



Research Paper

The Role of Business Intelligence Data Analysis Technology in Improving Financial Reporting Quality¹

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1. Introduction

In recent years, firms have been looking for tools and methods that can improve financial reporting and prevent financial fraud. One effective tool that has attracted a lot of attention in recent years is the use of business intelligence systems. A review of previous studies indicates the importance of business intelligence systems as a new information systems tool in facilitating managerial decision-making, improving the financial reporting quality, improving financial performance, and detecting financial fraud. Business intelligence allows organizations to identify patterns and anomalies in financial data by combining information technology and data management. In some studies, various components have considered as business intelligence sub-criteria including data integration, analytical capabilities, information content quality, information access quality, use of information in the business process, and analytical decision-

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making culture. Business intelligence by focusing on high-level analytical power can play an important role in improving financial transparency and enhancing the trust level among stakeholders, allowing firms to have better ability and performance in competitive markets by improving financial reporting quality. Implementing business intelligence tools has an impact on accounting systems through the input, process, and output dimensions. This study investigated the role of business intelligence data analysis technology in improving financial reporting quality.

2. MATERIALS AND METHODS

The research methodology is based on a survey research using a structural questionnaire. The statistical sample includes finance and accounting managers and supervisors in 384 listed firms at TSE & OTC whose have relevant work experience and sufficient expertise about new financial technologies and use of business intelligence. The research instruments were standard questionnaire on business intelligence (Popovič et al, 2012; Huang et al, 2022) and financial reporting quality (Ahmadi et al, 2021). The data were analyzed using LISREL software based on the confirmatory factor analysis approach and the structural equation modeling. After collecting data and describing the demographic samples' characteristics and survey results, some analyses were conducted such as assessing the distribution normality, reliability and validity of the questionnaire variables. Subsequently, the confirmatory factor analysis and the structural equation modeling were used to estimate the relationship between variables.

3. RESULTS AND DISCUSSION

According to the results, the evidence showed that 74 Firm observations were in the weak business intelligence domain, 182 observations were in the medium business intelligence domain, and 128 observations were in the strong business intelligence domain. The findings showed that business intelligence has a significant effect on improving financial reporting quality. Also, further analyses were conducted on business intelligence sub-criteria including data integration, analytical capabilities, information



content quality, information access quality, information use in the business process, and analytical decision-making culture. Evidence suggests that business intelligence sub-criteria also have significant impact on improving financial reporting quality. The results of the path analysis showed that analytical decision-making culture and information access quality have the greatest impact on the financial reporting quality. In addition, analytical capabilities have the least impact on financial reporting quality. Findings documented that business intelligence increases the accuracy and efficiency of financial processes by automating the reporting and data analysis process. Using business intelligence tools, financial data can be analyzed more deeply and accurately and hidden patterns and trends can be identified. Business intelligence increases transparency in financial performance by providing clear and interactive financial reports and allows firms to create customized financial reports, including charts, dashboards, and other visuals that respond to the stakeholders specific needs. Using business intelligence tools, accurate forecasting models can be created that help organizations predict their financial performance in the future and prepare for potential challenges. Business intelligence provides the information and insights necessary for informed, data-driven financial decisions. Using business intelligence, the profitability of different firm segments, products, or customers can be analyzed and strengths and weaknesses identified. Business intelligence helps organizations accurately track, manage, and optimize their costs by identifying and eliminating unnecessary costs and optimizing processes. Business intelligence helps organizations more accurately predict future sales revenues using historical data and other influential factors. Business intelligence plays an important role in managing assets as resources for production and service delivery. By using business intelligence tools, a firm's cash flow can be monitored in real time and liquidity problems can be prevented. According to the results, firms focus on integrating and merging reliable and homogeneous data to improve the financial reporting quality. The use of business intelligence allows firms to have different information with different dimensions and from all parts of the firms together, which improves the financial reporting quality. Firms have strengthened financial reporting through online analytical processing and reporting. The set of these



measures, by combining data integration and analytical capabilities, has matured the business intelligence system, which can improve the financial reporting quality. The information content quality as one of the business intelligence aspects leads to the information usefulness in the business process, and the information usefulness leads to favorable decision-making in financial reporting. By using business intelligence, firms have used high-quality and timely information to advance and develop the business goals. The information access quality as one of the business intelligence components has a positive effect on the financial reporting quality. Firms that use business intelligence system can have better access to information, have accurate economic and financial analyses of customers, market and firm internal environment, and with the right decisions, while developing customer relationships, add value to services and products, which leads to improved financial reporting quality. The use of information in the business process as one of the business intelligence components has a positive effect on the financial reporting quality; therefore, the use of information in the business process can provide appropriate strategies, innovative ideas in line with the firm goals and their leadership in the capital market. Business intelligence is a mechanism that fills the gap between business process management and business strategy. The analytical decision-making culture plays an important role in the use of high-quality information in firm decisions, so that business intelligence, by combining data from internal and external sources, creates useful information to improve decision-making support; in addition, improving decision-making capabilities through business intelligence improves the financial reporting quality.

4. CONCLUSION

The findings indicate that the use of business intelligence creates a more comprehensive view of financial processes and more accurate financial reporting. The research results can be useful for management teams, boards of directors, investors, regulatory bodies, and auditors, helping them to assess improving the financial performance by using business intelligence while increasing the financial information quality. In today's world, the success of firms in dealing with large volumes of data depends on the ability to use



data in decision-making efficiently and quickly. Given the changes in the business environment and the increasing complexity of business processes, the use of business intelligence helps firms to have a more comprehensive understanding and vision about financial reporting processes and present financial reports more accurately. According to the obtained results, it is suggested that firms facing to environmental and technological changes, should use business intelligence data analysis as a new approach to provide appropriate information, especially focusing on the transparency and quality of information content in financial statements. However, implementing this process requires attention to appropriate platforms and structures.

Keywords: Business Intelligence, Data Analysis, Financial Reporting Quality.

JEL classification: M41, M15, O33

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