

CHAPTER 1

INTRODUCTION

1.1 Background

In recent decades, the business world has experienced significant changes in the way companies manage and make their financial decisions (Alsmadi et al., 2019, 2022). These changes have been driven by advances in information and communication technologies that enable the collection, storage, and analysis of more data than ever before (McKinsey & Company, 2016). One of the most striking paradigm shifts is the role of Big Data Analytics in understanding and forecasting a company's financial performance. In an increasingly advanced digital era, Big Data Analytics has fundamentally changed the business landscape. As a tool capable of collecting, storing, and analyzing huge volumes of data at high speed, Big Data Analytics has become an integral part of making rational business decisions that cannot be ignored (Abkenar et al., 2020).

Big Data Analytics has become one of the most important innovations in modern business. This is due to its ability to integrate data from various sources, including internal and external company data, market data, and other data, which in turn helps companies to make more informed and accurate decisions (Chen et al., 2014). In an era where data is a valuable asset, companies that are able to effectively utilize the potential of Big Data Analytics have a significant competitive advantage. In addition, its ability to process large volumes of data at high speed allows companies to analyze information in real-time and develop trends based on historical data, so that companies can respond quickly to market changes and make more effective decisions with forecasting techniques (Shabbir & Gardezi, 2020; Wamba et al., 2017). Very large data can help in identifying patterns that may not be clearly visible in smaller data.

In various industries, operations are often complex and highly dependent on resource efficiency and optimization, Big Data Analytics has great potential to improve forecasting and enable companies to adapt quickly to dynamic market

changes. Big production, sales, and inventory data can provide a more complete picture of a company's performance. For example, significant increases in demand during a certain period can be detected early by using Big Data Analytics, allowing companies to adjust their production and financial planning more effectively (Davenport, 2006). The ability to integrate this data with internal company data can help in forecasting the development of a company's stock price and financial performance.

Global trends show a shift towards Big Data Analytics in various sectors, including banking in recent years (Abdullahi et al., 2020). Big Data provides access to massive data resources, including transaction data, consumer behavior, and market information. The use of Big Data can create added value through more sophisticated and accurate analysis, especially in anticipating market changes and optimizing financial decisions. In addition, big data-based economic and financial forecasting helps real-time and accurate correction of forecasting models and early warning systems, contributing to social stability, innovative development, and sustainability (Škare & Porada-Rochoń, 2020). The inclusion of financial big data significantly improves the forecast accuracy of financial cycle components, such as residential property prices, credit to the private non-financial sector, and the share of credit in GDP (Lin et al., 2022). Big data technologies have changed the paradigm of economic forecasting research, providing new and unique insights into high-frequency macroeconomic activity (Richardson, 2019). However, the successful use of big data for forecasting depends on embedding this information in a coherent framework.

In the context of banking, forecasting plays a key role in financial management. Forecasting is very important for banks because it can provide information about the financial health of banks and can be used by current and potential investors in predicting future cash receipts, dividends, and interest. In addition, forecasting also provides valuable insight and financial certainty. It allows companies to better forecast financial markets, trends, patterns, and deviations, thereby improving their decision-making process (S. Wang, 2021). Financial forecasting can also influence strategic decision-making as it provides a clear picture of various indicators so that it can be

used as a performance analysis tool. Relevant and credible information from a company's financial data influences business decision-making.

Despite the growing recognition of Big Data's potential in financial forecasting, there remains a notable research gap in understanding its specific implications for local government banks, particularly in regions with distinct socio-economic dynamics such as West Sumatra. By narrowing the focus to this geographical context, this study aims to provide localized insights that can inform decision-making processes and strategic initiatives within local government banks operating in similar environments. Previous research tended to focus on the global context, leaving a lack of research attention to contexts such as Local Government Banks.

In this context, PT. BPD Sumatera Barat was chosen as the research object because it is one of the leading financial institutions in Indonesia and has demonstrated a strong commitment to digital transformation, including the application of Big Data Analytics. This research is expected to provide relevant and applicable local insights for other local government banks.

Thus, this study is expected to contribute to a deeper understanding of how the application of Big Data Analytics can provide significant added value in the operational and business strategy context of West Sumatra Local Government Banks. The findings of this research are expected to provide valuable insights for stakeholders in developing effective and sustainable Big Data strategies. By addressing existing research gaps, this research will expand the understanding of the importance of Big Data Analytics in the context of local government banks.

1.2 Problem Formulation

- 1.2.1 How does the implementation of big data analytics influence the decision-making process within the PT. BPD Sumatera Barat?
- 1.2.2 What is the relationship between the utilization of big data analytics and forecasting accuracy in the PT. BPD Sumatera Barat?

- 1.2.3 To what extent does the integration of big data analytics affect the financial processes of PT. BPD Sumatera Barat?

1.3 Research Objectives

- 1.3.1 To examine the impact of big data analytics on the decision-making processes within the PT. BPD Sumatera Barat.
- 1.3.2 To examine the relationship between the utilization of big data analytics and forecasting accuracy in the PT. BPD Sumatera Barat.
- 1.3.3 To examine the extent to which the integration of big data analytics influences the financial processes of banks operating in PT. BPD Sumatera Barat.

1.4 Research Benefits

The findings of this research are expected to contribute to both academic knowledge and managerial practices within the PT. BPD Sumatera Barat as a Local Government Bank. By elucidating the implications of Big Data Analytics on decision-making processes, forecasting accuracy, and financial process, this research aims to provide insights into strategic initiatives and facilitate informed decision-making within local government bank, thereby driving sustainable growth and value creation in the region.

1.5 Systematics of Writing

The first chapter serves as an introduction to the research. It provides background information, outlines the problem statement, objectives, and benefits, and discusses the systematic approach adopted in writing the thesis.

The second chapter is the literature review. In this chapter, various theories relevant to the research topic are discussed based on existing literature, previous studies, and the development of hypotheses.

The third chapter elaborates on the methodology employed in the research. It includes discussions on the research design, population and sample selection, data

types and sources, methods of data collection, operational definitions, research variables, and the techniques used for data analysis.

The next chapter is the fourth chapter, which presents the research results and discussion. This section details the findings derived from the research, including the collected data and the analysis conducted on it.

The final chapter offers a summary of the research outcomes, along with recommendations and conclusions drawn from the study's results.

