalent employees working in the internal audit department.

- The SECTOR variable defines the sector of the organization as its measured by the dummy variable with a value of 0 (organization from the non-financial sector) or 1 (organization from the financial sector).

The respondents were asked to indicate the sector of the organization in which they worked. Then, a dummy variable was created (0=non- financial sector; 1=financial sector) based on the standard industrial classification codes. The size of the internal audit department also influences the activities performed by the IAF (Chen, Lin, Lu & Zhou, 2020). The size of the internal audit department was also included as a control variable. To assess this variable, the respondents were asked how many full-time equivalent employees worked in the internal audit department. As presented in the points earlier.

RELATED RESULTS

The average percentage of consulting activities is 26.68%. However, the standard deviation (16.722) indicates that the percentage of consulting activities varies between organizations. Also, the average use of data analytics during internal audit missions was unexpectedly low. Data analytics were used in less than 20% of these organizations during internal audit processes.

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Considering the technological developments and the emphasis highlighted in the literature (Kend & Nguyen, 2020). A higher percentage was expected. As the results presented in table 2 and table 3.

The researcher understands the challenge in hand when preparing a questionnaire, due to reach limitations, and believes that a shorter questionnaire would have been easier for the study sample to fill without risking the full coverage of the matters discussed.

Table 2
DESCRIPTIVE STATISTICS OF CONTINUOUS VARIABLES

Variables	N	Mean	SD	Min.	Max.
CONSUL	82	26.68	16.722	0	90
DATA-AN	82	19.74	18.927	0	90
IAFSIZE	82	17.87	71.780	1	650
DIGITAL	82	2.97	0.758	1.5	4.25

Table 3
DESCRIPTIVE STATISTICS OF DICHOTOMIC VARIABLES

Variables	N	Groups	N	(%)
SECTOR	82	Non-financial sector	41	**50**
		Financial sector	41	50

The average score of the DIGITAL variable is 2.97, which is close to neutral score. In total, 38 respondents presented a DIGITAL score below the average and 44 above it. In total, 30 respondents had a DIGITAL score equal to or above 3.5. This means only a third of the respondents considered their organization to be digitalized in at least two aspects that formed the DIGITAL variable.

CONCLUSION

The researcher agrees with the presented results, especially when digitalization is increasingly impacting organizations and changing auditing processes. But still, the shared knowledge on this subject is fairly slim, in comparison to other well developed prior methods and strategies, this research went through a deep literature review that viewed diverse and different perspective on the matter in hand, in addition to a short review on audits, the role of audit, and its types.

Notwithstanding the study that was reviewed and touched on, while suggesting an alternative for the questionnaire, as the study results showed that automation of the audit processes is positively related with the use of new technological trends for auditors: the more organizations are digitalized, the more it affects the way auditors function. Data analytics technologies offer the possibility for auditors to increase the accuracy and productivity of their activities, to make forecasts and predictions about future events, with the least amount of risk possible. Processes automation can be viewed as a powerful instrument for auditors to provide valuable opinions into the organization and to have the least inaccuracy rate while conducting the audit process. In an automated environment, firms need to adopt cutting edge technologies for their departments to be able to gain serious competitive advantage, or in some industries, just to survive, considering the aggressive competition in today's fast changing marketplace.

It can be viewed that the more the firm adopts automated processes, the more the likelihood for the firm to have a competitive advantage over its peers in the marketplace, however it can be seen that one of the disadvantages of RPA that it is still kind of raw, and limited, in comparison to other digital and technological strategies, but this also means that there is a huge gap to fill and many improvements to be made in the future.

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Any firm that wants to compete in the current circumstances needs to invest heavily in the technological aspects, and new digital strategies, such as AI, RPA, and processes automation, it is also expected from pioneers audit firms to create a balance between the human element and the digital impact, because having a high accuracy with low error rate could be tempting for the audit services providers, but that should eliminate the human mind, especially when it comes to the decision making process.

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