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Mismatch between AI recommendations and accounting standards

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Abstract

The increasing use of AI in accounting and finance is transforming how organisations record, analyse and report financial information. AI-driven systems are increasingly implemented to automate tasks, enhance analytical efficiency, and support managerial decision-making. However, this rapid adoption has sparked an important debate regarding whether AI systems can truly align with the judgment-driven nature of accounting standards. This study examines the mismatch between AI recommendations and principle-based accounting frameworks such as IFRS and Ind AS. To study this issue, annual reports of 30 Indian and Global companies were analysed, and each company was assigned an AI score, reflecting the extent of AI-related disclosures and a judgment score indicating the degree of judgment-intensive accounting language. The findings show that despite increased AI disclosure, reliance on professional judgment remains prevalent across sectors. This implies that the relationship between algorithm-based systems and principle-based accounting frameworks reflects a structural difference. While AI enhances efficiency and analytical capability, accounting standards remain interpretative and responsibility-driven. The study concludes that the future of financial reporting is not human versus machine, but human with machine. AI is most valuable when it supports human judgment, not when it attempts to replace it.

Keywords: Artificial Intelligence; Accounting Standards; Professional Judgment; IFRS; Financial Reporting; AI Disclosure.

1. Introduction

The increasing integration of Artificial Intelligence (AI) into business and financial processes has significantly transformed how accounting and corporate reporting work. Organisations are rapidly adopting AI-driven tools to enhance efficiency, automate routine tasks, and make data-driven decisions. Tools like predictive analytics and automated reporting are used to improve accuracy, reduce errors, and make financial reporting more transparent.

At the same time, accounting continues to operate within principle-based frameworks, such as International Financial Reporting Standards (IFRS) and Indian Accounting Standards (Ind AS). These rely extensively on professional judgment and are designed to accommodate uncertainty and context in areas such as revenue recognition, impairment, provisions and fair value measurement. (1) Unlike rule-based systems, principle-based accounting requires estimation and ethical reasoning that cannot be easily replicated through algorithmic processes.

This contrast gives rise to an important question: to what extent can AI-driven systems align with judgment-based accounting frameworks? While existing literature has extensively examined the efficiency and operational benefits of AI in accounting (2), relatively less attention has been given to the interpretative nature of accounting standards. In particular, there is a lack of empirical evidence on whether increased AI adoption reduces reliance on professional judgment or whether both continue to coexist in financial reporting systems.

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This study addresses this gap by examining the structural relationship between AI integration and professional judgment using firm-level disclosures. It analyses annual reports of 30 Indian and global companies across multiple sectors. The study constructs two indices- an AI score, which measures the intensity of AI-related disclosures and a Judgment Score, which reflects the frequency of judgment-intensive accounting language. Using descriptive statistics, correlation and regression analysis, the study provides empirical evidence on how AI and professional judgment interact within corporate accounting.

The findings reveal a moderate negative relationship between AI and Judgment Scores, but the link is not sufficiently strong to suggest that one replaces the other. Instead, the results suggest that AI and professional judgment coexist. This suggests that the interaction between the two is not merely technological but structural in nature.

This study contributes to the growing conversation about AI in accounting by shifting the focus from technical capabilities to conceptual alignment with accounting standards. By providing cross-sectoral, firm-level evidence, the paper offers a clearer view of the limits of automation in accounting. It shows that AI's role in financial reporting should be seen in the larger context of governance, accountability, and principle-based standards.

This study can also be conceptually linked to established theoretical perspectives such as the agency theory, which emphasises the importance of transparent and reliable financial reporting in managing information asymmetry between managers and stakeholders, and the institutional theory, which argues that organisations adopt practices not only for efficiency but also due to regulatory, social and normative pressures. The growing role of AI in financial reporting raises important questions about whether algorithmic outputs preserve or compromise these accountability mechanisms.

The remainder of the paper is structured as follows: the next section reviews the literature on AI in accounting and professional judgment, followed by the research methodology, findings, and discussion. The final section concludes with key insights and implications for practice and future research.

2. Literature review

2.1. Artificial Intelligence in Accounting and Finance

AI has become increasingly prevalent across various industries. Accounting and financial reporting is one area where AI has had a major impact. The introduction of AI was gradual. It started when spreadsheets replaced ledgers and software replaced calculators. This section will examine the main issues in accounting and financial reporting, focusing on both its benefits and challenges. As companies collect more and more economic data, it is important to process it efficiently and accurately. AI helps in the rapid review of complex financial data by using advanced algorithms and machine learning. AI increases productivity and reduces errors often associated with human operations by automating repetitive tasks like data entry, reconciliations, and report preparation. (3)

(4) document how AI tools have moved from basic data processing to include fraud detection, predictive analytics and financial analysis. They confirm that AI speeds up routine tasks and improves accuracy and efficiency. (5) agree, saying that AI reduces errors and improves the quality of accounting information. (6) explains that tools like Chat-GPT are changing how accountants interact with clients and make forecasts in almost every area of accounting. They see automation and AI as complementary forces, creating a collaboration between human skills and machine accuracy.

However, the literature is not uniformly positive. (4) note that resistance to change, high costs and need for skilled personnel remain significant barriers to AI adoption. (6) raises the concern of algorithmic biases. The possibility that AI systems trained on historical data may repeat old inequalities. These concerns raise a larger question: whether the growing presence of AI reduces the demand for the professional judgment that accounting standards structurally require.

2.2. Professional Judgment in Principle-Based Accounting Standards

To understand why AI's role is complex, it is important to examine the role of professional judgment within accounting standards.

(1) provides a comprehensive analysis of professional judgment used in areas of IFRS, such as going concern, materiality, revenue recognition, fair value measurement and provisions. The findings emphasise that professional judgment is not incidental but integral to principle-based accounting frameworks like IFRS and Ind AS. These standards

are deliberately designed to allow flexibility and require interpretation, as financial reporting is complex and uncertain and cannot be covered through strict rules.

(7) highlight the concept of 'responsibility gap', suggesting that increasing reliance on automated systems may lead professionals to abandon their ethical responsibilities slowly. While AI supports decision making, excessive dependence on algorithmic outputs may weaken the use of professional judgment and ethical duty that define the accounting profession. They are not arguing against using AI, but cautioning against uncritical reliance on it.

(8) further highlights a structural limitation, showing that current IFRS standards struggle to account for the value of AI-driven data and intangible assets. This results in a widening of the gap between book value and market value. This misalignment indicates that accounting standards are not fully aligned with technological advancements, an early indication of the broader structural mismatch explored in this study.

2.3. Intersection of AI and Accounting Standards

(9) find that AI cannot completely replace ethical aspects of professional judgment. Instead, increased reliance on AI introduces additional layers of responsibility, requiring professionals to evaluate and interpret AI-generated outputs. This means an addition in the responsibilities of professionals, not a subtraction from them. (10) further examine the practical impact of Artificial Intelligence on accounting practices, highlighting that AI-driven systems function more as supportive tools rather than independent decision-makers. This reinforces the idea that the integration of AI into accounting does not replace professional judgment but instead reshapes how it is exercised within an organisation.

(7) further observe that there has been extensive research on the technical applications of AI, but relatively little exploration of its impact on the ethical and professional dimensions of accounting. This gap highlights the need to examine how AI interacts with the core accounting practice. This is where the present study situates itself.

2.4. Research Gap

The existing literature establishes three key insights. First, AI is significantly transforming accounting processes, resulting in improvements in accuracy, efficiency and data analysis. Second, professional judgment remains structurally embedded within principle-based frameworks and cannot be eliminated. Third, there is a lack of empirical, firm-level evidence examining how these two forces interact. There is limited research analysing the coexistence of AI adoption and judgment-intensive accounting.

This study addresses this gap by constructing the AI Score and Judgment Score indices based on the annual reports of 30 Indian and Global companies across multiple sectors. By adopting a disclosure-based, cross-sectoral analysis, the study provides empirical evidence on whether increased AI adoption is associated with reduced reliance on professional judgment. The findings that follow are based on corporate reports and offer a realistic understanding of how AI and accounting standards interact in practice.

3. Research methodology

3.1. Research design

This study adopts an empirical and descriptive research design to examine the relationship between AI adoption and professional judgment in financial reporting across a diverse sample of companies. The research is designed to observe, measure and interpret patterns that emerge from corporate disclosures.

3.2. Sample selection

This study analyses annual reports of 30 Indian and Global companies, selected to represent a diverse range of industries. The Indian Companies are listed on the Bombay Stock Exchange and operate in sectors such as banking, infrastructure, manufacturing, fast-moving consumer goods (FMCG), and information technology (IT) services. Global companies were included as an international benchmark to capture variations in AI adoption across different regulatory and technological environments.

3.3. Data source

The main data source for this study is publicly available annual reports of all 30 companies, accessed through their official websites. Annual reports were selected as a data source because they represent the most comprehensive

medium through which companies disclose both their operational strategies and their accounting practices. They are also the primary document through which AI-related initiatives and judgment-intensive accounting decisions are communicated to external stakeholders. All reports analysed belong to the most recent financial year, ensuring consistency and uniformity throughout the sample.

3.4. Python- based text analysis

A Python-based text analysis method was implemented across all reports. Python was selected for its ability to systematically process large volumes of textual data and generate transparent results. The code scanned each annual report for two distinct sets of predefined keywords: one set related to artificial intelligence and another to judgment-intensive accounting concepts.

3.5. The AI score

The AI score measures the frequency of AI-related terms within annual reports, including references to artificial intelligence, automation, analytics and data-driven systems. It shows the extent to which firms disclose AI integration in their reporting processes.

3.6. The judgment score

The Judgment Score measures the frequency of judgment-intensive accounting terminology, such as estimates, impairment, provisions, assumptions and fair value. These show areas requiring professional judgment under principle-based accounting standards.

3.7. Mismatch classification

Based on the relationship between the AI Score and Judgment Score, companies were classified into four categories. Companies with a high AI score and a low judgment score are aligned. Those with moderate levels of both were classified as Balanced Mismatch. When one score significantly exceeded the other, the classification was a partial mismatch. Companies with a very high AI score and a very low judgment score, representing the widest gap, were classified as Strong Mismatch. This four-category structure helps compare data in detail without oversimplifying variations across firms.

3.8. Statistical analysis

To complement the index-based analysis, two statistical methods were used. Correlation Analysis was conducted to assess the direction and strength of the relationship between the AI score and the judgment score. Furthermore, a simple linear regression was estimated to assess whether AI-related disclosures significantly influence variation in professional judgment, with the AI score as the independent variable and the judgment score as the dependent variable.

4. Findings

4.1. Overview

This section presents the study's empirical findings using descriptive statistics, correlation, and regression analysis. It further interprets these results to examine the relationship between AI integration and professional judgment in accounting.

4.2. Descriptive statistics

Table 1 Descriptive Statistics of AI Score and Judgment Score

| | MEAN | MEDIAN | RANGE | SD | MINIMUM | MAXIMUM |
|----------------|-------|--------|-------|----------|---------|---------|
| AI SCORE | 130.7 | 34 | 919 | 243.7174 | 13 | 932 |
| JUDGMENT SCORE | 336.4 | 350.5 | 733 | 157.5978 | 62 | 795 |

To understand the distribution of AI and Judgment Score across selected firms, the descriptive statistics are presented in Table 1. The mean AI score across 30 companies is 130.70, while the median is significantly lower at 34.0. This indicates a positively skewed distribution. This suggests that a small number of firms exhibit very high levels of AI-related disclosures, whereas the majority of firms have relatively lower AI visibility. In contrast, the mean judgment is

approximately 336.4, and the median is 350.5, indicating a relatively balanced distribution. This implies that judgment-intensive accounting practices remain consistently present across firms.

These findings highlight an important pattern: while AI adoption varies significantly across companies, reliance on professional judgment remains consistently present across firms. A clear contrast emerges between the two. The AI score is fluctuating, uneven, and concentrated among a few firms. Whereas, the judgment score is stable, consistent and present across the sample. This difference in distribution provides an initial indication of a structural mismatch between AI integration and accounting practices that the rest of the analysis confirms.

4.3. Correlation analysis

Table 2 Correlation Analysis between AI Score and Judgment Score

| | |
|-------------------------------------|---------|
| Pearson Correlation Coefficient (r) | -0.4169 |
| P-value | 0.0219 |
| Sample Size (N) | 30 |

To further examine the relationship between the variables, a correlation analysis was conducted and the results are presented in Table 2. The Pearson correlation coefficient of -0.417 indicates a moderate negative relationship between AI Score and Judgment Score, suggesting that firms with higher AI-related disclosures tend to exhibit slightly lower levels of judgment-intensive accounting language. However, the relationship is not sufficiently strong to imply a direct substitution.

4.4. Regression analysis

Table 3 Regression Analysis Results

| | |
|-----------------------------|-----------------|
| Intercept (a) | 371.6324 |
| Slope/ Coefficient (b) | -0.270 |
| R-squared (R ²) | 0.174 |
| P-value (Regression) | 0.022 |

The regression analysis provides further insight into the relationship between the variables, and the results are presented in Table 3. The resulting equation is:

$$\text{Judgment Score} = 371.63 + (-0.27 \times \text{AI Score})$$

The regression slope is -0.27, indicating that each 1-unit increase in AI score corresponds to a -0.27 decrease in judgment score. To reduce a company's judgment score by 100 points, its AI score would need to rise by around 370 units. The R-squared value of 0.174 is the most significant finding in this analysis. AI Score accounts for only 17.38% of the variation in Judgment Score. Although AI is frequently described as transformative in financial reporting, a result below 18% is particularly noteworthy.

This suggests that a large portion of judgment-intensive accounting practices is influenced by other factors such as industry characteristics, regulatory requirements and business complexity. Overall, these findings suggest that although there is a slight inverse relationship between AI integration and professional judgment, the effect is not strong enough to indicate a substitution effect. Instead, the results support the presence of coexistence, where increasing AI adoption does not reduce reliance on judgment-based accounting practices.

4.5. Assumptions check

4.5.1. Normality Test (Shapiro-Wilk)

Table 4 Normality Test Results (Shapiro-Wilk Test)

| | |
|------------|-------|
| Statistics | 0.956 |
| p | 0.239 |

The results of the Shapiro-Wilk normality test are reported in Table 4. Since the p-value is 0.239, which is well above 0.05, it indicates that the residuals are normally distributed, satisfying the normality assumption required for regression analysis.

4.5.2. White's Heteroskedasticity Test

Table 5 White's Test for Heteroskedasticity

| | |
|---------|--|
| LM | 0.964679 |
| p-value | P (Chi-square (2) > 0.964679) = 0.617337 |

Null hypothesis: heteroskedasticity not present

Table 5 presents the results of White's test for heteroskedasticity.

The presence of heteroskedasticity was tested using White's test. The p-value is 0.617, which is significantly higher than the threshold limit of 0.05. This shows that there is no evidence of heteroskedasticity in the data, indicating that the variance of residuals remains constant across observations. Hence, the regression results can be considered reliable and consistent, ensuring results are not distorted by uneven variance.

4.5.3. Ramsey's RESET Test

Table 6 Ramsey RESET Test Results

| Specification | F-statistic | p-value |
|-------------------|-------------|---------|
| Squares and Cubes | 0.0989 | 0.906 |
| Squares only | 0.1323 | 0.719 |
| Cubes only | 0.1117 | 0.741 |

Table 6 shows that all p-values are well above the 0.05 significance level. This indicates that there is no strong evidence of any specification error in the model. This adds to the overall reliability of the regression results and strengthens confidence in the findings.

Overall, these tests indicate that the key assumptions of the regression model are satisfied. The residuals are normally distributed, there is no evidence of heteroskedasticity, and the model is correctly specified. With no major violations observed, the findings can be considered reliable and suitable for interpretation.

4.6. Summary of findings

The evidence presented in this section is consistent and clear. The descriptive analysis reveals that, while AI adoption is variable and concentrated, the degree of judgment remains stable across the sample. The sector-wise analysis shows that even the most technologically active Indian firms carry high judgment scores. The mismatch classification shows that no company achieves perfect alignment. The correlation analysis reveals a moderate negative relationship, mainly due to sectoral differences rather than cause and effect. Regression analysis indicates that the influence of artificial intelligence on professional judgment is modest.

These findings do not diminish the value of AI in accounting. It serves as a powerful and valuable tool, yet professional judgment remains essential to account for uncertainty, complexity and human responsibility.

5. Discussion

The findings of this study provide important insights into the relationship between AI integration and professional judgment within accounting frameworks. While the empirical results indicate a moderate negative relationship between AI disclosures and judgment-intensive accounting language, the overall effect remains limited. The most fundamental takeaway from the findings is that AI and professional judgment are not replacing each other, rather, they coexist. Across 30 companies, spanning over six sectors and two geographies, the data shows that a consistent increase in AI disclosure does not lead to a corresponding decrease in judgment-intensive accounting. One of the key reasons for this outcome lies in the principle-based nature of accounting standards, such as IFRS and Ind AS. These frameworks are designed to accommodate uncertainty and managerial discretion. Areas such as revenue recognition, provisions and fair value measurement require interpretation and estimation.

These findings reveal that the mismatch between AI recommendations and accounting standards is structural rather than technological. It does not arise due to limitations in AI capability, but from the fundamental differences in how algorithmic systems and accounting frameworks operate.

The regression result gives this argument its sharpest edge. AI Score explains a variation of mere 17% in judgment score, meaning that most of what drives accounting judgment lies beyond AI disclosure. Several structural elements influence the extent of judgment-intensive accounting across firms.

Industry characteristics play a crucial role: sectors such as banking and infrastructure require greater judgment due to risk assessment, long-term contracts, and regulatory complexity, while simpler industries like FMCG rely less on judgment. Secondly, business complexity, including firm size and diversification, increases the need for estimates and interpretation. Additionally, the nature of transactions, such as fair value measurement, impairment, and provisions, requires subjective evaluation. Lastly, the degree of judgment used is also influenced by broader economic factors, such as uncertainty and market fluctuations. Taken together, these factors reinforce the idea that professional judgment is shaped by structural and social factors outside the purview of AI-driven processes. This suggests that professional judgment is not a limitation to be overcome but rather a fundamental feature of accounting that is likely to persist.

Sectoral differences provide further support for this interpretation. The global technology companies, such as Google, Microsoft, and Amazon, come closest to alignment. Their AI scores are exceptionally high, and judgment scores are comparatively modest. These companies do not have lower judgment scores because they adopted AI. It is because their accounting environments are less complex. Companies, particularly those in banking, infrastructure, and manufacturing, exhibit higher reliance on professional judgment due to complexity, risk exposure and regulatory demands.

These findings have important implications for both professionals and organisations. For accounting professionals, the findings are reassuring as professional judgment is not disappearing, just evolving. It is also demanding because AI tools are increasingly embedded in financial processes, and judgment is required to critically evaluate their output. For organisations, the findings highlight that investment in AI must be matched by investment in the governance structures surrounding it. AI can enhance efficiency and support analysis. But the estimates and assumptions that accounting standards require depend on clearly visible human accountability.

Overall, the future of accounting does not involve choosing between human judgment and artificial intelligence. Instead, it requires continuous and careful integration of both, maintaining transparency and accountability in financial reporting.

Limitations of the study

This study is subject to certain limitations. The analysis is made on a relatively small sample size and relies on publicly available disclosures, which may not fully capture the internal decision-making processes.

While standard diagnostic tests confirm that the regression results are statistically reliable, further robustness checks using alternative and additional variables may provide deeper validation of the findings.

Despite these limitations, the study provides consistent and meaningful insights into the relationship between AI integration and professional judgment. Future research may build on this framework by incorporating larger sample sizes, multi-period analysis, and extended modelling approaches.

6. Conclusion

This study examines a question that lies at the intersection of two of the most significant forces influencing modern accounting: the rapid rise of artificial intelligence and the continual demand for principle-based reporting standards. Specifically, it examines whether increased AI adoption reduces reliance on professional judgment in accounting. An analysis of 30 Indian and global companies using two indices indicates that increased AI adoption does not reduce reliance on professional judgment.

The evidence assembled across this study is consistent and clear. The descriptive statistics reveal that AI disclosure is concentrated among a few large global technological companies, while judgment intensity remains consistent throughout the sample. The sector-wise analysis shows that companies in banking, infrastructure and manufacturing carry a high judgment score regardless of how much AI they disclose. The correlation analysis reveals a moderate negative relationship between the two indices, primarily due to sectoral differences rather than a substitution effect. And the regression analysis confirms that AI integration explains only a limited portion of the variation in professional judgment. Instead, the evidence points to a pattern of coexistence, in which increasing AI adoption does not eliminate the need for interpretative and judgment-based accounting practices.

These findings clearly suggest that the relationship between AI and accounting is not one of replacement but complementary in nature. AI enhances how organisations process information and support decision making, and professional judgment remains central to financial accounting. From a broader perspective, these findings have implications beyond academic research. For accounting professionals, it is a reminder that the growing presence of AI in financial processes adds rather than removes the burden of professional responsibility. For organisations, it means that investing in AI should be accompanied by strong governance frameworks to maintain clear human accountability. The goal should not be to weaken judgment requirements, but to make sure they remain strong as automation grows.

The main contribution of this study is to provide firm-level, cross-sector evidence that the literature has been missing. This study demonstrates that the structural mismatch is not merely theoretical. It is measurable, documented and a consistent part of how real companies operate today. The wider discussion about AI will keep on changing. It is expected to become increasingly prevalent and influential in the future. However, the financial reporting standards were created not just for efficiency, but also for accountability, which is genuine and defensible. The emphasis should be on maintaining a balance between technological efficiency and human oversight.

To conclude, the future of accounting will not be defined by the replacement of human judgment, but by how effectively AI is integrated to strengthen rather than undermine its analytical and ethical foundations.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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