



DETERMINANTS OF KEY AUDIT MATTERS: EVIDENCE FROM PAKISTAN

Fahim Javed ¹, Nargis Akhtar ², Muhammad Usman Qureshi ³, Nazira Zulfikar ⁴

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Affiliations:

¹ Department of Management Sciences,
COMSATS University Islamabad,
Vehari Campus, Pakistan
Email: fahimjaved@cuivehari.edu.pk

² Department of Management Sciences,
COMSATS University Islamabad,
Vehari Campus, Pakistan
Email: nargisakhtar@cuivehari.edu.pk

³ Department of Management Sciences,
COMSATS University Islamabad,
Vehari Campus, Pakistan
Email: qaziusman05@cuivehari.edu.pk

⁴ Department of Management Sciences,
COMSATS University Islamabad,
Vehari Campus, Pakistan

Corresponding Author's Email:

² nargisakhtar@cuivehari.edu.pk

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Abstract

Key Audit Matters (KAMs) are an important component of expanded audit reports because they communicate areas involving significant audit risk, professional judgment, and auditor attention. This study examines the company-related and auditor-related determinants of KAM reporting in Pakistan, an emerging market where mandatory KAM disclosure remains comparatively recent. The analysis covers all non-financial companies listed on the Pakistan Stock Exchange from 2018 to 2023 and distinguishes between the total number of KAMs, account-level KAMs, and entity-level KAMs. Panel-data regression models are used to evaluate the effects of audit-firm size, auditor industry specialization, audit fees, company size, operating complexity, financial risk, and relevant control variables. The findings demonstrate that KAM reporting varies systematically across audit engagements rather than reflecting a uniform compliance exercise. Among auditor characteristics, affiliation with a Big Four audit firm has a significant negative association with KAM reporting, whereas audit fees are positively and significantly associated with the total and separate categories of KAMs. Auditor industry specialization does not exhibit a statistically meaningful relationship with disclosure. Regarding client characteristics, company size is positively associated with total and account-level KAMs, indicating that larger organizations generate greater audit attention and reporting. Stronger financial performance, particularly higher profitability and liquidity, is associated with fewer KAMs, consistent with lower perceived audit risk. Measures of operational complexity, loss, and leverage generally remain insignificant. KAM reporting also increased during the COVID-19 period, reflecting heightened economic uncertainty and audit challenges. Overall, the evidence supports the interpretation of KAMs as a risk-sensitive communication mechanism shaped by client conditions, auditor incentives, and external circumstances. The study extends evidence from emerging economies and offers practical implications for auditors, regulators, investors, and other financial-statement users seeking to improve the transparency, consistency, and informational value of audit reporting in Pakistan.

Keywords: Key Audit Matters, Audit Fee, Big 4, KAM Determinants, PSX

1. Introduction

Key Audit Matters (KAMs) are those areas that, in the auditor's professional opinion, are deemed significant in relation to the external audit of the financial statements and are therefore disclosed in the audit report (Coram & Wang, 2020). The idea of introducing a new segment on KAMs in audit report marks a significant change in audit reporting as its introduction is aimed at emphasizing the most crucial issues identified by auditors during the audit process (IAASB, 2015). The objective of KAMs reporting is to improve the information content of the external auditors' reporting and improve the dialogue between users of financial statements, particularly the auditors and external stakeholders. International financial scandals and crises highlighted the role of external auditors, especially regarding the usefulness of the information contained in the external auditor's report, and reinforced the expectation gap between financial information users and



auditors regarding auditors' responsibilities. Key Audit Matters (KAMs) are critical issues of a company, as these are conveying risk and misstatements to the users via audit reports (Velte, 2019). As international auditing standards (ISA) have been adopted by various regulators, many countries across Europe, North America, and Asia have incorporated KAM disclosures. ISA 701 (IAASB, 2015) outlines; KAMs can relate to major risks, major transactions and critical judgments made by auditors (Ferreira & Morais, 2020). The (IAASB, 2015) observes that various factors like firm's size and complexity, its business nature and environment, and specific conditions of the audit engagement may affect KAMs disclosures. Furthermore, existing research indicates that usefulness of KAMs disclosures is affected by auditors' reporting choices (Christensen, Glover, & Wolfe, 2014), the number of KAMs disclosed, their nature and detail of the KAM information provided by the external auditor (Köhler et al., 2020).

The introduction of KAMs represents a significant shift towards improving the communication of audit results between auditors, management, and stakeholders. However, the extent to which KAMs are reported can be influenced by various factors, both company-related and auditor-related, that shape the nature of financial reporting and auditing practices. In Pakistan, a developing economy with its own unique business environment and regulatory framework, these factors present an interesting area of investigation. Prior to the formal implementation of mandatory KAM disclosures, several leading companies in UK had already adopted a practice of transparency. These early adopters of detailed audit reporting set a valuable precedent, paving the way for the mandatory KAM disclosures that followed. Several studies have examined the determinants of KAM (Njenga, 2019). These researches have been carried in developed economies like Australia, New Zealand, England and America etc. But studies in developing countries like Pakistan are rare (Bepari et al., 2024). Previous research has shown evidence of the factors that determine KAM in many countries on five distinct continents (Jiang & Olesen, 2022). Several research studies have explored the factors influencing KAM disclosure, revealing that both company and auditor traits impact the number KAMs disclosed in the auditor's report (Dusadeedumkoeng, Gandía, & Huguet, 2023).

As Pakistan is a developing country, the adoption of KAM reporting requirement is still in its early stages. The Institute of Chartered Accountants of Pakistan (ICAP) and the Securities and Exchange Commission of Pakistan (SECP) have made strides in aligning with international auditing standards, but challenges remain in enforcing consistent and comprehensive KAM reporting practices across the board. Given the socio-economic and institutional context of Pakistan, factors such as political stability, regulatory quality, and the level of investor protection can have a profound impact on how KAMs are perceived and reported. In Pakistan, the regulatory framework governing the auditing process has evolved over time, aligning more closely with international standards. The SECP's adoption of ISA 701 has introduced mandatory disclosures of KAMs for listed companies. However, empirical research on KAM determinants in Pakistan remains sparse. In an effort to enhance audit transparency and align with global standards, SECP introduced the Auditors (Reporting Obligations) Regulations, 2018, through SRO 558(I)/2018 on April 26, 2018 (hereafter referred to as the 2018 Regulations). This followed the release of a draft version for public feedback via SRO 471(I)/2017 on June 15, 2017. These regulations bring Pakistan's auditing practices in line with the updated standards set by IAASB and adopted by the Institute of Chartered Accountants of Pakistan (ICAP). Effective for periods ending on or after June 30, 2018, the new standards replace previous audit and review report formats, marking a significant shift in regulatory requirements.

Despite the growing body of research on KAMs in developed economies, limited studies have focused on emerging markets like Pakistan. This study seeks to bridge this gap by examining how both company-related and auditor-related factors influence KAM reporting in Pakistan. It aims to provide valuable insights into the audit profession's challenges and the regulatory environment in Pakistan, highlighting the potential barriers and opportunities for enhancing KAM reporting in the country. By focusing on a unique market with its own regulatory, cultural, and economic conditions, this research will offer a comprehensive understanding of the factors that influence KAM disclosures in Pakistan, contributing to the broader literature on audit quality and transparency in emerging markets (Akhtar et al., 2026; Javed et al., 2023; Rasheed et al., 2018). Building on previous research, the proposed study has aims to investigate whether various company features



like size, complexity, and risk—and audit characteristics (specialist auditors, big 4 auditor and audit fee) influence KAMs type/classification (e.g., EKAM or AKAM) reported in the audit reports. To achieve this, study will analyze a dataset all non-financial companies listed on PSX covering the period from 2018 to 2023. This study will help various users of financial information to better understand various factors and their effect on the KAMs disclosure. This study offers insights that contribute to theoretical understanding and practical applications related to KAM reporting and its determinants. Findings of this study will be beneficial for the audit practitioners, regulators and other users of annual or financial reports to help them to understand various factors that determines and affect the KAMs reporting in Pakistan.

This study is structured as follows: a review of the relevant literature on KAMs, audit quality, and financial reporting is provided in the next section followed by the research methodology, detailing the research design, data collection techniques, and analysis methods in section 3. Section 4 presents the empirical findings, followed by a discussion of the results. Finally, section 5 concludes the study with implications for policy, practice, and further research.

2. Literature Review

Key Audit Matters (KAMs) have become an important feature of contemporary audit reporting because they are intended to improve transparency, accountability, and the informational value of the auditor's report. Introduced through ISA 701, KAMs require auditors to communicate those matters that demanded significant auditor attention during the audit. Prior literature shows that commonly reported KAMs include goodwill impairment, asset impairment, revenue recognition, inventory valuation, and other significant account- or entity-level risks (Dusadeedumkoeng, Gandia, & Huguot, 2023; Jiang & Olesen, 2022; Lennox, Schmidt, & Thompson, 2023). KAMs are often classified into entity-level risk KAMs and account-level risk KAMs, reflecting whether the underlying issue affects the organization as a whole or a specific financial statement account. Their inclusion is generally viewed as a mechanism for reducing the information and expectation gaps between auditors and users of financial statements by providing greater insight into significant audit risks and judgments (Coram & Wang, 2020).

Existing research identifies three broad categories of KAM determinants: external, firm-specific, and audit-related factors. External determinants include the regulatory environment, economic conditions, and industry characteristics, while firm-specific determinants include size, leverage, profitability, complexity, financial distress, and going-concern risk. Larger and more complex firms, as well as firms operating in highly regulated or high-risk industries, are generally expected to report more KAMs because they present greater audit complexity and risk (Francis, Pinnuck, & Watanabe, 2014; Al Lawati & Hussainey, 2022). Audit-related characteristics are also important. Audit firm size, Big Four affiliation, audit fees, auditor industry specialization, tenure, independence, and professional skepticism can influence both the number and nature of KAMs disclosed. Larger audit firms are often associated with more extensive KAM reporting because of stronger internal quality-control systems, greater reputational concerns, and closer regulatory scrutiny (Knechel, Bruynseels, & Willekens, 2011; Maroun & de Riquebourg, 2024). Consistent with this view, Sania and Ali (2024) report positive relationships between KAM disclosure and audit fees, audit firm size, client size, and leverage.

The literature also suggests that KAM disclosure can enhance the perceived usefulness and credibility of audit reports, although its effectiveness may vary across institutional settings. Studies report that KAMs can improve the informativeness of audit reports and may be associated with higher perceived audit quality and better communication of risk-related information (Moroney, Phang, & Xiao, 2021; Gold & Heilmann, 2019; Elmarzouky, Hussainey, Abdelfattah, & Karim, 2022). Evidence from China, Indonesia, and Australia further indicates that the effects of KAMs depend on audit-firm characteristics, the type of KAM disclosed, and the broader regulatory environment (Lin, 2023; Sania & Ali, 2024; Gambetta et al., 2023). In emerging markets such as Pakistan, however, the impact of KAM reporting may be shaped by weaker enforcement, variation in audit-firm capacity, family ownership structures, political influence, and differences in auditor expertise. These contextual features suggest that the determinants and consequences of KAM disclosure in Pakistan may differ from those documented in developed markets, thereby providing a strong justification for



further empirical investigation. In exploring the determinants of KAMs, existing research has identified several critical factors that significantly influence the number of KAM disclosures.

2.1 Auditor-Related Factors

2.1.1 Affiliation with Big-4 Auditing Firms. The effect of Big 4 auditors—Deloitte, PwC, EY, and KPMG—on KAM disclosures is also well-documented according to existing research studies. These firms are known for their extensive expertise and specialized industry knowledge, which enhances the thoroughness of their audits. Hussin, Md Salleh, Ahmad and Rahmat (2023) demonstrate that this expertise enables Big 4 firms to identify and disclose more KAM, as they are better equipped to uncover significant issues and risks. As seen in previous research studies, different researchers have different opinions about the effect of Big Four audit firms (Boonlert-U-Thai & Suttipun, 2023). Furthermore, because Big Four audit firms have unique reporting styles, audit methodologies, and interpretations of globally applied accounting standards (Francis, Pinnuck, & Watanabe, 2014), Big Four audit partners may have their own KAM reporting models. In the UK, PricewaterhouseCoopers (PwC) tends to disclose more KAM information at the entity and account levels than non-Big Four. Additionally, UK auditors tend to report a decrease in AKAM and an increase in EKAM after implementing KAM standards (Sierra-García, Gambetta, García-Benau, & Orta-Pérez, 2019). In Australia, PwC outperforms all other auditors regarding the number of AKAMs and EKAMs reported (Bepari, Mollik, Nahar, & Islam, 2022). However, Istanbul data shows that non-Big four auditors prefer to report more KAMs than Big Four auditors (Özcan, 2021). Big 4 firms typically possess greater resources, more specialized expertise across various industries and accounting areas, and a potentially more risk-averse approach to auditing (Sawangjan & Suttipun, 2020). Their larger size allows them to dedicate more resources to complex audits, leading to a more thorough assessment of significant risks and a higher likelihood of identifying matters that meet the criteria for KAMs. However, other studies have reported no significant differences in KAM disclosure practices between Big 4 and non-Big 4 firms, suggesting that other factors might outweigh the influence of firm size. The inconsistency in findings underscores the complexity of this relationship and the need for further research to clarify the impact of auditor size on KAM disclosure (Honkamäki, Mättö, & Teittinen, 2022).

H1: Big Four audit firm involvement is positively associated with the extent of Key Audit Matter disclosure.

H1a: Clients of Big 4 audit firms disclose higher number of total KAMs.

H1b: Big 4 audit firm involvement has positively associated with number of AKAMs.

H1c: Big 4 audit firm involvement has positively associated with number of EKAMs.

2.1.2 Auditors' Industry Specialization. According to existing audit literature, Auditor's industry specialization is another important factor that affects the disclosure of KAMs. Auditors who are experts in their field are more likely to exhibit a superior competence and independence from their field as well as certain knowledge and goodwill. Regarding the quality of disclosure, (Rose-Green, Huang, & Lee, 2011) observed the relationship among audit industry expertise and reporting of weaknesses relating to internal control by first-time filing firms. The expertise and experience of the audit team are crucial determinants of KAM selection. Auditors with extensive experience in specific industries or specialized accounting areas are better equipped to identify and assess significant risks and judgments related to those areas (Nguyen & Kend, 2021). Their deep understanding of industry-specific accounting practices and regulations allows them to identify subtle risks that might be overlooked by less experienced auditors. This expertise is especially important in industries with complex accounting standards or unique risk profiles (Velte, 2019). Furthermore, by observing the relationship between auditor distinction, management risk reduction, and accuracy of audit report. Auditors with more industry specialization work more effectively than those with less industry specialization. Their major focus is on the effective disclosure of key audit matters to make the stakeholders aware of the important factors of business (He, 2021). Inexperienced auditors don't focus on each and every important element of business instead they tend to neglect things. That's why this study supposes that auditors with higher levels of industry specialization disclose more KAMs as compared to others.

H2: Auditor industry specialization is positively associated with the extent of KAM disclosure.



H2a: Auditor industry specialization has a positive relationship with the number of KAMs.

H2b: Auditor industry specialization has a positive relationship with the number of AKAMs.

H2c: Auditor industry specialization has a positive relationship with the number of EKAMs.

2.1.3 Audit Fee. Audit fees are a prominent factor highlighting that larger and more complex companies require more intensive audit procedures, which are reflected in higher audit fees (Baatwah, Almoataz, Omer, & Aljaaidi, 2022). These increased fees often correspond with the discovery and disclosure of more KAM due to the intricate nature of the financial transactions and reporting processes. Supporting this view, (Hussin, Md Salleh, Ahmad, & Rahmat, 2023) found a positive association amongst KAMs disclosure and audit fees, indicating that higher fees cause comprehensive KAMs reporting. Audit fee is a crucial factor in order to decide the level and numbers of KAMs to be disclosed. A study conducted by (Sania & Ali, 2024), revealed that the audit fee charged by the audit firm has a significant positive relationship with the KAMs disclosure. So, it is an important element. Audit firms that charge more audit fees disclose more KAMs and perform audit engagement in a better way. So, it has a positive relationship with KAMs disclosure.

H3: Audit fees are significantly associated with the extent of KAM disclosure

H3a: Audit fees are significantly associated with the total of number of KAMs disclosed.

H3b: Audit fees are significantly associated with the number of AKAMs disclosed.

H3c: Audit fees are significantly associated with the number of EKAMs disclosed.

2.2 Company-Related Factors

2.2.1 Company Size. According to existing research, company size is another significant determinant. Larger firms are assessed by total assets, revenue, and number of employees, present higher audit risks, necessitating more extensive auditing procedures. Ozcan (2021) shows that there is a significant relationship between company size and KAM disclosure, suggesting that larger companies are more likely to have detailed KAM disclosures. French company size, usually defined by total business assets, total sales, and number of employees, is often considered an important factor in corporate audits, as larger companies face greater audit risks and increased transparency. When investigating the relationship between audit risk and KAM disclosure, several research studies have shown that company size has a significant relationship with KAM disclosure. However, only one study has shown that firm size has no association with KAMs reporting (Boonyanet & Promsen, 2019). Larger companies are likely to require more audit work and therefore have more KAMs as there are more segments for auditors to focus on. Auditors have to pay more attention to the larger company financial information. Materiality principal requires the auditor to focus on every event that can influence the decisions of stakeholders of business. Regarding entity-level risk KAM, firm size was found to be positively correlated with the number of EKAMs, a significant relationship was not expected as these issues are related to complexity and risk proxies (Sierra-García et al., 2019). Size of the firm is the most important factor in order to decide the level and numbers of KAMs to be disclosed. A study conducted by Sania and Ali (2024) revealed that the firm size has a significant positive relationship with the KAMs disclosure.

Bigger firms disclose more KAMs and vice versa. So, it is an important factor to be kept in mind. Hence, the hypotheses regarding firm size and KAMs are formulated as follows:

H4: Company size is positively associated with the extent of KAM disclosure.

H4a: Company size is positively associated with the total of number of KAMs disclosed.

H4b: Company size is positively associated with the number of AKAMs.

H4c: Company size is positively associated with the number of EKAMs.

2.2.2 Firm Complexity. Firm complexity refers to firm characteristics that make financial reporting and auditing more sophisticated. Existing literature on KAMs disclosure suggests that this complexity can result from several factors that contribute to the complexity of a firm's operations and financial reporting. Business complexity also influences KAMs disclosure. More complex firms require more detailed audits due to increased uncertainty and closer scrutiny. (Dusadeedumkoeng, Gandía, & Huguet, 2023) Argue that greater complexity leads to more extensive audit procedures, resulting in more detailed KAM disclosures. The relationship between company size and complexity and the number of KAMs reported has been a central theme in the existing literature. Studies consistently indicate a positive correlation between larger company



size (measured by revenue, assets, or employee count) and the number of KAMs disclosed (Rautiainen, Saastamoinen, & Pajunen, 2021). This is largely attributed to the increased intricacy of larger companies' operations and financial reporting processes. Larger, more complex organizations often have more diverse business segments, complex financial instruments, and a wider geographical footprint, all of which contribute to a higher likelihood of encountering significant risks requiring extensive auditor attention. The increased complexity necessitates a more in-depth audit process, inherently increasing the probability of identifying matters that meet the criteria for KAMs (Abu & Jaffar, 2020). Furthermore, the sheer volume of transactions and data involved in larger companies increases the chances of encountering unusual items or areas requiring further investigation by the auditor. The more complex operations of business will be the more detailed audit will be performed by the auditors. They will have to disclose more KAMs than they usually do for less complex firms. Operational complexity plays a vital role in determining the extent of KAMs disclosure. KAMs disclosure becomes more crucial for the companies with complex operations. This research uses proxies like inventory to receivable ratio and sales growth in order to analyze the complexity of the firm.

H5: Company complexity is significantly associated with the extent of KAM disclosure.

H5a: Company complexity is significantly associated with the total number of KAMs.

H5b: Company complexity is significantly associated with the number of AKAMs.

H5c: Company complexity is significantly associated with the number of EKAMs.

2.2.3 Company Risk. Finally, company risk encompasses a wide range of potential issues that could adversely impact a company's financial performance, operational effectiveness, and strategic objectives. Company risk, including factors such as leverage, solvency, liquidity, and profitability, impacts KAM disclosures suggest that higher levels of company risk necessitate increased scrutiny and disclosure of significant risks, leading to a greater number of KAM (Bepari, Mollik, Nahar, & Islam, 2022). Risks force the auditors to disclose more KAMs to the users of financial information. It helps them to make informed investment decisions. The specific industry in which a company operates and its unique business model are significant determinants of KAM selection. Certain industries are inherently riskier than others, leading to a higher frequency of specific types of KAMs. For instance, the financial services sector, characterized by complex financial instruments and stringent regulatory compliance requirements, often exhibits a higher prevalence of KAMs related to these areas (Boonlert-U-Thai & Suttipun, 2023). Similarly, industries with complex revenue recognition models or significant reliance on accounting estimates (e.g., impairment of goodwill or intangible assets (Rautiainen, Saastamoinen, & Pajunen, 2021) are more likely to have KAMs focusing on these critical areas. The business model itself plays a crucial role; companies with complex supply chains, international operations, or significant reliance on specific accounting estimates are more prone to having a higher number of KAMs. The inherent nature of a company's operations and its specific business model significantly influence the types of risks and judgments the auditor encounters, directly affecting the selection of KAMs. To measure company's risk leverage is used. It's an important and commonly used measure of risk.

H6: Company risk is significantly associated with the extent of Key Audit Matter disclosure.

H6a: Company risk is significantly associated with the total number of KAMs.

H6b: Company risk is significantly associated with the number of AKAM.

H6c: Company risk is significantly associated with the number of EKAM.

3. Methodology

3.1 Data and Sample

Sample, for this study, is comprised of all non-financial companies listed on Pakistan Stock Exchange (PSX) over a six-year period from 2018 to 2023, inclusively. The reason for taking non-financial companies is the distinct nature of reporting items of non-financial companies as compared to financial companies. The balance sheet on non-financial companies is different from the companies in financial sector. As explained in the introduction, the SECP regulation on auditors related to KAMs is effective from period ending on or after June 30, 2018, therefore we start our sample period from 2018 onward. Company's annual reports will be used for data collection which are publicly available on company's official websites, PSX websites etc.



3.2 Estimation Method

Following previous studies on KAMs, data analysis is performed using panel data regression to examine the relationship between the dependent and independent variables (Sierra-García, et al., 2019; Dusadeedumkoeng, Gandía, & Huguet, 2023). The primary method used to analyse the data is panel data regression using panel data. We also use alternative estimation methods for robustness of our results. To ensure the results are reliable and not sensitive to the choice of method, the study also applies alternative estimation methods. This involves using techniques other than Panel data regression (like, for example, a robust regression using Poisson approach or instrumental variable approach) to check whether the results hold up under different statistical approaches. This is often done to enhance robustness, meaning to confirm that the findings are not due to some methodological flaw or data issue.

3.3 Variables

3.3.1 Dependent Variables. To analyse the determinants of (KAM), in model (1) the dependent variable of interest is the frequency of KAM disclosures. The dependent variable in model (2) is the entity-level risk KAMs (EKAM) and in model (3), dependent variable is the account-level risk KAMs (AKAM). Definition of all the variables used in our study is provided in the Table 1.

3.3.2 Explanatory Variables. This study investigates audit firm and client firms' specific variables, categorized into company attributes and audit characteristics, which may influence KAM disclosure outcome. Company attributes will include size, risk, and complexity. In terms of audit characteristics, the study incorporates three key variables: the affiliation with a Big 4 auditing firm (BIG4, where 1 represents a Big 4 firm and 0 represents other firms), an audit by industry specialist audit firm is also an important factor that may affect reporting of KAMs (Bepari, Mollik, Nahar, & Islam, 2022), indicating the presence of industry specialist audit firm (TOPFIRM) and 0 indicating its absence. Another important factor in this regard is the audit fee (AUDIT_FEE) paid by the client firm to the external auditor (Sierra-García et al., 2019; Dusadeedumkoeng, Gandía, & Huguet, 2023). In terms of client firms' specific variables, the company size is measured using the natural logarithm of total assets (Dusadeedumkoeng, Gandía, & Huguet, 2023). Complexity is gauged through several factors: the ratio of inventories and account receivables, and the rate of sales growth (Venturini, Barbetta, Borba, & Flach, 2023). Company risk is assessed using return on assets, leverage and indicators of liquidity and solvency and loss of the firm (Al Lawati & Hussainey, 2022). A number of control variables are also used in our study of determinants of Key audit matters. COVID-19 is incorporated in regression models as control variable. This variable has the value 1 for the companies whose accounting period ends in 2020 onward and zero will be assigned for all the preceding time periods. The reason for this value assignment is that the first case of Covid-19 was reported on 26th February 2020 (Javed, Sajjad, Akhtar, & Riaz, 2024). In addition, Industry and year dummy variables are also included in our regression models by following literature on Key Audit Matters.

3.4 Models

To test the research hypotheses, the following regression models are estimated:

$$\begin{aligned}
 NKAM_{it} = & \beta_0 + \beta_1 BIG4_{it} + \beta_2 Topfirm_{it} + \beta_3 Audit_Fee_{it} + \beta_4 Inv_Rec_{it} + \beta_5 Growth_{it} \\
 & + \beta_6 Roa_{it} + \beta_7 Loss_{it} + \beta_8 Lev_{it} + \beta_9 Cr_{it} + \beta_{10} LN_Ass_{it} + \beta_{11} Cov_{it} + \beta_{12} Year \\
 & + \beta_{13} Industry_{it} + \epsilon_{it} \quad (1) \\
 KAMType_{it} = & \beta_0 + \beta_1 BIG4_{it} + \beta_2 Topfirm_{it} + \beta_3 Audit_Fee_{it} + \beta_4 Inv_Rec_{it} + \\
 & \beta_5 Growth_{it} + \beta_6 Roa_{it} + \beta_7 Loss_{it} + \beta_8 Lev_{it} + \beta_9 Cr_{it} + \beta_{10} LN_Ass_{it} + \beta_{11} Cov_{it} \\
 & + \beta_{12} Year_{it} + \beta_{13} Industry_{it} + \epsilon_{it} \quad (2)
 \end{aligned}$$

In these models, we've incorporated Big 4, Audit fees, Auditor industry specialization, Inventories to Receivables ratio, Return on Assets, Loss of the firm, Leverage, log of total Assets, and Covid-19, year and Industry variables. Definition of these variables is given in Table 1 below. In order to test our research hypothesis H1a to H6a we use model 1, where dependent variable is (NKAM). In model 2, KAMType_{it} is used as a generic dependent variable representing two distinct categories of Key Audit Matters: entity-level



KAMs (EKAMs) and account-level KAMs (AKAMs). Accordingly, Model 2 is estimated separately for each KAM category. Hypotheses H1b-H6b are tested using AKAM as the dependent variable, whereas hypotheses H1c-H6c are tested using EKAM as the dependent variable.

Table 1

Definition of Variables

Variable	Definition/Measure
Dependent variables	
Nkam	The overall number of matters revealed by the external auditor in the KAM section of their report
Ekam	The number of KAMs related to client risk as a whole
Akam	The number of KAMs related to specific items in the financial statement
Explanatory Variables	
Big4	Dummy variable equal 1 if audit firm is Big and 0 if otherwise.
Topfirm	Dummy variable equal 1 if the audit firm is an industry specialist.
l_af	Natural logarithm of audit fees paid by client to external auditor
Cr	Ratio of current assets to current liabilities
Roa	Ratio of operating income to net assets
Loss	Dummy variable equal to 1 if the audit firm experienced a loss in the previous year and 0 otherwise
Invrec	Ratio of the sum of inventories and receivables to total assets
Lev	Ratio of total financial debt to total assets
Sales_gr	Measured as the growth in sales
l_tasset	Natural logarithm of the total assets
Covid	Dummy variable equal 1 for the years 2021 or 2022 and 0 otherwise
Industry	Dummy variable equal 1 if the company belongs to the sector in question and 0 otherwise.

4. Results and Interpretation

This section contains results of the statistical tests applied on the data and their interpretations. After descriptive statistics, we also report pairwise correlation before testing our research hypotheses using multivariate analyses and understand the research findings. The Table 2 contains descriptive statistics information. It shows on average (mean) nkam is 1.73 for listed firms in PSX, ranging from minimum 0 to maximum 8. While the mean ekam is mere 0.184, the akam is substantially higher 1.561. Mean reflects the average value each variable. On the other hand, median is the mid value of each variable. Standard deviation reflects the deviation from the mean. The more standard deviation means more dispersion from mean value. As we can see some variables have more standard deviation and some have less standard deviation. Standard deviation is used as a measure of risk in financial studies.

4.1 Descriptive Statistics

Table 2

Descriptive Statistics

Variable	Mean	Median	Std. Dev.	Min	Max
nkam	1.738	2	1.290	0	8
ekam	0.184	0	0.494	0	4
akam	1.561	2	1.060	0	5
big4	0.371	0	0.483	0	1
topfirm	0.250	0	0.433	0	1
l_af	6.982	7.039	0.937	4.554	9.030
l_tasset	15.470	15.648	2.140	9.269	20.260
cr	1.872	1.12	3.484	0	28



Variable	Mean	Median	Std. Dev.	Min	Max
roa	2.735	2.681	2.350	-49.34	8.07
loss	0.310	0	0.462	0	1
invrec	5.195	1.7	9.394	0	37.8
lev	1.198	0.894	0.682	-19.04	30.98
sales_gr	0.235	0.14	0.941	-17.49	

4.2 Pairwise Correlation

We also check pairwise correlations of various variables. All of the dependent variables have positive correlations with each other. Big4 has negative correlation with each of the three dependent variables nkam, ekam and akam. Audit industry specialization has negative correlation with ekam and positive correlation with nkam and akam. Audit fee has positive correlation with all of the dependent variables and big 4 and audit industry specialization also. The Pearson correlations and the variance inflation factor (VIF) for variables used to in this study. While some correlations are significant, but the issue of multicollinearity is not present (Gujarati & Porter, 2009) because the cut-off points are that the VIF should not exceed 10 and that the tolerance values should not be less than 0.10 (Hair, Black, Babin, & Anderson, 2010).

4.3 Multivariate Analyses

The Table 3 presents panel data regression estimates. The regression estimates for Model 1 are provided in Panel A, whereas estimates of Models 2 and 3 provide in Panels B and C, respectively. Overall, R² of our models is around 12.5% of the three models is and is higher for Model 2 (15.52%). These results are comparable with other studies conducted in various domains and it is discussed as below (Sierra-Garcia, et al., 2019; Dusadeedumkoeng, Gandia, & Huguet, 2023).

Table 3

Regression Analyses

Variables	Predicted sign	nkam (n = 1837)			ekam (n = 1837)			akam (n = 1837)		
		Coef.	Z-stat	p-value	Coef.	Z-stat	p-value	Coef.	Z-stat	p-value
big4	?	-	3.81	0.000	-	3.33	0.00	-	3.05	0.00
topfirm	+	0.034	0.39	0.70	0.014	0.43	0.67	0.006	0.08	0.93
l_af	+	0.225***	2.81	0.01	0.111***	2.55	0.01	0.135***	2.29	0.02
l_tasset	+	0.104***	3.19	0.00	0.012	0.75	0.46	0.088***	3.68	0.00
cr	+	-0.010	-0.7	0.49	-	1.95	0.05	-0.005	0.37	0.72
Roa	+	-	2.28	0.02	-0.001	0.45	0.65	-	2.59	0.01
loss	+	0.040	0.44	0.66	0.056	1.32	0.19	-0.037	0.53	0.60
lev	+	-0.004	0.65	0.52	-0.001	0.38	0.71	-0.001	-0.1	0.92
inv to rec	-	-0.005	1.27	0.20	0.000	0.21	0.84	-0.004	1.19	0.23
sales_gr	+	-0.024	0.91	0.36	-0.004	-0.4	0.69	-0.017	0.79	0.43
Covid	+	0.142***	2.94	0.00	0.031	1.53	0.13	0.116***	2.99	0.00
INTERCEPT	?	-	1.25	0.21	53.35	0.00	-	-3.34	0.00	
Year		Yes			Yes			Yes		



Table 3 contains regression results. Regarding the audit firm characteristics, results show that big4 has negative relationship with all the dependent variables namely nkam, ekam and akam. Big4 has significant negative with nkam at 1% level of significance. Its p-value is 0.0000 and has a negative z-stat value for each. These findings suggest that big audit firms are less likely to report Key Audit Matters as compared to non-big audit firms. One possible explanation is that big audit firms are employed by larger and more sophisticated clients. These firms also usually have stronger internal controls and governance structures. Hence, audit clients of Big audit firms are less likely to get KAMs reporting in their audit reports. These results are similar to those reported by prior studies from the UK and Istanbul, respectively (e.g., Sierra-Garcia et al., 2019, and Ozcan, 2021), whereas Dusadeedumkoeng, Gandia, and Huguet, (2023) reported insignificant results in this regard. Top firm variable reflects auditor industry specialization, and it has positive relationship with each of the three dependent variables, however the relationship is not significant. There is a minor positive change in the values of ekam, akam and nkam due to change in the value of auditor industry specialization. We can consider it as no relationship and that industry specialist audit firms are not as relevant in explaining the variation in the KAM reporting. Regarding the third variable aimed at capturing the audit firm's characteristic is the Audit fee paid by the client firms. In this regard, we have positive and significant results for each model. Audit fees are positively and significantly associated with the number of KAMs disclosed. So, it has a positive relationship with KAMs disclosure. These increased fees often correspond with the discovery and disclosure of more KAM due to the intricate nature of the financial transactions and reporting processes. Our results also supporting this view of Hussin, Md Salleh, Ahmad and Rahmat (2023) in this regard.

Regarding the company characteristics, we capture company size by using Log of assets and it reflects the positive relationship of company size and KAMs disclosure. We find that company size has a positive relationship with nkam and akam in model 1 and 3. However, the relationship remains insignificant for model 2 which is relating to ekam. These findings suggest client size has a significant relationship with the reporting of Key audit matters (Ozcan (2021)). Now coming towards other company characteristics, we find both proxies of firm complexity, inventory to receivables as well as sales growth, are insignificant. Finally, there are negative coefficient values for both current ratio and return on assets, which means that liquidity and profitability has negative relationship with KAMs disclosure. When liquidity & profitability increases it causes a decrease in the KAMs disclosure. It means our proxies to capture firm riskiness has mixed results, while our measures return on assets have negative relationship with model 1 and model 3. Whereas this measure remains insignificant for model 2 which relates to eam. These findings suggest that profitable firms are less risky clients and the less likely to have many Key audit matters reported in their audit reports. Similarly, our measure current ratio also has negative and significant relation with entity level matters reporting. although, for the other models it remains in significant (i.e., nkam and akam). Collectively, these findings indicate that auditors of distressed companies exhibit a more KAMs than the other companies; however, these KAMs do not belong to a specific category (Dusadeedumkoeng, Gandia, & Huguet, 2023).

As per regression results, we find that the variable capturing Loss of the firm remains insignificant with akam, nkam and ekam. On the other hand, leverage has negative relationship with all of the three dependent variables in model 1, 2 and 3. More importantly, the variable lack significance level. Thus, the coefficients on loss and leverage are statistically insignificant across the models, providing no reliable evidence that these measures of financial risk are associated with KAM reporting. Our control variable capturing the outbreak of COVID 19 pandemic is also an important variable. Its regression results reflect that when COVID spread during 2021 and 2022, then KAMs disclosure also increases for model 1 and 3. So, at the time of COVID, there was more need to reporting of KAMs disclosure.

5. Discussion and Conclusion

The motivation for this study is the recent regulatory change in audit reporting by Securities and Exchange Commission of Pakistan (SECP), in an effort to enhance audit transparency and align with global standards. Background of this regulatory change lies in international financial scandals and crises highlighting the role of auditors, especially with regard to the usefulness of the information contained in the audit report and have reinforced the expectation gap between users of financial information and auditors regarding



auditors' responsibilities. The introduction of KAM segment in audit report marks a significant change in audit reporting as its introduction is aimed at emphasizing the most crucial issues identified by auditors during the audit process (IAASB, 2015). KAMs aim to improve the information content of the audit report and improve the dialogue between auditors and users of financial statements. Pakistan is a developing economy with its own unique business environment and regulatory framework; these factors present an interesting area of investigation. Thus, an important purpose of this study is to explore the various company-associated and auditor-associated factors that affect the reporting of KAMs in Pakistan. By understanding these factors, this study shed light on the dynamics between auditing practices, regulatory requirements, and the quality of financial reporting in a Pakistani context.

Empirical findings of this study suggest that KAM reporting is not homogeneous regarding the auditor characteristics, as audit firm size and audit fees are significant determinants of KAM reporting in Pakistan. Whereas auditor industry specialization shows no meaningful association with KAM disclosure, audit fees exhibit a positive and significant relationship, indicating that the positive association between audit fees and KAM reporting is consistent with the view that engagements involving greater audit effort or complexity may generate more KAM disclosures. At the same time, Big 4 audit firms are significantly less likely to report KAMs, particularly in terms of the total number of KAMs, suggesting that auditor size plays an important role in shaping KAM reporting practices. This finding supports the argument that big audit firms, often serving larger and more sophisticated clients with stronger internal controls and governance structures, encounter fewer issues that warrant disclosure as KAMs, and it is consistent with prior international evidence (e.g., Jiang & Olesen, 2022; Dusadeedumkoeng, Gandia, & Huguët, 2023). Regarding firm characteristics, larger firms tend to disclose more KAMs, while financially stronger firms, as reflected by higher liquidity and profitability, report fewer KAMs, implying lower perceived audit risk. Additionally, KAM disclosures increased during the COVID-19 period, reflecting heightened uncertainty in the audit environment. Overall, these results support the view that KAMs function as a risk-sensitive communication tool rather than a standardized reporting requirement, thereby reinforcing the regulatory objective of enhancing audit transparency in Pakistan's evolving audit environment. Overall, this study provides empirical evidence that KAM reporting in Pakistan is shaped by both firm-specific, auditor-specific characteristics, and external economic conditions such as COVID-19 pandemic, confirming that KAM disclosures are not applied uniformly across audit engagements. We find that company size and company financial performance significantly effect on KAMs. These empirical findings suggest that KAM reporting is not homogeneous regarding the auditor characteristics, as Big 4 firms and the audit fees also significantly relate to KAMs. This study offers insights that contribute to theoretical understanding and practical applications related to KAM reporting.

This study presents numerous implications for users of financial information, auditors, and regulators. From the viewpoint of information users, a thorough understanding of the KAM section enables them to gain deeper insights into a firm's characteristics, which can ultimately influence their decision-making process. For auditors, this study highlights that although the number of KAMs may appear relatively similar across firms, those aiming to signal higher audit quality should focus on enhancing the depth and clarity of disclosures in the KAM section rather than merely increasing their quantity. Lastly, for regulators, this study offers useful evidence on the firm- and audit-related factors associated with KAM reporting, which can inform the development of disclosure standards tailored to specific organizational and auditing contexts. This study has some limitations which provided avenues for future research. As we categorized KAMs following prior studies, but their actual text has not been inspected. Since KAM reporting is primarily based on the number and type of Key Audit Matters disclosed, this study does not directly examine whether differences exist in the extent or depth of KAM disclosure. Consequently, the lack of significance of certain variables, such as auditor specialization, does not necessarily imply uniform audit quality across firms. This is because audit reporting quality is determined not only by the quantity of KAMs disclosed but also by their qualitative content. Therefore, qualitative methods—particularly textual analysis—are more appropriate for assessing the quality and substance of KAM reporting (Zeng et al., 2021). Future studies could focus on developing a more robust metric to measure the level of KAM disclosure. Another study could be conducted to investigate the impact



of company characteristics and audit characteristics on quality of reporting of KAMs. Further, KAM disclosure effect on user's decision should be investigated in future.

Author's Contributions

All authors participated in ideation, development, and writing the manuscript. All authors read and approved the final manuscript.

Conflict of Interest Statement

The authors declare that there is no conflict of interest regarding the publication of this article.

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Informed Consent

Informed consent was obtained from all participants prior to data collection. Participants were informed about the purpose of the study, the voluntary nature of their participation, and their right to withdraw at any time without any consequences. The confidentiality and anonymity of respondents were guaranteed throughout the research process.

Data Availability

The datasets generated and analysed during the current study are available from the corresponding author upon reasonable request. The authors are committed to transparency and will provide detailed methodological information and analysis protocols upon request.

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