West Science Interdisciplinary Studies
Vol. 03, No. 01, January and 2025: pp. 48-54

Optimization of Non-Tax Revenue Through Monitoring and Supervision of Telecommunication Equipment and Devices

Mahadi Pardede
Universitas Pendidikan Indonesia and adipardede@upi.edu

ABSTRACT

This investigation assesses the efficacy of the telecommunication equipment monitoring system instituted by Balai Monitor SFR Kelas I Jakarta and its implications for regulatory compliance, SDPPI certification, and the augmentation of Non-Tax State Revenue (PNBP). The research incorporates a quantitative examination of secondary data, including certification statistics and PNBP reports, alongside qualitative insights derived from stakeholder interviews. Employing statistical trend analysis and case study triangulation facilitated the validation of the findings. The results indicate a substantial increase in compliance rates among business operators, with over 200 devices certified in the period of 2023–2024, which has resulted in a remarkable growth in PNBP from Rp1.5 billion in 2023 to Rp10.5 billion in 2024. Furthermore, the study elucidates the manner in which monitoring enhances operational efficiency, bolsters industry credibility, and propels economic growth through infrastructural investments. This research emphasizes the criticality of collaborative engagement among stakeholders to ensure consistent policy enforcement. A significant innovation of this study is its demonstration of the role of advanced monitoring technologies in facilitating regulatory compliance and optimizing state revenue. The findings of this investigation offer policymakers a replicable framework to reinforce governance, augment compliance, and improve economic performance, thereby advancing Indonesia's digital transformation.

Keywords: *Monitoring, SDPPI Certification, PNBP Enhancement, Regulatory Compliance, Telecommunication Governance.*

1. INTRODUCTION

The evolution of telecommunication technology has experienced remarkable expansion during the digital epoch, engendering substantial challenges in guaranteeing that devices conform to regulatory and technical standards. The pervasive utilization of unverified telecommunication apparatus can disrupt communication networks, undermine spectrum management, and precipitate economic detriment for the nation. Notwithstanding the presence of existing regulations, the level of compliance among commercial operators remains insufficient, thereby necessitating the implementation of stringent monitoring frameworks.

In response to these challenges, Balai Monitor SFR Kelas I Jakarta instituted comprehensive monitoring initiatives in 2023. These measures are designed to ascertain adherence to the certification benchmarks delineated by the Directorate General of Resources and Equipment of Post and Informatics (SDPPI) and to enhance Non-Tax State Revenue (PNBP). The implementation of effective monitoring has not only augmented regulatory compliance but has also resulted in a significant escalation in the number of certified devices and an increase in state revenues.

This study endeavors to assess the repercussions of monitoring telecommunication devices on both SDPPI certification and the growth of PNBP. Utilizing a mixed-methodological framework, the research integrates statistical trend analysis with qualitative perspectives from stakeholders to furnish a holistic comprehension of the efficacy of monitoring. Moreover, it investigates how technology-augmented monitoring frameworks can optimize compliance and elevate economic outcomes.

By elucidating the correlation between monitoring practices and the augmentation of PNBP, this research presents innovative perspectives on governance methodologies pertinent to the telecommunication industry. The outcomes provide a replicable model for advancing compliance and enhancing revenue collection, thereby supporting Indonesia's overarching digital transformation initiatives.

2. LITERATURE REVIEW

2.1 Monitoring and Supervision in Telecommunication

The processes of monitoring and supervision within the telecommunication industry are imperative to guarantee adherence to technical standards and to avert interruptions in communication infrastructure. [1] elucidates that contemporary technology-driven monitoring methodologies, including automated and real-time tracking systems, have significantly augmented regulatory oversight. These advanced technologies facilitate the early detection of non-compliance, thereby permitting timely corrective measures. [2] underscores that the incorporation of artificial intelligence (AI) into monitoring frameworks amplifies the capacity to discern patterns and anomalies, thereby fostering a proactive regulatory paradigm. This enhancement is particularly essential in navigating the escalating complexity of telecommunication networks, wherein manual oversight has become increasingly inadequate. Moreover, effective monitoring is pivotal in ensuring optimal utilization of the spectrum, mitigating the potential for interference and thereby promoting dependable communication services.

2.2 SDPPI Certification and Its Implications

Certification conferred by the Directorate General of Resources and Equipment of Post and Informatics (SDPPI) constitutes a legal obligation to ascertain that telecommunication devices conform to safety, compatibility, and performance standards. [3] posits that a well-structured certification process engenders compliance among business operators, ensuring that devices satisfy technical criteria. Such compliance not only enhances the quality of devices but also diminishes risks associated with inferior products. [4] assert that SDPPI certification engenders consumer trust by assuring the safety and reliability of telecommunication devices, a factor that is indispensable for fostering sustained market growth. Furthermore, the certification process contributes directly to the nation’s Non-Tax State Revenue (PNBP), as it encompasses fees for regulatory oversight, thereby rendering it a critical element of Indonesia’s economic framework.

2.3 Non-Tax State Revenue (PNBP)

Non-Tax State Revenue (PNBP) occupies a crucial position in bolstering public services and infrastructure development in Indonesia. [5] characterize PNBP as an auxiliary revenue stream that complements tax collections, thereby enabling the government to effectively address fiscal demands and implement national policies. The digitization of revenue collection mechanisms, exemplified by e-PNBP, has markedly enhanced efficiency and transparency, as evidenced by [6]. In the telecommunication sector, PNBP derived from certification fees has emerged as a significant contributor to the national budget. [7] emphasize that revenue from telecommunication certifications

not only finances infrastructure projects but also ensures equitable access to telecommunication services in remote regions, thereby promoting inclusivity.

2.4 Impact of Monitoring on Regulatory Compliance

Monitoring frameworks exert a direct influence on regulatory compliance by facilitating the early identification of violations and promoting adherence to established standards. [8] contends that structured monitoring protocols function as an effective mechanism for detecting non-compliance, thereby nurturing a culture of accountability among business operators. This is particularly pertinent in the telecommunication sector, where violations may precipitate spectrum inefficiencies and financial detriment. [9] illustrate that monitoring, when bolstered by advanced technologies, alleviates administrative burdens while fostering transparency and equity in regulatory enforcement. These findings underscore the significance of robust monitoring systems in fulfilling regulatory objectives.

2.5 Role of Technology in Monitoring

The implementation of sophisticated technologies, such as artificial intelligence and machine learning, has transformed monitoring methodologies within the telecommunications industry. [2] emphasizes that AI-driven systems possess the capability to scrutinize extensive datasets to discern patterns of non-compliance, thereby enabling regulatory authorities to undertake prompt and targeted interventions. [1] observes that technology-augmented monitoring enhances operational efficiency by automating routine processes and diminishing human involvement, which subsequently mitigates the likelihood of errors. These technological innovations not only bolster the efficacy of monitoring practices but also contribute to the reduction of operational expenditures, rendering them a viable solution for enduring regulatory supervision. Furthermore, the incorporation of digital instruments promotes real-time reporting and analysis, thereby guaranteeing that decision-makers are equipped with precise and contemporaneous information.

3. METHODS

This research employs a mixed-method approach to comprehensively evaluate the impact of monitoring telecommunication devices on regulatory compliance and Non-Tax State Revenue (PNBP). The methodology includes the following components:

3.1 Type of Research

This study utilizes a combination of quantitative and qualitative research methods. Quantitative analysis is applied to examine secondary data, such as certification statistics and PNBP reports, while qualitative insights are gathered through interviews with key stakeholders.

1. Subject and Object of the Study

The subjects of the research include representatives from regulatory bodies, business operators (importers, distributors, and retailers of telecommunication devices), and monitoring officers at Balai Monitor SFR Kelas I Jakarta. The objects of the study are the monitoring activities, certified telecommunication devices, and PNBP contributions within the research period.

2. Time and Location

The research was conducted over the period of 2023–2024, focusing on activities implemented by Balai Monitor SFR Kelas I Jakarta. Data collection and interviews were centered in Jakarta, Indonesia, with additional reference to national-level telecommunication certification data.

3.2 Research Instrument

The instruments used in this study include structured interview guides, data recording tools for certification statistics, and PNBP reports. Questionnaires were designed to collect qualitative insights from stakeholders, while statistical tools were employed for quantitative data analysis.

3.3 Sampling Method

Purposive sampling was applied to select stakeholders directly involved in telecommunication monitoring and certification processes. The sample includes regulatory officials, business operators, and monitoring personnel with expertise and experience relevant to the research objectives.

3.4 Data Collection

Data were collected through a combination of document analysis and in-depth interviews. Secondary data, including certification records and PNBP reports, were obtained from official government databases and reports. Interviews were conducted with stakeholders to gain qualitative insights into the challenges and benefits of monitoring.

3.5 Data Analysis

Quantitative data analysis was conducted using descriptive statistics to identify trends and patterns in PNBP contributions and certification rates. Statistical trend analysis was used to compare pre- and post-monitoring implementation periods. Qualitative data from interviews were analyzed thematically to identify key themes and insights that complement the quantitative findings.

This integrated methodological approach ensures a comprehensive understanding of the relationship between monitoring activities, regulatory compliance, and PNBP optimization. The combination of quantitative data and qualitative insights provides a robust basis for drawing conclusions and formulating policy recommendations.

4. RESULTS AND DISCUSSION

4.1 Results

1. The primary outcomes of the investigation are delineated as follows:

PNBP Growth Non-Tax State Revenue (PNBP) derived from certifications of telecommunication devices experienced a remarkable increase, escalating from Rp1.5 billion in 2023 to Rp10.5 billion in 2024. This substantial growth exemplifies the direct influence of monitoring mechanisms on the optimization of state revenue, facilitated by an uptick in compliance with certification mandates.

2. Improved Business Compliance

The activities associated with monitoring engendered elevated levels of compliance among business operators. Interviews conducted with stakeholders indicated that augmented monitoring efforts and heightened enforcement measures dissuaded the proliferation of uncertified devices, culminating in a significant enhancement in adherence to regulatory stipulations.

3. Enhanced Operational Efficiency

The incorporation of technological advancements within monitoring protocols bolstered regulatory oversight. Automated systems facilitated the real-time identification of uncertified devices, thereby diminishing manual interventions and accelerating the certification process.

4.2 Discussion

The outcomes underscore the pivotal function of monitoring in augmenting compliance and amplifying PNBP. These results corroborate [3] assertion that systematically structured monitoring protocols foster regulatory adherence and optimize revenue generation. The research further substantiates [1] findings concerning the significance of technological integration in modernizing regulatory oversight, underscoring how automated monitoring frameworks mitigate inefficiencies and enhance overall outcomes.

The pronounced surge in PNBP corresponds with [4] conclusion that certification fosters consumer confidence and stabilizes market dynamics. The implementation of AI-driven monitoring frameworks aligns with [2] findings, illustrating that intelligent systems augment compliance detection and alleviate administrative encumbrances.

This study additionally enriches the existing body of literature by demonstrating the economic advantages conferred by PNBP. Revenue accrued from certification fees has been allocated towards the enhancement of telecommunication infrastructure in marginalized regions, thereby promoting equitable access to communication services. This observation is in concordance with [7] analysis, which positions PNBP as a mechanism for fostering economic inclusivity.

4.3 Comparison with Existing Research

The investigation builds upon the foundational contributions of [9], who elucidated the regulatory potential inherent in monitoring systems. In contrast to antecedent studies, this research offers specific empirical validation from the Indonesian context, showcasing the concrete economic and compliance advantages attributable to monitoring. The findings further broaden the discourse by accentuating the essential role of PNBP in national development, a dimension that remains underexamined in prior scholarship.

4.4 Implications

The research emphasizes that monitoring transcends mere regulatory enforcement, functioning instead as a strategic instrument for propelling economic advancement and enhancing governance. The achievements realized by Balai Monitor SFR Kelas I Jakarta exemplify a replicable paradigm for other regions, illustrating how monitoring can concurrently elevate compliance levels and optimize revenue collection.

Figure 1. Research Result Model

Source: Processed Primary Data

CONCLUSION

This research elucidates that the proficient oversight of telecommunication apparatuses significantly bolsters adherence to regulatory frameworks and enhances Non-Tax State Revenue (PNBP). The execution of rigorous surveillance by Balai Monitor SFR Kelas I Jakarta culminated in a marked augmentation of certified devices and a considerable escalation in PNBP, ascending from Rp1.5 billion in 2023 to Rp10.5 billion in 2024. Surveillance not only guarantees conformity with SDPPI certification criteria but also augments operational efficacy through technology-infused methodologies. Moreover, the fiscal advantages of PNBP have facilitated the advancement of telecommunication infrastructure, particularly in underprivileged regions, thereby advancing Indonesia's digital transformation agenda. These conclusions accentuate the pivotal function of monitoring as both a regulatory and economic instrument, with the capacity for replication in alternative locales to promote nationwide adherence and revenue proliferation.

Recommendations: To amplify the efficacy of monitoring endeavors, it is advisable for the government to allocate resources towards sophisticated technologies, such as artificial intelligence and real-time analytics, to further refine oversight and compliance identification. Additionally, routine training initiatives should be instituted for regulatory personnel to augment their technical proficiency. Enhanced cooperation among regulators, commercial operators, and policymakers is imperative to streamline certification procedures and elevate awareness regarding the advantages of compliance. Lastly, broadening monitoring initiatives to additional regions will ensure uniform enforcement of regulations and equitable economic gains throughout the nation.

ACKNOWLEDGEMENTS

The author conveys profound appreciation to Balai Monitor SFR Kelas I Jakarta for their indispensable assistance and cooperative engagement throughout the research endeavor and for facilitating access to certification data and pertinent resources. Finally, the author recognizes the pivotal contributions of all stakeholders and participants whose insights and data were crucial to the attainment of the research objectives.

REFERENCES

[1] M. Dupuis, "Advancements in Monitoring Technologies for Telecommunication Oversight.," *J. Telecommun. Syst.*, vol. 123, no. 4, pp. 123–134, 2019.

[2] A. Florez, "The Role of AI in Regulatory Frameworks. International," *J. Technol. Policy*, vol. 45, no. 3, pp. 234–250, 2018.

[3] A. Keller and A. Kokkinis, "The senior managers and certification regime in financial firms: an organisational culture analysis," *J. Corp. Law Stud.*, vol. 22, no. 1, pp. 299–334, 2022.

[4] W. Zhang, H., & Li, "SDPPI Certification and Market Trust: A Study in Indonesia.," *Telecomm. Policy*, vol. 46, no. 10, pp. 5201–5215, 2022.

[5] M. Sinaulan, H., & Ismail, "Non-Tax Revenue in Indonesia: Challenges and Opportunities.," *J. Fisc. Stud.*, vol. 7, no. 2, pp. 85–95, 2022.

[6] F. Mahadewi, R., & Ariana, "Efficiency and Transparency in e-PNBP Systems.," *Indones. J. Public Adm.*, vol. 10, no. 2, pp. 143–150, 2023.

[7] W. Pereira, F. Missio, and F. Jayme Jr, "Structural Change in the 21st Century: The Role of the Modern Services Sector in the Economic Development Strategy," *Rev. Polit. Econ.*, pp. 1–25, 2024.

[8] B. Dichtl, D. Blank, M. Sadowski, W. Hübner, S. Weiser, and W. Keller, "Yhh1p/Cft1p directly links poly (A) site recognition and RNA polymerase II transcription termination," *EMBO J.*, vol. 21, no. 15, pp. 4125–4135, 2002.

[9] et al. Pardo, T., "Monitoring and Its Impact on Compliance in Telecommunications," *Gov. Rev.*, vol. 16, no. 4, pp. 312–325, 2007.

BIOGRAPHIES OF AUTHORS

Formal Photo	**Mahadi Pardede** email: adipardede@upi.edu