UNIVERSIDADE CATÓLICA PORTUGUESA

Materiality Level in Auditing: Its Evolution and Impacts

The Case of the UK

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Católica Porto Business School
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Resumo

Esta dissertação explora a evolução da aplicação do conceito de materialidade em Auditoria, com foco em como os auditores determinam e divulgam os níveis de materialidade. O estudo centra-se no contexto do Reino Unido, onde a norma ISA 700 exige que todas as empresas listadas na London Stock Exchange (LSE) divulguem os níveis de materialidade utilizados nas suas auditorias.

A revisão de literatura destaca a crescente relevância da materialidade em Auditoria, mas também revela uma lacuna nos estudos empíricos sobre como ela é operacionalizada pelos auditores. O estudo analisa as empresas do índice FTSE 350 entre 2015 e 2022, revendo e completando uma base de dados abrangente, compilando informações de auditoria e indicadores financeiros. A investigação examina se mudanças de auditor influenciam decisões sobre materialidade, e testa a hipótese de uma relação inversa entre risco de auditoria e materialidade. Adicionalmente, é apresentado um modelo exploratório que avalia se os níveis de materialidade são influenciados pelo desempenho das empresas, como quedas de receitas ou de lucro.

Os resultados mostram que mudanças de auditor geralmente coincidem com ajustes nos níveis de materialidade e nos *benchmarks* utilizados, refletindo diferenças na estratégia de auditoria e na perceção de risco. No entanto, não foi encontrada uma relação significativa entre o desempenho da empresa e os ajustes de materialidade. Estas conclusões contribuem para uma melhor compreensão do conceito, apoiando investidores, reguladores e académicos na abordagem de lacunas, e sugerem uma potencial necessidade de orientações regulatórias mais claras sobre a determinação da materialidade.

Palavras-chave: Auditoria, Materialidade, ISA 700, FTSE 350.

Abstract

This dissertation explores the evolving application of materiality in auditing, focusing on how auditors determine and disclose materiality thresholds. The study takes advantage of the regulatory context in the United Kingdom, where ISA 700 requires all companies listed on the London Stock Exchange (LSE) to disclose their audit materiality levels. This unique requirement enables a detailed investigation into auditor practices across a large and diverse sample.

A literature review highlights the growing relevance of materiality in auditing, an also reveals a gap in empirical studies examining how it is operationalized by auditors. To address this, the study analyses FTSE 350 companies between 2015 and 2022, revising and completing an extensive dataset of audit disclosures and financial indicators. The research examines whether auditor changes influence materiality decisions and tests the hypothesis of an inverse relationship between audit risk and materiality. Additionally, it introduces an exploratory model to assess whether materiality thresholds respond to company performance, such as revenue or profit declines.

The findings show that auditor changes often coincide with adjustments in materiality levels and benchmarks, reflecting differences in audit strategy and perceived risk. However, no significant relationship was found between company underperformance and materiality adjustments. These insights contribute to the understanding of audit materiality, supporting investors, regulators, and academics in addressing transparency gaps, and suggest a potential need for enhanced regulatory guidance on materiality determination.

Keywords: Audit, Materiality, ISA 700, FTSE350.

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1.Introduction

1.1 Overview

Materiality is a fundamental concept in accounting and auditing, managing the usefulness of financial information for economic decision-making. By establishing objective criteria for relevance and significance, materiality enables financial statements to emphasize substantive issues while disregarding immaterial details (Bernstein, 1967).

Given the growing complexity of financial reporting and intensified expectations from regulators and stakeholders, materiality has evolved to address both quantitative and qualitative factors (Eilifsen & Messier, 2015). It varies depending on the circumstances of each entity and acts as a filter allowing information users to be more secure, as financial disclosures reflect the specific nature of a company's operations, risks, and stakeholder needs.

This study looks at UK companies in the FTSE 350 index from 2015 to 2022 to understand and further develop the study of how auditors use materiality. The results aim to shed some light on the levels of materiality and how they are defined and changed. By using a larger sample size, the study gives clearer insights that help policymakers, regulators, auditors, and investors. It also fills research gaps and adds to the existing knowledge by providing a bigger database and bringing new ideas to auditing.

1.2 What is the relevance of Materiality?

Auditing plays a vital role in the financial reporting ecosystem by providing independent assurance that financial statements are free from material misstatement, whether due to error or fraud. This assurance supports stakeholder confidence and contributes to the suitable functioning of capital markets. However, audits are not broad inspections of all transactions. Due to time and resource constraints, auditors perform their work based on sampling and risk assessment. They evaluate selected portions of financial information that are deemed most likely to contain significant misstatements, rather than reviewing every transaction. This sampling-based approach requires a systematic method for identifying what matters most.

This is where materiality becomes essential, as it determines the point at which financial information becomes significant enough to influence decisions made by users of financial statements. Because auditors cannot test every detail, materiality serves as a filter, helping them decide which misstatements or deviations are significant enough to require further investigation or correction. This concept not only enhances the efficiency of the audit but also helps ensure that the audit addresses issues most relevant to the users of financial statements and therefore guarantee that resources are used where they can have the greatest impact (Chewning & Higgs, 2002; Keune & Johnstone, 2012).

However, it's not a one-size-fits-all concept: it varies depending on the size, complexity, risks and nature of the organization being audited. A multinational corporation with diverse operations will have different materiality thresholds compared to a small local business (Iskandar & Iselin, 1999). Auditors then rely on professional judgment to set materiality thresholds, ensuring that these reflect the organization’s environment and operations. Materiality ensures that financial statements are useful, relevant, and aligned with the needs of stakeholders like investors, creditors, and regulators (Messier et al., 2005).

It fosters transparency and trust in financial markets as it helps stakeholders to be better informed of an organization's financial health and performance. This transparency is vital for maintaining investor confidence and ensuring the smooth functioning of financial markets. As such, materiality is more than just a technical term; it's a foundation for ethical and effective financial communication (Cullinan, 2004).

1.3 Types of materiality, auditors, mistake vs. misstatement

Materiality plays a critical role in auditing by guiding auditors in planning the audit, evaluating misstatements, and forming their opinion on the financial statements (ISA 320, 450, 700). During the planning stage, auditors set a preliminary materiality threshold, often referred to as planning materiality, which establishes the magnitude of misstatements that could influence users' decisions. This is typically based on quantitative benchmarks that are usually extracted from the income statement or balance sheet, such as a percentage of revenue, total assets, or net income (for instance, a common practice is to set materiality at 5% of profit before tax). As mentioned before, auditors must always have an adapted approach, tailored to the entity's size, industry, and specific circumstances. For example, in a profit-driven entity, pre-tax income might be the primary benchmark, while in asset-intensive industries, total assets might hold greater significance.

The planning stage also considers qualitative factors that focuses on the nature and context of the transaction or event. The auditor must analyze its impacts on compliance with regulatory requirements (FRC), stakeholder expectations, or contractual obligations, which may warrant additional attention regardless of their quantitative size. For example, a small misstatement in a financial statement

line item may still be material if it affects a company's ability to meet loan agreements or maintain investor confidence.

As part of the process, auditors also determine performance materiality, a threshold lower than planning materiality, designed to focus on the risk of undetected or aggregated errors. By setting performance materiality, auditors ensure that the audit has an incorporated margin for potential misstatements that may go unnoticed in individual procedures but could cumulatively affect the financial statements.

In certain cases, professionals apply specific materiality thresholds to particular accounts or disclosures judged critical, such as related-party transactions, significant estimates, or items required for regulatory compliance. These specific thresholds are tailored to ensure that even small misstatements in these areas do not go unaddressed (ISA 450), as they may have outsized impacts on users' decisions.

Throughout the audit, materiality is not a static concept but rather a dynamic process. Auditors may revise materiality thresholds if actual financial results or conditions differ significantly from initial assumptions. For instance, if an entity's actual revenue or profit deviates substantially from early estimates, the materiality threshold would be adjusted to maintain its relevance and appropriateness. Such revisions ensure that the audit remains focused on the most critical aspects of the financial statements as new information emerges.

During the evaluation stage, materiality serves as a benchmark for assessing identified misstatements. Auditors aggregate all detected errors and compare them to performance materiality and overall planning materiality to determine their impact. They also assess the qualitative aspects of misstatements, such as whether they affect regulatory compliance, involve fraudulent activity, or influence critical trends, such as earnings growth. Even small errors may be deemed material if they distort users' perceptions or violate legal requirements.

Understanding what a misstatement is, is equally crucial in assessing materiality. A misstatement may result from either error or intentional manipulation, including fraud or deliberate misrepresentation of financial information (Messier, 1983). Material misstatements, whether due to error or fraud, have the potential to destabilize the reliability of financial reporting and impact stakeholder trust.

All misstatements, regardless of size, are communicated to management, providing an opportunity for correction, while material or uncorrected misstatements are escalated to those charged with governance (ISA 450). The outcomes of this evaluation directly affect the auditor's report: if material misstatements remain uncorrected, the opinion may be modified to qualified, adverse, or disclaimed, depending on the gravity and depth of the issues. Key audit matters (KAM) or emphasis of matter (EOM) paragraphs may also highlight significant concerns. Through this process, auditors ensure the financial statements are presented fairly and provide meaningful assurance to users.

Following this, it must be highlighted that materiality is also closely related to audit risk and audit quality. Audit risk is the likelihood that an auditor may issue an incorrect opinion on the financial statements, such as failing to detect a material misstatement. Materiality thresholds help auditors assess and manage this risk. Lower materiality thresholds typically result in more extensive audit procedures, reducing the risk of overlooking significant misstatements. However, overly strict thresholds can lead to inefficiencies and increased costs (Messier et al., 2005).

Finally, audit quality, which refers to the accuracy and reliability of the audit process, is also influenced by materiality. Thus, materiality acts as a bridge

between audit risk and audit quality, balancing the need for diligence with practical considerations.

1.4 Main Challenges, Regulation Framework

Materiality presents several challenges, primarily due to its inherent subjectivity and the diverse expectations of stakeholders. Auditors must cross complex regulatory frameworks while balancing professional judgment with quantitative benchmarks and qualitative considerations, making it a nuanced and context-dependent process.

As a response to this challenge, International Auditing and Assurance Standards Board (IAASB), an independent standard-setting body under the support of the International Federation of Accountants (IFAC), created the International Standards on Auditing (ISAs), which are now globally recognized standards for auditing financial statements. The ISAs aim to develop the quality and uniformity of auditing practices worldwide, promoting confidence in the reliability of audited financial statements.

1.4.1 International Standards on Auditing (ISA) 320: "Materiality in planning and performing an audit"

Revised in June 2016 and further updated in May 2022, ISA 320 outlines the role of materiality in planning and performing an audit. It provides guidance to auditors on how to determine and apply materiality during an audit. The standard requires auditors to assess materiality levels at the planning stage and adjust them as needed throughout the audit. Auditors must use professional judgment to determine materiality thresholds for the financial statements as a whole (considering using quantitative and qualitative factors). This involves

considering both the amount and nature of items, based on the specific context of the business being audited.

1.4.2 ISA 450: "Evaluation of misstatements identified during the audit"

ISA 450, issued in January 2009 and updated in June 2018, considers the auditor's responsibility to evaluate the effect of identified misstatements on the financial statements. Auditors are required to aggregate all misstatements, except those that are clearly trivial, and communicate them to management promptly. If management chooses not to correct the misstatements, auditors must assess whether they are material individually or in aggregate, considering both their size and nature.

The standard emphasizes that evaluation should incorporate both quantitative factors, such as the magnitude of the misstatement compared to materiality thresholds, and qualitative factors, such as the nature of the misstatement or its impact on compliance, fraud, or key performance metrics. Auditors are also required to assess the cumulative effect of uncorrected misstatements on the financial statements as a whole and share these findings with those charged with governance.

ISA 450 ensures a systematic approach to evaluating misstatements, providing transparency in the audit process and enabling informed decisions by stakeholders. Its application supports the integrity of financial reporting and the reliability of the auditor's opinion.

1.4.3 ISA 700: "Forming an opinion and reporting on financial statements"

ISA 700, revised in April 2015 and effective for periods ending on or after December 15, 2016, establishes the auditor's responsibilities in forming an opinion on financial statements and provides guidance on preparing a clear and standardized audit report. The auditor must evaluate whether the financial statements are prepared, in all material respects, in accordance with the applicable financial reporting framework. This evaluation includes assessing the appropriateness and consistency of accounting policies, the rationality of significant estimates, and the adequacy of disclosures. The financial statements should provide a true and fair view of the entity's financial position, financial performance, and cash flows.

The standard mandates a specific structure and content for the auditor's report. It must begin with a clear opinion, stating whether the financial statements are free from material misstatement and whether they comply with the relevant framework. It must also include a basis for the opinion, which provides a concise summary of the audit process and highlights the auditor's compliance with ISA.

ISA 700 places significant emphasis on transparency by requiring auditors to discuss key audit matters (KAM), which are issues of significant risk or judgment encountered during the audit. The report also outlines the responsibilities of management, those charged with governance, and the auditor. Management's role in preparing the financial statements and maintaining effective internal controls is distinguished from the auditor's role in providing an independent opinion based on sufficient and appropriate evidence.

Together, ISA 320, 450, and 700 complement each other, providing a cohesive framework for applying and communicating materiality in auditing.

1.4.4 Different approaches

The application of these standards varies significantly across jurisdictions. For example, the United Kingdom's Financial Reporting Council (FRC) has implemented stricter disclosure requirements, compelling auditors to provide detailed explanations of materiality thresholds in their reports. In contrast, the United States follows a more principles-based approach under the guidance of the Public Company Accounting Oversight Board (PCAOB). While the PCAOB emphasizes auditor judgment, it does not mandate specific materiality disclosures in audit reports, leading to less transparency compared to the UK.

Germany, under the oversight of the Financial Reporting Enforcement Panel (FREP) and in adherence to EU auditing standards, adopts a balanced approach. While aligned with ISA guidelines, Germany places a strong emphasis on industry-specific benchmarks/thresholds.

Those differences highlight the varying emphasis on regulatory enforcement and market-driven practices in different regions.

1.4.5 Recent Challenges

The evolving landscape of financial reporting further complicates the determination and communication of materiality. Advances in technology, such as data analytics and artificial intelligence, offer new tools for assessing materiality but also introduce challenges related to data reliability and auditor expertise. Additionally, increasing stakeholder demands for transparency and accountability place pressure on auditors to provide more detailed and accessible explanations of their materiality assessments. Balancing these demands with the need to maintain efficiency and professional judgment remains a critical challenge for the auditing profession.

In this context, the emergence of double materiality—which considers not only the financial impact of information on the entity but also the entity's impact on the environment and society—adds a further layer of complexity. This broader perspective requires auditors and preparers to assess materiality through both financial and non-financial lenses. As such, double materiality represents a shift toward a more inclusive and multidimensional reporting framework, challenging traditional audit approaches and expanding the role of materiality in corporate accountability (Dragomir et al., 2024; Nobes, 2024).

1.5 Study objectives and scope

The UK is one of the few countries, to our knowledge, that requires (by the Financial Reporting Council (FRC)) the auditor to disclose information on auditing materiality in the audit report. Aligned with ISA 700, auditors must outline materiality thresholds, benchmarks, and their impact on the scope of the audit. Auditors are encouraged to go beyond basic compliance by including voluntary disclosures, such as the rationale behind selecting materiality benchmarks or adjustments to thresholds during the audit. These disclosures, effective since 2012, have set a benchmark for audit reporting, integrating materiality planning and risk assessment into the audit report. For this reason, we focus our study on UK firms, more specifically, on the constituents of the FTSE 350 index for the period from 2015 to 2022.

This work aims to explore the evolving role of materiality in auditing, focusing on how it is applied by auditors. By analyzing this timeframe, the research wants to investigate what factors can lead to changes in materiality thresholds and auditor practices. As main contribution, this study will complete and revise the database already constructed by the past studies (Costa, 2023; Barros, 2024).

After explaining the idea of materiality, chapter 2 will present a literature review on the topic helping us to better understand the concept of materiality and how it has evolved through time. The research questions are then presented in chapter 3, along with an explanation of how the sample was chosen. Chapter 4 looks at the data, and Chapter 5 shows the results for the research questions. Finally, Chapter 6 sums up the conclusions and gives ideas for future research.

2. Literature Review

Materiality began as a qualitative concept rooted in professional judgment, with early scholars such as Chetkovich (1955) and Moonitz (1961) accentuating its subjective and context-dependent nature. As the accounting profession matured, researchers introduced quantitative benchmarks to supplement judgment, leading to more structured frameworks (Bernstein, 1967; Frishkoff, 1970; Rose et al., 1970). By the 1980s, empirical studies began refining how auditors applied materiality, revealing the influence of experience, firm size, and risk assessments (Holstrum & Messier, 1982; Messier, 1983).

The turn of the century brought significant regulatory shifts. The Sarbanes-Oxley Act (2002) and the International Standards on Auditing (ISAs) established clearer expectations for auditors, encouraging more consistent materiality determinations (Cullinan, 2004; Messier, Martinov-Bennie, & Eilifsen, 2005). These frameworks pushed auditors to consider both quantitative thresholds and qualitative context.

In recent years, technological innovations and growing calls for transparency have reshaped the concept. Double materiality—capturing both financial and non-financial impacts—has emerged in response to global ESG concerns (Matsumura, Prakash, & Vera-Muñoz, 2022; Nobes, 2024). Auditors now navigate a complex landscape of stakeholder expectations, regulatory pressure, and advanced tools like AI and data analytics (El-Haj et al., 2019; Eilifsen, Hamilton, & Messier, 2021).

Yet, despite these advancements, challenges persist. Variability in thresholds, the tension between judgment and standardization, and the rising complexity of financial and ESG disclosures remain key concerns (Iskandar & Iselin, 1999; Houghton, Jubb, & Kend, 2011).

This chapter traces materiality's journey—from early theory to modern developments—highlighting its pivotal role in shaping auditing practices and the ongoing quest for consistency, relevance, and trust in financial reporting.

2.1. Early Conceptualization

The early conceptualization of materiality posed a robust foundation for its major role in accounting and auditing, emphasizing its inherently subjective and multifaceted nature. This period saw the establishment of initial definitions and frameworks, which pointed the complexities and ambiguities surrounding the concept. Through the contributions of various scholars, the groundwork was laid for understanding materiality as both a theoretical concept and a practical tool.

Chetkovich (1955) was among the first to approach materiality in the context of disclosure standards, declaring its pivotal role in guiding decisions about which financial information to include or exclude. He emphasized that materiality was essential to ensuring that disclosures remained meaningful and manageable. His work illuminated the intrinsically judgmental nature of materiality, showing its dependence on the circumstances surrounding financial information. Building on this foundation, Moonitz (1961) expanded the theoretical discourse by linking materiality to the basic postulates of accounting. He emphasized the importance of materiality in enhancing the treatment of financial information, particularly on reaching the objectives of financial reporting. Moonitz's insights highlighted materiality as a qualitative attribute, advocating for a nuanced application that considered both the needs of users and the intentions of preparers.

Bernstein (1967) further advanced the discussion by critically examining the variability in materiality applications. His analysis revealed significant inconsistencies in how practitioners defined and implemented materiality

thresholds, often leading to divergent outcomes. Bernstein's findings underscored the urgent need for clearer guidelines and structured approaches to materiality assessments, laying the groundwork for future empirical investigations into the subject.

As interest in materiality grew, researchers in the late 1960s and early 1970s began to explore its quantification. Reininga (1968) highlighted the elusive nature of materiality, noting the difficulties practitioners faced in defining it, often relying on subjective judgment in the absence of established criteria. In parallel, Frishkoff (1970) conducted one of the earliest empirical studies on the concept, demonstrating that materiality judgments were context-dependent and influenced by factors such as firm size, industry characteristics, and auditor experience. Similarly, Rose, Beaver, Becker and Sorter (1970) got to develop an empirical measure of materiality, employing quantitative methods to assess its impact on financial statement users. Their efforts signaled a pivotal shift towards understanding materiality as a measurable and systematic concept.

Pattilo (1975) was concerned about the elusive nature of materiality, describing it as a "formerly elusive standard." His observations resonated with those of Reininga, emphasizing the ongoing challenges of achieving consistency and comparability in materiality applications. This period also saw significant methodological innovations. Moriarity and Barron (1976) employed conjoint analysis to model materiality judgments, exploring how auditors evaluated multiple factors to determine thresholds. Their research highlighted the multidimensional nature of materiality, integrating both quantitative metrics, such as net income impact, and qualitative considerations, such as stakeholder relevance.

Newton (1977) introduced a critical perspective by linking materiality to risk. He argued that auditors' risk tolerance significantly influenced their materiality

judgments, suggesting that these assessments were not only about magnitude but also about the likelihood of misstatements affecting user decisions.

Collectively, the work of these researchers established materiality as a central yet complex concept in auditing. Their theoretical discussions and empirical investigations highlighted the need for clearer definitions, standardized thresholds, and a greater understanding of contextual factors influencing materiality judgments.

2.2. Empirical Exploration and Development (1980s)

The 1980s represented a transformative period in the exploration and development of materiality, driven by a rise in empirical studies and systematic efforts to quantify materiality thresholds.

Holstrum and Messier (1982) initiated this era with a comprehensive review that synthesized empirical research on materiality. Their work showed the variability in materiality thresholds across different contexts and illuminated gaps in understanding. They emphasized the need for additional research to provide practical guidelines for auditors, particularly in managing the inherent subjectivity of judgments.

Building on these insights, Messier (1983) conducted a pivotal study exploring the effects of auditor experience and firm type on materiality use. Exploiting controlled experiments, he demonstrated that experienced auditors exhibited greater consistency in their judgments than their less experienced colleagues. Furthermore, auditors from larger firms applied stricter materiality thresholds, reflecting differences in firm policies and training. This study highlighted the critical role of professional experience and organizational context in shaping materiality assessments, emphasizing the importance of both individual expertise and institutional practices.

A significant methodological advancement during this period came from Steinbart (1987), who developed a rule-based system, AUDITPLANNER, to study materiality judgments. This innovative system integrated "if-then" rules derived from interviews with experienced auditors and firm audit manuals, offering a structured framework for analyzing judgment processes. Tested across 13 diverse client scenarios, the tool provided valuable insights into how auditors balanced qualitative and quantitative factors. However, it also revealed challenges in standardizing materiality thresholds due to client-specific and industry-specific variability, reinforcing the quest for universal benchmarks.

Expanding those studies, Friedberg, Strawser, and Cassidy (1989) conducted a comparative analysis of materiality judgments across major accounting firms. They discovered significant inconsistencies in how materiality thresholds were determined, both within and between firms. These disparities were attributed to variations again in firm-specific guidelines and the criteria exercised by individual auditors. Their findings emphasized the importance of consistency and coherence in materiality assessments.

The decade also witnessed a deeper investigation into specific factors influencing materiality judgments. Newton (1983) explored the role of risk, demonstrating that auditors adjusted materiality thresholds based on the perceived risk of misstatement. Steinbart (1987) complemented this by analyzing the influence of qualitative considerations, such as management and stakeholder needs on materiality assessments. Together, these studies enriched the understanding of how quantitative measures intersect with qualitative factors.

Beyond the details of threshold determination, researchers examined the broader implications of materiality for audit planning and decision-making. Fisher (1990) focused on the impact of materiality disclosures on auditor-client interactions and stakeholder perceptions. Through experimental methods, the

author found that public disclosure of materiality thresholds enhanced transparency and stakeholder confidence but introduced challenges in managing client expectations and mitigating legal risks. This work first underscored the delicate balance auditors must strike between openness and practicality in their communications.

By the close of the 1980s, the empirical exploration of materiality had significantly advanced the field, offering a wealth of new tools, methodologies, and insights.

2.3. Integration into Practice and Standardization (1990s–2000s)

The 1990s and 2000s marked a transformative phase, as researchers and practitioners worked toward embedding materiality within auditing practices through standardization and empirical exploration. This period sought to resolve inconsistencies in materiality applications by addressing industry-specific needs and integrating both quantitative and qualitative considerations.

Chong (1992, 1993) initiated a comparative examination of materiality judgments across the United Kingdom and the United States, employing surveys and interviews with auditors. His findings revealed how cultural and regulatory contexts shaped materiality thresholds. U.S. auditors preferred rigid quantitative metrics such as percentages of net income, while U.K. auditors often emphasized qualitative factors, including public perception. This divergence underscored the challenge of achieving global harmonization and set the stage for further exploration into context-driven materiality practices.

Complementing this, Iskandar (1996) analyzed how industry-specific risks influenced materiality thresholds. His work, based on risk assessment models

applied to high-risk sectors such as financial services, demonstrated the necessity for conservative thresholds tailored to industry complexities.

Expanding on these themes, Iskandar and Iselin (1999, 2000) explored the integration of qualitative considerations into materiality. Their use of archival data and structured surveys revealed auditors' tendencies to prioritize quantitative measures, such as revenue thresholds, over qualitative elements like reputational risks. However, their findings also showed increasing recognition of stakeholder-driven expectations, especially in industries where public trust played a critical role. Their research emphasized the evolving dynamics of materiality judgments, pointing for a balanced approach that aligned technical standards with broader societal concerns.

The synthesis of these insights was further advanced by Chewning and Higgs (2000, 2002), whose meta-analysis integrated data from 26 empirical studies. Their work employed effect size calculations and comparative analytics to evaluate the relative weight of determinants like income, revenue, and equity in materiality thresholds. They found that income consistently appeared as the most critical factor, while revenue and equity played secondary roles. This analysis clarified trends and biases in existing research, particularly the tendency of survey-based studies to exaggerate quantitative metrics compared to the more reliable findings of archival studies. Their conclusions called for a more holistic approach that combined empirical rigor with practical judgment.

A significant contribution to risk-based materiality practices came from Martinov and Roebuck (1998), who explored the interaction between inherent risk and materiality thresholds. Their study, grounded in surveys and interviews with leading accounting firms, revealed that firms with robust internal risk protocols demonstrated greater consistency in materiality judgments. By integrating client risk profiles into their assessments, auditors

achieved more reliable and transparent outcomes. Their findings supported the call for firm-specific policies and training programs to enhance judgment quality and reduce variability. Regulatory developments further shaped materiality practices during this era.

The Sarbanes-Oxley Act of 2002 introduced rigorous internal control requirements and elevated auditor accountability, motivating significant shifts in materiality thresholds. Studies such as Cullinan (2004) highlighted how intensified scrutiny led firms to adopt more conservative thresholds and to document their materiality judgments rigorously. This regulatory environment encouraged greater transparency and consistency across audit engagements.

Building on this regulatory momentum, Messier, Martinov-Bennie and Eilifsen (2005) conducted a comprehensive review of post-Sarbanes-Oxley materiality practices. Their analysis accentuated the integration of both quantitative and qualitative considerations, reflecting pressures from regulators and stakeholders. They also pointed to the role of technological advancements, particularly data analytics, in improving the precision and consistency of materiality assessments. These tools enabled auditors to analyze vast datasets and identify trends, enhancing the reliability of their judgments.

By the late 2000s, materiality had evolved into a more sophisticated concept balancing empirical insights with practical considerations, consolidated existing knowledge but also laid the groundwork for contemporary advancements, addressing emerging challenges and opportunities.

2.4. Contemporary Advancements (2010s–2024)

The last decade has marked a transformative era for the concept, reshaped by technological innovations, evolving regulatory requirements, and growing emphasis on sustainability. The integration of financial, societal, and environmental considerations has elevated materiality from a financial concept to a multidimensional framework that addresses diverse stakeholder expectations.

2.4.1. Foundations for Modern Materiality Practices (2009–2020)

Between 2009 and 2020, research established the groundwork for contemporary advancements by addressing inconsistencies in materiality application and expanding its relevance across industries. This period witnessed a nuanced exploration of how materiality thresholds were shaped by both quantitative and qualitative factors, influenced by regulatory and operational contexts.

Azzopardi and Baldacchino (2009) provided early insights into the use of materiality thresholds among Maltese auditors, highlighting reliance on benchmarks like 5–10% of profit before tax or 1–5% of equity. Their findings revealed that qualitative factors —such as instances of fraud or regulatory non-compliance—often take precedence over purely quantitative thresholds when assessing materiality, emphasizing the judgmental nature of it. Similarly, Houghton, Jubb and Kend (2011) identified a significant expectations gap between auditors and stakeholders. While auditors adhered to fixed thresholds, stakeholders often anticipated stricter benchmarks in high-risk industries, underscoring the need for enhanced communication and alignment.

Building on these findings, Agoglia, Doupnik and Tsakumis (2011) explored the impact of accounting standards on materiality judgments. They

demonstrated that principles-based standards encouraged auditors to incorporate qualitative factors, whereas rules-based standards tended to prioritize rigid, quantitative benchmarks. Their experimental simulations, using thresholds of 1–5% of revenue, revealed the necessity of regulatory frameworks that harmonize professional judgment with standardization.

Keune and Johnstone (2012) further advanced the discourse by examining how materiality thresholds of 3–7% of pre-tax income guided initial assessments of misstatements, while qualitative considerations often warranted adjustments. Similarly, Cox, Dayanandan and Donker (2013) analyzed Canadian firms, revealing that transparent disclosure of thresholds—such as 0.5–1% of revenue—reduced litigation risks and enhanced investor confidence, emphasizing the importance of regulatory clarity.

The value of expanded auditor reporting was examined by Boolaky and Quick (2016), whose research revealed that disclosing materiality thresholds and key audit matters (KAM) improved stakeholders' perceptions of audit quality. Houghton et al. (2018) supported this by demonstrating how the disclosure of KAM and materiality thresholds enhanced decision-making, particularly in complex financial environments.

The variability in industry-specific benchmarks was addressed by Pecchiari, Emby and Pogliani (2013), who utilized the Omega-Square Statistic to analyze materiality thresholds. They found that total assets served as a stable benchmark, while income-based measures were prone to volatility due to fluctuating profitability. This research showed the necessity of tailoring materiality thresholds to industry characteristics to improve consistency and reliability. Eilifsen and Messier (2015) extended these themes by reviewing materiality guidance among major accounting firms. Their analysis identified a common reliance on 5% of net income as a threshold, but with adjustments for industry-

specific risk factors. The study highlighted the interplay between standard benchmarks and contextual flexibility.

2.4.2. Expanding Horizons with Double Materiality (2020s–2024)

In the 2020s, double materiality emerged as a groundbreaking framework, integrating financial performance with societal and environmental impacts. This dual perspective emphasizes financial materiality—assessing external factors' effects on an entity's performance—and impact materiality, evaluating how an entity's activities affect stakeholders and ecosystems.

Nobes (2024) provided a comprehensive analysis of double materiality's evolution, linking it to global sustainability initiatives. He highlighted the increasing requirement for firms to disclose both financial metrics, such as 2% operational cost increases due to regulatory shifts, and non-financial metrics, including carbon emissions and workforce diversity. Nobes called for standardized methodologies to quantify non-financial impacts, emphasizing the need for clear guidance to operationalize double materiality effectively.

Dragomir et al. (2024) expanded this discourse by examining double materiality under the European Sustainability Reporting Standards (ESRS). Their research employed multi-criteria decision analysis (MCDA) to demonstrate how firms balanced financial performance with sustainability goals. For example, energy companies prioritized carbon reduction targets, while financial firms emphasized governance metrics. Despite these advancements, gaps in reporting risks, such as regulatory non-compliance, highlighted the need for stronger oversight.

The SASB Materiality Map emerged as a critical tool during this period, providing industry-specific guidance by linking ESG risks with financial outcomes. For instance, energy firms focused on carbon emissions, while

governance practices dominated discussions in the finance sector, demonstrating the utility of sector-tailored materiality frameworks.

2.4.3. Technological Tools and Their Impact

Technology has revolutionized materiality assessments, equipping auditors with tools that enhance accuracy and consistency.

El-Haj et al. (2019) presented a methodology based on natural language processing (NLP) to extract and analyze narrative text from annual reports. Although their study does not directly focus on materiality, the proposed tool offers potential for application in this area. Specifically, it could be used to extract relevant information on materiality judgments embedded in unstructured sections of financial statements—such as explanatory notes or governance reports—thus supporting the qualitative assessment of materiality in large text-based datasets.

Christensen, Eilifsen and Messier (2020) introduced quantitative sensitivity analysis (QSA) to evaluate how variations in assumptions affected materiality thresholds. Their findings demonstrated how uncertainty disclosures influenced investor confidence, particularly when thresholds ranged from 1–10% of net income.

Eilifsen, Hamilton and Messier (2021) extended this research using factorial experimental designs to examine how varying uncertainty levels impacted stakeholder decisions. Their work underscored the importance of transparency in disclosing uncertainty ranges, especially in volatile industries like technology and energy.

AI-driven tools have also redefined materiality practices. Quick, Zaman and Mandalawattha (2023) demonstrated how narrative analysis software identified inconsistencies in ESG disclosures, improving qualitative assessments' reliability. Similarly, Goh et al. (2023) analyzed the implications of ISA 700

revisions, showcasing how NLP algorithms explained unstructured data to detect discrepancies, enabling real-time identification of material risks.

2.4.4. Integration of Financial and ESG Factors

The convergence of financial and ESG considerations has redefined materiality as a tool for aligning corporate activities with stakeholder expectations. Matsumura, Prakash and Vera-Muñoz (2022) illustrated the financial benefits of ESG integration, showing how transparent ESG disclosures reduced firms' costs of equity by 15–20 basis points, particularly in high-risk industries. Their work demonstrated how ESG considerations enhance both shareholder value and stakeholder trust.

Sector-specific applications further exemplify this integration. Energy firms have prioritized carbon intensity metrics in response to regulatory pressures, while consumer goods companies have focused on supply chain sustainability to address stakeholder demands. By tailoring ESG disclosures to operational realities, firms strengthen their strategic positioning and meet regulatory and market expectations.

The advancements in materiality over the past decade reflect its evolution into a multidimensional framework essential to modern auditing, ensuring that materiality aligns corporate practices with broader sustainability goals, fostering trust among diverse stakeholders and addressing the complexities of global reporting.

3. Research Questions and Methodology

3.1 RQ1: Does the change of auditor impact materiality?

The first study will assess whether a change in the audit firm leads to a change in the materiality threshold applied in the audit process. When a company chooses a new auditor, new benefits and challenges arise. A new audit team may contribute with greater independence and a fresh point of view, helping to eliminate potential biases from established auditor-client relationships. However, new auditors also face a period of adjustment, during which they must quickly gain a detailed understanding of the client's operations, internal control environment, and reporting history. This unfamiliarity can increase audit risk, especially during the first year of the engagement. Since materiality is closely linked to audit risk, it is possible that newly appointed auditors could adjust the materiality level, adopting a more conservative threshold to reflect their limited knowledge of the company.

This research question aims to revise and expand upon earlier work—particularly the studies by Costa (2023) and Barros (2024)—which began exploring this relationship. By using a larger sample and more detailed data, our goal is to revise their findings and provide deeper insight into how and why materiality decisions might differ when there is a change in the audit firm.

3.2 RQ2: Do auditors adjust materiality thresholds in response to annual company performance, such as revenue declines or profit declines?

The second study will assess whether auditors adjust the materiality threshold in response to fluctuations in a company's financial performance—specifically, periods of revenue or profit decline. This question is important because materiality is not a fixed value; it is influenced by both quantitative benchmarks (such as profit before tax or total assets), and qualitative factors related to risk and judgment.

When a company performs poorly—showing lower profits or declining revenues—this may signal increased business risk, financial instability, or management failure. These conditions can increase the likelihood of material misstatements or management bias, thereby raising audit risk. Since audit risk and materiality are closely related, it is reasonable to consider whether auditors lower materiality thresholds in such cases to compensate for the added uncertainty. At the same time, performance-based benchmarks (e.g., profit before tax) are commonly used to calculate materiality. When these financial figures drop significantly, the same percentage applied to a smaller base will automatically result in a lower materiality amount. However, beyond this mechanical effect, auditors may also exercise judgment in deciding whether to further adjust the threshold based on perceived risk or the need for greater audit sensitivity.

This research question builds on the idea that auditors do not rely only on formulas but adapt their approach according to the context and financial health of the audited company.

3.3 Sample selection

This study uses the FTSE 350 index as its sample, covering the 350 largest companies listed on the London Stock Exchange from 2015 to 2022. The UK is chosen due to the mandatory disclosure of materiality thresholds, in effect since 2012. These firms operate under strict regulation (FRC) and consistent reporting standards, making them suitable for analysis.

The FTSE 350 provides broad sector representation, allowing for comparisons across industries. Its constituents hold significant economic weight in both the UK and Europe, attracting the interest of investors, regulators, and other stakeholders. The eight-year period offers a solid foundation for reliable and meaningful analysis.

3.4 Data Collection

Refinitiv Datastream was the primary source for retrieving FTSE 350 company listings and financial metrics. The dataset includes variables such as total assets, total liabilities, total shareholder's equity, sector, price-to-earnings ratio, earnings per share (for the twelve months prior to the reporting date), total revenues or sales, audit fees, stock price volatility (also for the twelve months prior to the reporting date), weighted average cost of capital (WACC), profit before tax (PBT), and total expenses. The database was further developed to provide a more complete version, with coverage extended to the full period from 2015 to 2022.

Audit materiality data was gathered using a given predefined list of paragraphs from company annual reports, where disclosures on materiality were likely to appear.

In 262 cases where the necessary data was not found, a manual review was conducted. In these instances, annual reports were individually downloaded from the firms' official websites and examined to locate the materiality

disclosures and needed information to complete the sample. All collected entries were then processed and standardized to extract key fields including company name, reporting year, materiality benchmark account, threshold (%), materiality value, audit firm, and the name of the senior auditor.

	2015	2016	2017	2018	2019	2020	2021	2022	Total
FTSE 350 Constituents	351	351	351	351	352	351	351	351	2,809
Valid extration	285	303	301	304	303	304	299	274	2,373
Coverage	81%	86%	86%	87%	86%	87%	85%	78%	84%

Table 1: Final sample

As shown in Table 1, the data extraction process generated valid materiality information for 2,373 out of 2,809 possible firm-year observations, resulting in an overall coverage of 84%. This implies a sample loss of 16%, mainly due to cases where annual reports were not accessible or the extraction process—whether automated or manual—failed to find the required information. The lowest coverage occurred in 2022, at 78%, while the rest of the years maintained strong extraction rates between 81% and 87%.

Despite these limitations, the final sample reflects a significant enhancement over the previous version of the database, with 456 new observations added. This expanded and more complete dataset strengthens the reliability of the findings and provides a solid basis for addressing the research questions, as well as supporting future studies in this area.

Sector	2015	2016	2017	2018	2019	2020	2021	2022	Grand Total	Weight
Financials	77	80	83	84	86	92	93	87	682	29%
Industrials	53	55	50	51	50	48	43	44	394	17%
Consumer Discretionary	44	45	43	45	42	44	41	39	343	14%
Materials	27	27	28	28	25	26	26	20	207	9%
Real State	18	21	22	23	26	24	22	20	176	7%
Information Technology	18	18	16	18	20	15	18	16	139	6%
Consumer Staples	15	16	16	16	16	14	15	15	123	5%
Communication Services	11	12	14	12	14	14	16	12	105	5%
Health Care	11	17	15	14	12	13	11	10	103	4%
Utilities	8	9	11	10	9	11	9	8	75	3%
Energy	3	3	3	3	3	3	5	3	26	1%
Total	**285**	**303**	**301**	**304**	**303**	**304**	**299**	**274**	**2,373**	**100%**

Table 2: Number of reports by sector and per year

Table 2 presents the sectoral distribution of the collected observations. The Financials sector is still the most represented, with 29% of the total sample. This is followed by Industrials (17%), Consumer Discretionary (14%), and Materials (9%). Together, these sectors make up nearly 70% of the dataset. The least represented sectors include Health Care (4%), Communication Services (4%), Utilities (3%), and Energy (1%), reflecting their smaller share within the FTSE 350 index.

4. Results

4.1 Descriptive Statistics

Table 3 presents the results of descriptive statistics of the variables collected from both the audit reports and Refinitiv.

Audit Report´s Variables	Nº Reports	Mean (in £ million)	Standard Deviation (in £ million)	Minimum (in £ million)	Median (in £ million)	Maximum (in £ million)
Materiality	**2,373**	**29.279**	**77.344**	**0.063**	**10.000**	**1,200**
Assets	575	21.853	31.561	0.965	12.400	400.000
Equity	89	40.902	128.255	1.600	17.900	1,200
Expenses	9	64.578	8.165	0.900	1.100	18.300
Other	8	71.050	46.307	10.500	61.500	124.000
Profit Before Tax	1,544	32.971	88.269	0.063	9.000	1,050
Revenues	148	12.303	18.040	0.190	5.325	85.000

Audit Report´s Variables	Nº Reports	Mean	Standard Deviation	Minimum	Median	Maximum
Thresholds	**831**	**1.80%**	**0.32%**	**0.05%**	**1.00%**	**20.00%**
Assets	575	1.20%	0.50%	0.10%	1.00%	5.00%
Equity	89	1.30%	0.60%	0.50%	1.00%	5.00%
Expenses	9	1.30%	0.50%	0.80%	1.00%	2.00%
Other	8	1.50%	1.30%	0.50%	1.00%	3.80%
Profit Before Tax	2	4.80%	1.00%	0.50%	5.00%	20.00%
Revenues	148	0.70%	0.80%	0.05%	0.60%	7.50%

Audit Report´s Variables	Nº Reports	Mean (in £ million)	Standard Deviation (in £ million)	Minimum (in £ million)	Median (in £ million)	Maximum (in £ million)
Financials						
Total Shareholder's Equity	2,298	2,967	10,189	-6,050	880 773 000	155,049
Total Liabilities	2,286	23,637	151,298	0.116	806 950 000	2,285,004
Total Assets	2,278	26,813	161,798	35.339	1 775 800 000	2,447,119
Revenue / Net Sales	2,273	4,034	11,949	-4,040	786 600 000	207,624
Profit before taxes	2,191	439.479	1,638	-7,251	114 014 000	21,807
Earnings per Share (EPS)	2,101	0.00000059	0.00000105	0	0,24	0.0000157
Audit Fees	2,230	2.998	6 955	0.019	1.00	82.365

Table 3: Audit report's variables descriptive statistics

4.2 Audit Benchmarks

Table 4 shows how the 28 original benchmarks disclosed in audit reports were classified into six main categories: Profit Before Tax, Revenues, Expenses, Assets, Equity, and Other. This categorization was used to ensure consistency across the dataset and to lead to a deeper analysis of materiality thresholds.

Original Benchmark	Category
Total Revenues	Revenues
Revenues from Continuos Operations	
Retail Profit	
3 Years Average Total Revenues	
4 Years Average Total Revenues	
Gross management and other fees	Expenses
Total operating expenses	
Total Expenses	
Materiality from Previous Year	Other
Carrying value of investment properties line item in the Group balance sheet	
Profit Before Taxes	Profit Before Tax
3 Years Average Profit Before Taxes	
EBITDA	
5 Years Average Profit Before Taxes	
Adjusted Profit Before Taxes	
2 Years Average Profit Before Taxes	
Adjusted 5 Years Average Profit Before Taxes	
4 Years Average Profit Before Taxes	
Adjusted 3 Years Average Profit Before Taxes	
Gross Margin	
Adjusted EBITDA	
Forecasted EBITDA	
Net Assets	Assets
Forecasted Net Assets	
Total Assets	
Total Shareholders' Funds	Equity
Total Equity	
Gross Premium Written	

Table 4: Main Benchmarks and their categorization

4.3 Audit Benchmarks Breakdown

Benchmark	2015	2016	2017	2018	2019	2020	2021	2022	Total	%	Range %
Profit Before Tax	201	217	206	210	203	177	177	153	1,544	65.1%	[0.5-20]
Assets	59	63	75	70	70	81	76	82	576	24.3%	[0.1-5.0]
Revenues	9	8	10	14	19	30	33	26	149	6.3%	[0.05-7.5]
Equity	15	13	8	8	9	13	11	12	89	3.8%	[0.5-5]
Other	0	1	1	1	1	1	1	1	7	0.3%	[0.5-4]
Expenses	1	1	1	1	1	2	1	0	8	0.3%	[0.8-2]
Total	**285**	**303**	**301**	**304**	**303**	**304**	**299**	**274**	**2,373**	**100%**	

Table 5: Number of reports by materiality benchmark used per year

Table 5 presents the distribution of materiality benchmarks used by auditors in the FTSE 350 sample between 2015 and 2022. The data demonstrates a strong preference for Profit Before Tax (PBT) as the primary benchmark, appearing in 65.1% of the 2,373 valid audit reports. This is consistent with the guidance provided by ISA 320, which identifies PBT as the most appropriate basis for determining materiality in profit-oriented entities. Auditors frequently rely on both current-year and multi-year averages of PBT, often adjusted to exclude exceptional or non-recurring items. The widespread adoption of this benchmark reflects its perceived relevance to users of financial statements and its alignment with core business performance indicators.

Assets constitute the second most frequently used benchmark, applied in 24.3% of cases. The use of asset-based benchmarks is particularly relevant in capital-intensive industries, where balance sheet stability provides reliable and less volatile results. Asset measures such as total assets or net assets offer consistency and are less susceptible to short-term fluctuations or managerial influence, making them an appropriate alternative when profit figures are unstable or less representative of the entity's size and complexity.

Benchmarks based on Revenues and Expenses are significantly less common, appearing in 6.3% and 0.3% of reports, respectively. These categories are generally considered less stable due to their sensitivity to operational fluctuations, market conditions, and flexible accounting treatments, such as revenue recognition policies. Their volatility makes them less reliable for establishing consistent materiality thresholds, which may explain their limited use across the sample.

Equity was used in 3.8% of cases, most often in the financial sector, where regulatory and reporting norms may place greater emphasis on capital structure and shareholder funds. The limited use of this benchmark in other sectors suggests its relevance is more context-specific than broadly applicable.

Finally, a small portion of reports (0.3%) relied on Other benchmarks, which include prior-year materiality figures or specific line items from the financial statements. These instances are rare and typically reflect firm-specific considerations rather than sector-wide practices.

4.3.1 Audit Benchmarks Breakdown: by sector

Following the presentation of the overall sample (Chapter 3), it is important to break it down by sector to better understand how materiality is applied across different industries. This begins with classifying the companies into their respective sectors based on the standard FTSE 350 industry grouping. Once categorized, the next step is to analyze how materiality is used within each sector, focusing on the benchmarks and thresholds selected by auditors. This approach helps identify sector-specific patterns and shows whether certain industries apply materiality more consistently than others. It also allows for a clearer view of how audit practices may be shaped by the context of each industry, and

whether there is potential for more consistency or improvement in these practices.

Sector/Benchmark	Nº Reports	Average Materiality (in £ million)	Minimum	Median	Maximum
Communication Services	**105**	**17.306**	**0.50%**	**5.00%**	**9.50%**
Assets	2	11.400	1.00%	3.00%	5.00%
Profit Before Tax	97	18.406	0.50%	5.00%	9.50%
Revenues	6	1.490	0.90%	0.95%	1.00%
Consumer Discretionary	**343**	**13.380**	**0.05%**	**5.00%**	**8.00%**
Assets	10	12.310	0.38%	1.00%	4.60%
Profit Before Tax	299	13.494	1.00%	5.00%	8.00%
Revenues	33	11.474	0.05%	0.60%	1.00%
Other	1	53.000	1.00%	1.00%	1.00%
Consumer Staples	**123**	**56.999**	**0.10%**	**5.00%**	**5.50%**
Assets	5	16.540	0.11%	0.50%	5.50%
Profit Before Tax	100	66.668	4.00%	5.00%	5.50%
Revenues	18	14.519	0.10%	0.50%	5.00%
Energy	**26**	**31.373**	**0.40%**	**2.00%**	**6.00%**
Assets	7	36.157	0.40%	2.00%	2.00%
Profit Before Tax	13	24.508	2.00%	5.00%	6.00%
Revenues	6	40.667	0.50%	0.50%	0.50%
Financials	**682**	**34.599**	**0.40%**	**1.00%**	**7.50%**
Assets	358	16.793	0.40%	1.00%	4.00%
Equity	56	32.514	0.50%	1.00%	5.00%
Expenses	3	17.280	2.00%	2.00%	2.00%
Profit Before Tax	255	61.257	1.00%	5.00%	7.50%
Revenues	9	4.380	0.70%	1.00%	1.00%
Other	1	68.000	5.00%	5.00%	5.00%
Health Care	**103**	**39.704**	**0.40%**	**5.00%**	**7.50%**
Assets	9	9.800	0.40%	0.50%	2.00%
Equity	7	175.571	1.00%	1.00%	2.00%
Expenses	2	1.190	0.80%	0.85%	0.90%
Profit Before Tax	68	39.828	1.00%	5.00%	7.50%
Revenues	17	3.623	0.80%	0.90%	1.60%

Table 6: Sample breakdown by sector (part 1)

Industrials	**394**	**16.495**	**0.10%**	**5.00%**	**20.00%**
Assets	11	12.075	0.70%	1.00%	1.00%
Equity	7	16.386	1.00%	1.30%	2.00%
Profit Before Tax	344	16.545	2.90%	5.00%	20.00%
Revenues	30	18.138	0.10%	0.50%	7.50%
Other	2	13.200	3.30%	3.80%	3.80%
Information Technology	**139**	**5.944**	**0.20%**	**5.00%**	**8.80%**
Assets	5	1.324	1.00%	2.00%	2.00%
Profit Before Tax	116	5.739	2.50%	5.00%	8.80%
Revenues	14	10.704	0.50%	1.00%	1.00%
Expenses	4	0.975	1.00%	1.00%	1.00%
Materials	**207**	**60.072**	**0.30%**	**5.00%**	**7.00%**
Assets	18	84.092	0.50%	0.90%	1.50%
Equity	7	28.700	1.00%	2.00%	2.00%
Profit Before Tax	177	60.358	2.00%	5.00%	7.00%
Revenues	5	7.400	0.30%	1.00%	1.30%
Real State	**176**	**29.711**	**0.33%**	**1.00%**	**5.40%**
Assets	140	30.000	0.69%	1.00%	2.00%
Equity	12	22.908	1.00%	2.00%	2.00%
Profit Before Tax	10	14.750	5.00%	5.00%	5.40%
Revenues	8	11.000	0.33%	0.40%	1.00%
Other	5	97.800	0.50%	1.00%	1.00%
Utilities	**75**	**35.495**	**0.50%**	**5.00%**	**7.30%**
Assets	10	13.760	0.20%	1.50%	3.00%
Profit Before Tax	63	39.946	2.50%	5.00%	7.30%
Revenues	2	3.950	0.35%	0.38%	0.40%
Total	**2,373**				

Table 6: Sample breakdown by sector (part 2)

Table 6 offers a detailed view of how materiality benchmarks vary across sectors in both frequency and magnitude. The data reaffirms Profit Before Tax (PBT) as the dominant benchmark across most industries. Notably, the average materiality values under PBT vary significantly—ranging from approximately £5.9 million in Information Technology to over £60 million in Materials—highlighting the influence of sector size and financial structure on auditor judgment. The maximum thresholds under PBT can reach as high as 20%, as seen in Industrials, while minimums often remain close to 1%, indicating substantial variance in materiality sensitivity even within a common benchmark.

Sectors such as Financials and Real Estate, however, show a marked deviation, heavily favoring Assets as their primary benchmark. This reflects the asset-intensive nature of these industries, where balance sheet strength is often more critical than short-term profitability. Asset thresholds tend to be more conservative, generally falling between 0.2% and 5%.

While Revenues are occasionally used—most notably in Consumer Discretionary and Financials—they remain a minority choice, often due to volatility and managerial influence over revenue recognition.

4.3.2 Audit Benchmarks Breakdown: by audit firm

Table 7 presents the distribution of audit firms across the sample.

Audit Firm	2015	2016	2017	2018	2019	2020	2021	2022	Total	%
KPMG	71	83	76	84	82	75	68	62	601	25%
PWC	73	85	85	81	78	78	78	65	623	26%
Deloitte	71	76	72	72	73	69	64	56	553	23%
EY	46	47	50	49	51	57	57	58	415	18%
Others	24	12	18	18	19	25	32	33	181	8%
Total	**285**	**303**	**301**	**304**	**303**	**304**	**299**	**274**	**2,373**	**100%**

Table 7: Distribution of audit firms

				Threshold		
Audit Company/Benchmark	Nº Reports	Average Materiality (in £ million)	%	Minimum	Median	Maximum
Deloitte	**553**	**30.324**	**23.30%**	**0.10%**	**5.00%**	**19.60%**
Assets	121	23.480	21.88%	0.20%	1.00%	3.00%
Equity	28	58.905	5.06%	1.00%	1.25%	2.00%
Expenses	3	17.280	0.54%	2.00%	2.00%	2.00%
Profit Before Tax	372	31.848	67.27%	1.00%	5.00%	19.60%
Revenues	28	13.181	5.06%	0.10%	0.50%	7.50%
Other	1	10.500	0.24%	3.30%	3.30%	3.30%
Ernst & Young (EY)	**415**	**23.796**	**17.49%**	**0.35%**	**5.00%**	**5.10%**
Assets	92	21.918	22.17%	0.50%	1.00%	4.60%
Equity	44	28.917	10.60%	0.50%	1.00%	2.00%
Other	5	97.800	1.20%	0.50%	1.00%	1.00%
Profit Before Tax	269	22.600	64.82%	0.50%	5.00%	5.10%
Revenues	5	3.280	1.20%	0.35%	0.50%	1.00%
KPMG	**601**	**25.186**	**25.33%**	**0.10%**	**4.20%**	**20.00%**
Assets	124	17.283	20.63%	0.11%	1.00%	5.00%
Equity	11	40.118	1.83%	0.70%	1.00%	2.10%
Expenses	6	1.047	1.00%	0.80%	1.00%	1.00%
Profit Before Tax	389	30.142	64.73%	2.10%	4.78%	20.00%
Revenues	71	11.629	11.81%	0.10%	0.60%	1.40%
PWC	**623**	**38.411**	**26.25%**	**0.40%**	**5.00%**	**6.40%**
Assets	157	24.656	25.20%	0.50%	1.00%	5.00%
Equity	4	56.929	0.64%	1.00%	1.00%	5.00%
Other	2	34.450	0.32%	1.00%	3.75%	3.75%
Profit Before Tax	433	44.384	69.50%	2.30%	5.00%	6.40%
Revenues	27	20.361	4.33%	0.36%	0.60%	5.00%
Non Big 4 Company	**181**	**21.262**	**7.63%**	**0.05%**	**2.00%**	**7.00%**
Assets	81	20.913	44.75%	0.60%	1.00%	4.00%
Equity	2	24.800	1.10%	1.00%	2.00%	2.00%
Profit Before Tax	81	25.246	44.75%	1.35%	5.00%	7.00%
Revenues	17	3.525	9.39%	0.05%	0.90%	5.00%
Grand Total	**2,373**					

Table 8: Sample breakdown by audit firm

Table 8 presents the distribution of audit firms and their selected materiality benchmarks across the sample. As expected, the majority of audits were conducted by the Big Four firms—PWC, KPMG, Deloitte, and Ernst & Young—which together account for over 90% of the total sample. Across all firms, Profit Before Tax (PBT) remains the most commonly used benchmark, representing approximately two-thirds of materiality determinations within each auditor.

Notably, Non-Big Four firms show a more balanced approach between PBT (44.75%) and Assets (44.75%), possibly reflecting differences in client profiles or audit strategy. Benchmarks such as Revenues, Equity, and Expenses are used far less frequently across all firms, each generally below or up to 10% of cases. Other benchmarks are rare and typically firm-specific.

Sector/Audit Company	Nº Reports	%
Communication Services	**105**	**4.40%**
Deloitte	29	27.60%
Ernst & Young (EY)	12	11.40%
KPMG	36	34.30%
PWC	28	26.70%
Non Big 4 Company	0	0.00%
Consumer Discretionary	**343**	**14.50%**
Deloitte	65	19.00%
Ernst & Young (EY)	56	16.30%
KPMG	120	35.00%
PWC	69	20.10%
Non Big 4 Company	33	9.60%
Consumer Staples	**123**	**5.20%**
Deloitte	30	24.40%
Ernst & Young (EY)	28	22.80%
KPMG	25	20.30%
PWC	37	30.10%
Non Big 4 Company	3	2.40%
Energy	**26**	**1.10%**
Deloitte	7	26.90%
Ernst & Young (EY)	6	23.10%
KPMG	5	19.20%
PWC	8	30.80%
Non Big 4 Company	0	0.00%
Financials	**682**	**28.70%**
Deloitte	113	16.60%
Ernst & Young (EY)	148	21.70%
KPMG	153	22.40%
PWC	198	29.00%
Non Big 4 Company	70	10.30%
Health Care	**103**	**4.30%**
Deloitte	27	26.20%
Ernst & Young (EY)	12	11.70%
KPMG	20	19.40%
PWC	38	36.90%
Non Big 4 Company	6	5.80%
Industrials	**394**	**16.60%**
Deloitte	123	31.20%
Ernst & Young (EY)	40	10.20%
KPMG	88	22.30%
PWC	125	31.70%
Non Big 4 Company	18	4.60%
Information Technology	**139**	**5.90%**
Deloitte	18	12.90%
Ernst & Young (EY)	35	25.20%
KPMG	67	48.20%
PWC	6	4.30%
Non Big 4 Company	13	9.40%

Table 9: Sample breakdown by audit firm across sectors (% by sector) -part 1-

Materials	**207**	**8.70%**
Deloitte	60	29.00%
Ernst & Young (EY)	45	21.70%
KPMG	33	15.90%
PWC	55	26.60%
Non Big 4 Company	14	6.80%
Real State	**176**	**7.40%**
Deloitte	52	29.50%
Ernst & Young (EY)	20	11.40%
KPMG	41	23.30%
PWC	46	26.10%
Non Big 4 Company	17	9.70%
Utilities	**75**	**3.20%**
Deloitte	29	38.70%
Ernst & Young (EY)	13	17.30%
KPMG	13	17.30%
PWC	13	17.30%
Non Big 4 Company	7	9.30%
Grand Total	**2373**	

Table 9: Sample breakdown by audit firm across sectors (% by sector) -part 2-

Finally, Table 9 below shows that the Big Four audit firms dominate the FTSE 350 landscape, but with clear signs of sectoral specialization.

5. Research Questions and Discussion

5.1 RQ1: Does the change of auditor impact materiality?

Within this section, an analysis was conducted to determine whether a change in auditor is associated with a reduction in materiality thresholds. The underlying rationale is that when an auditor transition occurs, the newly appointed auditor may lack detailed knowledge of the company's internal controls, business processes, and historical audit concerns. As discussed in Chapter 3, this unfamiliarity increases audit risk. If this risk is acknowledged by the new auditor, it is likely to influence the planning phase—particularly the materiality threshold—potentially leading to a more cautious and conservative approach.

This study builds on the work of Barros (2024), which itself extended the initial findings of Costa (2023) by adding new data and refining the methodology. The current research aims to revise, complete and further develop the insights provided by Barros (2024), offering additional perspectives on whether auditor changes could influence the audit strategy and specially the use of materiality. As a first step, Table 10 presents the number of companies that experienced an auditor change or not across each year in the adjusted sample.

	2016	2017	2018	2019	2020	2021	2022	Total	%
Change	51	32	41	28	27	35	46	260	13.28%
No change	227	254	247	259	258	243	208	1,696	86.62%
No information	0	0	0	0	0	2	0	2	0.10%
Total	278	286	288	287	285	280	254	1,958	100.00%

Table 10: Companies that have changed auditor

After identifying the companies that changed auditors, the next step was to examine whether their materiality thresholds increased, decreased, or remained the same after the transition, comparing the threshold before and after the change. This analysis helps determine whether new auditors adjust their materiality assessments due to the added risk of auditing a new client.

	2016	2017	2018	2019	2020	2021	2022	Total	%
Increase	8	1	2	8	11	8	10	48	18.46%
Decrease	11	7	10	3	6	9	7	53	20.39%
Maintain	32	24	29	17	10	18	29	159	61.15%
Total	51	32	41	28	27	35	46	260	100.00%

Table 11: Change in materiality when there is a change in auditor

The analysis of materiality thresholds changes after an auditor switch reveals important insights. The results suggest that while most of the new auditors maintained the materiality level used previously, a significant portion opted to revise it—either upward or downward. The fact that materiality was more frequently reduced than increased may support the hypothesis that auditor changes may lead to more conservative judgments, potentially reflecting heightened risk awareness during the initial engagement. However, the relatively high proportion of unchanged materiality levels also indicates that a change in auditor does not automatically lead to a reassessment, and that other contextual factors may influence this decision.

To refine the analysis and better understand the drivers behind changes in materiality, the study also examines whether a change in auditor is accompanied by a change in the benchmark used to calculate materiality. Since the choice of benchmark—such as profit, revenue, or assets—can significantly influence the materiality amount, identifying shifts in benchmark selection helps clarify

whether changes in materiality thresholds are due to auditor judgment or simply the result of applying a different basis. This step adds depth to the research by distinguishing between changes in materiality driven by auditor risk perception and those caused by methodological adjustments.

	2016	2017	2018	2019	2020	2021	2022	Total	%
Change	14	10	14	9	11	17	18	93	35.77%
No change	37	22	27	19	16	18	28	167	64.23%
No information	0	0	0	0	0	0	0	0	0.00%
Total	51	32	41	28	27	35	46	260	100.00%

Table 12: Change in benchmark/account when there is a change in auditor

The results indicate that while most new auditors maintained the same benchmark as their predecessors, more than one-third opted to modify the basis for calculating materiality. This suggests that auditor changes may influence not only the materiality levels, but also the underlying methodology, which could reflect differing audit strategies or professional preferences.

As the final step in the analysis, the study then considered the combined effect of an auditor change and a benchmark change on materiality. By focusing on cases where both events occurred simultaneously, we aimed to assess whether this dual change increases the likelihood of a materiality adjustment. This approach helps isolate whether materiality shifts are more strongly driven when a new auditor not only brings a different risk perspective but also chooses a new basis for the materiality calculation. Analyzing this combination gives a better understanding of how changing both the auditor and the method used can affect the audit approach.

	2016	2017	2018	2019	2020	2021	2022	Total	%
Increase	4	1	1	4	3	6	5	24	25.81%
Decrease	3	3	4	1	5	4	5	25	26.88%
Maintain	7	6	9	4	3	7	8	44	47.31%
Total	14	10	14	9	11	17	18	93	100.00%

Table 13: Change in materiality when there is a change in the auditor and a change in the benchmark (combined effect)

These results suggest that even when both the auditor and the method for calculating materiality change, nearly half of the companies kept the same materiality treatment. However, the fact that materiality increased or decreased in over half of the cases also shows that this combination can significantly influence audit decisions. It highlights how both the auditor's judgment and changes in methodology can play a role in shaping the outcome of the materiality assessment.

5.2 RQ2: Do auditors adjust materiality thresholds in response to annual company underperformance, such as revenue declines or profit declines?

The underlying hypothesis is that auditors, when confronted with signs of financial underperformance — such as declining revenues or profits — may revise their materiality thresholds, either increasing or decreasing them, as a function of perceived audit risk or engagement judgment. This adjustment may reflect a more conservative posture or, conversely, a more permissive approach under pressure from clients or other contextual factors. This study aims to empirically assess whether such a relationship exists. To address this research question, the final regression model used a continuous dependent variable, *DeltaMateriality*, which measures the change in materiality threshold from one year to the previous one. This allows for the detection of both increases and decreases in materiality, which aligns with the intent of the research.

Two main explanatory variables were introduced:

- EBIT_Drop: a dummy variable equal to 1 if EBIT decreased compared to the previous year, and 0 otherwise;
- Revenue_Drop: a dummy variable equal to 1 if revenue decreased compared to the previous year, and 0 otherwise.

These variables were included in a linear regression model, along with a set of standard control variables:

- Log_Assets: logarithm of total assets (proxy of firm size);
- Log_AuditFees: logarithm of total audit remuneration;
- Big4_Dummy: equal to 1 if the auditor is from a Big Four firm;

Subscripts identify firm i in time t.

The regression equation estimated was:

$$\Delta Materiality_{it} = \beta_0 + \beta_1 . EBIT\_Drop_{it} + \beta_2 . Revenue\_Drop_{it} + \beta_3 . \log(Assets_{it}) + \beta_4 . \log(AuditFees_{it}) + \beta_5 . Big4_{it} + \varepsilon_{it}$$

The model was estimated using 530 observations from non-financial firms, between 2017 and 2019. This exclusion was made because financial institutions operate under distinct regulatory and reporting frameworks, including sector-specific definitions of capital, performance metrics, and audit considerations. Including them could introduce significant noise or bias into the model, making results less comparable and generalizable.

Regression Model - DeltaMateriality	
Intercept	-0,0034
	(0,5979)
EBIT_Drop	-0,0008
	(0,4665)
Revenue_Drop	-0,0009
	(0,4974)
Log_Assets	0,0004
	(0,4905)
Log_AuditFees	-0,0005
	(0,4764)
BIg4_Dummy	0,0000
	(0,9997)
Number of observations	530
R Square	0,0036

Table 14: Linear regression results

Table 14 presents the regression statistics of the model. The R Square is approximately 0.36%, indicating that the model explains only a negligible portion of the variation in the dependent variable, DeltaMateriality. This extremely low R Square suggests that the selected independent variables offer minimal explanatory power in predicting changes to audit materiality thresholds.

In conclusion, the findings from this model offer no empirical support for the hypothesis that auditors systematically adjust materiality thresholds in response to annual financial underperformance. While the theoretical rationale remains reasonable, the current data show no statistically significant association. These results highlight the complexity and subjectivity of materiality assessments and suggest that future research could benefit from alternative empirical approaches or the inclusion of qualitative audit inputs.

It is also important to recognize that, although the linear regression model applied in this study could be appropriate for a quantitative analysis as starting point, it may not fully capture the complexities of auditor decision-making. Moreover, binary indicators of underperformance, such as EBIT or revenue drops, may simplify what is likely a more nuanced response by auditors to varying degrees of financial decline. Future studies could explore alternative modeling techniques such as logistic regressions and integrate qualitative data such as audit committee disclosures or auditor interviews. These improvements may offer a more complete understanding of this topic.

6. Conclusions

Materiality is a major concept in financial auditing, playing a crucial role in guiding auditor judgment and ensuring the relevance of financial statements. This study, focusing on FTSE 350 companies from 2015 to 2022, explored how materiality thresholds can be determined, how they are influenced by changes in auditors, and whether they respond to fluctuations in company performance. The findings highlight both the importance and the complexity of applying materiality consistently in practice.

While auditor changes were found to impact materiality in a significant portion of cases—especially when accompanied by a shift in benchmark—the anticipated adjustments in response to company underperformance were not statistically supported. This suggests that, although auditors acknowledge the link between audit risk and materiality, performance metrics alone may not fully explain their decisions. Moreover, the influence of factors such as audit firm policies or audit fees may contribute to inconsistencies that are not visible to external stakeholders.

Despite a relatively advanced regulatory framework in the UK (including ISA 700 disclosures), the results reveal persistent variability in how materiality is applied. This raises concerns about comparability, transparency, and the potential for investor misinterpretation. It also underscores the need for clearer guidance and perhaps enhanced oversight to ensure that materiality serves its intended function in all audit contexts.

This work is not without limitations. The focus on FTSE 350 firms means that the vast majority of audits in the sample were conducted by Big Four firms, limiting the ability to generalize findings to smaller auditors or other markets. Also, the reliance on manual data extraction, while necessary, introduces

potential for error and limits scalability. The geographic scope, confined to the UK, further restricts the global applicability of the conclusions.

Finally, this work extends existing literature with a richer dataset and provides a better foundation for future studies. The findings should be shared with regulators, audit firms, and policymakers to promote greater consistency and transparency in materiality practices and thus favoring audit quality and trust in financial reporting.

Declaration of no plagiarism

I hereby declare on my honor that I have prepared my written work/thesis, ***Materiality Level in Auditing: Its Evolution and Impacts*** (Master's Final Assignment), with complete honesty and free from any fraudulent practices, namely copying or plagiarism.

I also declare that I am aware that committing fraud during written assessments constitutes a serious violation of the rules of ethics and academic conduct in force at the Universidade Católica Portuguesa, resulting in disciplinary action, as outlined in the Code of Ethics and Conduct of this University – paragraph b, nr. 3 of article 8 and nr. 3 of article 12.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of my written work/thesis, ***Materiality Level in Auditing: Its Evolution and Impacts*** (Master's Final Assignment), Chat-GPT, DeepSeek and Grammarly were used for the following tasks: text analysis, writing assistance, refining language and summarize, data analysis and academic research, with the prompts used listed at the end of the document in the Prompts List section. After using these tools/services, I reviewed and edited the content as necessary, and I take full responsibility for the content of the work presented.
I also declare that I am aware of and respect the Artificial Intelligence Rules of Conduct of Católica Porto Business School.

Prompts List

- "If you were writing a master's thesis on this, how would you organise it?"
- "Give me different definitions of this word and how it has evolved."
- "Write a detailed summary of the paper so that I can understand the main ideas."
- "Explain me this methodology."
- "Find new research papers on this field."
- "Reorganize my bibliography in chronological order so that I can do a good literature review showing the evolution of the concept."
- "Reorganize these ideas to show that…"
- "Find one that I can cite in the text I sent you earlier."
- "Rewrite this using more academic English."
- "Make it clearer."

- “What kind of model would you choose to illustrate my research question?”
- “Analyse this data”
- “Analyse the results: are they compatible with my theory?”
- “What are the main recommendations for future studies? What other models could be used?”
- “Draw some final considerations so that I can conclude my dissertation”.
- “Check all the grammar and point some corrections.

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