

Revealing The Role Of The App Penindakan As An Accounting Information System In Addressing Excise Supervision Challenges: A Qualitative Study at KPPBC TMP C Sumbawa

Risma Adekantari¹, Sriyatun²

^{1,2}Accounting Study Program, Faculty of Economics and Business, Sumbawa University of Technology

E-mail Address: rismaadekantari4@gmail.com, sriyatun@uts.ac.id

Abstract

This study aims to reveal the role of the App Penindakan as an accounting information system in addressing the challenges of supervising and enforcing illegal Excisable Goods (Barang Kena Cukai/BKC) in an archipelagic region. Employing a qualitative case study design at KPPBC TMP C Sumbawa, data were collected through semi-structured interviews with two key informants from the Enforcement and Investigation Section (Seksi Penindakan dan Penyidikan/P2), direct observation of application usage, and analysis of internal documents including enforcement reports for the period 2023–2025 and the Regulation of the Director General of Customs and Excise Number PER-8/BC/2024. The findings indicate that the App Penindakan has successfully integrated case data, digital evidence documentation, seized asset monitoring, and real-time reporting, thereby accelerating post-enforcement administrative processes. The number of illegal BKC enforcement actions increased from 258 cases in 2023 to a peak of 297 cases in 2024, followed by 274 cases in 2025, with tobacco products and ethyl alcohol-containing beverages constituting the dominant commodities. Nevertheless, system implementation remains constrained by accessibility limitations, as it can only be accessed through intranet networks and VPN, which have been addressed through an operational strategy involving data input by two designated operators. Based on the DeLone and McLean (2003) Model, the App Penindakan demonstrates strengths in information quality and service quality, although system quality remains limited due to

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network infrastructure constraints. Overall, the system has delivered net benefits in the form of enhanced administrative efficiency and data-driven decision-making support, despite achieving only partial success in the archipelagic region.

Keywords: *Accounting Information System, Excise Supervision, DeLone and McLean Model, Archipelagic Region*

INTRODUCTION

Supervision in the area of customs and excise constitutes a strategic pillar in preventing the circulation of illegal Excisable Goods (Barang Kena Cukai/BKC), particularly cigarettes and Ethyl Alcohol-Containing Beverages (Minuman Mengandung Etil Alkohol/MMEA), which have adverse effects on national consumption patterns, public health, and general welfare. Within the operational jurisdiction of the Customs and Excise Supervision and Service Office Type Medium Customs C Sumbawa (KPPBC TMP C Sumbawa), supervisory challenges have grown increasingly complex owing to the geographical characteristics of the Sumbawa region, inadequate transportation infrastructure, and limited accessibility. These conditions heighten the risk of illegal BKC distribution through routes that are difficult to monitor, as conventional (manual) supervision is no longer sufficient.

Customs and excise supervision in Indonesia is governed by Law Number 10 of 1995 on Customs as amended by Law Number 17 of 2006, as well as Law Number 11 of 1995 on Excise as amended by Law Number 39 of 2007. At the operational level, these provisions are reinforced by the Regulation of the Director General of Customs and Excise Number PER-8/BC/2024 on the Procedures for Supervision in the Field of Customs and Excise. This regulation explicitly emphasizes the importance of information exchange, data sharing, and the utilization of information technology-based application systems to support intelligence activities, law enforcement, and supervisory operations. This marks a paradigm shift from manual approaches toward an integrated digital framework.

The advancement of information technology has impelled various public sector organizations, including the Directorate General of Customs and Excise, to implement information systems aimed at enhancing the effectiveness and efficiency of supervisory processes. From the perspective of Accounting Information Systems (AIS), the role of such systems extends beyond the mere recording of financial transactions. More significantly, these systems function as integrated platforms that support strategic

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decision-making, performance monitoring, seized asset tracking, and the optimization of enforcement contributions to state revenue (Rahmatullah et al., 2025). The information system success model proposed by DeLone and McLean, which has been widely applied in the context of financial systems and public services in Indonesia, explains that system quality, information quality, and service quality interact dynamically to jointly influence user satisfaction and overall organizational performance (Rizky et al., 2025). Previous studies have also confirmed that the implementation of information systems in public sector settings is capable of significantly enhancing transparency, information accessibility, and supervisory effectiveness (Dewi & Wulandari, 2023; Wardani & Aripriatiwi, 2025).

Nevertheless, the implementation of information systems at the field level frequently encounters various obstacles, including limitations in technology infrastructure, inadequate data quality, and insufficient human resource competencies (Dewi & Wulandari, 2023; Hendriarto et al., 2023). Within the Directorate General of Customs and Excise, prior research has predominantly concentrated on service and administrative aspects of customs, particularly the implementation of the CEISA 4.0 system within the framework of customs digital transformation. Conversely, studies specifically addressing the role of information systems in customs enforcement and excise supervision activities—especially in archipelagic regions characterized by high geographical and operational challenges such as Sumbawa—remain exceedingly scarce (Rahmatullah et al., 2025; Rizky et al., 2025).

The most conspicuous research gap lies in the scarcity of empirical studies that comprehensively analyze how enforcement applications operate as accounting information systems in supporting excise supervision at the operational office level, such as KPPBC TMP C Sumbawa. While the Regulation of the Director General of Customs and Excise Number PER-8/BC/2024 has explicitly mandated the establishment of an intelligence database and real-time information exchange, no research has thus far comprehensively explored the gap between these regulatory provisions and actual field practice, particularly within the context of the archipelagic geography characterized by its unique characteristics. Furthermore, prior studies have not specifically addressed the mechanisms of case data integration, digital evidence storage, seized asset tracking, and real-time report submission through enforcement applications.

The novelty of this study lies in its focus on examining the App Penindakan as a strategic accounting information system at KPPBC TMP C Sumbawa. This research is among the first to analyze the application from an AIS perspective, employing the DeLone

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and McLean model as the primary framework for assessing its effectiveness in addressing the geographical and operational challenges of an archipelagic region. Accordingly, this study not only fills an existing gap in the literature but also provides highly contextual and practically relevant contributions for operational units in geographically remote areas.

The urgency of this study is further underscored by the tendency for illegal BKC circulation in the Sumbawa region to increase in tandem with the limitations of conventional supervision. Without optimal information system support, the risks of state revenue loss, threats to public health, and disruptions to public order are expected to intensify. It is therefore imperative to strengthen the App Penindakan as an accounting information system to realize more effective, efficient, and data-driven supervision in alignment with the spirit of PER-8/BC/2024.

Based on the aforementioned background, this study aims to analyze the App Penindakan as an accounting information system capable of supporting the enhancement of excise supervision effectiveness at KPPBC TMP C Sumbawa, taking into account the various geographical and operational limitations of the archipelagic region. More specifically, this study will explore the definition and role of the App Penindakan as an AIS in the execution of enforcement and supervisory activities against illegal BKC, and will describe the application workflow for integrating case data, storing digital evidence documentation, monitoring seized assets, and submitting real-time reports.

LITERATURE REVIEW

Accounting Information Systems in Public Sector Enforcement

An Accounting Information System (AIS) is defined as a unified framework within an organization that employs physical and digital resources to transform economic data into financial information for decision-making purposes (Romney & Steinbart, 2018). In the public sector context, AIS extends beyond conventional financial transaction recording to encompass the systematic collection, processing, storage, and reporting of operational data that supports regulatory enforcement, asset management, and revenue collection functions. Hall (2019) emphasizes that modern AIS integrates data from multiple operational modules, including enforcement documentation, asset tracking, compliance monitoring, and financial reporting, thereby creating a centralized information ecosystem that enhances transparency and facilitates cross-functional coordination. The effectiveness of AIS in public sector organizations is determined not solely by its technical



sophistication but also by its alignment with organizational workflows, user competencies, and the broader regulatory environment (Wardani & Aripriatiwi, 2025).

In the domain of customs and excise enforcement, AIS serves dual functions: first, as a recording mechanism for enforcement actions, including case documentation, evidence management, and seized asset tracking; and second, as a decision-support platform that generates real-time information for strategic planning and resource allocation in combating illicit trade (Nurmasita et al., 2025). The implementation of App Penindakan at KPPBC TMP C Sumbawa exemplifies this dual functionality, wherein the application functions as a comprehensive AIS by integrating enforcement data, digital evidence documentation, seized asset monitoring, and real-time reporting within a single platform. This integration aligns with Peraturan Direktur Jenderal Bea dan Cukai Nomor PER-8/BC/2024, which mandates the use of information technology systems to support intelligence gathering, information exchange, and enforcement activities. Rahmatullah et al. (2025) further assert that the success of such integrated platforms in the public sector is contingent upon achieving a balance between technical capabilities and organizational support structures, particularly in geographically challenging environments such as archipelagic regions.

Information Systems for Customs and Excise Enforcement

Information systems for customs and excise enforcement represent specialized technological platforms designed to support the detection, documentation, investigation, and reporting of violations related to excisable goods. These systems facilitate the systematic collection and management of enforcement data, including case details, evidentiary documentation, perpetrator identification, and seizure records, thereby enabling comprehensive monitoring of illicit trade patterns and enforcement performance (Nuraini & Yanti, 2026). The regulatory foundation for such systems in Indonesia is established through Peraturan Direktur Jenderal Bea dan Cukai Nomor PER-8/BC/2024, which explicitly requires the utilization of application-based systems for intelligence data collection, inter-unit information exchange, and operational support in enforcement activities. This regulatory mandate reflects a paradigm shift from conventional manual enforcement approaches toward technology-driven, integrated surveillance and enforcement mechanisms.

The Customs-Excise Information System and Automation (CEISA), developed by the Directorate General of Customs and Excise, serves as the broader digital ecosystem within which specialized applications such as App Penindakan operate. CEISA 4.0

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represents the latest iteration of this ecosystem, designed to achieve full paperless processing, real-time data integration, and enhanced transparency in all customs and excise operations (Rahmi et al., 2025; Samsu, 2026). Within this ecosystem, App Penindakan functions as a specialized module specifically tailored for enforcement and investigation activities, complementing other CEISA subsystems that handle revenue collection, documentation processing, and excise stamp management. Hidayah et al. (2025) emphasize that the digital transformation of customs enforcement through such integrated platforms significantly enhances operational efficiency by automating data recording processes, reducing documentation errors, and enabling rapid information retrieval for decision-making purposes. However, Oktavianil and Baturohmah (2025) note that the implementation of CEISA-based systems at regional offices, particularly those categorized as Type C in geographically challenging areas, faces unique obstacles related to internet infrastructure limitations, centralized system architecture, and varying levels of user technological literacy.

Challenges in Customs Enforcement in Archipelagic Regions

Customs enforcement in archipelagic regions presents distinctive challenges that fundamentally differ from those encountered in mainland or urban operational environments. The geographic characteristics of island territories, including fragmented landmasses separated by water bodies, limited transportation infrastructure, and uneven telecommunications network coverage, create significant obstacles for effective surveillance and enforcement operations against illicit excisable goods (Dewi & Wulandari, 2023). In such contexts, conventional enforcement approaches that rely on intensive physical patrols and manual documentation become increasingly inadequate, necessitating the deployment of technology-driven solutions capable of bridging spatial and infrastructural gaps. The unique challenges of archipelagic enforcement encompass three interrelated dimensions: first, the physical difficulty of accessing remote island locations where illicit trade activities may be concentrated; second, the communication infrastructure limitations that impede real-time data transmission and inter-unit coordination; and third, the human resource constraints that result from limited personnel availability relative to the expansive geographical area requiring surveillance coverage (Hendriarto et al., 2025).

At KPPBC TMP C Sumbawa, these archipelagic challenges are particularly pronounced. The office's jurisdiction spans the entire Sumbawa Island, encompassing four administrative regions with diverse topographical characteristics, including

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mountainous terrain and remote coastal areas. With only nine personnel assigned to the Enforcement and Investigation Section, the unit faces substantial operational strain in maintaining adequate surveillance coverage across this extensive territory. The implementation of App Penindakan as an integrated enforcement information system represents a strategic response to these challenges, enabling the digital consolidation of enforcement data from disparate operational locations and reducing dependency on physical documentation transfers. Nurmasita et al. (2025) observe that in Indonesian customs offices with similar geographic profiles, information systems play a critical role in compensating for personnel shortages by automating documentation processes and enabling remote data access, although their effectiveness remains contingent upon the underlying telecommunications infrastructure. Istambul et al. (2026) further advocate for the development of offline-capable field applications specifically designed for low-connectivity settings, arguing that such technological adaptations are essential for ensuring sustained system functionality in archipelagic and remote operational contexts.

The DeLone and McLean Model of Information Systems Success

The DeLone and McLean Model of Information Systems Success, originally proposed in 1992 and subsequently updated in 2003, represents one of the most widely cited and empirically validated frameworks for evaluating information system effectiveness across diverse organizational contexts. The updated model identifies six interrelated dimensions of information system success: system quality, information quality, service quality, system use (or intention to use), user satisfaction, and net benefits (DeLone & McLean, 2003). System quality refers to the technical characteristics of the system itself, including ease of use, functionality, reliability, flexibility, and system integration. Information quality encompasses the desirable characteristics of system outputs, such as accuracy, timeliness, completeness, relevance, and consistency. Service quality represents the quality of support that system users receive from the information technology department, including responsiveness, technical competence, and empathy. These three quality dimensions mutually interact and jointly determine user satisfaction and system usage levels, which subsequently generate net benefits at the individual, organizational, and societal levels (Rizky et al., 2025).

In the context of public sector information systems evaluation, the DeLone and McLean Model has demonstrated particular utility for assessing systems that serve both operational and accountability functions. Rahmatullah et al. (2025) applied this model to evaluate e-government systems in Indonesia and found that system quality and

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information quality were significant predictors of user satisfaction, while service quality moderated the relationship between system use and net benefits. Their findings emphasize that in public sector settings, where systems are often mandatory rather than voluntary, the measurement of system success must consider not only technical performance metrics but also the organizational and human factors that influence effective system utilization. Suryawijaya (2023) further underscores that the successful implementation of digital transformation initiatives in Indonesian public institutions requires careful attention to all six dimensions of the DeLone and McLean Model, with particular emphasis on service quality and user satisfaction as critical mediators between technical system characteristics and organizational net benefits. The application of this model to evaluate App Penindakan at KPPBC TMP C Sumbawa provides a theoretically rigorous framework for analyzing how the interplay of system quality (accessibility limitations), information quality (real-time enforcement data), and service quality (collaborative input strategies) collectively determines the system's contribution to enforcement effectiveness in an archipelagic setting.

Previous Studies on Customs Information Systems in Indonesia

Empirical research on customs information systems in Indonesia has expanded considerably in recent years, driven by the Directorate General of Customs and Excise's ongoing digital transformation initiatives. The majority of existing studies have focused on the implementation of CEISA 4.0 as the primary digital platform for customs and excise administration. Nurmasita et al. (2025) conducted a comprehensive literature review examining CEISA's role in enhancing financial reporting efficiency within Indonesian customs institutions and concluded that the integrated platform significantly improves data recording accuracy, accelerates reporting processes, and enhances transparency in customs revenue management. Similarly, Rahmi et al. (2025) analyzed the implementation of CEISA 4.0 in facilitating paperless customs services and found substantial improvements in administrative process speed and data integration across customs subsystems, although they also identified challenges related to user adaptation and regulatory harmonization. Nuraini and Yanti (2026) specifically examined CEISA 4.0's impact on customs service performance at KPPBC TMP B Samarinda and reported enhanced efficiency in document processing and inter-unit coordination, while noting that infrastructure limitations in remote areas continued to constrain optimal system utilization.

Despite the growing body of literature on customs digitalization, significant research gaps persist, particularly concerning specialized enforcement applications such

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as App Penindakan. Existing studies have predominantly examined service-oriented and revenue-collection modules of CEISA, while the enforcement dimension, which encompasses investigation documentation, evidence management, and seized asset tracking, remains comparatively underexplored (Hidayah et al., 2025; Oktavianil & Baturohmah, 2025). Furthermore, the majority of empirical investigations have been conducted at Type A and Type B customs offices located in major urban centers, where infrastructure conditions and operational challenges differ markedly from those encountered at Type C offices in archipelagic regions. Samsu (2026) highlighted this geographic bias in a recent literature review, noting that the specific challenges of implementing digital customs systems in remote island territories have received insufficient academic attention. The present study addresses these gaps by providing an in-depth qualitative examination of App Penindakan as an accounting information system specifically within the under-researched context of a Type C customs office operating in the archipelagic environment of Sumbawa.

RESEARCH METHODOLOGY

This study was conducted using a qualitative approach with a case study design (Yin, 2018). The selection of this design was based on the need to examine in depth how the App Penindakan functions as an accounting information system amidst the excise supervisory challenges in the archipelagic region of Sumbawa. This region is characterized by complex geographical conditions, limited infrastructure, and various daily operational constraints. According to Miles and Huberman (2014), case study design is particularly suited for comprehensively understanding the processes of "how" and "why" a system is implemented in the field, while simultaneously capturing users' perspectives in greater depth.

The primary data for this study were obtained through semi-structured interviews with two informants from the Enforcement and Investigation Section (Seksi Penindakan dan Penyidikan/P2) of KPPBC TMP C Sumbawa. These interviews were conducted on 1 April 2026. Informants were selected through purposive sampling, specifically individuals with a minimum of one year of experience using the App Penindakan and who were directly involved in the supervision and enforcement of illegal excisable goods. The relatively small number of informants only two individuals reflects the limited human resources available in the section, compounded by the extensive supervisory territory spanning from West Sumbawa to Bima. Notwithstanding this limitation, both informants were deemed sufficiently representative as key informants. Throughout the interview

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process, data saturation was observed, indicating that no significant new information emerged.

Data analysis followed the interactive analysis approach of Miles and Huberman (2014), consisting of data reduction, data display, and verification. The researcher conducted open coding, subsequently grouped the data into categories, and developed major themes. This process aimed to explore the definition and function of the application as an accounting information system, its workflow, the constraints encountered, and the factors influencing its success according to the DeLone and McLean (2003) model. Interviews were conducted anonymously and in an informal atmosphere to encourage informants to share their perspectives more openly and candidly. All research activities adhered to ethical principles by ensuring the confidentiality of informant identities through the use of anonymous codes.

RESULTS AND DISCUSSION

Research Findings

Overview of the Research Object

The Customs and Excise Supervision and Service Office Type Medium Customs C Sumbawa (KPPBC TMP C Sumbawa) is a vertical unit of the Directorate General of Customs and Excise, operating under the coordination of the Regional Office of the DJBC for Bali, West Nusa Tenggara, and East Nusa Tenggara, as stipulated in the Regulation of the Minister of Finance Number 183/PMK.01/2020. The office is located at Jalan Garuda Number 117, Labuan Sumbawa, Sumbawa Regency, West Nusa Tenggara Province. Its jurisdiction encompasses the entire island of Sumbawa, including West Sumbawa Regency, Sumbawa Regency, Bima City, and Bima Regency.

This archipelagic region presents significant geographical challenges, including hilly topography, limited transportation infrastructure, and difficult inter-regional access. These conditions impede the supervision of illegal Excisable Goods (BKC) circulation, particularly tobacco products and Ethyl Alcohol-Containing Beverages (MMEA). As the core supervisory unit, the Enforcement and Investigation Section (P2) has only nine personnel (including the section head), a number that is relatively limited in relation to the breadth of its area of responsibility.

To address these limitations, the Directorate General of Customs and Excise developed the App Penindakan as an integrated information system platform supporting enforcement activities. The application is designed to facilitate the collection and analysis of case data, digital documentation of evidence, monitoring of seized assets, and real-

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time exchange of information and reports between units. In this regard, the App Penindakan is expected to enhance operational efficiency and supervisory effectiveness, despite the geographical challenges and human resource limitations.

Within the context of the grand theory underlying this study—the Information System Success Model of DeLone and McLean (2003)—the success of the App Penindakan as an Accounting Information System (AIS) can be evaluated along six primary dimensions: system quality, information quality, service quality, use intensity, user satisfaction, and the net benefits accrued to the organization. This model posits that the three quality dimensions (system, information, and service) interact to influence user adoption and satisfaction, ultimately generating positive impacts on organizational performance, including the optimization of illegal BKC enforcement in archipelagic regions such as Sumbawa. The implementation of the App Penindakan at KPPBC TMP C Sumbawa serves as a concrete example of how information technology can provide strategic solutions in support of enforcement duties within environments characterized by accessibility constraints, while also serving as the primary object of analysis in this study.

Implementation of the App Penindakan in the Enforcement and Supervision of Illegal Excisable Goods (BKC)

The App Penindakan is an information system developed by the Directorate General of Customs and Excise to support the structured execution of enforcement and excise supervisory tasks. At KPPBC TMP C Sumbawa, the application is utilized by the Enforcement and Investigation Section (P2) upon the completion of field operations. The enforcement process typically commences with patrol activities, intelligence gathering, goods seizure, and the preparation of enforcement action reports. Subsequently, all data and evidence from the enforcement activities are entered into the App Penindakan for further processing.

According to Informant 1 (a member of Section P2): "After the operation is completed, we return to the office and immediately enter all the data into the Enforcement Application." The data entered encompasses the identity of the perpetrators, the type and quantity of illegal BKC seized (both tobacco products and MMEA), the location of the incident, the characteristics of the seized goods, and the estimated economic value of those goods. In addition to textual data, the application also enables the uploading of photographs, videos, and other supporting documents. Through this system, the recording process becomes faster and more structured, thereby reducing the time previously required for preparing manual reports. The implementation of the App

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Penindakan in the field is consistent with the provisions of the Regulation of the Director General of Customs and Excise Number PER-8/BC/2024, which underscores the importance of utilizing application systems for intelligence data collection, information exchange, and support for supervisory activities. The application facilitates the digitalization of all enforcement documents, ensuring that all information is stored within a single integrated platform and can be accessed in real-time by relevant units.

Evaluated through the lens of the DeLone and McLean (2003) Information System Success Model, as the grand theory of this study, the App Penindakan demonstrates commendable system quality, as evidenced by the ease of data input and cross-module integration. Information quality has also improved, given that data are available accurately, completely, and in real-time, thereby supporting evidence-based decision-making. Meanwhile, service quality is reflected in the system's capacity to provide rapid and responsive access between working units. Interview findings indicate an improvement in user satisfaction and net benefits, manifested in the acceleration of administrative processes and enhanced supervisory effectiveness in the geographically constrained archipelagic region.

These findings are consistent with the views of Nurmasita et al. (2025), who assert that integrated information system platforms can improve operational efficiency through the automation of recording and data management. Overall, the implementation of the App Penindakan has made a tangible contribution to addressing the conventional supervisory challenges at KPPBC TMP C Sumbawa, although room for improvement remains with respect to infrastructure and field user training.

Workflow of the App Penindakan

The operational workflow of the App Penindakan at KPPBC TMP C Sumbawa commences upon the completion of enforcement field operations. Officers from the Enforcement and Investigation Section (P2) first receive the Violation Report (Laporan Pelanggaran/LP) and the Task Implementation Report (Laporan Pelaksanaan Tugas/LPT) from the enforcement team. The LP contains critical information such as the Enforcement Evidence Letter (Surat Bukti Penindakan/SBP), the Enforcement Results Determination Sheet (Lembar Penentuan Hasil Penindakan/LPHP), a description of the incident, alleged violations, modus operandi, applicable articles, locus delicti, tempus delicti, perpetrator identity, and details of the Enforcement Goods (Barang Hasil Penindakan/BHP). The LPT, meanwhile, contains comprehensive documentation of the



assignment, operational area, activity duration, personnel identity, activity description, enforcement results, and follow-up plans.

Upon receipt of the LP and LPT documents, the operator enters data into the App Penindakan in a sequential and structured manner. The data entered includes the source of information (Intelligence Report/Nota Hasil Intelijen or other information), the number and date of the Order Letter (Surat Perintah/PRIN), the enforcement category (land or water-based), the type of transport vehicle, the name of the supplier, the name of the enforcement team, the type of case, the estimated value of goods, the potential excise underpayment, enforcement costs, seizure status, the number of the Seizure Minutes (Berita Acara Tegahan/BA Tegah), and the level of the perpetrator's resistance. Operators also enter specific seizure criteria, such as coordination with other law enforcement agencies or identification of high-risk locations. Once all data have been successfully entered, the operator clicks the save button, whereupon the system automatically performs analysis, integrates the data, and generates real-time information outputs accessible to the relevant units.

This systematic input workflow renders the App Penindakan an effective accounting information system for supporting the recording, management, and reporting of enforcement results. As evaluated through the DeLone and McLean (2003) Information System Success Model, the application demonstrates strong system quality through a user-friendly interface and cross-module data integration capabilities. Information quality is reflected in the accuracy, completeness, and real-time availability of data. Service quality, in turn, is evidenced by the system's capacity to support rapid decision-making despite the limited number of P2 Section personnel.

These findings align with Nurmasita et al. (2025), who contend that integrated information platforms can improve operational efficiency and data accuracy through automation. Overall, the implementation of the App Penindakan workflow not only simplifies post-enforcement administrative processes but also significantly enhances the effectiveness of supervision over illegal BKC circulation in the Sumbawa region, which is marked by geographical challenges and human resource limitations.

Enforcement Data: Number of Actions and Goods Value, 2023–2025

The App Penindakan enables real-time and integrated monitoring of every enforcement activity conducted by KPPBC TMP C Sumbawa. Based on data directly retrieved from the system as of 14 April 2026, the number of illegal BKC enforcement



actions during the period 2023–2025 exhibited a fluctuating trend with an overall increasing tendency.

Table 1. Number of Illegal BKC Enforcement Actions at KPPBC TMP C Sumbawa, 2023–2025

Year	Number of Enforcement Actions	Dominant Commodity Type	Remarks
2023	258	Tobacco Products and MMEA	Stable
2024	297	Tobacco Products	Peak (Highest)
2025	274	Tobacco Products and Local MMEA	Moderate Decline

Source: App Penindakan DJBC (accessed 14 April 2026)

The table illustrates a 15.1% increase in enforcement actions from 2023 to 2024 (from 258 to 297 cases), followed by a moderate decline of 7.7% in 2025 (to 274 cases). Despite this decrease, the 2025 enforcement figure remains higher than that of 2023. The most frequently targeted commodity was tobacco products (illegal cigarettes), followed by Ethyl Alcohol-Containing Beverages (MMEA). The Enforcement Goods (BHP) recorded in the system serve as an important basis for estimating potential state revenue and the contribution of enforcement activities to national development.

As evaluated through the DeLone and McLean (2003) Information System Success Model, the availability of structured and real-time data within the App Penindakan has enhanced system quality (through the facilitation of integrated monitoring) and information quality (accurate, complete, and immediately accessible data). This, in turn, supports improvements in user satisfaction and net benefits, including accelerated reporting, the strengthening of data-driven decision-making, and the optimization of supervision in the archipelagic region. These findings are consistent with Nurmasita et al. (2025), who assert that integrated platforms within the Directorate General of Customs and Excise can enhance operational efficiency and data accuracy through the automation of recording processes.

The increase in enforcement actions during the 2023–2025 period demonstrates that the App Penindakan not only reduces dependence on intensive field operations but also strengthens law enforcement effectiveness in the Sumbawa region, which faces



geographical challenges and human resource constraints. Nonetheless, more in-depth evaluation is warranted to continue maximizing the utilization of the system, so that its contribution to excise supervision and national development can be further optimized.

Constraints in the Implementation of the App Penindakan at KPPBC TMP C Sumbawa

Despite the positive contributions of the App Penindakan to the enforcement and supervision of illegal Excisable Goods (BKC), its implementation at KPPBC TMP C Sumbawa continues to face significant technical constraints, particularly with regard to system accessibility. The application is intranet-based and can only be accessed via the internal network of the Directorate General of Customs and Excise using a Virtual Private Network (VPN). This condition renders application usage highly dependent on the availability and stability of the official network connection.

Interview findings reveal that restricted access constitutes one of the primary obstacles in the field. According to Informant 2 (a member of Section P2): "After conducting operations in remote areas, we have to return to a location with a stable signal to access the VPN and enter the data." VPN disruptions or weak signals frequently compel officers to delay data entry until they return to the office or to a location with adequate network coverage. This challenge is particularly pertinent given the characteristics of the Sumbawa Archipelago region, which is characterized by uneven and often unreliable telecommunications infrastructure.

From the perspective of the DeLone and McLean (2003) Information System Success Model, these constraints reflect weaknesses in system quality, particularly with respect to accessibility and operational flexibility in the field. Service quality is also affected by the reliance on VPN infrastructure, which is not consistently stable. These limitations have the potential to reduce user satisfaction and diminish the net benefits that should be derived from the system, such as accelerated reporting and data-driven decision-making.

These findings are consistent with Nurmasita et al. (2025), who assert that technology infrastructure remains a primary constraint in optimizing information systems within the customs and excise environment. Similarly, Dewi and Wulandari (2023) emphasize that inadequate technology infrastructure frequently constitutes a critical factor impeding the successful implementation of information systems in the public sector, particularly in regions with geographical challenges such as archipelagic areas. Delays in data entry resulting from access constraints not only affect the smooth flow of

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administrative processes but also potentially degrade data quality and impede overall decision-making. Accordingly, it is necessary to develop more flexible features, such as offline data entry capabilities that can synchronize automatically when connectivity is restored. This measure is expected to improve the accessibility and effectiveness of the App Penindakan in archipelagic regions such as Sumbawa.

Strategies for Addressing Implementation Constraints of the App Penindakan at KPPBC TMP C Sumbawa

To overcome the limited accessibility of the App Penindakan, which can only be accessed via intranet and Virtual Private Network (VPN) KPPBC TMP C Sumbawa has adopted an operational strategy based on the optimization of human resources. The primary strategy employed involves collaborative data entry by two operators following the completion of field enforcement activities.

According to Informant 1 (a member of the Enforcement and Investigation Section): "Usually after returning from the field, we work in pairs. One person reads out the contents of the LP and LPT, while the other types directly into the application." This collaborative working pattern enables a data entry process that previously required up to a full working day to be completed more rapidly and efficiently. In addition, direct peer verification between officers also helps minimize the risk of data entry errors.

Evaluated through the DeLone and McLean (2003) Information System Success Model, this paired working strategy contributes to improvements in service quality by creating a more supportive operational environment. Although system quality and technology infrastructure remain constrained, this approach has successfully enhanced user satisfaction and the net benefits of the application through the optimal utilization of available human resources.

These findings are consistent with Nurmasita et al. (2025), who note that within the customs and excise environment, various technology infrastructure limitations are frequently addressed through the development of operational procedures and teamwork. Similarly, Dewi and Wulandari (2023) emphasize that human factors, organizational strategies, and adaptation to infrastructure limitations are critical elements that determine the success of information system implementation in the public sector.

While the collaborative data entry strategy has proven effective in accelerating post-enforcement administrative processes, this approach is short-term in nature and highly dependent on personnel coordination and availability. Therefore, long-term strategic measures are required, including the development of offline data input features

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capable of automatic synchronization when connectivity is restored, as well as the optimization of mobile access in adherence to data security standards. Through these measures, the effectiveness of the App Penindakan in archipelagic regions such as Sumbawa can be incrementally and more sustainably enhanced (Istambul et al., 2026; Suryawijaya, 2023).

Success Factors in the Implementation of the App Penindakan Based on the DeLone and McLean (2003) Model

The implementation of the App Penindakan at KPPBC TMP C Sumbawa reveals several success factors that can be analyzed using the DeLone and McLean (2003) Information System Success Model. In terms of system quality, the App Penindakan is assessed as commendable, given its capacity to provide an integrated platform facilitating case data processing, digital evidence documentation, and seized asset tracking. The system has significantly reduced reliance on manual recording, which is prone to errors, although accessibility limitations persist due to the requirement for intranet and VPN connectivity.

In the dimension of information quality, the application demonstrates high performance. The data produced are accurate, structured, complete, and accessible in real-time by relevant units for monitoring and reporting purposes. Service quality, meanwhile, is reflected in organizational adaptation through human-centered operational strategies, such as the collaborative data entry approach. According to Informant 1 (a member of Section P2): "With two people entering data, the work is faster and the results are more accurate." This strategy evidences efforts to enhance efficiency and accuracy in system utilization amidst existing limitations.

Based on the DeLone and McLean (2003) Information System Success Model, these findings suggest that the success of the App Penindakan's implementation is influenced by the interplay among system quality, information quality, and service quality, which collectively shape the level of system use and user satisfaction. High system quality facilitates ease of use, while high information quality enhances user confidence in the data generated. The operational strategy of collaborative data entry, in turn, constitutes a form of service support capable of compensating for technical limitations, thereby maintaining the effectiveness of system usage.

The net benefits derived from the system are evidenced by the acceleration of post-enforcement administrative processes, improvements in data accuracy, and faster evidence-based decision-making. This demonstrates that the system not only impacts

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operational efficiency but also the quality of supervision over illegal BKC circulation in the archipelagic region.

These findings align with Nurmasita et al. (2025), who contend that the success of information systems within the customs and excise environment is largely determined by the balance between technical quality and organizational support. Similarly, Dewi and Wulandari (2023) emphasize that technology infrastructure, human factors, and operational strategies are mutually influencing critical components that determine the effectiveness of information system implementation in the public sector. Overall, the implementation of the App Penindakan at KPPBC TMP C Sumbawa can be considered moderately successful; however, its success remains partial due to accessibility and infrastructure limitations. More comprehensive improvements are therefore required to enable the system to be utilized optimally and sustainably in the archipelagic region.

CONCLUSION

This study demonstrates that the App Penindakan constitutes a critically important information system in supporting the handling of illegal Excisable Goods (BKC) at KPPBC TMP C Sumbawa. The system has successfully integrated case data, evidence documentation, seized asset monitoring, and real-time reporting to enhance post-enforcement administration. According to DeLone and McLean (2003), the App Penindakan exhibits improvements in information quality and service quality, particularly through human-centered operational strategies including data entry by two designated operators. However, system quality continues to be affected by accessibility issues arising from intranet and VPN network dependencies, such that data processing cannot always be performed in real-time. Overall, the system has delivered net benefits in the form of enhanced administrative efficiency and support for data-driven decision-making, although its outcomes remain partial and are adversely affected by infrastructure conditions in the archipelagic region.

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