

Strengthening Tax Compliance: Enhancing E-Invoice Effectiveness in Public Sector Environmental Services

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ABSTRACT

The Environmental Quality Control Laboratory (LPKL) of Perumda Tirtawening is a Taxable Person for VAT purposes (PKP) responsible for issuing tax invoices for environmental testing services. However, the e-invoice generation process in this business unit faces operational constraints that hinder financial efficiency. This article aims to analyze the effectiveness of consumer e-tax invoice generation, identify obstacles, and provide improvement solutions through a 30 -day practical approach. The methods used were participant observation and in-depth interviews within the Finance Department. The results show a buildup of invoice requests and numerous revisions due to the absence of clear Standard Operating Procedures (SOP). As a solution, a draft SOP for the flow of generating and uploading e-invoices was developed to minimize data entry errors and accelerate the approval process from the head office. The implementation of these recommendations is expected to optimize tax administration compliance and increase consumer satisfaction.

Keywords: E-Invoice, VAT, Tax Administration, Effectiveness.

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1. INTRODUCTION

Taxes serve as a primary pillar of national development, acting as a mandatory contribution from individuals and entities to the state to fund public services and improve social welfare. Within the Indonesian fiscal framework, the Value Added Tax (VAT) is a significant revenue stream collected through the consumption of goods and services. For business entities designated as Taxable Persons (*Pengusaha Kena Pajak* or PKP), the responsibility to accurately collect, record, and report these taxes is not merely a legal obligation but a critical component of corporate transparency and national economic stability. The Environmental Quality Control Laboratory (LPKL) of Perumda Tirtawening Bandung City plays a vital role in providing specialized environmental testing services. As a state-owned enterprise unit, LPKL is mandated to implement digital tax administration through the e-Invoice (*e-Faktur*) system. This digital transformation, initiated by the Directorate General of Taxes (DJP), aims to streamline tax documentation, prevent tax evasion, and provide legal certainty for both the service provider and the consumer. However, the transition to a fully effective digital workflow requires more than just software; it demands robust administrative synchronization.

The modernization of public sector administration through digital transformation is fundamentally linked to the principles of good governance, which emphasize transparency, accountability, and efficiency in every organizational process (Akrong et al., 2022; Chowdhury et al., 2021). According to Karunia et al. (2023), the successful implementation of e-Government is

significantly influenced by the synergy between advanced information technology and the readiness of human resources to adapt to digital systems. In the context of financial management, this transformation is part of a broader effort toward national financial reform, which seeks to mitigate risks such as corruption and administrative mismanagement by establishing a more integrated and orderly accounting system (Kusumawijaya et al., 2023). Therefore, optimizing the e-invoice system at LPKL Perumda Tirtawening is not merely a technical adjustment but a strategic move to align the institution with the global standards of high-performing government organizations.

Furthermore, the transition from traditional manual processes to optimized digital payment and documentation systems, such as e-invoicing and cashless mechanisms, is essential to create a more accountable state expenditure and revenue environment. Puspita et al. (2023) highlight that digital payment systems are designed to simplify complex administrative procedures while maintaining professional rigor through enhanced tracking and verification capabilities. When organizations successfully integrate these information systems into their core functions, it leads to measurable improvements in performance, specifically in terms of community satisfaction and operational cost reduction (Karunia, Budiaji, et al., 2023). By addressing the current bottlenecks in e-invoice generation, LPKL Perumda Tirtawening fulfills its responsibility to provide transparent and professional services, ensuring that the organization operates as a "good corporate citizen" that complies with evolving fiscal regulations (Karunia, Darmawansyah, et al., 2023; Rusmayanthi et al., 2023).

Despite the availability of digital tools, the e-invoice generation process at LPKL frequently encounters operational bottlenecks. Current observations indicate a significant backlog in invoice issuance and a high frequency of data revisions, often caused by the absence of standardized workflows. When tax administration is handled reactively rather than proactively, it creates a ripple effect of inefficiency. Errors in Taxpayer Identification Numbers (NPWP) or service descriptions not only delay the tax process but also jeopardize the institution's professional reputation in the eyes of its corporate clients. The urgency of this community service initiative lies in the direct correlation between administrative precision and financial health. Improving the effectiveness of e-invoice creation is essential to ensure that tax documents are issued in a timely and accurate manner. Without a well-structured system, the institution risks facing administrative sanctions, fines, and audit discrepancies. Furthermore, an effective tax system is the backbone of consumer trust; when a client receives a correct tax invoice promptly, it facilitates their own accounting processes and strengthens the business relationship between the public and the state-owned enterprise.

Therefore, this activity must be executed with high standards of diligence and professional rigor. The primary objective of this program is to enhance the effectiveness of consumer e-tax invoice generation by identifying systemic gaps and implementing strategic improvements. By analyzing the current "as-is" conditions and comparing them with regulatory ideals, this initiative seeks to provide a practical framework that minimizes human error and maximizes the utility of the DJP electronic systems. The focus is not only on the technical input of data but on the creation of a sustainable administrative ecosystem. Ultimately, the goal of this community service activity is twofold: first, to establish a clear and formal Standard Operating Procedure (SOP) that guides personnel through every stage of the e-invoice lifecycle—from initial data validation to final approval. Second, it aims to foster a culture of administrative accountability within the LPKL Finance Department. By achieving these objectives, Perumda Tirtawening will be better positioned to fulfill its role as a compliant taxpayer while providing seamless, transparent, and professional service to its consumers, thereby contributing to the broader goal of modernizing public sector administration in Indonesia.

2. METHODS

The implementation of this community service activity followed a systematic approach designed to address administrative inefficiencies within the financial workflow of the Environmental Quality Control Laboratory (LPKL). The process was conducted over a period of

30 working days, from June 19 to July 20, 2023. The initial phase involved a comprehensive situational analysis through participant observation. By being directly embedded in the Finance and General Department, the team was able to map the existing "as-is" process of e-invoice generation, identifying critical touchpoints where delays and data discrepancies frequently occurred. This stage was crucial for understanding the practical challenges faced by staff when navigating the Directorate General of Taxes (DJP) electronic systems. In the second phase, a qualitative data collection method was employed through semi-structured interviews and collaborative discussions with key stakeholders, including the Finance Manager and Treasury Supervisor. These interactions aimed to uncover the root causes of the recurring issues, such as the backlog of invoice requests and the high frequency of revisions. The information gathered from these discussions provided a deeper perspective on the institutional constraints, such as the lack of documented guidelines and the dependency on the head office for system approvals. A Gap Analysis was then performed to evaluate the discrepancy between current operational practices and the regulatory standards set by the Director General of Taxes Regulation (PER-03/PJ/2022).

The final phase focused on the formulation and socialization of corrective measures. Based on the findings from the previous stages, a specialized Standard Operating Procedure (SOP) was drafted to provide a step-by-step guide for the e-invoice lifecycle. This procedure introduced a proactive verification mechanism, where data validation occurs prior to system uploading to minimize the need for replacement invoices. The implementation concluded with a consultative presentation of these new workflows to the relevant staff members. This participatory approach ensured that the proposed solutions were not only technically sound but also practically viable for the department, ultimately fostering a more efficient and accountable tax administration environment within the organization.

3. RESULTS AND DISCUSSION

3.1. Initial Tax Administrative Process

The initial phase of the administrative process involves the preparation of formal invoices for the laboratory testing services provided to consumers. Once the environmental samples have been submitted by the clients or collected directly by laboratory personnel, consumers typically request a detailed billing statement from the Finance and Taxation Department. This document serves as the primary basis for payment, outlining the specific costs associated with the testing procedures performed. At the LPKL Business Unit of Perumda Tirtawening, this process is executed using Microsoft Word-based templates, as the organization maintains its own specific formatting standards that differ from those of other entities.

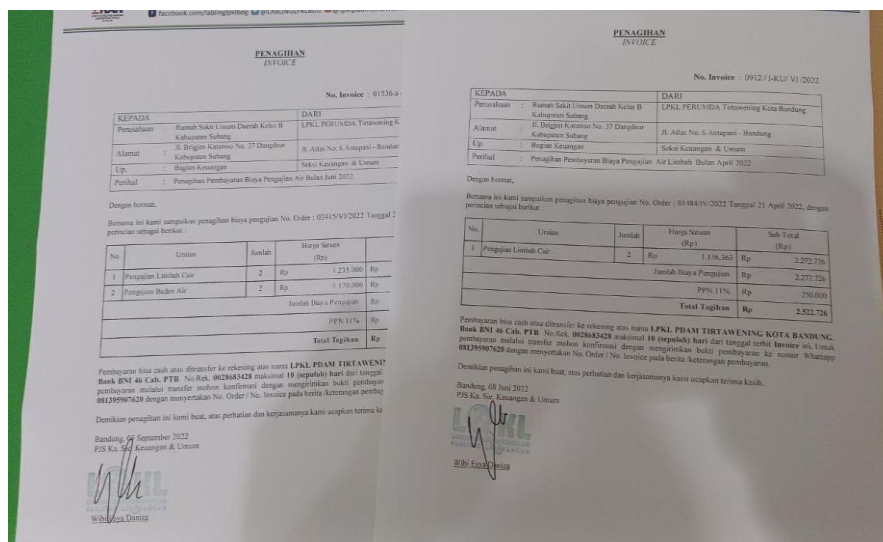


Figure 1. Invoice creation for Laboratory Testing at LPKL
Source: Community Service Documentation (2023).

To ensure high levels of accuracy, the generation of these invoices strictly adheres to the data available within the company's internal counter system (*sistem loket*). This system contains crucial information derived from the Work Orders (WO) issued by the Customer Service Department. In practice, constant coordination is maintained with the counter staff to verify that the testing details recorded in the system align with the actual services rendered. The workload for invoice preparation is strategically distributed between the Finance Department and the counter staff to ensure operational efficiency and timely delivery to the clients. In crafting these invoices, meticulous attention is paid to several critical components to ensure legal and financial validity. These include the unique invoice number, issuance date, consumer's name and address, subject of the transaction, and the specific test order reference. Furthermore, the document must accurately reflect the registration date, a detailed breakdown of the products or items tested, and the total billing amount. Every invoice is also finalized with clear payment terms—detailing the methods and deadlines—and is formally validated with the signature of the authorized official and the date of signing. Once these elements are thoroughly verified for accuracy, the invoice is considered ready for delivery to the respective consumer or transaction partner.

3.2. Implementation of E-Tax Invoice and Financial Service Operations

In the execution of tax administration duties, the process of generating tax invoices was meticulously synchronized with the data available in the LPKL Counter System and the pre-existing service invoices. This synchronization ensured that every digital input into the DJP application accurately reflected the actual laboratory services provided. The documentation of this process, as illustrated in the e-invoice samples and the recorded technical activities, highlights the precision required to align internal financial records with official state tax documentation. This integration is vital for maintaining data integrity and ensuring that the tax obligations of each consumer are properly recorded without discrepancies.

Beyond digital tax administration, the activity also involved direct management of consumer payment transactions at the LPKL Counter. Although not a primary daily assignment, this responsibility was undertaken during periods when the regular counter staff was unavailable or conducting field sampling. The core task in this capacity was providing direct front-office service to consumers regarding laboratory testing payments. This role extended beyond mere transaction processing to include the immediate preparation of invoices and payment receipts upon consumer request. All activities at the counter were performed under the professional guidance of the senior counter officer to maintain service standards and financial accountability.

The handling of these payments followed two distinct procedural flows based on the payment method: cash or bank transfer. For cash transactions, the process began with the direct receipt and manual verification of the funds to ensure the amount matched the laboratory billing. Once verified, the payment data was entered into the LPKL Counter System under the cash category. The final stages involved printing the receipt, obtaining signatures from both the responsible officer and the consumer as a form of dual verification, and providing the consumer with their copy while archiving the internal proof alongside the physical cash.

A similar yet distinct protocol was applied to bank transfer payments, which prioritized the verification of digital evidence. In these instances, consumers were required to present valid proof of transfer to the LPKL bank account. After confirming the transaction's validity, the data was recorded in the system under the transfer category. The documentation process followed the same rigorous standard as cash payments, requiring official signatures and the issuance of formal receipts to the consumer. These administrative steps are crucial in ensuring that every financial transaction, regardless of the method, is fully traceable and legally documented.

The final stage of the operational workflow involved the physical distribution of tax invoices, billing statements (invoices), and payment receipts to other departments within the organization. These documents were primarily requested by the Customer Service Department and the Counter Department. The Customer Service Department required these files for direct shipment to the consumers' registered addresses, while the Counter Department needed them for consumers who were physically present to collect laboratory results or finalize payments.

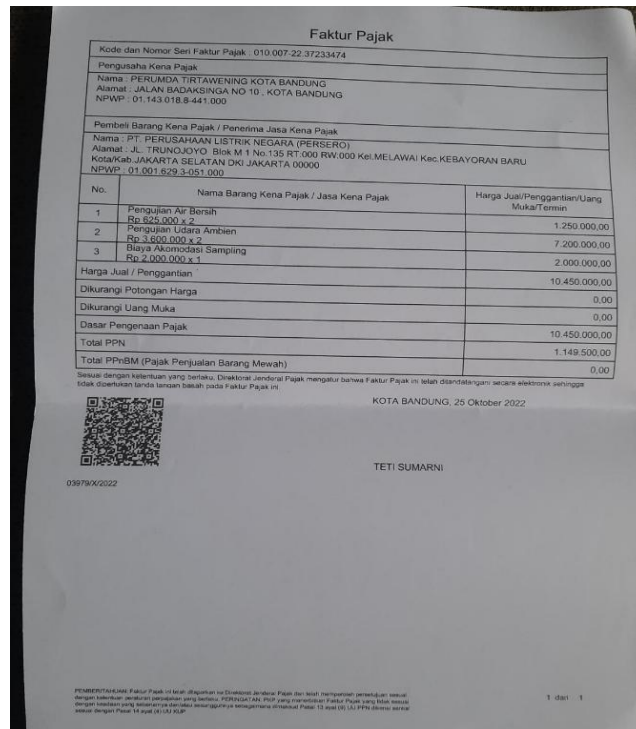


Figure 2. Example of a Tax E-Invoice created
Source: Community Service Documentation (2023).

This logistical coordination required moving physical documents from the Finance Department on the second floor to the service areas on the first floor. This internal distribution chain is a critical link in the service delivery process, as it ensures that the financial documentation reaches the consumer through the appropriate channels. By managing this flow effectively, the LPKL unit maintains a professional and seamless service experience, ensuring that the completion of environmental testing is supported by accurate and timely financial administration.

3.3. Discussion: Practical Insight and Implication

The community service activities conducted at the LPKL Business Unit of Perumda Tirtawening revealed that the digital transition to the e-invoice system had been technically initiated but not yet operationally optimized. During the implementation period, it was observed that the Finance Department managed a high volume of environmental testing transactions, each requiring a corresponding tax invoice. However, the absence of a synchronized timeline between service completion and tax documentation led to a significant administrative lag. Invoices were often generated only upon specific requests from consumers, resulting in a reactive workload that overwhelmed the staff during peak periods. Based on observations during the internship, the e-invoice generation process at LPKL refers to the Director General of Taxes Regulation No. Per-16/PJ/2014.

One of the primary findings was the high frequency of e-invoice revisions, which hindered the efficiency of the tax reporting cycle. Analysis of the data entry process showed that errors often stemmed from outdated consumer information, such as incorrect Tax Identification Numbers (NPWP) or mismatched service descriptions. Since the e-invoice application by the Directorate General of Taxes (DJP) does not allow for direct edits once a factor is uploaded, every error necessitated the creation of a "Replacement Invoice" (*Faktur Pajak Pengganti*). This repetitive cycle not only wasted administrative time but also delayed the revenue recognition process for the company. Furthermore, the study identified a structural bottleneck regarding the "Approval Status" in the DJP application. The LPKL unit operates under the administrative umbrella of the Perumda Tirtawening head office, meaning that every e-invoice uploaded by the unit must be approved by the central tax administrator. Observations showed that many invoices remained in a "Ready to Approve" status for extended periods due to a lack of real-time

communication between the unit and the head office. This delay prevented the immediate printing and distribution of invoices to consumers, which in turn stalled the collection of payments.

Although the application is technically used, its effectiveness is still hindered by several significant obstacles:

Table 1. Identification of Obstacles and Consequences

Main Obstacles	Causes	Consequences for the Organization
Buildup of e-invoice requests	Generation is only based on consumer requests, not automatically when the invoice is issued.	Workload overload and delays in sending documents to consumers.
High frequency of invoice revisions	Inconsistencies in Tax ID (NPWP) data, addresses, or testing details during initial input.	Time wasted on creating replacement invoices and disruption of payment flows.
Approval Status Constraints	Dependence on upload approval from the head office of Perumda Tirtawening.	Invoices are stuck with "Ready to Approve" status, preventing immediate printing for consumers.

Source: Developed for Community Service Report (2023).

To address these systemic issues, the community service team developed a draft for a new Standard Operating Procedure (SOP) specifically tailored for e-invoice management. This procedure introduces a "Pre-Upload Verification" stage, where the finance staff must confirm the validity of the consumer's tax profile against the latest database before entering the data into the system. By implementing this preventive check, the probability of human error is significantly reduced, ensuring that the first submission is accurate and final. Another strategic improvement introduced during the activity was the integration of e-invoice generation with the issuance of the service invoice (*invoice penagihan*). Under the proposed workflow, the tax invoice is prepared simultaneously when the billing document is created, rather than waiting for a consumer's prompt. This proactive approach ensures a steady flow of documentation and prevents the end-of-month accumulation of tax tasks. It also provides consumers with a complete documentation package, enhancing the professionalism of LPKL's financial services.

The implementation of these corrective measures showed promising qualitative results. Through socialization and trial runs of the new workflow, the finance staff demonstrated a better understanding of the importance of data synchronization and proactive tax management. The proposed SOP serves as a foundational document that ensures consistency in performance, regardless of personnel changes. Ultimately, these improvements contribute to a more robust financial administration, ensuring that Perumda Tirtawening remains compliant with national tax regulations while maintaining high standards of service for its environmental testing clients.

4. CONCLUSION

In conclusion, the community service activities at the LPKL Business Unit of Perumda Tirtawening demonstrate that while digital tools like e-Invoice are essential for modern tax compliance, their effectiveness is heavily dependent on well-defined operational procedures. The study identified that the primary causes of administrative inefficiency were the reactive nature of invoice generation and a lack of standardized data validation, which led to frequent revisions and workload imbalances. By introducing a structured workflow and integrating tax documentation with the primary billing process, the institution can significantly reduce human error and ensure that tax invoices are issued accurately and promptly. This improvement not only ensures full compliance with national tax regulations but also enhances the professional image of the organization in providing environmental testing services. Based on these findings, it is highly recommended that the management of Perumda Tirtawening formally adopt and implement the

drafted Standard Operating Procedures (SOP) for e-invoice management across its business units. To ensure sustainability, the organization should conduct periodic technical training for finance staff to keep pace with the latest updates from the Directorate General of Taxes (DJP). Furthermore, strengthening the internal communication channel between the LPKL unit and the head office is crucial to accelerate the "Approval Status" process, thereby preventing documentation bottlenecks. Future initiatives should also explore the possibility of automating data synchronization between the internal accounting software and the e-invoice system to further minimize manual entry risks and maximize overall administrative efficiency.

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