

MAJ
37,7

798

Received 10 July 2021
Revised 29 October 2021
5 December 2021
Accepted 21 December 2021

Key audit risks and audit procedures during the initial year of the COVID-19 pandemic: an analysis of audit reports 2019-2020

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Abstract

Purpose – The purpose of this study is to explore audit procedure disclosures related to key audit risks, during the prior year and the initial year of the COVID-19 outbreak, by reporting on matters published in over 3,000 Australian statutory audit reports during 2019 and 2020.

Design/methodology/approach – This study partially uses latent semantic analysis methods to apply textual and readability analyses to external audit reports in Australia. The authors measure the tone of the audit reports using the Loughran and McDonald (2011) approach.

Findings – The authors find that 3% of audit procedures undertaken during 2020 were designed to address audit risks associated with the COVID-19 pandemic. As a percentage of total audit procedures undertaken during 2020, the authors find that smaller practitioners reported much less audit procedures related to COVID-19 audit risks than most larger audit firms. Finally, the textual analysis further found differences in the sentiment or tone of words used by different auditors in 2020, but differences in sentiment or tone were not found when 2020 was compared to the prior year 2019.

Originality/value – This study provides early evidence on whether auditors designed audit procedures to deal specifically with audit risks that arose due to the COVID-19 pandemic and on the extent and nature of those audit procedures. The study will help policymakers to better understand whether Key Audit Matters provided informational value to investors during a time of global crisis.

Keywords Key audit matters, Audit firms, External audit, COVID-19, External audit, Audit firms, COVID-19

Paper type Research paper

1. Introduction

Judgement and decision-making research in accounting and auditing focusses on the judgements and decisions of preparers, users and assurance providers of financial and non-financial information (Humphreys and Trotman, 2021). However, the environment in which these judgements are made has changed substantially during the Coronavirus Disease (COVID-19) pandemic (Humphreys and Trotman, 2021). The last major crisis before the COVID-19 pandemic was the global financial crisis (GFC) around 2007–2008 (Hay *et al.*, 2021). External auditors responded appropriately to the GFC, a view supported by several



international studies (Xu *et al.*, 2013; Geiger *et al.*, 2014). However, thus far, there is little academic research that has investigated how external auditors have responded to the COVID-19 pandemic. We know little about how changes in the COVID-19 environment have affected audit tasks completed by external auditors, including judgements on what to include in audit reports and the informational value of those reports to investors. Albitar *et al.* (2020) suggest that the effects of the COVID-19 pandemic will be the toughest challenge for external auditors and their clients since the 2007–2008 GFC.

The aim of the present study is to explore audit procedure disclosures in the audit reports within the Key Audit Matters (KAM) section during the prior year and the initial year of the global COVID-19 pandemic, published in over 3,000 Australian statutory audit reports during 2019 and 2020. The study provides early evidence on whether external auditors designed audit procedures to specifically deal with audit risks that arose due to the COVID-19 pandemic. We compare and analyse the content of all these audit procedure disclosures with the prior year 2019, using textual analysis methods, to investigate whether the tone in the reported KAM disclosures changed during those two years (2019 and 2020) and whether it was different among external auditors during 2020.

In 2017, Australia fully adopted a new form for audit reports with a section termed “Key Audit Matters.” The introduction of KAMs is one of the most significant changes to the audit reporting model in the past 90 years (Coram and Wang, 2020). The purpose of KAMs is to disclose financial reporting risks, thereby enhancing the communication value of the external audit report. KAMs are financial reporting matters that, in the external auditor’s professional judgement, require significant auditor attention during the statutory audit (ASA 701/ISA 701).

Some academic researchers consider that the new audit reporting requirements are likely to increase auditors’ accountability, which should result in improved audit quality (IAASB, 2013; Peecher *et al.*, 2013). Others suggest that the new audit reporting requirements may impose additional pressure on external auditors and thus have an adverse effect on audit quality (KPMG, 2015). These mixed views (and the uncertainty they create) ensure that academic research is needed to explore the informational value of KAMs and or their impact on audit quality (Kend and Nguyen, 2020). Jensen and Meckling (1976) hypothesize that an audit is one type of monitoring activity that increases the value of the firm. KAM disclosures represent the latest reforms designed to enhance the communicative value of the audit report produced as part of the auditor’s monitoring role. Audits are considered successful when they help in managing expectations and hence reducing the opportunistic behaviour costs (agency costs) borne by the management of the audited company. This success occurs because it is expected that the auditor will report on discovered breaches (Watts and Zimmerman, 1983). KAM disclosures can play a role in helping to manage the expectations of shareholders (principals) and, in theory, may help reduce agency costs.

While there have been several studies conducted in other developed countries, such as the UK and the USA, few studies have been conducted in Australia which is the largest developed country in the region of Southeast Asia (Raymer *et al.*, 2018). Australia has distinct audit reporting practices currently, for example, Australia is in a unique position (apart from Finland) where only one of the Big Four auditors, PriceWaterhouseCoopers (PwC), voluntarily discloses audit materiality thresholds in audit reports (AUASB, 2020a, 2020b). In the UK (FRC, 2013) and The Netherlands (NBA, 2014), for instance, audit firms disclose materiality thresholds in their audit reports along with other relevant information. Standard setters in both the UK and The Netherlands issue standards that require auditors to disclose the audit materiality threshold used for financial statement audits (Christensen *et al.*, 2020). Across the Tasman from Australia in New Zealand, three of the Big Four auditors voluntarily disclose audit materiality thresholds in audit reports.

With these unique characteristics and differences in audit report disclosures, the present study of Australia will allow enrichment of the current international debate on the reforms related to audit and the informational value of KAM disclosures (Nguyen and Kend, 2021). The extended audit report in Australia deals with the KAM reforms through ISA 701, and given the concerns raised from the Parliamentary Joint Committee Inquiry into The Regulation of Auditing in Australia (2019), it is timely to revisit the issues surrounding these audit reforms, particularly during the COVID-19 pandemic.

Thus, the main research questions developed for this study are:

- RQ1.* What are the extent and nature of the audit procedures that Australian external auditors reported in KAMs, during the initial year of the COVID-19 pandemic (2020) to address key audit risks and improve the informational value of audit reports for shareholders (principals)?
- RQ2.* Between the years 2019 and 2020, do we observe any changes in the tone and sentiment of the KAM disclosures related to key audit risks in Australian audit reports? In addition, do we observe any differences between external auditors during 2020?

The data are analysed to find differences between external auditors of similar or different sizes and between different industries. We also investigate which main KAM topic areas have the most audit procedures are referencing COVID-19. Our findings are consistent with the Australian Auditing, and Assurance Standards Board's (AUASB, 2020a, 2020b) reports indicating that around 17% of KAMs referenced COVID-19 during 2020. Our study finds differences between large and small audit practitioners related to the number of audit procedures that referenced COVID-19 relative to total audit procedures undertaken and reported in the KAMs section of audit reports. There are also differences found between industries (related to audit risks) that indicate that the COVID-19 pandemic has impacted some industries much more than others in Australia. Finally, we investigate the content (wording, sentences, etc.) of these KAM disclosures (i.e. audit procedures) in audit reports to determine any differences observed before and after the COVID-19 pandemic. This present study will help regulators, standard setters and other stakeholders to understand what observed changes in audit reporting occurred in 2020 and any potential impact on the informational value of audit reports to investors. The study aims to respond to the AUASB's call for further research on the impact of COVID-19 on the reporting of KAMs (AUASB, 2020b, p. 27). The present study has policy implications by contributing to the debate on audit reforms in the wake of the GFC, the Hayne Royal Commission into Banking and Financial Services (2019) in Australia and the COVID-19 pandemic.

In the next section, we provide a review of prior research on the impact of the COVID-19 pandemic on the auditing profession and on the KAM reforms and specifically about KAMs contributing to the informational value of audit reports for investors. The description of the sample and research methodology adopted in the study is then presented. This is followed by an analysis of the findings. The final part of the paper concludes and discusses the implications of the research, including future research opportunities and limitations.

2. Literature review and theoretical framework

The June 2020 financial reporting period has been described by regulators, preparers and auditors as one of the most challenging ever experienced, as reporting entities were faced with unprecedented disruption and uncertainty owing to the COVID-19 pandemic (AUASB, 2020a, 2020b). Over a year later, as of 4 October 2021, the City of Melbourne (one of Australia's key business centres) was officially labelled the "world's longest lockdown" city. During 2020–2021, Sydney (another key business capital city) had also been in lockdown for

many months. The business uncertainty created was even greater than during the GFC. Government-imposed restrictions forced many reporting entities to temporarily close or make substantial changes to their business operations. Supply chains, business confidence and investing activities all suffered dramatically as harsh lockdown restrictions crippled many industries.

In such times, the value of audit is more important than ever in enhancing investor confidence in the integrity of financial reporting and keeping the market informed (AUASB, 2020b). However, the audit profession has been under intense scrutiny in Australia. For instance, in Australia, the Australia Securities and Investment Commission's (ASIC) inspection findings have continued to bring audit quality into question, and there has been continued media criticism of external auditors (AUASB, 2020b). In response to the ASIC findings, the Australian Government undertook an inquiry into the Regulation of Auditing (Parliamentary Joint Committee on the Regulation of Auditing in Australia, 2019), which examined ways to improve audit quality in Australia. Furthermore, investors were looking at the June 2020 statutory financial reports for vital information as to the initial impact of the COVID-19 pandemic on entities' financial results and just as importantly, the impact on the future viability of the entities and any impacts on the agency relationship that exists between shareholders and company management (AUASB, 2020a, 2020b).

2.1 The impact of the COVID-19 pandemic on audit procedures

The crisis due to the COVID-19 pandemic has created alarm regarding health, social, economic and financial effects all over the world (Goodell, 2020). Under the challenging context of economic contractions together with high market volatility, the COVID-19 outbreak may lead to company bankruptcies and earnings manipulation. Given the importance of external auditing in assuring the financial report's quality, which subsequently improves users' decisions and the integrity of financial markets (Shahzad *et al.*, 2018), there are some highlighted areas that the auditing industry needs to pay particular attention to, discussed as follows (FRC, 2020).

COVID-19 has impacted analytical procedures in the auditing process. Analytical procedures assist in audit planning and fieldwork and in the audit conclusion, evaluation and reporting stages to guide auditors and provide relevant evidence to support the audit opinion (Messier *et al.*, 2013; Noh *et al.*, 2017). Amid the high uncertainty caused by the COVID-19 pandemic, there were predictions that some companies would go out of business or otherwise try to manipulate accounts or disclosures in their financial statements (Rose *et al.*, 2019). As the main communication methods during the COVID-19 pandemic have been through digital platforms, external auditors exhibit a higher reliance on analytical procedures that could facilitate them in acquiring comprehensive information of a company's current financial position, thus minimizing the potential expenses and time taken to conduct detailed audit tests (KPMG, 2020). Rose *et al.* (2019) propose that it is essential that external auditors continue to adopt analytical technologies into their traditional audit procedures.

The accuracy of auditor judgement also depends on the quality of audit evidence (Rose *et al.*, 2017). The COVID-19 pandemic has driven the use of external evidence acquired through third parties, which according to PwC (2020), is considered to have higher reliability compared to that obtained directly from clients. At the same time, the COVID-19 pandemic has also lowered the usage of physical evidence – the forms that were traditionally perceived to be more reliable than digital copies. Moreover, in the long run, there are the impacts of a working-from-home strategy that will influence the appropriateness and relevance of audit evidence collected and this will subsequently influence audit quality

(KPMG, 2020). Al-Khasawneh (2021) examines the impact of the COVID-19 pandemic on the external audit processes of Jordanian banks. Al-Khasawneh (2021) finds that the COVID-19 pandemic has had a significant effect on audit planning procedures, auditing risks and methods of collecting evidence and has affected the contents of the audit report.

Referring to KAMs, the External Reporting Board and Financial Markets Authority (2020) have recognised the impact of the COVID-19 pandemic as follows:

The impact of COVID-19 will also be a key event that external auditors need to consider when deciding on the KAMs for the current period. (XRB and the FMA reports, May 2020).

These regulatory reports also anticipate that there will be new KAMs disclosed in audit reports, more going concern opinions, more modifications to audit reports and more emphasis of matter paragraphs. When discussing KAM disclosures during the COVID-19 pandemic, Kaka (2021) argues that KAMs is one of the main areas of change due to increasing uncertainty and the required judgements in financial statements, as it is expected that there will be an increase in KAMs reported and related audit procedures disclosed (Kaka, 2021).

Studies during time periods prior to the COVID-19 pandemic, such as Smith (2021), find that textual measures, such as readability or tone of audit reports change in the first year of ISA 700 implementation. Smith (2021) also finds some evidence that the language of auditors evolves in the second year of implementation. However, there is little or no current research that considers the evolving language of auditors since the start of the COVID-19 pandemic. The higher uncertainty induced by the COVID-19 pandemic has made regular audit procedures become more sophisticated and time-consuming (KPMG, 2020; PwC, 2020). Given this highly volatile situation created by the COVID-19 pandemic, it is important to understand whether auditors have adjusted their language in audit report disclosures from around 2020 onwards.

2.2 The informational value of key audit matter disclosures in audit reports

International standard-setters, including the International Auditing and Assurance Standards Board (IAASB), the US Public Company Accounting Oversight Board (PCAOB) and the UK Financial Reporting Council (FRC), have reinforced the need for enhanced audit reports by including the KAMs section in audit reports to provide further informational value for investors and provide insights on auditor judgements (IAASB, 2015; PCAOB, 2016). KAMs have been adopted in several countries, for example, the UK, Ireland, France, New Zealand, Australia, Hong Kong, Singapore and Thailand (PWC, 2015, 2017; KPMG, 2017; Boonyanet and Promsen, 2018; Kend and Nguyen, 2020).

The IAASB (2015) states that the presence of KAMs allows users of financial statements to more easily to identify areas, including significant management judgements, that require careful consideration from external auditors. Another benefit of KAM reporting, according to Cordos and Fulop (2015), is the de-standardisation of audited information, therefore making the audit report more individualised and exclusive to the entity under the audit engagement. Vanstraelen *et al.* (2012) also derive the same argument that auditors' discussions of significant matters to report on, such as accounting policies, client estimations and valuations, could potentially reduce the audit expectations gap, reduce agency costs and improve the informational value of audit reports to investors.

Considering the investors' perspective, the cornerstone objective of the KAM framework is to deliver valuable and applicable information to investors (FRC, 2013; IAASB, 2011; PCAOB, 2016). Research conducted by Kipp (2017) verifies a surge in users' confidence in financial statements when the detail illustrated in the KAMs section is greater than usual.

Results from other studies suggest that the KAMs section allows a better and more comprehensive assessment of a company's current financial situation (Nguyen and Kend, 2021). Köhler *et al.* (2016) find that the disclosure of negative KAMs has a positive influence on investors' evaluation ability regarding company performance. Moreover, Sirois *et al.* (2018) also note that KAM disclosures drive the focus of users onto significant issues in the financial statements. Conversely, Christensen *et al.* (2014) and Carver and Trinkle (2017) report a negative influence of KAMs, as the presence of KAMs makes investors more reluctant to buy shares as well as reducing the readability of audit reports.

Auditors' behaviours under the impact of KAMs have been the subject of several prior studies (Gay and Ng, 2015; Ratzinger-Sakel and Theis, 2019; Asbahr and Ruhnke, 2019); however, the results of these studies have raised concerns about the way external auditors respond to such disclosures. The presence of KAMs is reported to positively influence auditors' acceptance of clients' aggressive accounting practices (Gay and Ng, 2015). Moreover, research conducted in Germany has also delivered similar results, that the introduction of the KAM reporting framework increases external auditors' acquiesce with clients' preferred accounting treatments (Ratzinger-Sakel and Theis, 2019; Asbahr and Ruhnke, 2019).

Several recent high-profile scandals in the UK and Germany have again put the reputation of auditors into question. These scandals primarily involve business and audit failures and possibly a combination of severe financial reporting issues and management misconduct. Minutti-Meza (2021) investigated whether KAMs could have alerted investors about high-risk areas in recent corporate scandals. Related to Carillion in the UK, in the company's 2016 expanded audit report (fiscal year ending on 31 December 2016), KPMG included three KAMs related to:

- (1) recognition of contract revenue;
- (2) recognition of revenue in a licensing agreement; and
- (3) carrying value of goodwill.

Importantly, although these KAMs touched upon areas where the alleged irregularities appeared, the KAMs' language appears unlikely to have triggered additional scrutiny by investors on the reasonability of the company's estimates (Minutti-Meza, 2021). In Germany, the demise of the company Wirecard in 2020 left several stakeholders stunned at the magnitude of the company's fraud which allegedly involved inappropriate revenue recognition and significant inflation of cash balances (Minutti-Meza, 2021). In the company's 2017 expanded report (fiscal year ending on 31 December 2017), Ernst and Young (EY) included four KAMs (pp. 290–294) related to:

- (1) the acquisition of a business;
- (2) valuation of goodwill;
- (3) valuation of customer relationships; and
- (4) recoverability of receivables and presentation of revenues from acquiring partners (Minutti-Meza, 2021).

However, none of these KAMs conveyed a heightened level of risk that would meaningfully alert the company's investors (Minutti-Meza, 2021). In the company's 2018 expanded report (fiscal year ending on 31 December 2018), EY included a new KAM related to allegations of misreporting by a whistle-blower in Singapore (EY, 2019, p. 219). However, the KAM's text ends with the conclusion that "our audit procedures did not lead to any reservations regarding the accounting treatment of matters on the basis from investigations, which were

performed in response to allegations of a whistle-blower in Singapore” (EY, 2019, p. 219). Thus, while the issue is mentioned, there is no sense of urgency in the discussion of this highly irregular matter (Minutti-Meza, 2021).

2.3 *The theoretical framework*

The present study’s focus is on audit in its monitoring role within agency theory (Jensen and Meckling, 1976) and how changes to audit regulations (such as KAM disclosures) impact the work of auditors. The agency model suggests that, because of information asymmetries and self-interest, principals lack reasons to trust their agents and will seek to resolve these concerns by putting in place mechanisms to align the interests of agents with principals and to reduce the scope for information asymmetries and opportunistic behaviour (Houghton *et al.*, 2013). Agency theory emphasises auditors as independent, vigilant monitors of management, responsible for reporting back to shareholders (principals) (Jensen and Meckling, 1976). KAM disclosures are now an additional mechanism for auditors to report back to shareholders on management’s behaviour, in conjunction with the audit opinion accompanying the audited financial statements. Further, the fineness theorem posits that a finer information structure will result in greater benefits to the decision maker (Demskei, 1973). That is, the information in set X is said to be as fine as or finer than the information in set Y if X is a sub partition of Y (Demskei, 1973). Consistent with the fineness theorem, data on key audit risks are more accurate as they allow the investor or analyst to better integrate similar individual entity data with external sources of information such as relevant industry data (Kend and Nguyen, 2020).

Previous research has found that KAM disclosures are useful to shareholders or potential investors (Christensen *et al.*, 2014; Köhler *et al.*, 2016). Expanded audit reports are intended to increase the information content and usefulness of audit opinions, to increase external monitoring by auditors of management and to foster a more open conversation between external auditors and the users of financial reporting (Minutti-Meza, 2021). For instance, Seebeck and Kaya (2021) find that a higher level of specificity in KAMs is positively and significantly associated with short-window capital market reactions. Thus, they provide evidence that KAM sections are incrementally informative for investors – beyond other available information sources. Therefore, in relation to financial information, there is a reliance on the accounting numbers produced by the audited company based on the established criteria of the accounting standards and the external audit report of the statutory external auditor. To identify key audit risks, the investors now solely rely on the audit report disclosures of the external auditor and any other information that is publicly available; however, as they proceed to the stages where they make investment decisions, they would shift their reliance to their own advisors and also the representations made by management of the statutory audited company and thus rely less on the work of the external auditor (Kend and Nguyen, 2020). This supports the findings in the Lennox *et al.* (2018) study that indicates that investors do not believe that the new audit information provided by KAM audit disclosures increases informative content. However, Sirois *et al.* (2018) find that users of financial statements relied on the KAM audit disclosures to focus attention on aspects of the audited financial statements. Thus, there are mixed findings reported in the relevant literature, thus suggesting that further research on KAM audit disclosures is required.

The present study responds to the call for more research on how KAMs are worded (Seebeck and Kaya, 2021; Zeng *et al.*, 2021). Our study differs from this prior research as we consider the circumstances directly related to the COVID-19 pandemic as impacting audit procedure disclosures. We consider direct references to COVID-19 in audit procedures related to KAM disclosures in audit reports; and analyse these by auditor size, industry, KAM topic, and finally, by year when we investigate possible tone or sentiment changes in

the wording of audit procedures in the KAMs section between 2019 and 2020. Our results are relevant to regulators and standard setters worldwide; for example, the IAASB is committed to ensuring the success of the revised reporting standards of ISA 701 by undertaking post-implementation reviews (Seebeck and Kaya, 2021). The results of the present study can contribute to the future improvement in audit reporting requirements and in helping to improve the communicative value of audit reports for investors and to help better monitor managements' behaviour.

3. Research approach

3.1 Methodology

All audit reports that we obtain from the Australian Securities Exchange (ASX) after the end of the reporting period for 2018–2019 were used and analysed using content and textual analysis to investigate and analyse the content of the audit procedures disclosed in the KAMs section of audit reports. The data collected included, for the years 2019 and 2020: company names and ASX code; industry membership of the audit client; external auditor names; information on external auditor switches; reported KAMs disclosures for both years; and relevant audit procedures for both years.

To derive higher-quality information from accounting and audit disclosures and to help readers of financial statements better understand their textual characteristics (i.e. meaning, pattern, theme and structure of the text), experts from different areas have been collaborating to create methods and tools that can be used to analyse the textual data in disclosure documents such as external audit reports. Computational linguistics, natural language processing and advanced statistics have enabled the development of effective text-mining techniques for financial accounting and auditing disclosure analysis (Yang *et al.*, 2018). The present study extracts textual information from external audit report disclosures, which may be beneficial in identifying differences in textual information provided by auditors of different sizes (Big Four and non-Big Four audit firms) and in different years, i.e. before and during the pandemic.

Latent semantic analysis (LSA) has been broadly applied in textual information retrieval in many fields, including accounting, finance and auditing. The present study partially uses LSA methods to apply these methods to external audit reports in Australia. Since the application of LSA enables the weighting and ranking of topics, together with audit procedures extracted from the KAMs sections in statutory audit reports, our results should help to differentiate the focus of the themes between different auditors. Using LSA on the 2019 and 2020 KAM section data sets, we first evaluate audit procedure disclosure characteristics from two conceptual levels:

- (1) the selection of KAM topics; and
- (2) the wording of each of the audit procedures (Zeng *et al.*, 2021).

More specifically, we examine the textual characteristics for each audit procedure within each KAM (i.e. the aspects of similarity, readability and length). Prior research based on pre-ISA 701 periods finds that audit reports are inherently difficult to understand due to low levels of readability (Seebeck and Kaya, 2021). More readable audit reports around the implementation of ISA 701 are likely to make the information more accessible to financial statement users and thus increase communicative value (Zeng *et al.*, 2021; Seebeck and Kaya, 2021).

3.2 Data

From January 2019 to December 2019, there were initially 2026 ASX listed domestic companies on the ASX Ordinaries Index (ranging up to 2033 companies at its peak). From

Some of the following tables (i.e. [Tables 2](#) and [4](#)) exclude the auditor switch sample of 118 to allow for comparative tests of the changes related to the same auditor; however, [Tables 3](#)

Dataset details	Total clients listed	Final sample of audit clients (2019–2020)
ASX listed companies (2020 peak)	2,036	
(-) less foreign companies, delisting's, IPOs, debt issuers	(256)	
Initial target sample	1,780	
Missing reports 2019	(29)	
Missing reports 2020	(33)	
Final sample		1,718
Auditor switches	(118)	
Final sample (excl. switches)		1,600

No. of KAMs identified per Australian auditor/s (total clients)	2019		2020			COVID-19 procedure counts per auditor 2020	% of total procedures per auditor
	<i>N</i>	(%)	<i>N</i>	(%)	% Change (+/-)		
<i>Panel A</i>							
Deloitte (127)	225	8.01	219	7.67	-0.34	43	2.9% (1,463)
EY (185)	398	14.17	339	11.88	-2.29	106	5.1% (2,081)
KPMG (162)	278	9.89	243	8.52	-1.37	101	5.8% (1,752)
PwC (180)	409	14.56	337	11.8	-2.76	127	5.5% (2,297)
NB4 (946)	1,499	53.36	1,714	60.1	6.74	57	0.8% (6,714)
Total KAMs Australia	2,809	100	2,852*	100		434*	3% 14,307
<i>Panel B</i>							
BDO (225)	301	10.7	238	8.3	-2.4	16	(1,257)
Grant Thornton (146)	199	7.1	171	5.9	-1.2	7	(1,032)
HLB Mann Judd (110)	104	3.7	124	4.3	0.6	2	(596)
Pitcher Partners (73)	119	4.2	82	2.8	-1.4	3	(489)
Bentleys (53)	87	3.1	59	2.1	-1.0	0	(267)
Total KAMs Australia	2,809		2,852*			28*	14,307

Note: *Auditor switches not included

Table 3.
KAMs Reported
average in 2020 and
audit procedures
referencing COVID-
19 per industry

Industry name	No. KAMs (Avg) 2020	COVID-19 Counts per industry** (audit procedures)	% Of total audit procedures
Insurance (GICS Code 18)	27 (2.7)	25	12.6% (198)
Real Estate (GICS Code 19)	114 (2.07)	78	10.8% (725)
Transportation (GICS Code 5)	29 (2.64)	23	10.8% (213)
Banks (GICS Code 16)	41 (3.15)	22	7.6% (287)
Media (GICS Code 9)	74 (2.06)	29	5.9% (485)
Consumer Services (GICS Code 8)	114 (2.71)	45	5.5% (814)
Utilities (GICS Code 24)	44 (2.09)	12	4.9% (243)
Diversified Financials (GICS Code 17)	147 (2.13)	39	4.6% (847)
Health Care Equipment and Services (GICS Code 14)	113 (1.88)	29	4.4% (661)
Retailing (GICS Code 10)	107 (2.61)	28	3.9% (702)
Technology Hardware and Equipment (GICS Code 21)	38 (1.9)	8	3.3% (241)
Commercial and Professional Services (GICS Code 4)	81 (2.19)	15	3% (488)
Telecommunication Services (GICS Code 23)	34 (2.43)	5	2.6% (193)
Software and Services (GICS Code 20)	205 (2.28)	27	2.4% (1,135)
Automobiles and Components (GICS Code 6)	19 (2.38)	2	2.2% (91)
Food and Staples Retailing (GICS Code 11)	7 (3.5)	1	2% (47)
Capital Goods (GICS Code 3)	116 (2.19)	14	1.9% (702)
Consumer Durables and Apparel (GICS Code 7)	24 (1.71)	2	1.5% (135)
Pharmaceuticals, Biotechnology and Life Sciences (GICS Code 15)	115 (1.92)	9	1.4% (622)
Food, Beverage and Tobacco (GICS Code 12)	87 (2.35)	7	1.3% (551)
Energy (GICS Code 1)	190 (1.74)	11	1% (1,120)
Household and Personal Products (GICS Code 13)	19 (2.38)	1	0.9% (106)
Materials (GICS Code 2)	798 (1.69)	20	0.4% (4,317)
Semiconductors and Semiconductor Equipment (GICS Code 22)	8 (1.6)	0	– (42)
Not Classified (see endnote 1) ¹	522		
Total KAM Australia 3,073**			

Notes: **Auditor switches included (452 COVID-19 related audit procedures which include auditor switches). ¹There are 129 audit clients (excluding three auditor switches) that remained unclassified into GICS industry classifications in [Table 3](#)

and [5](#) include these auditor switches when examining industry effects and using the textual analysis methods for comparing the two years but not when comparing the different external auditors' use of language (in sub-parts of [Table 5](#)).

The next section conveys the findings of the content and textual analysis of statutory audit reports from ASX listed entities in the years 2019 and 2020. The analysis considers the number of KAMs reported, references to the COVID-19 pandemic in the audit procedures, the number of audit procedures undertaken and industry effects of the COVID-19 pandemic related to reported KAMs and the disclosed audit procedures.

4. Findings

Of the sample of 1,600 companies (excluding auditor switches), exactly 946 companies were audited by non-Big Four audit firms (about 60%). The other 40% were audited by Deloitte (127), EY (185), KPMG (162) and PwC (180) (see [Table 2](#) – Panel A).

Between the two years 2019 and 2020, all Big Four auditors had a small percentage decline in disclosed KAMs, whereas the non-Big Four audit firms had a +6.74% increase in disclosed KAMs [[1](#)]. According to [Table 2](#) (Panel A), over the two years period, EY and PwC on average reported more KAMs as a percentage of total KAMs in Australia (11%–14%) than any other audit firm. The non-Big Four audit firms disclose on average 57% of the total KAMs reported in Australia for both 2019 and 2020. Additional analysis of non-Big Four audit firms appears in [Table 2](#) (Panel B) where the top five non-Big Four audit firms based

on client numbers (minimum 50 clients) in our sample are also investigated. Both BDO (225) and Grant Thornton (146) have more clients in the sample than Deloitte (127); and BDO has on average more disclosed KAMs than both Deloitte and KPMG in 2019 and more than Deloitte in 2020. The KAM disclosures from BDO represent 9.5% of total KAMs disclosed in both years, whereas both KPMG and Deloitte are around 7%–9%.

As we look further into smaller practitioners, the sample size of their clients in our sample is too small to make any meaningful analysis, so we kept the cut-off at a minimum of 50 clients for [Table 2](#) (Panel B). Many of the other non-Big Four audit firms have less than 40 clients in our sample. When we compare the trends found for all Australian auditors from an earlier study by [Kend and Nguyen \(2020\)](#) covering 2017–2018, overall reported KAMs are down from 3,227 in 2017 to a low of 2,809 in 2019. This downward trend in reported KAMs is observed for each year successively from 2017 to 2019; however, in 2020, the trend is slightly upwards to 2852. However, interestingly, disclosed audit procedures have risen, from 11,675 in 2017 to a high of 14,307 in 2020. Thus, it appears that Australian auditors in the past four years have focussed on less key audit risks, but of those KAMs that they do focus on, they are undertaking more audit procedures (testing and evaluation, etc.). Although beyond the scope of this study, we suggest that, after the initial years of implementation of the KAM reforms in Australia, the auditors have started to focus on a narrower set of key audit risks but have planned a more extensive testing and evaluation regime of those key risk areas, which they then report on in the KAMs section of the audit report. Differing motivations and information asymmetries lead to concern about the reliability of information ([Houghton et al., 2013](#)), which impacts on the level of trust that shareholders (principals) will have in their agents. Future research needs to be undertaken to better understand why auditors have focussed on a narrower set of key risk areas. For instance, are auditors responding to shareholder demands or is this simply a consequence of how auditors have responded to the KAM reforms over time?

Overall, Australian auditors in 2020 reported 434 audit procedures that referenced COVID-19 (up to 452 when auditor switches are counted), which is 3% of total audit procedures (14,307) reported in the KAMs section of audit reports in our sample. PwC (127) reported the most, then both EY (106) and KPMG (101), and finally, Deloitte (43) was by far the lowest from the Big Four (see [Table 2](#), Panel A). For PwC, this is 5.5% of their total reported audit procedures in 2020, whereas EY is higher at 5.8% and KPMG is lower at 5.1%. All non-Big Four auditors together reported a very low 57 total audit procedures referencing COVID-19, which is around 0.8% of the 6,714 total audit procedures they reported in the KAMs section of audit reports in 2020. Many of the audit clients of these smaller practitioners are junior mining or mining exploration companies listed on the ASX. Most of these companies are classified as industries that were not impacted much by the COVID-19 pandemic, so that this outcome is not surprising. Thus, making further reference to Panel B of [Table 2](#) is not logical as the COVID-19-related audit procedures were predominately undertaken by the Big Four (of which Deloitte is somewhat of an outlier). In terms of market share, Deloitte has the smallest client base among the Big Four in Australia, and this has been the case for many decades now ([Houghton et al., 2010](#)). Below we present some *verbatim* quotes from Big Four firm audit reports to enrich the discussion on how auditors referenced COVID-19 in audit procedures during the initial year of the pandemic in Australia:

“[...] assessing the impact of COVID-19, including the Melbourne lock down on the loan recovery assumptions.” (Deloitte, 2020).

“[...] assessed the reasonableness of adjustments made to incorporate the expected impacts from COVID-19.” (EY, 2020).

“[...] we evaluated the Group’s assessment of COVID-19 on insurance liabilities.” (KPMG, 2020).

[...] we developed an understanding of the impact of COVID-19 on the Group, the Group’s planned response and the potential subsequent impact on future cash flows.” (PwC, 2020).

These extracts from the relevant 2020 audit reports refer to the impacts of the COVID-19 pandemic more broadly, such as in the EY example. Some are more specific to key audit risks, such as loan recovery (Deloitte), insurance liabilities (KPMG) and future cash flows (PwC). The COVID-19 pandemic was understandably always going to impact different industries with differing degrees of severity. In Australia, for example, the tourism, domestic travel, retail and hospitality sectors suffered from international and domestic border closures, harsh lockdowns, restrictions on density limits in venues, cancellation of major events and overall falls in consumer spending confidence. Therefore, from an audit risk perspective, we expected to find more emphasis on COVID-19-related audit risks in certain industries. Where there are at least 40 KAMs disclosed in an industry, the Banking sector has the highest KAM average of 3.15, followed by Consumer Services 2.71 and Insurance 2.70 (see Table 3). This is consistent with the findings of a prior study by Kend and Nguyen (2020) that reports industry KAM averages for 2018 and with the AUASB (2020b) report. We investigate audit procedures that referenced COVID-19 relative to total audit procedures reported in KAMs per industry and report in Table 3 that Insurance (12.6%), Transportation (10.8%), Real Estate (10.8%) and Banking (7.6%) are the most impacted industries.

With the increases in business risks and the cancellation of travel plans leading to more insurance claims, it is not unexpected that the insurance industry faced increased scrutiny from external auditors in relation to COVID-19-related audit risks. Likewise, for the transportation industry, which includes the international and domestic airlines, such as Qantas, Rex and Virgin Australia, the grounding of airplanes and loss of revenue has placed strains on this industry never before experienced in the history of aviation, therefore COVID-19-related audit risks were more prevalent in transportation than in many other industries. The KAM disclosures for the real estate sector indicate concerns related to investment property asset valuation, rental income and lease terms related to tenancy schedules and lease agreements. With many businesses forced to close during the COVID-19 pandemic, it is not surprising that external auditors have focussed their audit procedures on tenancy, lease and rental income matters in the KAM audit disclosures they report in 2020 in audit reports. The AUASB (2020b) report conveys that audit clients in the real estate sector received the highest proportion of KAMs referencing COVID-19 to overall KAMs, with 79 of 117 (67.5%). In our sample, the real estate sector was equal second, but this is based on audit procedures referencing COVID-19, not KAMs, thus the level of analysis between the two studies is different. Finally, the banking sector had concerns related to credit assessments, impairments, forecasts and meeting strict regulatory requirements, all linked to audit procedures referencing COVID-19. However, the banking sector (at 7.6%) is about 3% less than the other three industries mentioned above when measuring the COVID-19 audit procedures relative to total audit procedures for each industry.

In Table 4, we investigate the main KAM topic areas (Top 7 for Australia), as identified in a prior study by Kend and Nguyen (2020), to understand where most COVID-19-referencing audit procedures appear. At 37.5% (of total audit procedures referencing COVID-19), “Asset Valuation” is the key audit matter identified by external auditors, followed by “Revenue Recognition” (23.5%). We find that many COVID-19-related audit procedures focussed on investment property portfolios and valuations, inventory valuations, tenant occupancy risks and rental revenues. In “Asset Valuation,” the firm EY had a higher proportion of COVID-19-referencing audit procedures compared to other

auditors, whereas in “Revenue Recognition” it was KPMG having the highest number of audit procedures. In the area of “Impairments,” PwC had a very high proportion compared to all other auditors, which is worth highlighting for future research. An AUASB (2020b) report found that the most common KAMs which referenced COVID-19 were impairment of goodwill and other intangible assets (31.6% of all KAMs are referencing COVID-19) and valuation of property, plant and equipment (26.9%). This is only partially consistent with our findings; however, we considered audit procedures, not KAMs, thus again, we note that the level of analysis is different between these two studies. The final row of Table 4 indicates (for each auditor) how often they made a reference to COVID-19 within those Top 7 KAM topics. For Deloitte, for example, the number of times there is an audit procedure referencing COVID-19 within the Top 7 KAM topics is 41, whereas the total times Deloitte referenced COVID-19 in our sample of audit reports from 2020 is 43. This means that, on the two occasions that Deloitte made a reference to COVID-19 within a KAM related audit procedure, these were not within the Top 7 KAM topics.

We measure the tone of the audit reports using the Loughran and McDonald (2011) approach, where $Negative_Tone = (negative - positive) \div (negative + positive)$, where positive is the count of positive words in the text portion of the audit reports, scaled relative to the total words in the text portion and negative is the count of negative words in the text portion of the report scaled relative to the total words in the text portion. We defined negative and positive words using the Loughran and McDonald (2011) dictionary and added the negation check as suggested by Loughran and McDonald (2011); that is, any occurrence of negating words (e.g. is not, not, never) within three words preceding a positive word will flip that positive word into a negative one. The negation check only applies to positive words because Loughran and McDonald (2011) suggest that double negation (i.e. a negating word precedes a negative word) is not common. Furthermore, we measure the readability using the Fog Index and the Flesch Kincaid scale test (Lehavy et al., 2011).

The Fog index, developed in the computational linguistics literature, captures the written complexity of a document as a function of the number of syllables per word and the number of words per sentence. Specifically, the readability of the target statements is measured as follows:

$$Readability \text{ (i.e. Fog Index)} = (\text{average words per sentence} + \text{percentage of complex words}) \times 0.4$$

Table 4.
Audit procedures
referencing COVID-
19 within the Top 7
KAM topics (2020)
per auditor

KAM by topic 2020 (Top 7)	Deloitte	%	EY	%	KPMG	%	PwC	%	NB4	%	Total (%)
Goodwill and intangibles	5	11.6	4	3.7	8	7.9	4	3.1	4	7.0	25 (5.8%)
PPE	4	9.3	2	1.9	5	4.9	2	1.6	0	0.0	13 (2.9%)
Revenue recognition	8	18.6	19	17.9	28	27.7	24	18.9	23	40.3	102 (23.5%)
Acquisitions	2	4.6	3	2.8	3	2.9	3	2.3	1	1.7	12 (2.8%)
Impairments	4	9.3	14	13.2	6	5.9	50	39.4	8	14.0	82 (18.9%)
Asset valuation	18	41.9	58	54.7	37	36.6	39	30.7	11	19.3	163 (37.5%)
Exploration and evaluation	0	0.0	0	0.0	0	0.0	0	0.0	1	1.7	1 (0.2%)
(COVID-19 references within the Top 7 KAM topics)	(41)	100	(100)	100	(87)	100	(122)	100	(48)	100	(398)
Total COVID-19 references for each auditor/s	43		106		101		127		57		434*

Note: *Auditor switches not included

where a complex word is defined as one with three or more syllables. According to Li (2008), the Fog Index can be interpreted as the number of years of formal education required for a person of average intelligence to read the document once and understand it. In addition, we use the Flesch–Kincaid readability test which is designed to indicate how difficult a passage in English is to understand. There are two tests, the Flesch Reading-Ease Level test and the Flesch–Kincaid Grade Level test, that use the same core measures (word length and sentence length); however, they have different weighting factors. The results of the two tests correlate inversely: i.e. a text with a comparatively high score on the Reading Ease test should have a lower score on the Grade-Level test. We use the Flesch–Kincaid Grade Level test, thus the auditors with the lower Grade around 30 or below will be classified as more difficult to understand than auditors above that range (35 or higher).

There is growing research in accounting and finance using the textual analysis of qualitative information. This qualitative information includes media news, annual report/10-K/10-Q filings, earnings press releases, analyst reports and conferences calls (Huang *et al.*, 2014). For instance, Davis and Tama-Sweet (2012) report a more negative tone in the management discussion and analysis than in the earnings press release when managers have strong incentive to report strategically. Following prior studies, we adopt textual analysis for the audit reports and provide the results in Table 5. Audit reports are prepared by the accounting firms to inform the shareholders in deciding whether they should invest or continue to invest in the audited entity. In Australia, statutory audit reports specifically address shareholders.

Table 5 contains the sentiment analysis and readability tests of audit reports, comparing the two years 2019 and 2020 and the external auditors in the year 2020 only. In 2020 there was around a 15% increase in audit procedures reported in the KAMs section since 2019 (see Table 2); however, total words increased by 60% which is significant. This implies that auditors were reporting much more detail about audit procedures during 2020 in the KAMs section; however, Table 5 reveals that, although more negative words were reported relative to positive words, these were not greater in 2020 (86.8%) compared to 2019 (91.2%). Examples of negative language in KAMs-related audit procedures include: “[...] not billed,” “[...] not collected” or “[...] not yet occurred”; whereas some positive language includes “[...] agreed upon,” “[...] approved within” or “[...] had been met.” When comparing differences between auditors in 2020, we report that PwC (88.5%) and the non-Big Four auditors (89.2%) used more negative language in their audit reports than the other Big Four auditors. Given that we found that PwC reported the most audit procedures referencing COVID-19, this would be an expected subsequent finding, but not for the smaller

Year	FOG index	Flesch Kincaid grade level	Sentiment analysis*			
			Positive words	(%)	Negative words	(%)
2019			118	8.8	1,209	91.2
2020			382	13.2	2,515	86.8
<i>Auditor in 2020</i>						
Deloitte	27.32	48.41	38	12.4	269	87.6
EY	27.68	30.06	57	16.8	283	83.2
KPMG	26.88	35.84	88	18.6	384	81.4
PwC	29.77	32.15	49	11.5	376	88.5
NB4	28.44	45.73	120	10.8	982	89.2

Note: *Words Classification is Based on the Loughran and McDonald (2011) Sentiment Word Lists (<https://srafi.nd.edu/textual-analysis/resources/>)

Table 5.
Sentiment analysis
and readability tests

practitioners. Given that non-Big Four practitioners report such a high percentage of overall KAMs in Australia, this might skew the results (as they audit 60% of the clients in our sample). KPMG used a significantly less negative tone (81.4%) than all other auditors during 2020, which is consistent with the findings that KPMG had less audit procedures referencing COVID-19 compared to two other Big Four auditors (EY and PwC). The readability tests using the FOG index did not reveal reportable differences between the auditors; however, further tests using the Flesch Kincaid Grade level method indicate that the audit reports of both EY and PwC are “very difficult” to read, whereas all other auditors are classified as “difficult” to read. This is not surprising, given the professional level and technical nature of the audit procedures reported in the KAMs section of audit reports. Overall, negative words far outweigh positive words in both years; however, this is an inherent feature of KAM disclosures, as the focus is on identifying key audit risks. What we observe is significantly greater word count in 2020 (a 60% increase), indicating more description was being provided by auditors in the KAMs section of the audit report. Perhaps, this is a response to shareholders concerned related to the agency relationship and information asymmetries, particularly during a time of crisis, when investors are looking for vital information on the impact of the COVID-19 pandemic on entities’ financial results. Finally, only KPMG provided audit reports with a less negative tone than other auditors, which is consistent with the finding that they reported less audit procedures referencing the COVID-19 pandemic than their market competitors PwC and EY.

5. Conclusion

The objectives of the present study were to:

- examine the extent and nature of the audit procedures that Australian auditors reported in KAMs, during the initial year of the COVID-19 pandemic, to address key audit risks; and
- report on any differences between the two years (2019 and 2020) and differences between external auditors for the year 2020 related to the tone and sentiment of all audit procedures related to KAMs.

Using content analysis, we initially report for 2020 that around 17% of KAM disclosures referenced COVID-19 during the pandemic in Australia, which is consistent with earlier [AUASB \(2020a, 2020b\)](#) reports. We further find that 3% of audit procedures undertaken during 2020 were designed to address audit risks associated with the COVID-19 pandemic. The two prior [AUASB \(2020a, 2020b\)](#) reports did not examine audit procedures reported in the KAMs section of audit reports as the present study has. As a percentage of total audit procedures undertaken during 2020, we find that smaller practitioners reported much less audit procedures related to COVID-19 audit risks than larger Big Four firms. The insurance, real estate, transportation and banking industries had significantly more COVID-19-related audit procedures undertaken during 2020 as a percentage of total procedures than all other industries. Investors would find this information relevant for assisting them in their decision-making related to investing in different industries. The [AUASB \(2020b\)](#) report used a broader set of sector classifications (11), whereas the present study used the 24 GICS industry classification codes, thus explaining the partially consistent findings, although the level of analysis is also different. Considering the main topic areas of KAMs, we report that “asset valuation” and “revenue recognition” had the most audit procedures undertaken by all auditors to address COVID-19-related audit risks. Again, these results are only partially consistent with the prior [AUASB \(2020b\)](#) report due to differences in the level of analysis. The present study finds more significant results related to “revenue recognition” issues

related to the COVID-19 pandemic than the AUASB reported for 2020, which investors should also find relevant for investment-making decisions. Finally, the textual analysis we undertook finds differences between the words used by different external auditors in 2020; however, no differences in sentiment or tone during the COVID-19 pandemic are found when compared to the prior year 2019, which finding was unexpected. However, given that only 3% of audit procedures referenced the COVID-19 pandemic in 2020, perhaps this small proportion assists in explaining these insignificant results. There is no empirical evidence that the COVID-19 pandemic specifically impacted the tone expressed by external auditors in their audit report disclosures in 2020 compared to 2019. However, we do find that KPMG provided audit reports with a less negative tone than most other auditors in 2020, which is consistent with the findings that KPMG reported less audit procedures referencing the COVID-19 pandemic than both their market competitors, PwC and EY. This is some evidence, although weak, that audit procedures referencing the COVID-19 pandemic in the KAMs section are associated with a more negative sentiment in audit reports. Future research is needed to explore this issue further.

The present study can help regulators, standard setters and other stakeholders to understand what observed changes in audit reporting occurred in 2020 during the initial year of the COVID-19 pandemic. Our study indicates which specific industries were most impacted and the KAMs topic areas, i.e. “asset valuation” and “revenue recognition,” that were most impacted by the COVID-19 pandemic. We also suggest that, after the initial years of implementation of the KAM reforms in Australia (2017–2018), auditors have started to focus on a narrower set of key audit risks and have initiated a more extensive testing and evaluation regime for those key risk areas since 2018. This is an important observation that should be of interest to policymakers, as no prior Australian studies have reported such observations. Finally, policymakers in Australia should be interested in observing how auditors have responded when reporting on audit risk matters during a period of crisis and this is one of the first studies to provide findings related to how KAM audit disclosures were used to highlight COVID-19-specific audit risks. The [AUASB \(2020b\)](#) report proposed the following research question for the future: Has/will the impact of COVID-19 affect the reporting of KAMs? The [AUASB \(2020b\)](#) states, “it will be interesting to examine the KAMs which reference COVID-19 in more detail to determine whether they have significantly changed from the previous year or simply carried over” (pp. 27–28). The present study contributes to audit practice by providing some answers to this question by reporting on the number of audit procedures that referenced the COVID-19 pandemic within the KAMs section of audit reports in 2020.

Given that the cornerstone objective of the KAM framework is to deliver valuable and applicable information to investors, it would be interesting to know whether, during a time of crisis, KAM disclosures provide sufficient informational value for investors. The Australian setting is particularly interesting, as the stress on business operations from the harsh and extended series of lockdowns has created several business and audit risks, leaving investors looking for vital information on the impact of the COVID-19 pandemic on entities’ financial results. Within the agency theory framework, due to differing interests between management (agents) and shareholders, agents may have an incentive to bias information flows, particularly during a time of crisis. Shareholders may also express concerns about information asymmetries where agents are in possession of information to which they do not have access ([Houghton et al., 2013](#)). The KAM disclosures in the extended audit reports may help alleviate some of these concerns of shareholders ([Nguyen and Kend, 2021](#); [Kend et al., 2021](#)) and if so, improve the effectiveness of auditors in their monitoring role of company management. However, at this stage, there is not enough empirical research

to support whether KAM disclosures help to better align both the agent's and principal's best interests (Nguyen and Kend, 2021). Future research should also examine whether user confidence in audit reports had improved during the COVID-19 pandemic.

There is a possibility that the language used in KAMs (i.e. description of the matter and the audit procedures) does provide incremental information beyond other disclosures already made by the audited entity; however, the application of ISA 701 (IAASB, 2015) gives auditors little opportunity to provide any "original information" (Minutti-Meza, 2021). Thus, there is some debate on whether KAM disclosures in audit reports do deliver "new" informational value to investors, as prior academic research has reported mixed findings (Lennox *et al.*, 2018; Sirois *et al.*, 2018; Zeng *et al.*, 2021; Seebeck and Kaya, 2021; Minutti-Meza, 2021). Future research investigating whether KAM disclosures enhance the communication between each of the related parties, the audit committees (Oussii *et al.*, 2019), the external auditors and the financial statement users, specifically during a global crisis (like the COVID-19 pandemic), will provide helpful knowledge for policymakers in most jurisdictions.

As with all empirical research studies, there are limitations to report, some of which might offer opportunities for further research. Firstly, there were delays in issuing audited annual reports during the COVID-19 pandemic in Australia and the corporate watchdog, ASIC, gave listed companies more time to prepare the annual reports in 2020 (Hay *et al.*, 2021). We have missing annual reports for both years 2019 and 2020, with the delays in issuing annual reports in 2020 contributing to this limitation. Secondly, we only investigated two years of KAM disclosures in Australia, when the initial impacts of COVID-19 in 2020 were first being realised. Future research should look at KAM implementation beyond 2020, when complete years of COVID-19 impacts can be investigated, rather than the partial year of 2020 when the pandemic was just starting to have a financial impact in Australia from around February 2020 (with the financial year ending on 30 June 2020).

Note

1. This rise may be because, in 2019, there was a fall in KAMs reported by the non-Big Four, which was lower than that reported by other studies (Kend and Nguyen, 2020) for 2017–2018; however, the 2020 results for the reported KAMs appear to be higher and more consistent with what prior studies reported.

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