TRANSFORMATION OF THE ROLE OF ACCOUNTANTS IN THE DIGITAL ERA: A LITERATURE REVIEW ON THE IMPACT OF DATA ANALYTICS IN FINANCIAL REPORTING

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Abstract

This study aims to analyze the utilization of data analytics in financial reporting and examine the shift in the role of accountants in the digital era. Using the Systematic Literature Review (SLR) method, this study reviews scholarly articles from Google Scholar and Scopus published between 2020 and 2025, with sampling conducted in April 2025. The result of this paper stated that data analytics may improve the accuracy, transparency, and timeliness of financial reporting. Also, the role of accountants has transformed from merely recording transactions to becoming strategic analysts with multidisciplinary expertise in data analysis and technology. Adopting data analytics faces challenges such as data security, competency gaps, and internal resistance.

Keywords: Cloud Accounting, Data Analytics, Financial Reporting, Digital Transformation, Accountant Role

INTRODUCTION

The rapid development of technology is driven by the adoption of big data, artificial intelligence (AI), and machine learning technologies that automate data processing and present relevant information. The emergence of these new technologies provides new competitive and dynamic resources for the fulfillment of fast, accurate, and reliable information for decision-making. The financial information is an important instrument for strategic decision-making (Stoica & Ionescu-Feleagă, 2021).

The periodic financial reporting system is no longer sufficient to meet the needs of stakeholders who require real-time information. Research by Kerrouchea & Belouadahb., (2025) shows that digitalization positively impacts the quality of financial reporting, increasing the reliability and timeliness of reporting in the public company environment. Raffey et al., (2023) also highlight the importance of big data analytics in financial decision-making, including challenges such as data security and the need for advanced analytical skills. For this reason, most companies have begun integrating data analytics technology into the financial reporting process to increase the informative value of financial reports. This data analytics provides data cleaning, transformation, visualization, and interpretation of analysis results (Liu & Fu, 2024).

In the health sector, data analytics is used to diagnose diseases earlier, predict the spread of outbreaks, and improve patient services (Theodorakopoulos & Theodoropoulou, 20(Theodorakopoulos & Theodoropoulou, 2024). Data analytics is improving user experience in the technology sector. The transformation of technology is also fundamentally changing the landscape of the accounting profession.

Digital transformation in accounting requires adjusting to new reporting paradigms, considering ethical aspects and professional responsibility (Pisoni et al., 2023). From a theoretical perspective, decision usefulness and stakeholder theory can be used to evaluate how data analytics-based reporting can meet the needs of decision makers and stakeholders (Abdelhalim & Hassan, 2025). Data analytics in financial reporting has great potential to increase transparency and minimize the risk of data manipulation. In addition, implementing ERP systems and artificial intelligence (AI) strengthens the reliability of accounting data. Automating various controls drives audit and internal supervision efficiency (Becha et al., 2025).

The application of data analytics in the accounting field significantly impacts the financial reporting system and changes in the role and competencies required of an accountant. (Cosa & Torelli, 2024). Accountants are no longer just transaction recorders, but have transformed into data analysts and strategic advisors who can produce quantitative information-based insights. This changing role requires mastery of cross-disciplinary expertise, ranging from technical skills in data processing and interpretation, understanding of analytical algorithms, to effective communication skills to bridge information to decision makers who do not have a technical background (Bindeeba et al., 2025).

Various studies have highlighted the strategic benefits of using data analytics in financial reporting, which is now one of the important pillars in the digital transformation of modern accounting. Kerrouchea & Belouadahb (2025) show that digitalizing financial systems significantly strengthens the reliability and integrity of financial reports by enabling companies to produce more accurate, relevant, and timely financial information. In line with

the above opinion, Raffey et al., (2023) stated that big data analytics has great potential to improve fraud detection capabilities and efficiency in the internal audit process.

Data analytics adoption and implementation in financial reporting practices show increasingly significant developments. Big companies like Google, Amazon, and Netflix have proven the effectiveness of this approach. They leverage Big Data to personalize services, improving user experience and strengthening customer loyalty (Ibna & Nasution, 2024).

PT Pertamina is a state-owned company (BUMN) in the energy sector, especially oil and gas. As one of the largest companies in Indonesia, PT Pertamina has succeeded in optimizing operational processes in the oil and gas industry by combining IoT and Big Data technology. Data in the oil and gas industry is used to improve operational and cost efficiency. By adopting this technology, they can monitor and control every operational process from production to the distribution of fuel (Amanda et al., 2024).

Although studies on the use of data analytics in preparing financial reports have been widely conducted, literature that critically examines the use of data analytics in financial reporting and the transformation of the role of accountants in the digital era is still limited, especially in Indonesia. Therefore, this study aims to conduct a comprehensive study with a literature review approach on the use of data analytics technology in the financial reporting process and analyze the effect of digital transformation on the role of accountants. This study is expected to provide a substantial conceptual contribution to understanding the practical implications of using data analytics in financial reporting and the development of the accounting profession (Zhao et al., 2024).

REVIEW OF LITERATURE

Decision Usefulness Theory

The decision usefulness theory emphasizes that the use of historical cost-based accounting concepts is less relevant because they do not reflect current asset values (Staubus, 2000). Therefore, asset valuation should employ fair value to enhance relevance to current market conditions. However, using the current value poses challenges, particularly in verifying the validity of valuation. Based on decision usefulness theory, financial statements should contain information that is useful for decision-making.

Based on the conceptual framework, financial reporting should exhibit relevant and reliable qualitative characteristics to improve the quality of decision-making. Relevant qualitative characteristics include predictive value, materiality, and timeliness. The characteristics of faithful presentation include completeness, neutrality, and freedom from material misstatements.

Advances in modern technology, such as data analytics and artificial intelligence, can improve the quality of financial reporting for effective and efficient decision-making. In addition, this technological advancement also transforms the accounting profession, not just as a preparer of financial reporting, but into a partner in decision-making (Shalhoob et al., 2024).

An integrated system enables fundamental changes in the context of financial reporting, replacing conventional systems. The system encompasses historical data and forecasts for the future (Abdelwahed et al., 2025). Decision-making becomes more

meaningful because it is based on a modern system. Data analytics technology strengthens its function as a strategic tool for organizational decision-making.

Data Analytics in Accounting

Data analytics technology is a systematic and integrated approach to data collection, cleaning, and transformation, and modeling for better decision-making. According to Nurhayati et al., (2023), data analytics allows the evaluation of data using analytical and logical thinking for each component of information.

The use of data analytics technology in accounting can enhance the quality of financial reporting and strengthen functions. Financial reporting includes not just financial reports but also other information that supports decision making quality. Data analytics is the analysis of data to draw conclusions that are useful for effective and efficient decision-making (Nguyen et al., 2025). The techniques are used to obtain internal insights to improve the decision quality. This analytical approach optimizes data analysis and increases system efficiency, enabling effective decision-making in the context of accounting.

The application of data analytics leverages automation and statistical methods for the financial reporting process by identifying trends or anomalies in large datasets for real-time processesing and predictive analysis. This accelerates the financial reporting process so that management can make timely, data-driven decisions (Karmitsa et al., 2025). The use of analytical data in financial reporting enables financial adaptability to changes and responsiveness to business dynamics.

This technology allows companies to analyze data in a real time and evaluate performance as needed. It provides rapid, information-based insights for decision-making (Giang & Dung, 2025). In the context of rapid technological advances, the accounting profession has shitfted from recording and reporting finances to leveraging the latest technology for big data analysis, assesing the quality of information, and communicating it to stakholders.

Accountants in the digital era are strategic partners for top managers, helping them understand business challenges and integrate information for effective and efficient decision-making (Ling & Ling, 2025). Technological changes require cross-disciplinary competencies. Accountants must understand business models and posses critical thinking skills that enhance financial reporting and support economic decisions.

Accountants now play a key role in driving Innovation and operational efficiency, enabling companies to operate economically and adaptively. This digital transportation makes accountants more integrated into strategic business context, offering greater value in strategic planning and data-driven decision-making (Argento et al., 2025).

RESEARCH METHOD

This study employs a systematic literature review approach, examining relevant research that has been scientifically and systematically structured to identify, evaluate, and synthesize previous findings. This method was chosen because it contributes to scientific knowledge by analyzing existing literature and indetifying gaps as a recommendation for future research (Saleh et al., 2021)..

This study focused on scientific articles in the fields of business management and accounting. Article selection was conducted via Google search In April 2025, using criteria availability

in PDF format, publication in open access journal, written in Indonesian or English, and published between 2020 to 2025. The search employed keyword such as “data analytics” or “big data” and “financial reporting” or “financial statement” . The resulting articles were filtered acording to the specified criteria and systematically analyzed in terms of structure and academic content (Domingues et al., 2022).

RESULTS AND DISCUSSION

The literature review indicates that digital transformation has significantly influenced the function and role of accountants within organizations, particularly in the domain of financial reporting. Tehcnological development suc as data automation, data analytics, and artificial intelligence have shifted the resposibilities and role of accountants, making their role more strategic and analytical.

Big data technologies enable accountants to access and analyze large volumes of data within a short timeframe, thereby generating valuable insight for decision-making (Beemamol, 2024).. These thechnologies also facilitate frocasting and anomalies detection in financial report with improved accuracy and effieciency (Freeman, 2024).. The automation of these processes plays a crucial role in enhancing operational performance and reducing errors in financial management.

Artificial intelligence has shifted the role of accountants toward more strategic and analytical function (Freeman, 2024). Big data technology enables accountants to access and analyze large volumes of data in a relatively short period, generating useful information for decision making. AI also facilitates the predictions of future outcomes and the detection anomalies in financial reporting accurately. Automation plays an crucial role in enhancing company operations by reducing human error and improving the quality of high-value information used in planning and performance analysis. Digital transformation enables companies to oeprate more effectively and improve quality by emphasizing strategic priorities and informed decision making (Song et al., 2025).

The implementation of AI in the accounting process has a significant altered the traditional work of accountant, which one focused on recording data reconciling transactions. Today, accountants are shifting toward a strategic role, focusing on decision making, and risk-based evaluation. However, adoption of AI raises new challenges, particularly in redefining the accountant’s role (Singla & Jangir, 2020).

Another major issue is data security, AI system involved in financial reporting process often acces internal including and highly sensitive financial and proprietary information (Hilal et al., 2022).. Therefore, while digital transformation significantly enhances accounting productivity, its adoption must comply with existing organizational policies and regulatory standards.

To effectively navigate these tehcnological changes, companies must invest in infrastructure, provide effective training, implement integrated change management strategies, and encourage active stakeholders participation (Maheshwari et al., 2021).The integration of analytical data into financial reporting indicated a new dimension in modern accounting practices. Based on big data analysis, this approach increaces organizational transparency, support the detection of anomalies, and reduce the risk of financial statement manipulation (Khotanlou et al., 2025). Financial reporting now incroporates not only

numerical data but also analytical tools that support corporate decision making related to organizational financial health nad performance.

The integration of enterprise resources planning (ERP) and AI strengthens the role of analytical data in both financial reporting and internal control (Khotanlou et al., 2025). Automation enables consistent transactions tracking, recording and monitoring, thereby enhancing the integrity of accounting data and improving internal audits effiencieny.

As digital transformation accelerates, companies must also focuss on upholding ethical standard and professional responsibilities (de Paula et al., 2024).. Values such as objectivity, accountability and integrity must remain crucial for technology based financial reporting. According to findings of this study, the use of analytical data empowers companies to produce timely and accurate financial reports, adapt to changing condition, and respond effectively to market dynamics (Kraus et al., 2021). Accountants are no longer limited to data entry roles, the now serve as data driven analyst who provide strategic insight to decision makers.

CONCLUSION

Data analytics technology, including machine learning data and business intelligence, can enhance a company's operational capabilities, support business growth, and improve risk management (Gonçalves et al., 2022). Further research is recommended to adopt an empirical method such as interviews or surveys with accounting professionals who have utilized data analytics, to proivide practical evidence of these relationship (Yigitbasioglu et al., 2023).

Furhter studies should also consider limitations such as skill gaps, organizational cultural barriers, employee resistance, data security concerns, and regulatory compliance. Addressing these factors is crucial to enabling effective database driven decision making.

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