

Chapter 14

Tax Authorities Big Data Analytics in Developing Countries: A Case Study of Indonesia

Susanna Hartanto

 <https://orcid.org/0000-0002-6936-6049>

Widya Mandala Catholic University, Indonesia

ABSTRACT

Nowadays, most tax authorities in the world are utilizing various technologies, including big data analytics to be more efficient and effective in their works. Utilization of big data analytics and business intelligence by tax authorities in developing countries can be used to help identify the non-compliance taxpayers and support other activities in order to explore potential tax revenues. Directorate General of Taxes, Indonesian Tax Authority, uses combination of compliance risk management application and business intelligence. There are nine types of compliance risk management applications. Currently, seven types of compliance risk management applications have been launched and used by the directorate general of taxes. The last two compliance risk management applications will be released in the near future. The series of nine compliance risk management applications will be supported by four business intelligence. Those compliance risk management and business intelligence applications will lead directorate general of taxes to be data driven organization.

INTRODUCTION

Tax authorities are “flooded with data.” Most tax authorities are progressively utilizing various technologies, including big data analytics, to be more efficient and effective in their work. Big data and data analysis are not new, but in recent years, technological advances have made their use possible in companies, public administration, and tax authorities. Big data primarily refers to data sets that are too large or complex to be dealt with by traditional data-processing application software. Big data refers to

DOI: 10.4018/979-8-3693-0472-3.ch014

any large and complex collection of data. Data analytics is the process of extracting meaningful information from data.

Big data analytics is the use of advanced analytic techniques against very large, diverse big data sets that include structured, semi-structured, and unstructured data from different sources and in different sizes, from terabytes to zettabytes. The ultimate goal of big data is to create value, largely in an analytical capacity, including a reduction of costs from the great expansion of processing and storage capacity, the increasing availability of communications networks, the development of effective models to capture, store, and process massive data and advanced cognitive algorithms, the emergence of new data sources, including electronic invoices, and the exchange of tax information between countries.

This book chapter aims to examine the big data analytics that are used by tax authorities nowadays in developing countries, especially one of the emerging developing countries in Southeast Asia, Indonesia. The chapter will first discuss the implementation of big data analytics in other countries and then in Indonesia. This study aims to raise awareness about the implementation of big data analytics and the difficulties or constraints encountered during the process. This study uses the qualitative research method with a case study approach. The qualitative research method is used in investigating, locating, and describing the object under study. This method is best used to study the condition or situation of the research object.

The process of the qualitative research method involves emerging questions and procedures, including observation, interviews, and further follow-up sessions. Qualitative researchers collect data themselves by examining documents, observing behavior, or interviewing participants. Qualitative researchers typically gather multiple forms of data, such as interviews, observations, documents, and audiovisual information, rather than relying on a single data source (Creswell & Creswell, 2018).

In this study, data was collected through interviews, observation, and documentation. It was combined with a literature review to enrich the chapter, especially from the Directorate of General of Taxes regulations, to get further details of the implementation rules and guidelines of big data analytics in the Directorate of General of Tax Regulations system and databases. Work limitation data was collected through interviews, only with the Directorate General of Taxes. It would be great if there were interviews and data gathering from taxpayers' perspectives, but the new system will be implemented in July 2024, so it can only be conducted after July 2024.

The Principles of Tax System

According to Hector De Leon (De Leon, 2022), there are three main principles of a tax system:

1. The principle of adequacy of revenue states that if tax revenue is sufficient, the total must be an adequate source of the state budget.
2. The principle of justice states that the tax burden must be proportional (comparable) to the taxpayer's ability to pay taxes. Justice in tax collection is divided into horizontal justice and vertical justice. A tax collection system is said to be fair horizontally if the tax burden is the same for all taxpayers earning the same income with the same number of dependents, without distinguishing the type of income or source of income.
3. The principle of administrative feasibility states that all tax regulations must be administered cheaply, easily, and effectively. Administration Taxation is the key to the successful implementation of tax policy. As the organizer of tax collection based on law, tax administration must be structured in

22 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:
www.igi-global.com/chapter/tax-authorities-big-data-analytics-in-developing-countries/345429

Related Content

A Framework for Ontology-Based Tourism Application Generator

Roopa Jakkilinkand Nalin Sharda (2008). *Information Communication Technologies: Concepts, Methodologies, Tools, and Applications* (pp. 920-937).

www.irma-international.org/chapter/framework-ontology-based-tourism-application/22713

The Mediating and Moderating Effects of Emotional Intelligence on the Impact of Employee Contemplation on Work Engagement

Yanping Wang and Li Hu (2025). *Journal of Cases on Information Technology* (pp. 1-18).

www.irma-international.org/article/the-mediating-and-moderating-effects-of-emotional-intelligence-on-the-impact-of-employee-contemplation-on-work-engagement/371404

Innovations for Online Collaborative Learning in Mathematics

Rodney Nason and Earl Woodruff (2005). *Encyclopedia of Information Science and Technology, First Edition* (pp. 1529-1534).

www.irma-international.org/chapter/innovations-online-collaborative-learning-mathematics/14468

Managerial Responsibility and IT: How Does the Use of Information Technology Change the Way Managers Have to Think and Realize Responsibility?

Bernd Carsten Stahl (2003). *IT-Based Management: Challenges and Solutions* (pp. 77-89).

www.irma-international.org/chapter/managerial-responsibility-does-use-information/24791

Applying Cognitive Theories to Evaluate Conceptual Models in Systems Analysis

Stephen Rockwell and Akhilesh Bajaj (2010). *Journal of Information Technology Research* (pp. 55-72).

www.irma-international.org/article/applying-cognitive-theories-evaluate-conceptual/40313