



Impact of COVID-19 on Audit Risk Assessment Procedures: Insights from Malta

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Abstract: This investigation explores the transformative effect of the COVID-19 pandemic on the risk assessment processes employed by auditors. The primary focus is on how the pandemic has reshaped the identification and evaluation of risks, necessitating alterations in the timing, nature, and extent of risk assessment procedures (RAPs) in the audit risk assessment context. This study, through semi-structured interviews with audit partners and senior managers from Big Four and mid-tier firms in Malta, comprising a total of 15 interviews, delves into the evolving landscape of risk assessment. It has been observed that the pandemic demanded increased vigilance and effort from auditors in understanding clients' businesses and their operational environments. This heightened attention was crucial to identify emerging risks aptly. A shift in the RAPs was discerned, favoring inquiries and analytical procedures (APs) over traditional methods like observation and inspection. The incorporation of Information Technology (IT) tools has markedly transformed the approach to gathering sufficient and appropriate audit evidence, particularly in verifying inventories and property, plant, and equipment (PPE), along with third-party confirmations. Furthermore, the study identifies material risks such as going concern (GC), asset impairment (including plant, equipment, inventory, and receivables), and the impact of external events on companies. An important outcome of this shift is the increased reliance on Artificial Intelligence (AI) and blockchain-based applications, heralding a more efficient and effective risk assessment process. This evolution not only enhances audit quality but also serves the public interest more robustly. The findings imply a long-term impact on audit risk assessment, projecting a continued evolution in the post-COVID era. These insights contribute significantly to the discourse on audit practices in times of crisis, underscoring the need for adaptive methodologies and the integration of advanced technologies in audit procedures.

Keywords: COVID-19; Risk assessment; Risk assessment procedures (RAPs); Audit evidence; Analytical procedures (APs); Malta

1. Introduction

The entire auditing process is fundamentally anchored in the risk assessment (RA) process, as it is through this that auditors effectively identify and assess audit risks (ARs) (Klasson & Knutsson, 2021). Given this context, it becomes crucial to examine how auditors and audit firms have reacted to the global outbreak of COVID-19, and to ascertain the effectiveness of RA amidst the complexities introduced by the pandemic (Al-Aamaedeh & Alhosban, 2021; Murphy, 2020). This inquiry is vital, particularly in the face of global economic uncertainties triggered by COVID-19, described by the International Monetary Fund as a crisis “worse than the Great Depression of the 1930s” (Chan, 2020).

The audit profession has evolved over time, often in response to external events like the 2008 financial crisis, the WorldCom scandal, the ENRON collapse, and increasing criminal activities (Johnsson & Persson, 2021). These events have necessitated a shift towards a risk-based approach in auditing to rebuild the profession's

reputation. In the context of environmental challenges, auditors are urged to focus their processes on risk assessments, aiming primarily at-risk mitigation (Klasson & Knutsson, 2021). The COVID-19 pandemic, in this vein, has provided an opportunity for the audit process to adapt to the evolving expectations of stakeholders and for auditors to redefine their roles (Deloitte-a, 2020).

The pandemic has significantly disrupted companies' operational environments, leading to production halts, delays in business expansions, and supply chain disruptions (El-Mousawi & Kanso, 2020; Kaka, 2021). A study in Greece revealed that 78% of respondents observed a negative impact on the auditing process due to these operational disruptions (Tasios et al., 2022). Moreover, a global survey by the (ACCA-a, 2023) among auditors indicated that 27% of respondents noted an increase in ARs, with a quarter facing challenges in obtaining audit evidence. The shift to virtual environments has also necessitated adaptations in various RAPs), such as inquiries, APs, inspections, and observations (Alao & Timilehin, 2021).

Under the mandates of the International Standard on Auditing (ISA) 315, auditors are required to conduct RAPs. These procedures are essential for acquiring a comprehensive understanding of the entities and their environments, encompassing their internal control systems and the relevant financial reporting frameworks. This understanding forms the cornerstone for identifying and evaluating the risks of material misstatement, both at the financial statement (FS) level and at the assertion level, to ensure the collection of sufficient audit evidence (IAASB, 2019; Zukauskaitė, 2021).

The three principal RAPs include: (i) inquiries, encompassing both financial and non-financial matters, directed towards various stakeholders such as management, employees, marketing and risk management teams, among others; (ii) observation and inspection of the entities' operational processes, premises, internal and external records, documents, and tangible assets; and (iii) APs. AP involves the analysis of financial information by examining the interrelationships between financial and non-financial data, such as through the application of ratios (Chukwu et al., 2019).

The centrality of the risk assessment process is highlighted by the frequency of audit failures attributed to the inadequacy in identifying and evaluating risks, leading to significant audit shortcomings (Arnold, 2020). Recognizing its importance, the International Federation of Accountants (IFAC) and the Financial Reporting Council (FRC) have issued specific guidance for auditors. This guidance focuses on the key audit challenges posed by COVID-19. It underscores the necessity for auditors to meticulously consider how the pandemic impacts their risk assessment process, to contemplate adjustments to their planned audit strategies, and to incorporate alternative methods to gather adequate audit evidence (Financial Reporting Council, 2020; International Federation of Accountants, 2020).

According to reports by Financial Reporting Council (2020) and International Federation of Accountants, (2020), the unpredictability of business scenarios during the pandemic may have escalated the risk of material misstatements. This assertion is supported by findings from a global study by (ACCA-a, 2023), which revealed that 27% of auditors reported increased AR, with 25% encountering challenges in obtaining supporting documentation. In this context, the necessity of exploring how auditors and audit firms have navigated the global pandemic becomes evident, particularly in terms of conducting an efficient risk assessment that adheres to professional skepticism. Notably, the auditing process during this period could also have yielded positive outcomes (Al-Aamaedeh & Alhosban, 2021; Murphy, 2020).

The Maltese literature on the impacts of COVID-19 on auditing remains sparse. Connor (2022) explored the pandemic's influence on the auditor's report and the potential need for modifications in auditor opinions. Similarly, Saliba (2022) investigated the effects of teleworking on audit firms during the pandemic. Building upon these Maltese studies, this research seeks to further examine the pandemic's influence on auditors' risk identification and assessment processes, given the pivotal role of AR assessment in directing the audit's trajectory. A significant research gap in the auditing literature is identified, highlighting the need for more comprehensive reports in this area.

This study aims to scrutinize how the AR assessment is poised to evolve in the post-COVID era, responding to a study (Hazaea et al., 2022) call for insights into the lessons learned from the COVID-19 situation. The objectives of this research are: (i) to examine the alterations in auditors' risk identification and assessment processes due to COVID-19; (ii) to evaluate the changes in the nature, timing, and extent of the RAPs integral to the audit RA; (iii) to assess the modifications in methods used for gathering sufficient and appropriate audit evidence on the identified and assessed risks; and (iv) to investigate the potential long-term impacts of COVID-19 on audit RA and its anticipated evolution in a post-COVID context.

2. Literature Review

2.1 Auditors' Identification and Assessment of Risks

2.1.1 Understanding of the entity and its environment

In accordance with ISA 315 (IAASB, 2019), auditors are mandated to identify and assess risks through obtaining

an in-depth understanding of their clients' businesses. This understanding encompasses industry-specific and regulatory factors, as well as an evaluation of the effectiveness of clients' internal control (IC) systems (ACCA-b, 2023; Alao & Timilehin, 2021). Nevertheless, the advent of the novel coronavirus has potentially altered entities' objectives, organizational structures, business risks, and models (Arnold, 2020). Consequently, it has been proposed that auditors need to reassess their comprehension of entities and their operating environments (EY-a, 2021).

IC and Laws & Regulation

Alterations in financial reporting standards, compounded by the complexities of recent regulations, including the introduction of government programs related to grants, have likely impacted client businesses (Chartered Professional Accountants Canada, 2021; Diab, 2021). Consequently, the risk of NOCLAR for certain clients has been heightened, potentially exerting significant influence on FS (Dohrer, 2020). KPMG (2020) underscored that numerous businesses, previously unfamiliar with receiving grants, lacked established accounting procedures for them.

Furthermore, the COVID-19 pandemic induced significant changes in clients' controls, as many financial reporting processes transitioned to virtual platforms, thereby escalating the risk of breakdowns in IC systems (Dohrer, 2020). It became imperative for auditors to thoroughly evaluate whether these changes gave rise to new risks and to assess the continued validity of their planned reliance on controls in response to these risks (ACCA-a, 2023; Chartered Professional Accountants Canada, 2021). The Public Company Accounting Oversight Board (2020) also highlighted the potential for increased risk of control deficiencies, stemming from inadequate segregation of duties and ineffective monitoring.

2.1.2 Emerging ARs

In the wake of the COVID-19 outbreak and its adverse consequences, auditors were required to be vigilant towards increasingly significant ARs, as well as any new risks that emerged, as delineated below (ACCA-a, 2023).

Fraud Risk

The pandemic potentially exacerbated fraud risk due to the likelihood of breakdowns in IC and heightened management pressure to meet targets. Auditors were thus compelled to concentrate on risk indicators that could signify fraud, including any unusual transactions (Centre for Audit Quality, 2020; Diab, 2021; Institute of Chartered Accountants of Pakistan, 2020).

Materiality

The reassessment of materiality levels was essential for auditors, including re-evaluating benchmarks used in establishing materiality. Adjustments in performance materiality for certain transactions or revising the overall FS materiality were imperative, especially in instances such as clients disposing of significant business segments (Arnold, 2020; Institute of Chartered Accountants of Pakistan, 2020).

Subsequent Events

Increased scrutiny was necessary for subsequent events, particularly for reporting dates in early 2020, as the COVID-19 situation evolved rapidly. Auditors had to judiciously determine the extent of COVID-19's impact, differentiating between non-adjusting and adjusting subsequent events (ACCA-b, 2023; Appelbaum et al., 2020; Diab, 2021).

Impairment of Assets

Companies potentially encountered augmented risks of asset impairment, particularly in the context of PPE. This was primarily due to temporary plant closures, which cast doubt on the feasibility of supporting future cash flow predictions with subsequent performance (EY, 2020). Additionally, PWC-a (2020) observed that calculations of expected credit losses (ECL) required adjustments to mirror the escalated probability of default, coupled with increased credit risk. Consequently, auditors were necessitated to intensify their focus on the elevated AR associated with the impairment of financial instruments (Deloitte-b, 2020).

Valuation of Assets

Valuation models required adjustments to key inputs, such as discount rates and cash flow forecasts, to account for heightened uncertainties. This was particularly relevant for assets measured at fair value (FV), where auditors needed to ensure that companies reassessed the economic assumptions used in FV calculations (PWC-b, 2020; KPMG, 2020).

GC

Challenges in accessing external borrowing and deteriorating financial health of customers and suppliers increased concerns about audit clients' ability to continue as a GC. Auditors were, therefore, urged to consider reporting on material uncertainties related to GC (Financial Reporting Council, 2020; Institute of Chartered Accountants of Pakistan, 2020).

FS Line Items

Kaka (2021) conducts a comprehensive analysis of various FS items that were significantly influenced by COVID-19, consequently escalating AR and intensifying the demands of RA. Primarily, the pervasive uncertainty adversely affected receivables, as prolonged debt collection processes necessitated auditors to reevaluate the

estimation of bad debts. Additionally, companies faced challenges in liquidating their entire inventory owing to reduced demand, compulsory plant shutdowns, and unfulfilled purchase and sales contracts, as noted by a standard (Deloitte-b, 2020). Furthermore, the closure of businesses and restrictions on movement led to a decrease in revenue generation (Kaka, 2021). Additionally, any alterations in contractual agreements with lenders, prompted by cash flow difficulties, had a notable impact on revenue streams (EY, 2020).

2.2 Determinants for a High-Quality RA

Research indicates various factors that enhance the effectiveness and quality of the RA process (Klasson & Knutsson, 2021). The complexities arising from COVID-19 may have underscored the importance of these determinants.

2.2.1 Professional scepticism

In the face of fraud indicators, incomplete audit evidence, and complex judgements during COVID-19, auditors were necessitated to exhibit increased levels of professional scepticism (Institute of Chartered Accountants of Pakistan, 2020). While auditors are expected to maintain an impartial and diligent approach, Sian (2022) noted that the absence of non-verbal cues due to virtual inquiries, coupled with the increased reliance on management assertions, further amplified the need for professional scepticism in the RA process.

2.2.2 Professional experience

Auditors possessing greater experience are likely to reach reliable conclusions more swiftly and are less prone to audit failures. This is because experience is crucial for effectively handling stressful and unpredictable situations, thus leading to more precise and dependable audit RA (Haeridistia & Fadjarenie, 2019). In the context of COVID-19, experienced auditors were better equipped to anticipate the pandemic's impacts, drawing on parallels with historical events (Johnsson & Persson, 2021). However, Klasson & Knutsson (2021) caution that experienced auditors might depend excessively on previous audit beliefs, potentially leading to oversight in current RAs.

2.2.3 Audit firm's size

The size of the audit firm plays a significant role in effective RA, with larger firms generally excelling in risk assessment due to their broader knowledge base, experience, and global presence (Sawan & Alsaqqa, 2013). Gong et al. (2022) observed that Big Four firms adapted more adeptly to virtual auditing and upheld high-quality RA during the pandemic, unlike smaller firms which faced difficulties in adjusting to these challenges. Additionally, a study (Beechem, 2021) reported that Big Four firms utilize more advanced technological tools in conducting their RA.

2.3 The Performance of RAPs

2.3.1 The timing and nature of RAPs

The Institute of Certified Public Accountants of Cyprus (2021) emphasized the need for continuous re-evaluation and adjustment of RAPs in response to the evolving COVID-19 situation. Furthermore, the studies (Arnold, 2020; Public Company Accounting Oversight Board, 2020) stressed the importance of initiating inquiries with clients earlier in the audit process to effectively gauge the pandemic's implications.

The complexity of RAPs increased significantly. The GCS Malta (2021) noted an escalation in the volume of RAPs executed to comprehend alterations in clients' businesses, including any changes in IC. The standard (Centre for Audit Quality, 2020) also pointed out that during the modification of RAPs, auditors enhanced the involvement of experienced team members and sought advice from subject-matter experts as required. Additionally, there was a heightened emphasis on providing more robust guidance to less experienced audit staff, as highlighted by the Institute of Chartered Accountants of Pakistan (2020).

2.3.2 The extent of RAPs

During the pandemic, auditors were compelled to judiciously determine which RAPs yielded the most immediate value (Diab, 2021).

Greater Reliance on AP

In the initial stages of the pandemic, there was a notable shift towards the utilization of AP, owing to their cost-effectiveness and straightforward execution (Hazaea et al., 2022). However, Cohen & Co. (2021) and Institute of Chartered Accountants of Pakistan (2020) pointed out that the pandemic's unique circumstances complicated the comparability of financial data, thereby impeding ratio analysis as historical financial information became less relevant for comparison.

Additional Focus on Inquiries

The need for comprehensive inquiries with management, boards of directors, and audit committees intensified

during COVID-19 to ensure that risks were accurately identified and assessed (Centre for Audit Quality, 2020). This necessitated additional inquiries concerning potential fraud, NOCLAR, litigation, and transactions that were unusual or involved related parties (Cohen & Co., 2021).

Challenges Related to Observation and Inspection

Arnold (2020) noted that inquiries, while essential, were not the sole effective RAPs. Despite the challenges posed by COVID-19, the execution of onsite observation and inspection procedures remained imperative. Yet, during specific periods of the pandemic, conducting such procedures became impracticable due to mandatory social distancing and travel restrictions (Luo & Malsch, 2020).

2.4 Gathering Sufficient and Appropriate Audit Evidence

The stringent COVID-19 measures potentially exacerbated challenges in the audit RA process, particularly in obtaining first-hand audit evidence (Gong et al., 2022).

2.4.1 Inventory and PPE verification

In scenarios where physical attendance was prohibited, auditors resorted to web-based videoconferencing for conducting 'auditor first view' inventory observations (Arnold, 2020). Additionally, there was an increased tendency to test a larger number of inventory items than typical (Al-Aamaedeh & Alhosban, 2021; Diab, 2021). The use of AI tools, such as AI picture recognition software, was also noted for verifying inventory quantities through digital images (Appelbaum et al., 2020). In situations where prior observations had been conducted, such as during interim inventory counts, or when physical counts could be deferred, both roll forward and roll back procedures were employed. The roll forward involves updating the balance from a previous period by adding all transactions (debits and credits) up to the current period's balance, while roll back entails reverting the database to a specific cutoff date by examining timestamps to exclude any transactions that occurred post-cutoff (ACCA-b, 2023; Institute of Chartered Accountants of Pakistan, 2020; Sian, 2022).

Parallel to the approach with inventories, for PPE verification during the pandemic, real-time video streams were utilized for 'auditor first view' observations (Appelbaum et al., 2020; Kashyap, 2020). Additionally, a study of Sian (2022) highlighted the innovative use of drones for observing PPE, particularly in locations that were challenging to access.

2.4.2 Third party confirmations

During COVID-19, there was an increased reliance on confirmations from third parties, such as banks, suppliers, or customers (Akrimi, 2021; Huy, 2022). However, the electronic nature of this process often resulted in prolonged response times (Huy, 2022).

2.4.3 Observation procedures

COVID-19 restrictions limited extensive site visits, complicating physical observation of clients' processes (Independent Regulatory Board for Auditors, 2020; Sharma et al., 2022). Johnsson & Persson (2021) highlighted the difficulty in losing direct interaction with clients' staff and management, which is essential for effective RA.

2.4.4 Interviews

The onset of COVID-19 restrictions led to a significant shift in communication dynamics, necessitating a transition to video conferencing tools such as Microsoft Teams, Skype, and Zoom (Appelbaum et al., 2020; Luo & Malsch, 2020). Despite these changes, Johnsson & Persson (2021) and Mugabe et al. (2022) observed that this shift to virtual meetings facilitated enhanced levels of communication and inquiries. This improvement was attributed to the increased need for support and motivation among both audit team members and clients during the pandemic. However, this adaptation was not without challenges. Notably, the reduction in direct eye contact and the difficulty in interpreting non-verbal and emotional cues were significant barriers. These limitations made it challenging for auditors to develop an intuitive understanding of the individuals they were interacting with (Appelbaum et al., 2020; Sian, 2022).

2.4.5 Document collection

In the context of the health crisis, auditors were compelled to depend on electronically transmitted documents via various file-sharing platforms (American Institute of Certified Public Accountants, 2020; Huy, 2022). However, the adoption of advanced technological tools, including AI and cloud-based accounting software, significantly enhanced the document collection process. These technologies enabled rapid and real-time gathering of evidence, thereby maintaining the integrity of the RA process (Sharma et al., 2022). Nonetheless, Litzenberg & Ramirez (2020) noted challenges in instances where clients lacked fully digitized systems, leading to delays in receiving necessary documents.

Additionally, the authenticity of digitized documents became a prominent concern, necessitating the

implementation of extra monitoring procedures (Public Company Accounting Oversight Board, 2020; Sharma et al., 2022). In certain cases, it was essential to conduct forensic examinations of documents or observe clients extracting data from their systems, particularly for sensitive information like bank statements (Appelbaum et al., 2020; Sian, 2022).

2.5 Lessons Learnt from COVID-19: Adaptations and Improvements for a Post-COVID World

2.5.1 Audit RA: Greater dependence

Klasson & Knutsson (2021) postulate that RA will assume greater significance in the future, with auditors maintaining an elevated awareness of risks even beyond the pandemic. This includes a sustained focus on GC assessments. Research from New Zealand indicates that auditors will likely bear a heightened responsibility for fraud detection and more extensive reporting on IC post-pandemic (Hay et al., 2021).

2.5.2 Further adoption of virtual auditing

A 2020 survey revealed that 61% of 23 audit firms intend to conduct most audits remotely in the future, a substantial increase from the pre-pandemic figure of 17% (Ovaska & Murphy, 2022). Serag & Daoud (2021) suggest that the remote execution of audit RA will persist, driven by financial and time efficiencies. Furthermore, Farcane et al. (2023) reported that Romanian auditors found improved efficiency in conducting RAPs remotely. However, Miller Kaplan (2023) notes that certain audit procedures, particularly those requiring physical inspection of assets like PPE and inventory, are still challenging to perform remotely. In contrast, Sian (2022) argues that roll-forward and roll-back procedures, effective during COVID-19, could continue to be utilized even with relaxed government restrictions.

2.5.3 Further utilisation of advanced technological tools

Post-COVID, the technological innovations adopted during the pandemic, such as electronic document storage, cloud-based accounting software, and video conferencing tools, remain valuable for auditors conducting RAPs (EY-b, 2021; Mitchell, 2021). Technologies like satellites, smart sensors, and cloud computing enable real-time monitoring of clients, potentially reducing the time to detect external or internal events like accidents or non-compliances (Castka & Searcy, 2023). Additionally, Deloitte (2023) highlights the efficiency gains from digitizing documents, facilitating real-time access to client information and reducing the need for prolonged on-site visits. Sharma et al. (2022) also emphasize the enhanced capabilities provided by blockchain and AI technologies, enabling auditors to review data at unprecedented scales and speeds during the RA process.

3. Methodology

3.1 The Research Tool

Semi-structured interviews were selected as the most suitable and effective method for this study, primarily due to their inherent flexibility. This approach allowed for the incorporation of probing, spontaneous questions aimed at enhancing the depth of understanding and clarifying responses. Such a methodology enables the interviewer to tailor the pace, style, and sequence of questions as needed, thereby eliciting more comprehensive responses from the participants (Rowley, 2012). A meticulously crafted interview schedule was employed, structured around pre-identified themes and encompassing essential questions. This ensured that the same queries were presented to all interviewees, facilitating the generation of comparable data, which could then be quantitatively analyzed (McIntosh & Morse, 2015).

The interview schedule included both open-ended and close-ended questions. The open-ended format was utilized to collect qualitative data, capturing the experiences and perceptions of the participants. Conversely, the close-ended questions, structured for quantitative analysis, required participants to respond within predefined response categories, thereby simplifying statistical analysis. For the close-ended portion, a 5-point Likert Scale was employed, with '0' indicating strong disagreement or lack of importance, and '5' signifying strong agreement or high importance.

3.2 The Sample Population

A crucial aspect of this study was the accurate identification of the target population, aligned with the research objectives (Saunders et al., 2012). The focus was on audit firms in Malta. A purposive sampling approach was employed, targeting prominent audit firms, including the Big Four and other mid-tier firms. The sampling and interviews, conducted between November 2022 and February 2023, involved audit partners and senior managers from these firms. Selection criteria centered on the individuals' expertise and insight into the Maltese audit market, aiming to engage the most knowledgeable professionals in the field (Etikan et al., 2016).

3.3 Data Analysis

Qualitative data were collected through open-ended questions and additional remarks made by respondents in conjunction with their Likert Scale responses. This data was then transcribed into a format suitable for analysis. Thematic analysis was applied, generating multiple codes for frequently mentioned concepts. This process revealed patterns within the transcribed data, facilitating the organization of relevant coded data extracts into themes and subthemes, in alignment with the research objectives (Nowell et al., 2017).

Quantitative data were derived from the close-ended questions. The Wilcoxon Signed Ranks test was utilized to compare mean rating scores for specific statements, both before and during the COVID-19 pandemic, and between normal and uncertain conditions such as the pandemic. Additionally, the Mann Whitney test was employed to compare mean ratings between different audit firm types (Big Four, Mid-Tier). Frequency tables were also used to ascertain the prevalence of various responses within the dataset.

4. Results

4.1 Auditors' Identification and Assessment of Risks

This section aims to address the first research objective, corresponding to section A of the interview schedule.

4.1.1 Understanding of the entity and its environment

The initial question posed to interviewees inquired whether they perceived an increased AR due to alterations in their understanding of the entity and its environment during COVID-19.

A majority of the participants (9/15) indicated that COVID-19's profound impact on business operations necessitated more extensive efforts in understanding clients' businesses. Additionally, several respondents (8/15) observed that the extent of this impact varied across different clients and industries.

IC and Laws & Regulation

A significant number of respondents (8/15) highlighted that many companies were ill-equipped for the shift to online systems, leading to an increased risk of IC breakdowns. Moreover, a subset of these respondents (4/8) noted that specific control procedures were hampered due to staff shortages, emphasizing IC as a critical focus in their audit RA.

In relation to compliance, a few respondents (4/15) remarked on an elevated AR concerning NOCLAR. This was particularly noted in the context of changes to both general and industry-specific regulations, with specific references to the gaming and financial services sectors.

4.1.2 Emerging ARs

Interviewees were asked to identify any new or intensified ARs resulting from the uncertainties of COVID-19.

A predominant concern (9/15 respondents) was GC risk, with several (4/9) indicating instances necessitating the inclusion of "emphasis of matter" or "material uncertainty related to GC" paragraphs in audit reports. Furthermore, a substantial number (9/15) pointed to heightened AR in asset impairment, particularly in PPE and investments. This involved reassessments of estimated useful life and valuation. Of these, a fraction (5/9) expressed increased AR regarding the ECL framework, especially as standard 30-day/90-day presumptions were challenged.

Valuation of assets, especially those at FV, was another area of increased AR, noted by some auditors (5/15). This was due to uncertain projected cashflows and a rise in discount rates reflecting growing risks. Additionally, inventory valuation was a concern (6/15 respondents), largely due to issues like stock obsolescence.

A number of respondents (4/15) discussed the need to adjust materiality levels in RA, basing these on reduced turnover. Others (3/15) opted to lower performance materiality for specific COVID-impacted transactions. Subsequent events received heightened audit attention (10/15 respondents), particularly in 2020, with challenges in distinguishing between adjusting and non-adjusting GC issues.

The risk of fraud, particularly management override of key controls, was underscored by several respondents (9/15). Specific instances, such as individuals handling cash transactions singularly, were cited. Additionally, COVID-19 wage supplements were identified as potential fraud areas (5/9 respondents), with a few (4/15) noting increased AR due to unfamiliarity with accounting for these novel transactions.

Concerns were also raised about extended settlement periods for debts like trade receivables or loans, with auditors assessing impairments and recoverability (8/15 respondents). Payables received additional scrutiny (3/15 respondents), as an accumulation could lead to litigation and supply chain issues. Finally, heightened audit work related to revenue was mentioned (6/15 respondents), driven by management pressure to present an improved FS.

4.2 Determinants for a High-Quality RA

This section also aims to address the first research objective, corresponding to section B of the interview schedule.

4.2.1 Professional scepticism

Respondents were invited to evaluate the significance of exercising professional scepticism amidst the COVID-19 pandemic. As illustrated in Table 1, the participants' responses were overwhelmingly positive: 33% of respondents rated professional scepticism as 'Very Important', while a significant 67% deemed it 'Extremely Important'. A majority of the participants (8/15) emphasized that in confronting the heightened ARs precipitated by the health crisis, auditors were required to adopt a more sceptical stance, particularly when evaluating businesses' prospects for the future.

Table 1. The importance of professional scepticism during COVID-19

Frequency Table (Q3)		Frequency	Percentage
Lack of professional scepticism is found to be the cause to most audit failures. In the COVID environment, how important do you think exercising professional scepticism was to overcome the problems encountered?	Not Important	0	0.0%
	Slightly Important	0	0.0%
	Moderately Important	0	0.0%
	Very Important	5	33.3%
	Extremely Important	10	66.7%

4.2.2 Professional experience

To assess whether professional experience enhances auditors' RA capabilities, the Wilcoxon Signed Ranks Test, as depicted in Table 2, was employed. This test compared rating scores provided for "normal circumstances" against those during "uncertain conditions like COVID-19." It revealed a decrease in the mean rating score from normal to uncertain conditions. However, the p-value exceeded the 0.05 significance threshold, indicating that this difference was not statistically significant. This outcome could be attributed to the fact that a majority of the respondents (10/15) assigned identical rating scores across both scenarios. This uniformity in responses suggests that broader professional experience equips auditors with consistent RA proficiency, regardless of the scenario's complexity.

Table 2. Significance of professional experience

Wilcoxon Signed Ranks Test (Q4 & Q4a)				
		Mean	Std. Dev.	P-value
To what extent do you agree that a high level of professional experience tends to help auditors to come to reliable conclusions faster, reduce their likelihood of being implicated in audit failure and hence makes their risk assessment more accurate?	In normal circumstances	4.87	0.352	0.180
	During uncertain conditions like COVID-19	4.67	0.488	

Among the respondents who assigned identical rating scores across both scenarios (4/10), several underscored the value of professional experience in navigating diverse situations. They drew parallels to the Libya crisis of the early 2010s, illustrating how prior experience in similar conditions proved beneficial in addressing the challenges posed by COVID-19. On the other hand, a portion of the respondents (5/15) opted to lower their rating scores. One interviewee reasoned that extensive professional experience might lead seasoned auditors to rely on habitual assumptions and conventional conclusions, potentially limiting their adaptability in unique situations like the COVID-19 pandemic.

4.2.3 Audit firm's size

Auditors were subsequently asked to rate their extent of agreement that the audit firm's size has an influence on how well-prepared the firm was to handle the COVID-19 audit challenges.

Table 3 reveals divergent views among respondents on the impact of firm size in auditing. A segment (3/15 – Strongly Disagree; 1/15 – Disagree) disagreed with the notion that firm size is a significant factor, arguing that sufficient time and resources for client management are more crucial than firm size. Conversely, several respondents (4/15 – Strongly Agree; 3/15 – Agree) recognized the importance of firm size. Among these, a few (2/15) highlighted that larger firms benefit from more extensive guidance from their network in tackling COVID-19 audit challenges, while others (3/15) noted that larger firm size often correlates with greater resources for conducting RAs. Additionally, a notable proportion of respondents (4/15 – Neutral) expressed neutrality, with one

interviewee remarking that “Big firms were just as uninformed as small firms.”

Table 3. Significance of audit firm’s size

Frequency Table (Q5)			
		Frequency	Percentage
To what extent do you agree that the audit firm’s size has an influence on the quality of the audit risk assessment and on how well-prepared the firm was to manage the COVID audit challenges?	Strongly Disagree	3	20%
	Disagree	1	6.67%
	Neutral	1	26.7%
	Agree	3	20%
	Strongly Agree	4	26.7%

Furthermore, the Mann Whitney Test, as shown in Table 4, indicates that mid-tier firms assigned lower importance to firm size, reflected in their lower mean rating scores. However, this discrepancy in ratings was not statistically significant, given that the *p*-value exceeded the 0.05 threshold. It’s important to consider potential biases in these perspectives: larger firms tended to emphasize their broader specializations, while some mid-tier firms maintained that they could still perform high-quality RAs during the COVID-19 period.

Table 4. Significance of audit firm’s size – Big Four vs Mid-Tier Audit Firms

Mann Whitney Test (Q5)					
	Audit Firm	Sample Size	Mean	Std. Dev.	P-value
To what extent do you agree that the firm’s size has an influence on the quality of the audit risk assessment and on how well-prepared the firm is to manage the COVID audit challenges?	Big Four	4	4.25	0.957	0.138
	Mid-Tier	11	2.91	1.514	

4.3 The Performance of RAPs

This section addresses the second research objective, corresponding to section C of the interview schedule.

4.3.1 The timing of RAPs

The interviewees were questioned about any modifications they made to the timing of conducting RAPs in response to COVID-19. Several participants (5/15) indicated that they initiated RAPs earlier than usual due to the additional work necessitated by COVID-19-related factors. In contrast, a few respondents (3/15) reported that they delayed RAPs to allow clients more time to understand the pandemic’s impact on their operations. Moreover, some interviewees (5/15) mentioned the need for frequent revisits to RAPs throughout the audit process, ensuring continual relevance and accuracy. On the other hand, a minority (2/15) expressed that they did not find it necessary to alter the timing of their RAPs.

4.3.2 The nature of RAPs

Participants were inquired about any changes they implemented in the format of RAPs during the COVID-19 pandemic. A majority of the respondents (8/15) noted that RAPs were executed more thoroughly, necessitating increased questioning on various aspects. Among these, some (3/8) mentioned that their approach involved consulting a broader range of information sources, such as “correspondence with banks and regulators to understand ongoing discussions.” One interviewee mentioned the practice of requesting dual budget scenarios—one with COVID-19 considerations and another without—to critically evaluate any discrepancies. A few other respondents (2/8) described integrating qualitative elements into their analytical reviews. Contrasting their pre-COVID-19 reliance on ratio analysis, they shifted to assessing changes in revenue dynamics, such as dissecting revenue by service lines and investigating variances.

4.3.3 The extent of RAPs

The Wilcoxon Signed Ranks Test was employed to examine changes in the utilization of various RAPs. As indicated in Table 5, there was an observed increase in the rating scores for inquiries and APs, resulting in a higher mean. Conversely, for observation and inspection, the rating scores decreased. Nevertheless, these variations in mean rating scores were not statistically significant, as evidenced by *p*-values exceeding the 0.05 threshold of significance. This lack of significant difference can be attributed to some respondents maintaining consistent rating scores from the pre-COVID-19 period.

Inquiries of Management and Others Within the Entity

Among those respondents who increased their rating (6/15), the rationale provided was a more extensive engagement with clients’ management to better understand the impact of COVID-19 on their businesses. On the

other hand, two auditors reduced their rating, citing challenges associated with conducting inquiries remotely. The remaining participants (7/15) maintained their pre-COVID rating, explaining that consistent interaction with management is key to building an understanding of clients and forming expectations about FS, both before and during the pandemic.

APs

The majority of the respondents (8/15) assigned the same importance to APs, considering them crucial for highlighting risks like fraud, evident through significant changes in metrics such as gross profit margin. A minority (2/15) reduced their rating, reasoning that APs were less informative in identifying trends or unusual transactions during COVID-19, as most FS line items were on the decline. Conversely, a subset of interviewees (5/15) increased their rating, relying more heavily on AP due to the difficulties in performing inquiries and observations remotely.

Observation and Inspection

A small group of respondents (3/15) raised their rating for observation and inspection, emphasizing the importance of accurately assessing operational and control processes. Conversely, a significant number (6/15) lowered their rating, noting the absence of informal inspections and direct observation of clients' day-to-day operations. Similarly, another set of interviewees (6/15) upheld their rating, underscoring the fundamental role of observation and inspection in RAPs, as reliance solely on management responses is inadequate.

Table 5. The use of different RAPs

		Wilcoxon Signed Ranks Test (Q8)			
			Mean	Std. Dev.	P-value
How important is the following risk assessment procedures, in terms of its usage: Making inquiries of management and of others within the entity	Pre COVID-19	4.33	0.724	0.206	
	During COVID-19	4.60	0.737		
How important is the following risk assessment procedures, in terms of its usage: Analytical Procedures	Pre COVID-19	4.47	0.516	0.655	
	During COVID-19	4.53	0.640		
How important is the following risk assessment procedures, in terms of its usage: Observation and Inspection	Pre COVID-19	4.20	0.676	0.454	
	During COVID-19	4.00	1.000		

4.4 Gathering Sufficient and Appropriate Audit Evidence

This section explores the third research objective, corresponding to section D of the interview schedule.

4.4.1 Inventory and PPE verification

Given the increased ARs associated with inventories and PPE during COVID-19, respondents were asked about alternative procedures implemented for verifying these assets.

For inventory verification, the majority of respondents (8/15) indicated the use of video conferencing tools when physical attendance at inventory counts was not feasible. In contrast, a few participants (3/15) relied exclusively on stock lists provided by the client. Additionally, some respondents (5/15) noted that when video calls failed to yield sufficient and appropriate evidence, inventory roll forward and roll back procedures were employed.

In terms of PPE inspection, several respondents (4/15) reported using virtual calls or photographs, mirroring the approach for inventory. However, most respondents (7/15) described employing other methods, such as detailed examination of the fixed asset register and closer scrutiny of supporting documentation, including invoices and proof of payments.

4.4.2 Third party confirmations

When asked about the reliance on third-party confirmations, several respondents (6/15) indicated that they increased efforts to secure circularization of payables and receivables, as well as confirmations from banks. This was attributed to challenges in obtaining original documents from clients or executing certain physical procedures. However, the majority (9/15) emphasized that their reliance on third-party evidence remained significant, irrespective of the pandemic, as auditors cannot solely depend on management's assertions.

4.4.3 Interviews

In addressing the challenges in client communication, all respondents noted a shift to virtual interviews using platforms like Microsoft Teams and Zoom during COVID-19. Some (4/15) felt that communication had improved, as virtual meetings with clients became more frequent. One interviewee observed that technology facilitated ongoing monitoring of their team.

Conversely, a group of respondents (6/15) experienced difficulties discussing sensitive topics, such as fraud, in virtual settings, which they found complicated the RA process. Additionally, several interviewees (7/15) cited the loss of non-verbal cues as a limitation, impacting their ability to interpret body language during interviews.

4.4.4 Document collection

Interviewees were queried about changes in the process of document collection from clients and obtaining confirmations from external sources for RA. A number of respondents (6/15) noted the use of email, WeTransfer, or Google Drive for document transfer, subsequently storing these documents on SharePoint. However, a larger group (8/15) indicated a shift to live audit tools, with clients uploading documents onto cloud-based software. Despite these technological advancements, many (7/15) highlighted delays in receiving necessary paperwork from clients.

Regarding external confirmations, some participants (5/15) mentioned transitioning to platforms like 'confirmation.com'. Additionally, others (6/15) described adopting digital signature tools like 'DocuSign'. Several respondents (7/15) took extra steps to ensure the authenticity of data sources. For example, two mentioned having documents certified by a lawyer in high-risk areas, while another noted, "instead of just requesting the bank statement from clients, we would watch them extract the data we needed virtually."

4.4.5 Observation procedures

The impact of COVID-19 on site visits to clients' premises was also examined. Most interviewees (11/15) reported a significant reduction in such visits, with some periods seeing no visits at all. Two respondents emphasized the value of informal interactions at client sites as vital for gathering information, lamenting the loss of this aspect and expressing concerns over increased fraud risks due to the lack of direct observation.

4.5 Way Forward: Lessons Learnt from COVID-19

This section addresses the final objective, corresponding to section E of the interview schedule.

4.5.1 Impact of COVID-19 in a post-COVID world

Respondents were asked to rate their extent of agreement that COVID-19 will continue to have an impact on the audit RA in a post-COVID world. As can be observed in Table 6, 60% of respondents agreed with this statement, 20% strongly agreed, with the other 20% disagreeing.

Table 6. Impact of COVID-19 in a post-COVID world

Frequency Table (Q10)		Frequency	Percentage
To what extent do you agree that COVID-19 will continue to impact the audit risk assessment even in the long run, in a post-COVID world?	Strongly Disagree	0	0%
	Disagree	3	20%
	Neutral	0	0%
	Agree	9	60%
	Strongly Agree	3	20%

Respondents who agreed (9/15) or strongly agreed (3/15) with the statement perceived COVID-19 as a critical wake-up call, redefining the auditors' role beyond mere scrutiny of FS line items. One interviewee remarked, "The resilient focus on GC, NOCLAR, fraud, subsequent events, etc., during COVID-19, will undoubtedly persist." Furthermore, a subset of these respondents (6/9) noted that the pandemic enhanced their openness to unforeseen risk scenarios and heightened vigilance regarding external events' impact on companies. They cited the Russian-Ukraine War as an example, explaining that experiences during COVID-19 made auditors more cognizant of potential effects on companies, such as implications for GC and IC breakdown.

Conversely, the respondents who disagreed (3/15) expressed the view that the repercussions of COVID-19 were not as far-reaching as some literature might have suggested.

4.5.2 The move to virtual auditing

The respondents were inquired about their ongoing use of remote working practices for conducting RAPs and evidence collection.

Several respondents (7/15) noted that video conferencing tools continue to be employed for client inquiries, though they revert to in-person meetings when deemed more effective during the RA stage. Aligning with this hybrid model, the same number of interviewees (7/15) mentioned an increase in visits to clients' premises compared to the peak of COVID-19. They emphasized that a true understanding of a firm's operations can be gleaned from observing employee interactions and workflow, particularly in areas like warehouses. However, a few respondents (3/15) observed that the frequency of site visits has not yet returned to pre-pandemic levels.

Regarding the physical inspection of assets such as PPE and inventory, the majority (9/15) indicated a return to pre-pandemic procedures, believing that physical presence is irreplaceable. Some among them (3/9) noted that this approach is combined with procedures emphasized during COVID-19, like roll forward procedures.

4.5.3 The utilisation of advanced technological tools in a post-COVID world

The interviewees were questioned about the ongoing utility of technological advancements in supporting auditors with RAPs in the post-COVID era.

A significant number of respondents (10/15) indicated that electronic file-sharing platforms, such as SharePoint, remain integral to their RA processes. Within this group, some (7/10) specifically noted the continued benefits of cloud-based accounting software, which facilitates tracking of data received and pending from clients.

Additionally, a few interviewees (4/15) mentioned the sustained use of 'DocuSign' for electronic signing of documents, with ongoing improvements aimed at enhancing system reliability. One respondent underscored that "these lessons learnt will definitely stay." Further, some participants (4/15) observed that the pandemic accelerated the adoption of technology, particularly highlighting a significant shift towards AI and blockchain-based applications. They speculated that advancements in AI might eventually reduce or eliminate the necessity for physical presence at client sites.

4.5.4 The quality of RA with COVID-19 challenges

In the final query, participants were asked to evaluate the extent to which their firms successfully conducted high-quality RA in the face of COVID-19 challenges.

As depicted in Table 7, a majority of the respondents (9/15) strongly concurred that their RA quality remained high despite the pandemic. One interviewee highlighted that this was achieved through increased consultations and, on occasion, involving a second partner to challenge conclusions at the RA stage, thus safeguarding the quality.

The other respondents (6/15) merely agreed with the statement, indicating their belief in a slight diminution in RA quality. They suggested that in certain instances, less attention might have been paid to specific issues due to the impracticalities of addressing them under the pandemic's constraints.

Table 7. High quality RA during COVID-19

Frequency Table (Q13)			
		Frequency	Percentage
To what extent do you agree that your firm managed to carry out high quality audits and high-quality risk assessment despite the added complexities brought about by COVID-19?	Strongly Disagree	0	0%
	Disagree	0	0%
	Neutral	0	0%
	Agree	6	40%
	Strongly Agree	9	60%

Furthermore, the Mann Whitney Test, as illustrated in Table 8, reveals that Mid-Tier firms assigned lower rating scores in this context, leading to a lower average. Nonetheless, the variation in rating scores was not statistically significant, as indicated by a p-value exceeding the 0.05 threshold for significance.

Table 8. High quality RA during COVID-19 – Big Four vs Mid-Tier Audit Firms

Mann Whitney Test (Q13)					
	Audit Firm	Sample Size	Mean	Std. Dev.	P-value
To what extent do you agree that your firm managed to carry out a high-quality risk assessment despite the added complexities brought about by COVID-19?	Big Four	4	4.75	0.500	0.571
	Mid-Tier	11	4.55	0.522	

5. Discussion

5.1 How Did COVID-19 Alter Auditors' Identification and Assessment of Risks?

Arnold (2020) noted that the uncertainties brought about by COVID-19 dramatically altered entities' organizational structures, business models, and associated risks. This aligns with the findings of this research, where interviewees indicated that the pandemic substantially transformed entities' operations, necessitating increased effort in understanding an entity and its environment at the RA stage.

5.1.1 IC & laws and regulation

As highlighted in section 4.1.1, auditors identified IC as a critical area of focus in their RA, particularly as the shift to remote work increased the risk of breakdowns in clients' IC systems. This concurs with research by standards (ACCA-a, 2023; Chartered Professional Accountants Canada, 2021), which underscored the need for auditors to reassess their reliance on controls. Corroborating Public Company Accounting Oversight Board (2020), interviewees observed increased ARs due to staffing shortages, leading to inadequate segregation of duties.

Additionally, Diab (2021) and Dohrer (2020) emphasized the importance of understanding how changes in laws and regulations affected clients' businesses during the pandemic. This research supported these views, with interviewees noting an elevated AR related to NOCLAR, owing to modifications in both general and industry-specific regulations, such as those in the gaming sector. The research also revealed increased AR concerning wage supplements issued by the government, in line with KPMG (2020), as businesses unfamiliar with receiving grants lacked appropriate accounting policies for them.

5.1.2 Emerging ARs

The findings indicate that GC was identified by respondents as the most significant risk arising from COVID-19. In accordance with Financial Reporting Council (2020), this heightened risk often required auditors to report material uncertainties related to GC. Furthermore, interviewees pointed out increased audit work concerning specific FS line items, particularly receivables, payables, revenue, and inventory. This aligns with research (Kaka, 2021), highlighting prolonged debt collection, reduced revenue due to business closures, and inventory obsolescence following sales reductions.

The research also underscores the intensified audit work associated with subsequent events. Echoing Diab (2021), auditors found it challenging to classify the repercussions of COVID-19 as adjusting or non-adjusting events. Additionally, aligning with Institute of Chartered Accountants of Pakistan (2020), some interviewees noted the necessity of reducing materiality levels, including performance materiality and the benchmarks employed for its establishment, at the RA stage.

Participants in this study also reported increased ARs concerning fraud, asset impairment, and asset valuation. These observations are in agreement with findings from several studies (Deloitte, 2023; Diab, 2021; EY, 2020; KPMG, 2020). Diab (2021) highlighted the need for heightened vigilance in fraud detection, particularly due to increased pressures to enhance company performance. EY (2020) described the complexities auditors faced in assessing whether future estimated cashflows were sustainable, complicating the auditing of asset impairment. Furthermore, both interviewees and PWC-b (2020) stressed that valuation model inputs like discount rates needed adjustments to accurately represent the increased risk.

5.2 An Assessment on the Determinants for High-Quality RA

5.2.1 Professional scepticism

Echoing Institute of Chartered Accountants of Pakistan (2020), the study corroborated the necessity for heightened professional scepticism amidst the presence of fraud indicators and complex judgments during COVID-19. Interviewees concurred that increased scepticism was essential to effectively challenge the augmented ARs, particularly in evaluating businesses' future prospects.

5.2.2 Professional experience

Consistent with Haeridistia & Fadjaranie (2019), all interviewees recognized that substantial professional experience accelerates the attainment of reliable conclusions, thereby enhancing the accuracy of RA. However, Klasson & Knutsson (2021) posited that the unprecedented nature of COVID-19 rendered the impact of experience on RA uncertain. In contrast, most respondents in this study upheld the importance of experience in navigating diverse scenarios during the pandemic.

5.2.3 Audit firm's size

Gong et al. (2022) suggested that larger firms like the Big Four are more adept at conducting RA in uncertain environments such as COVID-19. The study's findings partially align with this view, as most respondents agreed on the advantages of larger firm size due to greater resource availability for RA. Nevertheless, some interviewees argued that the adequacy of resources, irrespective of firm size, is paramount for client management. Beechem (2021) found that Big Four firms tend to use more advanced technological tools, facilitating their response to COVID-19 challenges. This observation was reflected in the Mann Whitney Test results in Table 4, showing a higher mean rating for Big Four firms compared to mid-tier firms.

5.3 Has There Been Any Changes in the Timing, Nature and Extent of the Raps During the Global Pandemic?

5.3.1 The timing and nature of RAPs

The study's findings, along with insights from Public Company Accounting Oversight Board (2020), emphasize the necessity of initiating RAPs earlier during the COVID-19 period to adhere to audit timeframes. Correspondingly, The Institute of Certified Public Accountants of Cyprus (2021) and this research both indicate the need for ongoing re-evaluation and calibration of RAPs, adjusting to the evolving nature of the pandemic.

The research also underscored a more comprehensive execution of RAPs, involving deeper inquiry into clients'

risks. This aligns with observations by GCS Malta (2021), who noted that regular RAPs have become increasingly intricate and time-consuming, reflecting the need to understand shifts in clients' operations prompted by the pandemic's unpredictability.

5.3.2 The extent of RAPs

Consistent with a standard (Cohen & Co., 2021), who emphasized the heightened focus on inquiries due to increased risks, a majority of interviewees from this study reported conducting more inquiries during COVID-19. This approach aimed at gaining a deeper understanding of the pandemic's impact on businesses, reflected in a higher mean rating as shown in Table 5.

Arnold (2020) highlighted the necessity of complementing inquiries with other RAPs, such as observations. Aligning with this perspective, several interviewees in this research stressed the continuing importance of observation and inspection during COVID-19, citing the insufficiency of relying solely on management responses. However, as Luo & Malsch (2020) noted, on-site inspections were often hindered due to social distancing and travel restrictions, leading some interviewees to report a reduced use of these procedures during the pandemic, as indicated by a lower mean in Table 5.

The increased reliance on AP during COVID-19, as suggested by Hazaea et al. (2022), aligns only partly with the findings of this study. While some interviewees did report an increased use of AP during the pandemic, the majority indicated that AP became less informative due to the heightened uncertainty and the resulting lack of data comparability affecting ratio analysis, as noted by Institute of Chartered Accountants of Pakistan (2020).

5.4 How Did Auditors Gather Sufficient and Appropriate Audit Evidence on the Identified and Assessed Risks During COVID-19?

5.4.1 Inventory and PPE verification

In response to COVID-19 restrictions, the auditors interviewed indicated that they had to pivot to using video conferencing tools for inspecting inventory and PPE, in lieu of on-site visits. The study's findings further reveal that, particularly for inventory verification, roll forward and roll back procedures were implemented. This aligns with existing literature, which underscores how auditors conducted virtual inventory counts through live video streams and applied roll forward and roll back procedures during the pandemic (ACCA-a, 2023; Arnold, 2020; Diab, 2021; Institute of Chartered Accountants of Pakistan, 2020). However, the literature also mentions other methods not referenced by the interviewees, such as the utilization of AI picture recognition software for counting inventory via snapshots/videos and the employment of drones for inspection purposes (Appelbaum et al., 2020).

5.4.2 Third party confirmations

Consistent with Akrimi (2021), numerous interviewees acknowledged an increased emphasis on securing confirmations from third parties, especially due to the impracticality of physical procedures during COVID-19. They highlighted a transition to using 'confirmation.com', facilitating more effective audit confirmations with clients' stakeholders. However, this finding contrasts with a study (Huy, 2022), who noted that confirmation letters during the pandemic were often sent via email, resulting in extended timeframes for receipt and response.

5.4.3 Interviews

Echoing Luo & Malsch (2020), the study's findings indicate that the pandemic substantially limited face-to-face interactions, prompting auditors to rely on virtual platforms for inquiries. Contrary to the observations of Mugabe et al. (2022), who found no significant impact of the absence of in-person meetings on RA, this study suggests that the shift to virtual meetings enhanced communication with clients due to the increased frequency of interactions. However, in accordance with the study (Appelbaum et al., 2020; Sian, 2022), the findings also reveal that virtual communication posed challenges, particularly in addressing sensitive topics and interpreting non-verbal cues, complicating the risk assessment process.

5.4.4 Document collection

Consistent with Sharma et al. (2022), all interviewees highlighted the adoption of electronic file-sharing solutions like SharePoint and cloud-based accounting software during COVID-19. This ensured that the quality of RA was maintained, as documents could still be shared digitally. However, echoing Litzenberg & Ramirez (2020), the study found delays in receiving necessary information from clients. Additionally, aligning with Sian (2022), the interviewees mentioned instances where they observed clients extracting specific data, such as bank statements, to mitigate risks associated with the authenticity of digitized documents.

5.4.5 Observation procedures

The interviewees noted that the substantial reduction in site visits to clients' premises led to a loss of crucial information typically acquired through informal observation. This aligns with findings by Johnsson & Persson

(2021), who observed that visits to clients are instrumental in gaining a comprehensive understanding of operations and connecting with personnel like sales staff, thereby gathering valuable insights into revenue streams.

5.5 Will COVID-19 Continue to Have an Impact on the Audit RA in a Post-COVID World?

5.5.1 Greater reliance on the audit RA

According to Klasson & Knutsson (2021), RA will play an increasingly vital role in the future, with a study (Hay et al., 2021) suggesting that the focus on GC and fraud will continue to be prominent post-crisis. This aligns with this study's findings, indicating that the heightened attention to risks like GC will undoubtedly persist, exemplified by the ongoing Russian-Ukraine War.

5.5.2 Lessons learnt from leveraging virtual auditing

The responses from the interviews affirm that aspects of virtual auditing, such as using video conferencing tools for client inquiries, will likely be integrated into future auditing practices. This resonates with Serag & Daoud (2021), who posited that remote RA would remain favored due to its efficiency and cost-effectiveness. However, the study's findings also reveal that despite the proliferation of remote work, post-COVID has seen an increase in physical visits to clients' premises. In agreement with Miller Kaplan (2023), interviewees noted the superior effectiveness of conducting on-site inspections for inventory and PPE checks, highlighting the limitations of alternative methods like drones and security cameras.

5.5.3 Lessons learnt from the utilisation of advanced technological tools

The critical role of digitization in audit RA, as highlighted by Deloitte (2023), is evident in the trend towards converting documents into soft copies for real-time access to clients' documentation. This aligns with the perspectives of the majority of interviewees who noted the ongoing use of electronic file-sharing platforms, enhancing accessibility in their RA processes. Additionally, participants mentioned the sustained use of digital signature tools like 'DocuSign'.

The interviewees further suggested that the pandemic-induced shift towards technology will likely see AI and blockchain-based applications becoming increasingly integral to audit RA in the near future. This view is in line with Sharma et al. (2022), who observed that blockchain and AI technologies enable more efficient data analysis at unprecedented speeds.

5.5.4 Have auditors managed to perform high quality risk assessments notwithstanding the COVID audit challenges?

The study's findings indicate that all auditors interviewed were able to conduct high-quality RAs despite the elevated ARs, alternative procedures implemented, and the complexities introduced by COVID-19.

Contrary to the findings of Gong et al. (2022), which suggested that while the Big Four firms adeptly transitioned to virtual auditing and maintained high-quality audits during COVID-19, non-Big 4 firms faced challenges in this area, the results of this research, as indicated by the Mann Whitney Test, reveal no significant statistical difference between the Big Four and mid-tier firms. All respondents affirmed their ability to perform high-quality RAs during the pandemic.

6. Conclusions

This study's investigation into the first research objective led to the conclusion that the COVID-19 pandemic necessitated augmented audit efforts in understanding clients' businesses and their operational environments. It was discerned that GC emerged as a predominant risk, with asset impairment, including PPE, inventory, and receivables, following closely. The research further elucidated that a more stringent review of IC procedures was imperative, thereby intensifying the risks associated with fraud and subsequent events.

The relationship between professional scepticism and experience was also examined. It was found that heightened professional scepticism, a characteristic more prominent among experienced auditors, was crucial for identifying key risks and challenging assertions in the high-risk environment induced by the pandemic. Opinions on the impact of audit firm size on managing COVID-19 audit challenges were mixed. While a significant proportion of interviewees concurred that larger firms, with superior resources and technological tools, were better equipped, a contrary view was expressed by others, indicating no discernible advantage of larger firms over their smaller counterparts.

In addressing the second research objective, it was concluded that RAPs were executed more comprehensively during the pandemic. Auditors incorporated additional information and qualitative elements into their APs. The timing of RAPs varied: some auditors initiated RAPs earlier due to the increased scope of audit work, while others deferred them to allow clients time to assess COVID-19's impact. Regular revisiting of RAPs was necessitated as the pandemic evolved. It was observed that inquiries and APs were more frequently utilized during COVID-19, as

compared to observation and inspection methods. Despite AP offering less comparability in useful information, their consistent application was instrumental in highlighting risks.

Furthermore, this research delineates a significant shift in the methodology of gathering audit evidence, attributable to the implementation of advanced IT tools. Addressing the third objective, novel procedures such as inventory roll forward/back, enhanced reliance on supporting documentation for PPE, and increased utilization of third-party confirmations were identified. Additionally, auditors employed extra measures to authenticate documents. However, the study concludes that the diminution in client site visits and reliance on virtual inquiries led to a dearth of non-verbal cues and informal inspections, perpetuating elevated ARs.

In conclusion, the findings project a lasting impact of COVID-19 on audit RA in the post-pandemic era. Persisting focus on GC, NOCLAR, and fraud, underscored by the ongoing Russian-Ukraine War, signal the enduring lessons for auditors in remaining vigilant of external events influencing companies. While the pandemic catalyzed the transition to virtual auditing, tools like video conferencing, electronic file sharing platforms, and cloud-based software such as CaseWare, 'DocuSign', and 'confirmation.com' are anticipated to retain their relevance in supporting RAPs. Nevertheless, the return to conventional physical procedures, including face-to-face inquiries, onsite examinations of PPE and inventory, and visits to clients' premises, was observed. This approach, affirming the necessity of physical inspection of sensitive documents, is deemed essential for maintaining high-quality RA.

Although the COVID-19 pandemic introduced challenges in audit RA, leading to more thorough RAPs and adapted evidence collection methods, all participating auditors emphasized their ability to conduct high-quality RA. This paper underscores that while the pandemic significantly impacted auditing practices in Malta, it also fostered positive developments. Notably, the adoption of advanced technologies, including AI and blockchain applications, emerged as beneficial tools during the outbreak, with their utility expected to extend into the post-pandemic era. These advancements are projected to enhance the efficiency and effectiveness of RA, thereby improving audit services for clients and serving the public interest more effectively. As Information Systems Audit & Control Association (2022) aptly noted, "The future is here, and change is being accelerated by the COVID-19 pandemic."

However, this study is subject to certain limitations. Firstly, the interviewees' personal views and experiences may impart a degree of subjectivity to their responses. Secondly, there might have been a reluctance among participants to reveal specific information, potentially influenced by allegiance to their respective companies. Thirdly, minor inconsistencies were observed between respondents' ratings on the Likert scale and their answers to open-ended questions. Lastly, while the study included interviews with representatives from the most prominent audit firms in Malta, the sample size of fifteen participants could be considered limited for a comprehensive quantitative analysis to generalize findings across the population. This limitation was addressed by incorporating qualitative analysis to enrich the overall quality of the results.

The inclusion of black swan events in risk assessments is essential due to their potential to significantly impact firms across various industries. While traditional risks like financial and liquidity issues remain important, it is crucial for AR assessments to specifically and thoroughly consider black swan risks. Consequently, the adoption of cloud-based technology platforms, as already implemented by some audit firms surveyed, is recommended for all audit firms. These platforms enable efficient collaboration among audit teams, as they consolidate data in a single, easily accessible source from any location. Additionally, they enhance data security and reduce the risk of data loss.

Investing in advanced software that facilitates an accurate risk assessment process is prudent. Current technological applications can achieve this through trend and regression analysis combined with customizable peer benchmarking, rather than relying solely on predefined industry-specific comparisons. This approach results in a more precise identification of risk indicators. As business models and RAPs evolve with digital transformation, audit firms should not only prioritize hiring individuals based on their industry experience but also seek auditors with a strong understanding of technology. Furthermore, recruiting individuals with a solid background in STEM (Science, Technology, Engineering, and Mathematics) subjects should be considered. Such a strategy will enhance diversity within audit teams, introducing fresh perspectives on how to augment or replace traditional auditing procedures reliant on human judgment. This multidisciplinary approach is vital for effectively leveraging technology in auditing and adapting to the increasingly complex landscape of business risks.

Indeed, in the context of global challenges such as the COVID-19 pandemic, the ongoing conflict in Ukraine, potential future pandemics, and the prevalent use of videoconferencing, which may potentially diminish auditors' natural inclinations toward scepticism, the emphasis on scepticism and judgment becomes paramount. It is imperative, therefore, to advocate for comprehensive training for audit professionals in this realm. Such training should be aimed at fostering a mindset of suspicion when appraising the risks faced by their organizations.

This study sought to shed light on the interplay between professional scepticism, experience, and the size of the audit firm in relation to the implications of COVID-19 for AR assessment. However, future research could delve deeper, particularly focusing on how organizational and individual factors—such as the size, culture, and structural dynamics of the firm, in conjunction with professional experience and judgment—influence the quality of AR

assessment. Investigating these aspects could reveal the distinctions and parallels between these variables, and identify which exerts the most significant impact. Such insights would be invaluable for both organizations and auditors, guiding them to prioritize key attributes that enhance the efficacy of their AR assessment practices.

Author Contributions

All authors have contributed equally to this article.

Data Availability

The data used to support the research findings are available from the corresponding author upon request.

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Conflicts of Interest

The authors declare no conflict of interest.

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Appendix

Introduction to the Study

The scope of this study is to investigate the implications of COVID-19 on the process of identifying and assessing risks within auditing and to analyse whether any modifications were made to the timing, nature and extent of the risk assessment procedures and the various methods used to collect audit evidence. This study also aims to examine the impact of COVID-19 on the audit risk assessment in a post-COVID world, focusing on any adaptations and improvements for the future.

Section A: Auditors' Identification and Assessment of Risks

1. During the process of identifying and assessing the risks of material misstatement, the auditor obtains an understanding of the entity and its environment, the applicable financial reporting framework, any relevant industry specific regulations and the entity's internal control system. During COVID-19, did you notice a higher audit risk because of changes to the above? In what ways?
2. Can you describe in detail any new audit risks that emerged during audit execution or audit risks that became more significant as a result of the COVID-19 uncertainties?
 - a) When it comes to clients' financial statements items (such as revenue, receivables, cash etc), can you explain in detail which items required more audit work during COVID-19 and hence made the risk assessment more demanding?

Section B: Determinants for a High-Quality Risk Assessment

Previous literature has pointed out that there are individual and organisational aspects which stimulate the quality of the audit risk assessment and the extent to which COVID-19 impacts this process, such as professional scepticism, professional experience and the audit firm's size.

3. Lack of professional scepticism is found to be the cause to most audit failures. In the COVID environment, how important do you think exercising professional scepticism was to overcome the problems encountered? In what ways? Kindly rate from 1 to 5 with 1 being 'not at all important' and 5 being 'extremely important'.

Not Important	Slightly Important	Moderately Important	Very Important	Extremely Important
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4. From a scale from 1 to 5 with 1 being 'strongly disagree' and 5 being 'strongly agree', from your experience at your firm, to what extent do you agree that a high level of professional experience tends to help auditors to come to reliable conclusions faster, to reduce their likelihood of being implicated in audit failure, and hence to make their risk assessment more accurate?

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
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- a) On a similar note, is this in any way different under environmental uncertain conditions like COVID-19? *To what extent do you agree that a high level of professional experience tends to help auditors **even under environmental uncertain conditions** to come to reliable conclusions faster, to reduce their likelihood of being implicated in audit failure and hence to make their risk assessment more accurate?* Kindly rate from 1 to 5 with 1 being 'strongly disagree' and 5 being 'strongly agree'.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
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5. On a scale from 1 to 5 with 1 being 'strongly disagree' and 5 being 'strongly agree', to what extent do you agree that the audit firm's size has an influence on the quality of the audit risk assessment and on how well prepared the firm is to handle the COVID-19 audit challenges? Why?

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
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Section C: Risk Assessment Procedures

6. As COVID-19 brought with it new risks, did you have to adjust the time when certain risk assessment procedures are performed? (*Eg: analytical procedures, inquiries, observations, etc*)
7. Apart from the timing of the risk assessment procedures, did you encounter any modifications in the nature/format of the risk assessment procedures, i.e. whether alternative risk assessment procedures were used to identify the high risk areas?

8. From a scale from 1 to 5, with 1 being ‘not important’ and 5 being ‘extremely important’, how important were the following risk assessment procedures, in terms of their usage both before the pandemic and during COVID-19?

Pre-COVID-19

	Not Important	Slightly Important	Moderately Important	Very Important	Extremely Important
<i>Making Inquiries of management and of others within the entity</i>					
<i>Analytical Procedures</i>					
<i>Observation & Inspection</i>					

During COVID-19

	Not Important	Slightly Important	Moderately Important	Very Important	Extremely Important
<i>Making Inquiries of management and of others within the entity</i>					
<i>Analytical Procedures</i>					
<i>Observations & Inspection</i>					

Section D: Sufficient & Appropriate Audit Evidence

9. Can you explain in detail how COVID-19 may have modified the methods used to obtain reliable audit evidence, in respect of the following in-person procedures?
- Inventory Verification: ISA 501 requires auditors to attend inventory counts where inventory is material. In cases where attendance was not permitted, what alternative procedures were performed?
 - PPE Evaluation: If traditional methods could not be used, what alternative methods were used?
 - Third Party Confirmations: Did you place greater reliance on obtaining confirmations from third parties?
 - Document Collection: During COVID-19, has there been a change in the process of obtaining information from your clients and in obtaining confirmations from external sources? Did you perform additional procedures to test the reliability of the data sources?
 - Observation Procedures: Has the number of visits to clients decreased during COVID-19? In what ways?
 - Interviews: Have you encountered any problems in this respect?

Section E: Way Forward: Lessons Learnt from COVID-19

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
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- On a scale from 1 to 5 with 1 being ‘strongly disagree’ and 5 being ‘strongly agree’, to what extent do you agree that COVID-19 will continue to impact the audit risk assessment even in the long run, in a post-COVID world? Give reasons for your answer.
- One form of audit adaptation during COVID-19 was the conduct of virtual audits. Now that government restrictions have been lifted, do you still make use of remote working when conducting risk assessment procedures and gathering audit evidence? What are the plans for the future?
- The pandemic has accelerated the utilisation of advanced technological tools (such as secure file exchange portals or cloud-based accounting software). In a post-COVID reality, in what ways do you think the advancement in technologies will continue to be useful in supporting auditors in conducting their audit procedures?
- From a scale from 1 to 5, with 1 being ‘strongly disagree’ and 5 being ‘strongly agree’, to what extent do you agree that your firm managed to carry out high-quality risk assessments despite the added complexities brought about by COVID-19? Explain.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
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