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Impact of auditor characteristics and Covid-19 Pandemic on KAMs reporting

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Abstract

Purpose – This paper aims to investigate how auditors' characteristics affect key audit matters (KAMs) in the new audit report. It also provides an understanding of the effect of the COVID-19 pandemic on different audit reporting decisions and audit quality in specific industries.

Design/methodology/approach – The paper uses a survey based on actual audit case studies extracted from the management letters of clients in an audit firm with international affiliation to test the proposed hypotheses. Kruskal–Wallis and Mann–Whitney tests are conducted to analyze variance in responses among different groups of auditors regarding their selection of audit report sections required for each audit matter. The Wilcoxon signed rank test analyses difference in the auditors' responses pre- and post-COVID-19 implications.

Findings – Most of the developed hypotheses were only partially accepted where industry specialization, professional qualifications of the auditors and the effects of COVID-19 had some effects on the ability of auditors to recognize and disclose KAMs. Auditor position is the most factor that significantly influenced the recognition of KAMs in the new audit report resulting in higher audit quality. This was specially the case with auditors specializing in manufacturing and financial institutions.

Originality/value – The current research illustrates that during the pandemic, auditors were more effective in recognizing KAMs compared to other audit matters, thus enhancing users' confidence in both the audit and the financial reporting processes. The results are useful to regulators and auditors as they provide a better understanding of the factors that may impact communicating KAMs in the new audit report under COVID-19.

Keywords Auditing, Audit reports, Audit firms, COVID-19, KAMs, Auditors' characteristics

Paper type Research paper

1. Introduction

Relevant and reliable information is required for users to make various decisions. Audit firms examine the reliability of the financial statements through the auditors' reports (Vaziri and Azadi, 2017). Auditing profession requires continuous reforms to communicate reliable information to users. Regulators require that this communication be done through the auditor's report. The more transparent the auditor's report content, the greater perception of audit quality. The International Auditing and Assurance Standards Board (IAASB, 2015) and the Public Company Accounting Oversight Board (PCAOB, 2017, 2020) issued in 2015 and 2017, the new auditing reporting standards to provide expanded and detailed measures

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to the audit report. Many audit firms worldwide issued the new audit report for audited financial statements before its formal application date (Pinto and Morais, 2019). Furthermore, new regulation in the European Union introduced the mandatory disclosure of key audit matters (KAMs) with a discussion about whether to extend the new audit report to private and government entities. Hegazy and Kamareldawla (2021) indicated that KAM are those matters that, in the auditor's professional judgment, were of most significance in the audit of the current period financial statements. KAMs are selected by auditors from matters communicated to those charged with governance. They may include areas identified as significant risks requiring significant management judgment and unusual transactions. KAMs may include areas in which the auditor encountered significant difficulty during the audit including the accumulation of sufficient appropriate audit evidence. KAMs could also include circumstances that require significant modifications of the auditor's planned approach. Audit firms in Egypt follow the Egyptian Standards on Auditing (ESAs), which are translated versions of the International Standards on Auditing (ISAs). Thus, audit firms in Egypt follow the ISAs requirements for KAMs. However, in practice, only the Big 4 and few auditing firms with international affiliation include KAMs in their audit report, especially for consolidated financial statements prepared according to the International Financial Reporting Standards (IFRS). These auditing firms use narrative explanations for KAMs without yet adding graphical presentations as the case for KAMs in developed countries.

Moreover, recent corporate failures and the effects of the COVID-19 pandemic led to regulating bodies taking reform measures to improve the perceived value of audits and enhance audit quality (Cordoș and Fülöp, 2015). This is consistent with the stakeholder theory which highlights the importance of the new audit report with its related KAMs disclosures to satisfy the stakeholders needs and achieve the standards setters' objectives. Several publications by the Staff Audit Practice Alert (Staff Audit Practice Alert, 2020a, 2020b, 2020c) identified considerations for the impact of COVID-19 on audit reporting; going concern (GC), subsequent events, accounting estimates and interim financial reporting. For example, auditors when forming an opinion on financial statements including KAMs according to ISA 700 and 701 are required to assess new uncertainties introduced because of COVID-19 in the calculation of accounting estimates (i.e. impairment calculations) as well as the impact of new or changed laws or regulations (Staff Audit Practice Alert, 2020d). The occurrence of COVID-19 which became a global pandemic during 2020–2021 forced the auditing profession worldwide to take measures to reduce its effects on both the auditors and the management in performing their duties. For auditors, uncertainty created risks of material misstatements that are new or intensified in the circumstances related to the audit of the financial statements. Management, on the other hand, are adjusting to the changing environment associated with their operations including financial reporting processes, disclosures in financial statements and their ability to safeguard operations and activities in the foreseeable future. Several studies investigated the impact of KAMs disclosure on the investors' decisions, the auditor's liability, audit fees and earnings management (Christensen *et al.*, 2014; Gimbar *et al.*, 2016; Sirois *et al.*, 2018; Lennox *et al.*, 2019; Köhler *et al.*, 2020). Christensen *et al.* (2014) found that investors who receive a critical audit matters (CAM) paragraphs are more likely to change their investment decision than investors who receive a standard audit report. While Kachelmeier *et al.* (2020) experimentally reported that KAM/CAM reduces the auditor's liability in relation to misstatements, Gimbar *et al.* (2016) concluded that KAM/CAM exposes the auditors to high litigation liabilities. Gimbar *et al.* (2016) argue that a new section in the audit report (KAMs) is more likely to increase the liability of auditors, which, in turn, motivates them to exert much more effort in providing

high-quality audits, protecting their reputation and avoiding financial costs. This implies that auditors will try to list informative and high-quality KAM. Sirois *et al.* (2018) examined the effectiveness of KAMs in a small Canadian manufacturing public company and found that participants pay more attention to KAMs disclosures which are communicated in the auditor's report. Their findings suggested that KAMs direct the user to focus their attention on the issues highlighted by the auditors when reading the financial statements. However, when exposed to an auditor's report with several KAMs, participants devote less attention to the remaining parts of the audited financial statements. Also, Reid *et al.* (2019) found an improvement in the quality of earnings following the new disclosure requirement in the audit report.

Moreover, Lennox *et al.* (2019) found client characteristics are determinants of the type of KAMs disclosed by an auditor and that differences exist in the extent to which entity-wide versus account-level KAMs capture value relevant risks at the firm level. Finally, Köhler *et al.* (2020) did not find any evidence that investors consider KAM disclosures as incrementally informative. They suggested that research on how auditors' characteristics affect KAMs disclosure is required as this disclosure is based on their judgment. The qualifications, experience, job position and the type of audit firm did have an impact on the disclosure of KAMs in audit reports. Experienced auditors in specific industries and with professional degrees are expected to provide audit reports with detailed disclosure of KAMs (Wuttichindanon and Issarawornrawanich, 2020; Nguyen and Kend, 2021). The current study investigates the impact of the auditors' characteristics on KAMs disclosure and how such disclosure is affected by the COVID-19 pandemic outbreak. Understanding and applying the new auditing standards may require auditors to have adequate experience in specific industries, qualifications and more resources. This concern motivates the first research question: Do the auditor's experience, competence, gender, position and the type of audit firm affect the recognition and disclosure of KAMs? Investigating the effect of the COVID-19 pandemic on such disclosure is another main objective leading to the second research question: Does COVID-19-related implications affect the audit reporting decisions and KAMs disclosure given the challenges faced by auditors and reporting entities during such pandemic? Some of these challenges could include multiple uncertainties facing an entity or a lack of sufficient appropriate audit evidence to be provided to the auditor (PWC, 2020). To answer these two research questions, a questionnaire was developed based on seven actual audit case studies extracted with permission from 10 management letters of audit clients from an audit firm with international affiliation. Two sets of the questionnaires were sent to various levels of auditors in 10 audit firms in Egypt including Big 4 firms and firms with international affiliations. The first set was sent to auditors without indicating the existence of the pandemic. The second set was sent to the same auditors after one month from the date of sending the first set and requesting auditor's selection of the appropriate sections in the auditor's report considering the existence of the pandemic. The findings reveal that auditor position is the most factor significantly affecting the recognition of KAMs. Industry specialization and auditors` professional qualifications have some effect on reporting decisions, but auditor gender and the type of audit firm do not have such impact. The findings also provide evidence that COVID-19-related implications increase the recognition and disclosure of KAMs and affect audit reporting decisions.

The current study contributes to the growing literature related to auditors and audit firms' characteristics and audit quality by identifying those characteristics affecting the recognition and disclosure of KAMs in the new audit report. The study also sheds light on how the implications of COVID-19 pandemic affect audit reporting decisions including the effects on KAMs and its related disclosures. The results may be useful to regulators and

auditors as they provide a better understanding of the factors that may impact communicating KAMs in the new audit report, especially during the pandemic. The remainder of this paper proceeds as follows: Section 2 reviews the relevant prior literature and develops the research hypotheses. Sections 3 and 4 discuss the research methodology and present the results. Finally, Section 5 includes the conclusion and recommendations for future research.

2. Auditors' characteristics, audit reports and hypotheses development

The financial crises and various audit failures forced accounting professionals and regulating bodies to consider means by which audit quality can be enhanced. Efforts were directed toward improving the audit reporting by amending specific auditing standards to decrease the information asymmetry between auditors and users (Bédard *et al.*, 2014). The PCAOB and IAASB suggested significant changes to the audit reports including disclosing the KAMs and the GC paragraphs in such reports to minimize the expectation and information gaps between users and auditors (Church *et al.*, 2008). Meanwhile, the onset of the COVID-19 pandemic around the world presented unique challenges for audit firms to undertake their audit tasks and provide their audit opinions. The effect of COVID-19-related implications on determining and communicating KAMs may result from pandemic effects including mobility restrictions and difficulty of auditors to have in-person meetings with the management, audit committee and the board of directors, as well as uncertainty embedded in both the audit evidence collection and the client's business disruptions. As a result of repeated lockdowns, auditors may face difficulties in performing the audit process and obtaining adequate evidence. Thus, auditors may need to perform additional audit work to disclose KAMs in the audit report to overcome the impact of COVID-19 outbreak.

At the same time, auditors may face challenges when preparing the new audit report due to the lack of their qualifications and experience, in addition to the uncertainty existing during the pandemic. The qualifications of auditors, especially in emerging economies, may be insufficient to enable them to understand the application of the new auditing standards before and after the occurrence of the COVID-19 pandemic. Such matter may affect the audit quality and user's confidence in the financial reporting process. Also, the type of audit firm may have a significant role in preparing the new audit report given the available resources, training, qualified personnel, network and members' support associated with the Big 4 compared to non-Big 4 audit firms. Non-Big 4 audit firms suffer from shortage in their resources needed to acquire the knowledge to properly perform the various audit tasks and related reporting requirements, especially during the pandemic (PWC, 2020).

In addition, the accounting and auditing profession, in an emerging market such as Egypt, may have some issues related to the experience, competency and gender of the auditors. In such circumstances and situations, junior auditors may rely on the basic knowledge and qualifications from their universities' education. Regarding the professional standards for accountants and auditors, the educational quality in Egypt suffers from a lack of new and sufficient curriculum (Wahdan *et al.*, 2005). Thus, the curriculum may need to be enhanced and developed to satisfy the new requirements of the new audit report given the effects of the pandemic. For example, the ability to perform audit tasks using online cloud audit software with related information technology skills should be included more in the accounting and auditing curriculum. Moreover, more examples and case studies should be provided in teaching auditing and forensic accountant courses to highlight significant areas requiring the disclosure of KAMs, especially during the pandemic. Also, the Egyptian Society of Accountants and Auditors (ESAA) provides good training for auditors before passing the two levels of exams to earn their Certified Public accountants (CPA) license, thus

providing auditors with good qualifications for providing high quality audit. Many Egyptian graduates tend to sit for either the American Institute of Public Accountants (AICPA) or Association of Chartered Certified Accountants (ACCA) exams to get the CPA license, enhancing their qualifications and competence in performing their diversified audit tasks. In addition, all international auditing firm networks are well represented in Egypt providing adequate resources and training for auditors in those firms enhancing their qualification and competence. Finally, the ESAA does require continued professional education (CPE) from its members, but in practice, there are no penalties for the nonadherence. Therefore, auditors may suffer from a shortage of knowledge and competency within lower levels of management positions to apply the new audit reporting standards and achieve the required level of audit quality.

Audit reports should meet the requirements of determined standards to improve audit quality by producing reliable information for decision-making considerations (Furiady and Kurnia, 2015). Audit quality may be significantly affected by factors such as work experience (Furiady and Kurnia, 2015), qualifications (Zahmatkesh and Rezazadeh, 2017), gender of auditor (Yang *et al.*, 2018), type of the audit firm (Vaziri and Azadi, 2017; Alsmairat *et al.*, 2019) and the auditor's position. Recently, the impact of the changes in an audit report on audit quality was investigated in several research studies (Bédard *et al.*, 2014; Reid *et al.*, 2019; Kitiwong and Sarapaivanich, 2020; Moroney *et al.*, 2021). Li *et al.* (2019) examined a sample of listed companies in New Zealand and found that upon the adoption of the new audit reporting regime, audit quality had improved expressed in reduction in absolute abnormal accruals. They also discovered higher audit fees are associated with the implementation of the new audit standard (ISA701) and are found to be costly. Reid *et al.* (2019), on the other hand, provided different results and claim that KAM disclosures are not increasing incremental audit costs. Also, Nguyen and Kend (2021) examined the impact of KAM disclosures on audit reports and audit quality in Australia and indicated that there is little consensus among some stakeholders on to whether the KAM reforms may have improved audit quality. The findings conveyed that the auditors and regulators, standard setters acknowledged that KAM disclosures are either costly and/or time-consuming to implement. The Big 4 auditors indicated that these reforms led to changes mainly around internal consultations and independent reviews, whereas the non-Big 4 auditors highlighted increased interactions with audit clients.

2.1 Experience and qualification

The experiences and qualifications of auditors have a significant role in the issuance of the appropriate auditors' reports. Prior research examined the effect of auditor characteristics such as experience, qualification and competence and gender on audit quality (Furiady and Kurnia, 2015; Hardies *et al.*, 2016). Other studies focused on the determinants of KAMs that influence the disclosure and the number of KAMs by auditors (Pinto and Morais, 2019). Limited studies investigated the disclosure status of KAMs and the factors affecting this disclosure (Shao, 2020; Wuttichindanon and Issarawornrawanich, 2020). The current study considers that the disclosure of KAMs is affected by the auditor's characteristics such as experience, qualification, gender, position and the type of audit firm. According to stakeholder theory, owners and users may be concerned with the audit report and related audit quality (Kivits and Sawang, 2021). Auditors must present the new audit report that satisfy the stakeholders requirements and achieve the standards setters' objectives. The experience and industry specialization are important characteristics to perform audit duties and achieve the required audit quality. Boynton *et al.* (2010) indicated that the competence of auditors is based on the formal education at the university, the training, practice and

experience in the auditing field and auditors gaining CPEs throughout their professional career. Prior studies investigated the effect of auditor experience and qualification on the audit report and audit quality (Balsam *et al.*, 2003; Asmara, 2016; Zahmatkesh and Rezazadeh, 2017). Experienced auditors in specific industries and with professional degrees are expected to provide audit reports with high quality. Auditors must have the competence and the obligation to maintain professional knowledge and skills on an ongoing basis (Asmara, 2016). Zahmatkesh and Rezazadeh (2017) found that the experience and professional competence of the auditor had a significant effect on the audit quality. Similarly, Furiady and Kurnia (2015) found that audit quality is positively influenced by the experience, competency, accountability and the objectivity of the auditors in public accounting firms. The current study predicts that the experienced and more qualified auditors will be able to identify KAMs effectively more than unexperienced and unqualified auditors, especially during the pandemic. Thus, the following hypotheses are developed:

H1. Industry specialization has a significant effect on the ability of auditors to recognize and disclose KAMs.

H2. Professional qualifications significantly affect the ability of auditors to recognize and disclose KAMs.

2.2 Gender

Gender role socialization theory expects that males and females may bring different ethical values to work. This may result in differences in their decision-making concerning how misstatements, the GC and KAMs are disclosed in the audit report (Breesch and Branson, 2009; Hardies *et al.*, 2016). Contemporary literature had mixed results of audit quality based on gender differences. While some studies suggested that gender has significant influence on the performance of the various audit tasks throughout the audit cycle as well as the audit quality (Yang *et al.*, 2018; Hossain and Chapple, 2018), others found no significant differences in the audit quality due to gender (Li *et al.*, 2012; Gul *et al.*, 2013; Wang *et al.*, 2014; Hottegindre *et al.*, 2017). Contrary to studies that found male auditors provided greater audit quality than female auditors (Zhang *et al.*, 2014; Hossain and Chapple, 2018; Abdelfattah *et al.*, 2021), other studies found that female auditors are more efficient and accurate in complex decision-making situations (Sun *et al.*, 2011; Ittonen *et al.*, 2013; Garcia-Blandon *et al.*, 2019). Abdelfattah *et al.* (2021) suggest that behavioral variances between females and males may affect their writing style while disclosing KAMs. The current research predicts that the ability to identify KAMs in the audit report differs from male to female auditors. Thus, the following hypothesis is developed:

H3. Gender differences significantly affect the recognition and disclosure of KAMs by auditors.

2.3 Auditor position

The position of auditors requires them to be qualified and certified by a regulatory authority. Auditors move in the hierarchy of audit firms from junior, senior auditors, vice managers, audit managers until they reach the top of the hierarchy as audit partners. According to the theory of inspired confidence, auditors should keep appropriate business practices to maintain their independence from the firm being audited, to satisfy their obligations and provide a credible opinion on the financial statements. Auditors moving in

the hierarchy of the audit firm should be more independent, possesses required experience and competence to perform the various audit tasks with high quality and be able to identify matters with significant risks related to the disclosure of KAMs. Prior literature investigated the relationship between the auditors' positions measured by years of experience and the auditor's performance and the quality of the audit report (Zahmatkesh and Rezazadeh, 2017; Lennox and Wu, 2018). Most studies found positive effect of years of experience on the audit report (Balsam *et al.*, 2003; Luo *et al.*, 2014). Other studies found that the age was negatively related to the audit quality (Chen *et al.*, 2016; Goodwin and Wu, 2016). The current study suggests that auditors with higher positions in audit firms as managers and partners will be more competent to satisfy the requirements in the new audit report and effectively identify and disclose KAMs than others in lower-level management positions. Based on the above, the following hypothesis is developed:

H4. Auditor's position significantly affects the recognition and disclosure of KAMs.

2.4 Type of the audit firm

Audit reports issued by large audit firms may differ in content from those issued by small firms. The audit literature suggests that many economic factors influence the audit quality including the firm size (Francis *et al.*, 1999; Vaziri and Azadi, 2017). De Angelo (1981) demonstrated that auditor firm size has a positive relationship with audit quality and auditors' opinions as expressed in the audit report. Large audit firms are likely to provide higher-quality audit services than small audit firms to protect their reputation and maintain their independence (Vaziri and Azadi, 2017). Other studies revealed that the type of audit firm has insignificant influence on audit quality (Ali and Aulia, 2015). For example, Lowensohn *et al.* (2007) indicated that Big 4 audit firms have been linked with lower audit quality than non-Big 4 audit firms in a governmental setting. Other studies empirically examined the relationship between the type of audit firm and auditors' going-concern opinion decisions as a proxy for audit quality (Lennox, 1999; Bauwhede *et al.*, 2003). Dye (1993) suggested that large audit firms are more likely to disclose going-concern problems because they have more wealth at risk from litigation. Also, Lennox (1999) found that opinions issued by large audit firms are more accurate than opinions provided by small audit firms. Wang *et al.* (2014) found that Big N firms helps to mitigate information asymmetry in Taiwan, while in China, they are better able to constrain earning management. Thus, Big 4 have more qualified personnel and resources than other audit firms, a matter which increases the ability of the auditors in the Big 4 audit firms to identify KAMs and issue reliable audit reports. Thus, the following hypothesis is formulated:

H5. The type of audit firm significantly affects the auditor's ability to recognize and disclose KAMs.

2.5 COVID-19 pandemic

Regulating bodies (e.g. IAASB; AICPA; PCAOB) and academic researchers investigated the effect of COVID-19 on the preparation of the audit report. Most of them indicated that there is a significant impact of COVID-19 crisis on the execution of audit work. Also, global developments related to the pandemic may impact the work of auditors (IAASB, 2020). The Financial Reporting Council reported the effect of the COVID-19 pandemic on audit quality providing a guide for auditors on the matters that should be considered in relation to the impact of social distancing measures (FRC, 2020). Moreover, some recent studies

investigated the effect of COVID-19 pandemic implications on the economies relating to audit quality and the audit process (Albitar *et al.*, 2021). These studies stated that to enhance audit quality, and there is a need to improve audit reporting communication by disclosing KAMs and GC paragraphs. A study by Akrimi (2021) found that the pandemic had a significant impact on the audit quality, according to the opinions of Saudi auditors. Similarly, Albitar *et al.* (2021) discussed the theoretical impact of COVID-19 social distancing outbreak on audit quality and found that the pandemic negatively influences the quality of the audit process. They believe that COVID-19 social distancing can largely affect audit fees, GC assessment, audit human capital, audit procedures, audit personnel salaries and audit effort, which can significantly affect audit quality. The Staff Audit Practice Alert (Staff Audit Practice Alert, 2020d) highlighted some areas of focus in an evolving audit environment due to the impact of COVID-19. For example, changes in how, and where, auditors may undertake their work under the pandemic in response to the changing environment. This may include the change of direction and supervision of engagement teams and the review of their work. Also, at the engagement level, how auditors may increase their awareness of the possibility of fraud and errors, their reporting decisions including the disclosures of KAMs compared to qualifications in the new audit report. Similarly, auditors should adjust the process under which they obtain sufficient appropriate audit evidence on which to base their audit opinion, especially during the pandemic. Hay *et al.* (2021) describe the early effects of COVID-19 on auditing in New Zealand and expect the pandemic to increase auditor responsibility, introduce changes in reporting in internal control, changes in corporate governance and increased responsibility for fraud. Crucean and Hategan's (2021) study show that the pandemic significantly impacted most industries. They showed that auditors assessed the risks posed by subsequent events reported by companies and resulted from the pandemic, presenting some significant uncertainties regarding the GC of the activity of some companies. Diab (2021) conducted document and website analysis and observed that COVID-19 had significant implications for the whole audit process, including the emergence of new fraud risks and introduction of changes in risk assessment and accounting estimates and the required revisions of the previous set of audit plans. These implications could affect the treatment of subsequent events and type of audit opinion to be issued. Although recent research explored the economic and social influence of COVID-19 and its impact on the audit process, empirical research examining the effect of the outbreak on disclosing KAMs in audit reports do not exist. Our study, therefore, aims to address this research gap in the auditing literature and explore further the possible effects of the COVID-19 outbreak on KAMs and its related disclosure. We expect the number of KAMs to increase in the audit reports due to the increased uncertainty and judgments in the financial statements (PWC, 2020). Building on the results of prior research and recommendations from the regulating bodies, the following hypothesis is developed:

H6. COVID-19 implications have a significant effect on the recognition of KAMs and the audit reporting decisions.

3. Research methodology

Two sets of questionnaires were designed to examine the auditors` ability to identify the appropriate type of audit report for different audit matters including those requiring KAM paragraphs before and after auditors take into consideration the effects of COVID-19. The questionnaires were developed from several actual audit matters including misstatements extracted from 10 clients' management letters from one audit firm with international affiliation in Egypt. Two professors of auditing in reputable School of Businesses and two

audit partners with more than 15 years of experience from the selected audit firm selected the audit matters. The questionnaire was sent to various levels of auditors in 10 audit firms in Egypt including Big 4 firms and firms with international affiliations. The first set of the questionnaire was sent to auditors without indicating the existence of the pandemic and requesting auditors to select the sections in the auditor report where the audit case applies. The second set of the questionnaires was sent to the same auditors after one month from the date of sending the first set and requesting auditor's selection of the appropriate sections in the auditor's report considering the existence of the pandemic. Each questionnaire is composed of seven case studies extracted from the selected management letters of clients in the manufacturing, construction and commercial industries as shown in the Appendix. Each case study contains several audit matters where audit participants are asked to determine the appropriate opinion considering the requirements of ISAs for audit reports. Twenty-eight audit matters were selected for the seven case studies.

Using the experience of two audit partners (as well as the academic qualifications of the two audit professors) as a benchmark for proper opinion classifications, 14 of those matters were included in the first set of the questionnaire (i.e. before considering the implication of COVID-19) are classified as KAMs while the rest are classified as follows: seven emphasis of matters (EOMs), two GC matters and five qualified opinion (QO) matters. However, some of those matters were classified by those experts differently after considering COVID-19 implications, resulting in 12 KAMs, two EOMs, three GC matters and 11 QO matters. We also presented to the participants some financial information about each case including total assets, total revenues and net profit. The participants were asked to identify the correct classification for each of those 28 matters from among four different choices. The statements were presented in a different sequence to avoid an order effect on participants' responses and the possibility that earlier matters could provide context for subsequent matters. The final part of the survey provided questions on demographic data (see Table 1).

The research participants were auditors with various levels of management in the top 10 ranked audit firms in Egypt according to IAB classification in early 2021. Audit firms in Egypt follow the ESAs and Egyptian Accounting Standards (EASs), which are translated versions of the ISAs and IFRS. The questionnaire was pilot tested to ensure that audit matters accurately reflect the requirements in ISAs including KAMs, as well as assessing the sequence and extent of the questions to achieve the research objectives. A letter stating the purpose of the study along with a brief explanation of the main requirements of ISA 701 was sent to all participants. The distribution of the questionnaires was made randomly among the levels of partners and their subordinates within each audit firm to ensure no bias. The selection of seniors and vice managers was due to their usual participation in brainstorming sessions with managers in drafting the audit report for presentation to partners as well as to assess the effects of job positions on auditors' classification of KAMs. The response rate was 32.8% as a total of 82 questionnaires were collected out of 250 (from each set of the questionnaire) sent to the ten audit firms (each audit firm received 25 questionnaires as the maximum numbers accepted for distribution among their staff) after excluding participants with incomplete information and questionnaires which were not returned. In total, 34.2% of the respondents are audit partners and managers, whereas the rest are vice audit managers and senior auditors. To measure the consistency and the internal reliability of the questionnaire, the Cronbach alpha test is conducted for all questionnaire items. It shows a Cronbach alpha for the first set of the questionnaire (pre-COVID) and the

	No	(%)
Type of international audit firm		
Big 4	38	46.3
Non-Big 4	44	53.7
Participant's position		
Senior auditor	43	52.4
Vice audit manager	11	13.4
Audit manager	14	17.1
Audit partner	14	17.1
Gender		
Male	52	63.4
Female	30	36.6
Years of experience		
5–10 years	45	54.6
11–15 years	9	11
16–20 years	6	7.3
>20 years	22	26.8
Industry specialization		
Manufacturing companies	2	2.4
Service companies	4	4.9
Manufacturing and service companies	18	22
Financial institutions	2	2.4
Different Specializations	56	68.3
Professional qualifications		
Professional certificates (CPA, ACCA, CIA, CMA)	8	9.8
Egyptian Society of Accountants and Auditors (ESAA)	10	12.2
Professional certificates and ESAA	12	14.6
No professional certificates	52	63.4

Table 1.
Demographic data

second set (post-COVID) of 0.828 and 0.817, respectively, indicating an acceptable level of reliability.

4. Results and discussion

Descriptive statistics were conducted to determine the percentage of participants regarding their classification of each audit matter included in both questionnaires (pre- and post-COVID). Since the data is not normally distributed, nonparametric tests were applied. The Kruskal–Wallis's test is conducted to test for analysis of variance in responses among the different industry specializations (*H1*), different qualifications (*H2*) and different job positions (*H4*). The Mann–Whitney test compares the mean ranks between two grouping variables, i.e. gender (male/female) (*H3*) and type of international audit firm (Big 4 and non-Big 4) (*H5*). In addition, the Wilcoxon signed rank test is conducted to test *H6*. This test compares two sets of scores (pre- and post-COVID responses) that come from the same participants.

4.1 Testing the first hypothesis (industry specialization): partial support

According to the results of the Kruskal–Wallis's test shown in Table 3 Panel A, there is no significant difference among the different groups of auditors with different industry specializations toward their classification of the audit matters except for 10 audit matters (1,

*Audit matters	(%) of selection KAM	EOM	GC	QO
1. Company received tax form 9A (KAM)	*31.7*	*25.6*	*19.5*	*23.2*
2. Nonmoving suppliers balances (KAM)	*64.6*	*17.1*	–	*18.3*
3. Significant reliance on third-party finance (KAM)	*30.5*	*30.5)*	*23.2*	*15.9*
4. Violation of EAS 28 (QO)	*20.7*	*9.8*	–	*69.5*
5. Significant increase in the cost of operations (EOM)	*52.4*	*36.6*	*11*	–
6. Misclassification of assets and depreciation matter (EOM)	*57.3*	*29.3*	–	*13.4*
7. Auditors not receiving the stocking sheets (QO)	*40.2*	*6.1*	*2.4*	*51.2*
8. Obsolete inventory and nonmoving supplies (QO)	*24.4*	*7.3*	*8.5*	*59.8*
9. Inability to ascertain clients' credit limits (KAM)	*37.8*	*4.9*	*2.4*	*54.9*
10. No ERP system for inventory (EOM)	*72*	*19.5*	–	*8.5*
11. Direct purchase order and appropriateness of prices (KAM)	*70.7*	*24.4*	–	*4.9*
12. Inability to meet financial obligations (GC)	*26.8*	*7.3*	*61*	*4.9*
13. Company not operating with full capacity (EOM)	*59.8*	*37.8*	–	*2.4*
14. Assessment of impairment not according to EAS 31 (QO)	*26.8*	*15.9*	*2.4*	*54.9*
15. Inventory average value (KAM)	*67.1*	*17.1*	*2.4*	*13.4*
16. Inventory without significant sales (EOM)	*50*	*24.4*	–	*25.6*
17. Assessment of residual value for fixed assets (KAM)	*48.8*	*11*	*7.3*	*32.9*
18. Settlement of petty cash balances (KAM)	*63.4*	*20.7*	*6.1*	*9.8*
19. Appropriateness of accounting estimates (EOM)	*63.4*	*24.4*	*2.4*	*9.8*
20. Contractual obligations to government (KAM)	*35.4*	*47.6*	*7.3*	*9.8*
21. Provisions for doubtful debts (QO)	*34.2*	*20.7*	–	*45.1*
22. Economic viability and financial difficulties (GC)	*12.2*	*28*	*54.9*	*4.9*
23. Provisions for legal situations (KAM)	*39*	*22*	–	*39*
24. Assessment of impairment of unused fixed assets (EOM)	*63.4*	*24.4*	*2.4*	*9.8*
25. Nonmoving balances/projects under development (KAM)	*34.1*	*14.6*	*17.1*	*34.1*
26. Financial investment in subsidiaries (KAM)	*37.8*	*37.8*	*2.4*	*22*
27. Sufficiency of tax provisions (KAM)	*29.3*	*17.1*	–	*53.7*
28. Recognition of real estate investment revenues (KAM)	*25.6*	*7.3*	*6.1*	*61*

Note: *The case studies and details about related audit matters are shown in the Appendix

Table 2.
Descriptive statistics (pre-COVID)

4, 7, 9, 12, 13, 17, 20, 21, 27) as the p-value for those matters is <0.05. Although only 31.7% (Table 2) of the participants properly classified the first audit matter concerning the receipt of tax form 9A as a KAM, those who are specialized in different industries, manufacturing, services and financial institutions, were more able to correctly classify it (the mean of 47.54) than who are only specialized in one type of industry. Moreover, auditors who are specialized in auditing manufacturing companies have higher mean ranks for most of those 10 audit matters. They were able to recognize that the inability of auditors to accumulate evidence related to stocking sheets for fixed assets (audit matter no. 7) could require qualifying their opinion rather than just considering it as KAM with mean rank of 61.50. In addition, they were able to recognize that the auditors' nonreceipt of client's contract to ascertain their credit limits (audit matter no. 9) could be a KAM rather than QO matter with the highest mean rank of 46.50. This is despite that most of the participants (55%) misclassified it as QO matter rather than KAM. Incurring fixed costs by the company without reaching its full capacity in operation (audit matter no.13) is also classified by those specialized in manufacturing companies as EOM with the highest mean rank of 67, although most of the participants (approximately 60%) misclassified them as KAMs. Moreover, this group of auditors outperformed other auditors who specialized in other industries in classifying audit matter no. 20 (the company did not assess its ability to pay its contractual

obligation to the government) as KAM and audit matter no. 21 (The company did not form any provision for doubtful debts for clients' balances) as QO matter with the highest mean rank of 68 and 64, respectively. Although these two audit matters are related to construction and real estate companies, the ability to pay contractual obligations and formation of provisions for doubtful debts could be also among the most common matters found during the audit of manufacturing and industrial companies.

Most of the participants (69.5%) properly classified company violation of EAS (audit matter 4) as a matter requiring QO, while 61% of them properly classified the inability of the company to meet its financial obligations at due dates (audit matter 12) as GC matter rather than KAMs. The two groups of auditors who highly contributed to such proper classification are manufacturing companies (mean 54), and firms specialized in financial institutions audit (mean 57.5). Auditors specialized in service companies outperformed other auditors in only one audit matter related to auditor's inability to determine the sufficiency of the tax provisions (audit matter no. 27). Although most of the participants (53.7%) misclassified this matter as QO matter rather than KAM, this group of auditors had the highest mean rank of 70.5. Thus, the results indicate that there is a partial support for *H1*. Industry specialization, especially in manufacturing, has significant impact on auditors' ability to recognize KAMs and differentiate it from other matters for 10 audit matters out of the 28 matters presented to them. Similar results are found in Shao (2020) study.

4.2 Testing the second hypothesis (professional qualifications): partial support

The results of the Kruskal–Wallis's test in Table 3 (Panel B) show that professional qualifications of auditors have a significant impact on 12 audit matters (1, 3, 5, 6, 8, 13, 14, 20, 21, 23, 25 and 26) where the *p*-value is less than 0.05. Auditors who are members in the ESSA were more able, compared to other grouping variables (i.e. those with professional certificates [PC] and those without any PC), to recognize four KAMs. They scored for audit matters no. 1, 20, 25 and 26 with the highest mean rank of 61.3, 59.8, 60.3 and 58.8, respectively. Moreover, many auditors with ESSA membership are more able to properly classify the sixth audit matter as EOM with a mean rank of 54.1, despite that most of the participants misclassified it as KAM (57.3%). In addition, they were able to recognize that if the client company did not assess the likelihood of impairment of its unused fixed assets according to the EASs no. 31 (audit matter no. 14), this could require qualifying the audit opinion with the highest mean rank of 60.

The results also show that auditors with PC, such as *CPA, ACCA, certified internal auditors and certified management accountants*, outperformed the other groups of auditors (i. e. with no PC or who are only members in the ESSA) in recognizing two of the KAMs (audit matters no. 3 and 23). This grouping variable achieved the highest mean rank for the third and 23rd audit matters of 59.75 and 56.25, respectively. Moreover, they were more able to recognize that incurring fixed costs by the company without reaching its full capacity in operation (audit matter no. 13) should be reported as EOM rather than KAM (Mean rank 56.75). Moreover, auditors who have both PC and a membership in ESSA were more able to properly classify audit matters no. 5, 8 and 21 with a mean rank of 53.83, 51.17 and 57.17, respectively. They were able to recognize that a significant increase in the cost of operations by 13% (audit matter no. 5) is an EOM rather than KAM. They recognize that the existence of a material amount of obsolete inventory and nonmoving supplies (8) and that not forming provisions for doubtful debts for balances that are due (21) are all matters requiring qualifying the audit opinion rather than just considering it as KAMs. Although those two matters are properly classified by most of the participants as QO matter (59.8% and 45.1%, respectively), this group of auditors with both ESSA membership and PC highly contributed

Table 3.
Krustal-Wallis & Mann Whitney tests for *H1, H2 & H3*

	Kruskal–Wallis test												Mann–Whitney test			
	Panel A/Industry specialization Mean rank							Panel B/Professional qualifications Mean rank						Panel C/Gender Mean rank		
Audit matter	Man.	Serv.	Man. & Serv.	Fin. instit.	All	*P*-value	Audit matter	PC	ESAA	PC & ESSA	No PC	*P*-value	Audit matter	Male	Female	*P*-value
1	28.50	28.50	28.50	28.50	47.54	*0.002*	1	59.25	61.30	42.17	34.81	0.000	2	37.87	47.80	*0.028*
4	54.00	13.00	49.44	54.00	40.09	*0.007*	3	59.75	53.60	29.00	39.25	0.001	10	46.12	33.50	*0.001*
7	61.50	20.50	52.39	20.50	39.54	*0.009*	5	36.75	51.10	53.83	37.54	0.024	14	45.02	35.40	*0.041*
9	46.50	26.00	30.56	26.00	45.77	*0.032*	6	39.75	54.10	50.00	37.38	0.023	21	47.44	31.20	*0.001*
12	57.50	16.50	34.72	57.50	44.32	*0.019*	8	27.25	49.80	51.17	39.87	0.033	22	37.13	49.07	*0.011*
13	67.00	26.00	35.11	26.00	44.30	*0.044*	13	56.75	50.60	46.50	36.25	0.011	25	44.85	35.70	*0.041*
17	62.50	62.50	44.28	62.50	37.6	*0.031*	14	39.50	60.00	46.33	37.13	0.011				
20	68.00	47.50	27.00	27.00	45.30	*0.002*	20	47.50	59.80	54.33	34.10	0.000				
21	64.00	23.00	54.89	23.00	38.38	*0.003*	21	33.25	55.80	57.17	36.40	0.001				
27	29.50	70.50	29.50	29.50	44.14	*0.001*	23	56.25	33.70	25.50	44.42	0.002				
							25	37.75	60.30	27.50	41.69	0.001				
							26	36.25	58.80	53.33	36.25	0.001				

to such classification. The above results provide a partial support for *H2* given the highly subjective judgment of auditors when performing their audit tasks. The exchange of experience in the auditing and accounting field among members of the ESSA could justify the outstanding performance of those auditors compared to that of other groups.

4.3 Testing the third hypothesis (gender): rejected

The results of the Mann–Whitney test shown in Table 3 (Panel C) provide that there is no significant difference among male and female auditors toward their classification of different audit matters except for six matters (2, 10, 14, 21, 22 and 25) as the *p*-value for those matters is less than 0.05. Male auditors outperformed the females in only four audit matters. They were able to recognize that both auditing matter no. 14 and 21 require QOs rather than considering them as KAMs. They also properly classified audit matter no. 10 as EOM and audit matter no.25 as KAM, compared to female auditors. However, female auditors were more able to classify the second audit matter as KAM. Although most of the participants (approximately 55%) classified the 22nd audit matter (the reassessment of the economic viability and the GC assumption of the company given its financial difficulty) as GC matter, female auditors were among the participants that contributed significantly to such proper classification with a mean rank of 49.07. As the *p*-value of the Mann–Whitney test for the gender grouping variable for 22 audit matters is greater than 0.05, this indicates that gender differences have no significant impact on auditors` ability to recognize KAMs or to differentiate them from other reporting requirements. Thus, *H3* is rejected.

4.4 Testing the fourth hypothesis (auditor's position): accepted

The results are shown in Table 4 (Panel A) provide a strong support for *H4*. There is a significant difference in the responses among the different groups of the auditors` position (Seniors/Vice-audit managers/Managers/Partners) for 18 audit matters with *p*-value less than 0.05. Audit partners achieved an outstanding performance compared to the other positions with the highest mean rank for nine audit matters (1, 5, 12, 13, 14, 19, 20, 21 and 26). They were able to recognize that the three audit matters 1, 20 and 26 are KAMs with the highest mean rank of 57.79, 68 and 61.14, respectively. They assess the company inability to pay the amounts due to the government (no.20) as KAM, despite that most of the participants (47.6%) misclassified this matter as an EOM. Moreover, they properly classified the significant increase in the cost of operations (audit matter no. 5), incurring fixed costs by the company without reaching its full capacity in operation (audit matter no. 13) and the need of experts to assess the appropriateness of many accounting estimates (audit matter no. 19) as EOMs rather than KAMs. They believe that those matters could be fundamental to users' understanding of the financial statements. They also believe that company noncompliance with the requirements of EASs no. 31 (audit matter 14) and not forming provisions for doubtful debts for balances that are due (audit matter no. 21) are QO matters with the highest mean rank of 55.29 and 64, respectively. A possible interpretation for such results is that most of the audit partners in top 10 audit firms in Egypt hold PC and most of them in Big 4 audit firms have either AICPA or ACCA audit certificates.

On the other hand, audit managers were more able than other levels of audit positions to properly classify five audit matters from those 18 matters that gained significant difference among the four levels of audit position. They achieved the highest mean rank of 55.36 for the third audit matter through properly classifying it as a KAM. They also classify the fourth, seventh and eighth audit matters as conditions that require qualifying the audit opinion with the highest mean rank of 54, 55.64 and 58, respectively, and significantly contributing to such selection. They also achieved the highest mean rank of 60 toward classifying audit

Table 4.
Krustal-Wallis & Mann Whitney tests for *H4* & *H5*

	Panel A/Kruskal–Wallis's test Auditor position Mean rank					Panel B/Mann–Whitney Test Type of audit firm Mean rank			
Audit matter	Senior auditors	Vice audit managers	Audit managers	Audit partners	*P*-value	Audit matter	Big 4	Non-Big 4	*P*-value
1	34.22	39.68	49.00	57.79	0.000	2	31.18	50.41	0.000
2	42.65	56.00	41.36	26.71	0.003	3	36.55	45.77	0.028
3	40.44	36.45	55.36	34.86	0.018	6	48.92	35.09	0.001
4	33.98	46.55	54.00	48.14	0.002	11	36.24	46.05	0.018
5	39.85	41.41	26.50	61.64	0.000	17	33.37	48.52	0.001
7	39.57	20.50	55.64	49.79	0.000	22	35.18	46.95	0.010
8	36.07	35.64	58.00	46.29	0.003				
12	34.62	35.14	51.64	57.50	0.000				
13	39.35	37.18	37.71	55.29	0.043				
14	39.98	26.45	45.36	54.14	0.008				
17	49.15	28.95	42.00	27.36	0.001				
18	45.06	41.59	27.21	44.79	0.029				
19	42.94	31.50	31.50	54.93	0.001				
20	34.63	45.64	32.86	68.00	0.000				
21	36.35	30.45	43.50	64.00	0.000				
22	39.02	33.91	60.00	36.57	0.003				
23	47.43	44.14	37.21	25.50	0.003				
26	35.53	44.64	37.71	61.14	0.000				

matter no. 22 as a GC matter. However, vice audit managers outperformed other levels of audit position in only one matter which is the second audit matter, through classifying it as KAM. Senior auditors, on the other side, were able to properly classify three KAMs (audit matters 17, 18 and 23) than other job levels due to being continuously involved in dealing with different audit matters, thus using the experience of their supervisors. The results support *H4* as auditor position had a significant impact on the recognition of KAMs or even differentiating it from other matters.

4.5 Testing the fifth hypothesis (type of audit firm): rejected

The Mann–Whitney test in Table 4 (Panel B) shows that the type of international audit firm (Big 4/non-Big 4) has no significant impact on auditors' ability to recognize KAMs except for only six audit matters, namely, no. 2, 3, 6, 11, 17 and 22. Auditors who work in non-Big 4 international audit firms scored a mean rank higher than that of the Big 4 for five audit matters. They were more able to recognize that those five matters are KAMs, compared to the Big 4 auditors. A possible interpretation is they could be more exposed to similar cases in their audit firms during the period of KAM reporting requirements implementation, where they audit small- and medium-size clients with larger accounting and auditing challenges, which enhanced their ability to recognize those KAM matters. On the other hand, auditors working in the Big 4 audit firms achieved a higher mean rank of 48.92 than those working in non-Big 4 firms for only the sixth matter, which is an EOM. The above results do not provide enough support for *H5* as there is no significant difference in the recognition of KAMs among the two groups of auditors. Thus, *H5* could be rejected. This result is inconsistent with Shao's (2020) study which found that firm size has a greater and wider impact on KAMs disclosures.

4.6 Testing the sixth hypothesis (COVID-19 implications): partial support

The Wilcoxon signed rank test shows that there is a significant difference in the participants' responses pre- and post-COVID-19 pandemic for 13 matters of the audit matters presented to them. Table 6 shows only those matters that gained significant difference pre- and post-COVID as the p-value is less than 0.05. Through using the responses of audit experts as a benchmark for audit matters after considering the implications of COVID-19, it seems that many of the participants agree with such benchmark responses. Before considering the impact of COVID-19 on audit risk assessment and the accumulation of sufficient appropriate audit evidence, many participants (36.6%), as shown in Table 2, consider the fifth audit matter (significant increase in cost of operations) as an EOM. However, after considering COVID-19 implications on the audit process and client business risks, about 56% of the participants, as shown in Table 5, believe that this matter should be KAM rather than an EOM with a p-value of 0.027 (Table 6). Similar results are obtained for audit matters 10, 16, 19 and 24 with the highest percentage of selection of 51.2%, 40.2%, 63.4% and 58.5%, respectively, as shown in Table 5 and in agreement with the benchmark responses. Most participants, taking into consideration the outbreak of COVID-19, classified those matters as KAMs rather than EOMs which was the proper classification but pre-COVID considerations. The pandemic increases the risk of uncertainty on demand and supply of inventory which necessitates a system for tracking and managing inventory, and the unavailability of such system (audit matter 10) could introduce significant risk in internal control system and thus requiring KAM reporting. Moreover, the insignificant sales of material amount of inventory (audit matter 16) represent a risk that is expected to be significantly higher after COVID-19 due to lockdowns, curfew and social distancing requirements, and such risks may need to be communicated as KAM. The pandemic also

Benchmark classification	KAM (%)	EOM (%)	GC (%)	QO (%)
1 QO	42.7	24.4	7.3	25.6
2 QO	52.4	15.9	13.4	18.3
3 KAM	39	13.4	41.5	6.1
4 QO	12.2	13.4	6.1	68.3
5 KAM	56.1	34.1	7.3	2.4
6 EOM	50	19.5	–	30.5
7 QO	20.7	7.3	4.9	67.1
8 QO	26.8	17.1	7.3	48.8
9 QO	57.3	11	2.4	29.3
10 KAM	51.2	32.9	–	15.9
11 KAM	68.3	20.7	2.4	8.5
12 GC	11	7.3	73.2	8.5
13 EOM	58.5	36.6	2.4	2.4
14 QO	9.8	7.3	2.4	80.5
15 KAM	57.3	22	12.2	8.5
16 KAM	40.2	37.8	4.9	17.1
17 KAM	40.2	18.3	2.4	39
18 KAM	67.1	30.5	–	2.4
19 KAM	63.4	26.8	2.4	7.3
20 GC	45.1	28	17.1	9.8
21 QO	12.2	13.4	4.9	69.5
22 GC	31.7	2.4	61	4.9
23 QO	22	22	6.1	50
24 KAM	58.5	36.6	2.4	2.4
25 KAM	43.9	34.1	2.4	19.5
26 KAM	46.3	30.5	–	23.2
27 QO	7.3	24.4	13.4	54.9
28 QO	24.4	7.3	–	68.3

Table 5.
Descriptive statistics (post-COVID)

increased the uncertainty of management estimates (audit matter 19) and the impairment of fixed assets (audit matter 24) which reflect significant risks.

Audit matters no. 7, 14 and 21 are considered matters that require qualifying the audit opinion, both pre- and post-COVID-19. However, there is a significant difference in the percentage of selection for such audit opinion, as shown in Table 6, as the p-value is less than 0.05. There is a significant increase in the number of participants that considered this matter as QO matter after considering COVID-19 implications. Prior to COVID-19 considerations, the percentage of QO selection for audit matters 7, 14 and 21 are 51.2%, 54.9% and 45.1%, respectively, as shown in Table 2. However, those percentages had increased after COVID-19 to be 67.1%, 80.5% and 69.5%. The pandemic placed more restrictions on auditors' ability to collect sufficient appropriate audit evidence. This may have led more participants to consider audit matter 7 as QO matter. Moreover, the pandemic brought other challenges as businesses should expect delays in payment and collection of accounts receivable due to severe economic conditions. Thus, more participants considered the nonformation of provisions for doubtful debts during pandemic requires QO (audit matter 21). Moreover, the inability of the company to meet its financial obligations at due dates, audit matter 12, is considered a GC matter, both pre- and post-COVID-19 (Table 6 with p-value < 0.05). However, there is a significant increase in the number of participants who considered this matter as a GC after considering COVID-19 implications. The percentage of selection increased from 61% (pre-COVID) to 73.2% (post-COVID). The pandemic affects the

Matters that gained significant difference in responses pre- and post-COVID-19 implications	Correct classification	Mean	*P*-value
2. Nonmoving suppliers' balances	Pre (KAM)	0.6463	0.000
	Post (QO)	0.1829	
5. Significant increase in cost of operations	Pre (EOM)	0.3659	0.027
	Post (KAM)	0.5610	
7. Auditors did not receive the stocking sheets	Pre (QO)	0.5122	0.024
	Post (QO)	0.6707	
10. No ERP system for inventory	Pre (EOM)	0.1951	0.000
	Post (KAM)	0.5122	
12. Inability to meet financial obligations	Pre (GC)	0.6098	0.050
	Post (GC)	0.7317	
14. Assessment of impairment not according to EAS 31	Pre (QO)	0.5488	0.000
	Post (QO)	0.8049	
16. Inventory without significant sales	Pre (EOM)	0.2439	0.028
	Post (KAM)	0.4024	
19. Appropriateness of accounting estimates	Pre (EOM)	0.2439	0.000
	Post (KAM)	0.6341	
20. Contractual obligations to government	Pre (KAM)	0.3537	0.007
	Post (GC)	0.1707	
21. Provisions for doubtful debts	Pre (QO)	0.4512	0.000
	Post (QO)	0.6951	
24. Assessment of impairment of unused fixed assets	Pre (EOM)	0.2439	0.000
	Post (KAM)	0.5854	
27. Sufficiency of tax provisions	Pre (KAM)	0.2927	0.003
	Post (QO)	0.5488	
28. Recognition of real estate investment revenues	Pre (KAM)	0.2561	0.000
	Post (QO)	0.6829	

Table 6.
Wilcoxon signed rank test

financial performance of many manufacturing companies, raising doubt about their ability to continue as a GC.

Although the correct classification of audit matters no. 27 and 28 (before considering the implications of COVID-19) as KAMs, few participants were able to reach the correct classification with a percentage of selection of 29.3 and 25.6, respectively, as in Table 2 and means of 0.2927 and 0.2561 as in Table 6. However, after considering the different effects that the pandemic could have on the financial statement audit, higher percentage of the participants were able to properly classify them as QO matters with the percentage of 54.9% and 68.3%, as in Table 5 and means of 0.5488 and 0.6829 as in Table 6. The increased uncertainty imposed by the pandemic could increase the risk of determining the sufficiency of tax provisions when there are disputes with tax authorities (audit matter 27). Moreover, the lockdown and the banned activities imposed by the pandemic could affect the completion of real estate sold units. Thus, the violation of the use of the percentage of completion method when recording revenues could require QO (audit matter 28). On the other hand, most of the participants were not able to properly classify the second audit matter (existence of nonmoving suppliers balances) as QO post-COVID-19. The above results provide partial support for *H6* that there is a significant difference in the responses pre- and post-COVID considering the implications of the outbreak for thirteen out of the 28 matters.

5. Conclusion

The results of the research provide more evidence about the importance of the audit report in communicating useful information to stakeholders for their various decision-making. Most of the developed hypotheses were only partially accepted where industry specialization and professional qualifications of the auditor as well as the effects of COVID-19 did have some effects on the ability of the auditors to recognize and disclose KAMs. Only the auditor's position made a significant difference when auditors assessed and recognized KAMs and when differentiating it from other matters in an audit report. Both the gender and the type of audit firm did not make a significant difference for auditors when they assessed and analyzed clients' transactions for KAMs recognition. Auditors specialized in manufacturing and financial institutions outperformed other auditors in industries like service, real estate and construction due to the nature of these industries and the number of years auditors are likely to audit such companies. Because of the subjective judgment of the audit activities, it was not conclusive that auditors with PC outperformed the work of other auditors who do not hold PC. The increased uncertainty, the management estimates and the subjective judgment made by both the management and the auditors during the pandemic resulted in an increase in the number of KAMs selected by auditors compared to those before the pandemic.

The current research makes several contributions to the existing auditing literature. First, it provides evidence that the changes made by the IAASB and the PCAOB related to audit reporting standards with the addition of KAMs and CAM would result in more information being provided to users, especially during the current pandemic. Second, the current research showed that during the pandemic, auditors were more effective in recognizing the importance to report KAMs compared to other audit matters, thus enhancing users' confidence in both the audit and the financial reporting processes. Third, the paper provides additional evidence confirming the importance of industry specialization, auditors' experience and qualifications and auditors' position when applying their subjective judgment in the audit report process. At the same time, the research adds to the body of knowledge of the effects of the auditor's characteristics on the audit quality and the reporting process. The rejection of the hypotheses associated with the effects of gender and the type of audit firm triggers the investigation about the reasons behind such results and their effects on the issue of the auditor's report. Finally, the current research highlights the importance of KAMs to provide information to users of the financial statements and the need to enhance the explanatory matters provided in the IAASB's audit reporting standards to help auditors better understand the nature and components of these matters compared to EOM, QO, GC and other audit issues.

One of the limitations of the current research is its application in a developing country and the limitation with the generalization of its results. Most of the developed hypotheses were only partially accepted. This requires further research in other developing countries following similar research methodologies to assess the findings of the current research study. Also, more research studies are required to assess how auditor's characteristics, culture, business environment, regulations and other elements of the accounting and auditing profession would impact both the audit report and audit quality during the COVID-19 pandemic for both developed and developing countries. Also, more investigation by standard setters, regulators and academics is required to better understand the primary areas of key risk identification in KAMs, which require auditors to make the most adjustments from year to year in their audit procedures.

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Further reading

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Appendix. Case studies and related audit matters listed in the questionnaire

Case 1: Manufacturing and industrial company – TA[a] L.E 2.6 B, TR[b] L.E 2 B, NP[c] 170 M

- Company received tax form 9A for L.E 308 million and the company bank accounts were placed under administrative restrictions until payment is made. The company is still in the process of taking measures to uplift the administrative restrictions and make payments.
- There are nonmoving suppliers' balances for more than a year.

Case 2: Manufacturing and industrial company – TA L.E 224 M, TR L.E 75 M, NI[d] L.E 25 M

- The financial structure of the company shows significant reliance on third party finance to the company's working capital as the total debts amounted to L.E 39 207 837 representing 103% of the issued and paid capital.
- The company violated Egyptian Accounting Standards (EASs) no 28 for not forming the appropriate allowance for after sales service guarantee even though the company provides its customers with services.
- There is a significant increase in the cost of operations compared to last year's results as it reached 81% compared to 68% with a difference of 13%.

Case 3: Manufacturing and industrial company – TA L.E 132 M, TR L.E 173 M, NI L.E 6 M

- Company misclassified warehouse and administrative buildings doors as buildings rather than fixtures given the similarities between the depreciation of these additions with that for fixtures (i.e. 10 years rather than 40 years).
- Auditors requested and have not received the stocking sheets for fixed assets.
- The balance of the inventory of raw materials and production supplies amounting to L.E 17 647 185 obsolete and nonmoving supplies amounting to L.E 5026711 at the end of the financial year.

- The clients' accounts included L.E 20 M for some clients for whom we were not able to ascertain their credit limits and related guarantees and auditors requested copies of clients' contracts but were not received up to the financial statements date.
- The company does not have an enterprise resource planning system for inventory to record the additions and withdrawals of inventory items as inventory is recorded manually and on bin card.
- The company made its purchases of raw materials, supplies and other assets using direct order, a matter which affected review of the appropriateness of the prices used for such purchases.
- The inability of the company to meet its financial obligations at due dates (GC).

Case 4: Manufacturing and industrial company – TA L.E 156 M, TR L.E 1 B, NI L.E 40 M

- The company does not operate its factory with full capacity planned for even though there are fixed costs incurred by every department in case the company does not reach its full capacity.
- The company did not assess the likelihood of impairment of its unused fixed assets according to the requirements of EAS no 31.
- The company did not ensure its inventory according to the average value during the year as the company had an insurance policy for its inventory against fire for an amount of L.E 158 M even though the value of inventory at the end of the year amounted to L.E 289 M.
- The company had an inventory of finished goods for 365.709 tons amounting to L.E 5 million for more than a year without any significant sales.
- There are fully depreciated fixed assets amounting to L.E 220 M and the company management did not comply with the EAS no 10 paragraphs 51 related to assessment of the residual value for such assets.

Case 5: Commercial company – TA L.E. 351 M, TR L.E 15 M, NI L.E 7.4 M

- Even though the company had petty cash balances at the end of the financial year, the company did not have a fidelity insurance policy for such account balances. Also, the company did not ensure the settlement of such petty cash balances at the end of every year.
- The company financial statements included many accounts balances requiring management estimates, a matter which necessitates the use of experts to assess its appropriateness.

Case 6: Construction and real estate company – TA L.E 225 M, TR L.E 76 M, NI L.E 52 M

- The company did not prepare the needed study to assess its ability of to pay its contractual obligations given the need to pay this year L.E 10 M to increase by 5% annually to the government authority. The balance due to the government body amounted to L.E 43101250 since the start of the use of the highway and the company did not pay any of such dues yet.
- The post balance sheet events indicate that clients' balances for L.E 1300266 are due for more than one year without collection. The company did not form any provision for doubtful debts for such balance.
- The annual general meeting of the company recommended the reassessment of the economic viability and the going concern assumption of the company given the financial difficulty faced by the company. The total amount owed to third parties including some government bodies is equal to L.E 1744352279.
- It is unclear if the company has sufficient provisions for its legal situations.

Case 7: Construction company – TA L.E 1.3 B, TR L.E 428 M, NI L.E 10 M

- The fixed assets account balance amounting to L.E 133 M at the end of the financial year includes unused assets amounting to L.E 1.3 M, where management should have assessed the impairment of these assets.
- There are nonmoving accounts balances for more than three years period for projects under development amounting to L.E 5977000 at the end of the year.
- The company made financial investment in several subsidiaries for an amount of L.E 3107716 for more than five years, and none of these subsidiaries have started its activities and no board of directors have been formed since then.
- There are existing disputes with the tax authority at the various tax settlement levels with no indication about the expected dues; therefore, auditors are not able to determine the sufficiency of the tax provisions.
- The company recorded revenues from real estate investments based on sold and delivered units to clients in violation of the requirements of the EAS, which requires the use of percentage of completion method when recording the investment revenues. Also, the company did not record realized investment revenues amounting to L.E 35 M.

[a]TA: total assets; [b]TR: total revenues; [c]NP = net profit; [d]NI: net income

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