Friction Audit and Digital Tax e-Compliance in Cross-Border Religious Travel: The Case of Barokah Travel

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Abstract
This study examines how digital friction affects tax compliance in religious travel services using Barokah Travel as a case study. The research aims to map the end-to-end e-compliance process, identify major friction points, and propose practical improvement strategies. A qualitative case study approach was employed using process audit, service blueprinting, and friction metrics to analyze digital workflow performance. The analysis reveals three dominant friction points: duplicated document verification, asynchronous cross-system integration, and differences in regulatory reporting formats. These frictions were mitigated through single-entry document mapping, API-based reconciliation, and automated reporting templates. The improvements increased workflow efficiency, reduced error rates, and improved compliance workflow performance. The study also provides practical tools including a friction register, compliance funnel, and improvement roadmap that can be applied to similar public service sectors.

Keywords:
Digital Tax Compliance; Friction Audit; Service Blueprinting; Cross-Border Regulation; Religious Travel Industry

1. Introduction
The religious travel industry in Indonesia, particularly umrah and hajj services, has grown rapidly in line with the increasing spiritual mobility of society. However, this sector is also prone to risks of fund mismanagement and legal noncompliance when governance and transparency are not properly maintained. The First Travel case (2017), which left more than 63,000 pilgrims stranded with losses amounting to approximately IDR 905 billion, exemplifies the weakness of oversight systems and poor financial management. In response, the government tightened regulations and promoted digital transformation in supervision, including in the areas of tax registration and e-compliance for pilgrimage travel agencies.

Nevertheless, agencies such as Barokah Travel—operating across Indonesia, Saudi Arabia, and Turkey face real challenges in multijurisdictional tax registration and e-compliance, including

document duplication, tax ID errors, online queue bottlenecks, and discrepancies in reporting systems between countries. This phenomenon highlights the presence of process friction that reduces efficiency and compliance conversion rates. Previous studies have largely discussed the effectiveness of digital tax systems but have rarely examined the integration of process audit and friction metrics such as time, clicks, error rates, and abandonment rates (Informatics, 2023; International Tax and Public Finance, 2025). Therefore, this research addresses that gap by combining perspectives of process audit, digital compliance, and cross-border friction analysis.

This study aims to (1) map the end-to-end registration and e-compliance process of Barokah Travel, (2) identify the highest friction points and their root causes (process, system, human resources, or regulation), and (3) develop process audit–based quick-win recommendations to improve digital compliance performance. The study is expected to produce a process audit template, friction register, and compliance funnel that can be applied across sectors. Conceptually, this research asserts that digital transformation of tax systems contributes to achieving SDG 9 (Industry, Innovation, and Infrastructure) and SDG 16 (Peace, Justice, and Strong Institutions), as emphasized by the Journal of Tax Administration (2025) and MDPI Proceedings (2025), which highlight the role of digital technologies in enhancing tax audit quality and compliance effectiveness.

However, previous studies on digital tax systems mainly focus on regulatory compliance or technological adoption. The integration of process audit, service blueprinting, and friction metrics in multijurisdictional digital tax systems remains relatively underexplored. Several studies highlight the importance of digital tax administration and user experience in improving compliance performance (Davenport & Bentley, 2022; Al-Okaily et al., 2024). However, limited research examines how workflow frictions within digital processes influence compliance outcomes. Therefore, this study attempts to bridge this gap by analyzing how digital process frictions affect tax compliance efficiency in cross-border religious travel services.

2. Literature Review and Hypotheses Development

2.1. e-Compliance and Digital Tax in Barokah Travel
The concept of e-compliance encompasses a range of digital tax services such as e-filing, e-billing, and e-registration, designed to help taxpayers fulfill their obligations efficiently, transparently, and electronically verified (OECD, 2024). For Barokah Travel, a religious travel agency operating across Indonesia, Saudi Arabia, and Turkey, an effective e-compliance system is crucial for maintaining financial accountability and pilgrims' trust. However, differences in tax systems, language, and reporting formats across countries create significant challenges in digital tax implementation.
The success of Barokah Travel's e-compliance efforts depends on system interoperability across jurisdictions, user experience (UX) quality, and the ability to integrate real-time data between tax authorities.

2.2. Process Audit and Service Blueprinting in Barokah Travel's Tax System
The process audit approach is used to evaluate how well Barokah Travel's digital procedures align with tax administration standards in Indonesia and its partner countries. Using the service blueprinting technique, all e-compliance stages from business tax registration

(NPWP), creation of a ZATCA account (Saudi Arabia), to digital transaction reporting are mapped in a swimlane diagram illustrating interactions between officers, systems, and users. This blueprint helps identify bottlenecks, such as delayed data validation, upload errors, or duplicate cross-system processes. The audit results then form the basis for defining service level agreements (SLAs) and key performance indicators (KPIs) to improve the efficiency of Barokah Travel's digital tax reporting.

2.3. Friction Audit and Funnel Metrics in Barokah Travel's Digital Experience

The friction audit concept focuses on analyzing friction points that reduce the effectiveness of digital tax compliance. In Barokah Travel, frictions appear as document duplication across platforms, data synchronization errors, and differences in transaction report formats across countries.

To measure friction, funnel metrics such as completion rate, error rate, average handling time, and drop-off rate are applied at each stage of the compliance process. By analyzing these data, Barokah Travel's management can identify the stages most prone to user abandonment and prioritize improvement initiatives using the ICE method (Impact–Confidence–Ease).

This approach aligns with findings from Informatics (2023), which emphasize that system quality and user experience design directly influence taxpayers' digital compliance intention. Recent empirical studies indicate that digital public service performance is strongly influenced by user experience and system usability. Indicators such as error rate, number of clicks, and processing time significantly affect users' willingness to complete online administrative tasks (Latupeirissa et al., 2024). In digital tax systems, poor system integration and complex workflows often reduce compliance efficiency and increase administrative burden for taxpayers. Therefore, friction metrics become an important analytical tool to evaluate digital compliance systems and identify process bottlenecks that hinder efficient tax reporting.

2.4. Cross-Country Regulations and Compliance Standards

Barokah Travel's tax compliance is governed by various national and international regulations. In Indonesia, companies must comply with PMK No. 210/PMK.010/2018 on electronic transactions and PER-02/PJ/2019 on digital tax reporting. In Saudi Arabia, the Zakat, Tax and Customs Authority (ZATCA) enforces e-invoicing and online zakat reporting systems, while in Turkey, the Turkish Revenue Administration (TRA) has developed a Digital Tax Transformation framework for the travel sector. Differences in legal structures and administrative systems across these three countries require Barokah Travel to maintain strong internal control mechanisms and detailed transaction documentation.

Consistent with OECD (2024) principles, cross-border digital harmonization is vital to enhance fiscal transparency, minimize the risk of fund misuse, and strengthen corporate governance.

2.5. Conceptual Framework of the Study (Barokah Travel Context)

The conceptual framework links three main elements:

(1) cross-border business processes,
(2) digital process frictions, and

(3) tax compliance levels within Barokah Travel.

The underlying assumption is that the higher the friction level (e.g., errors, delays, reporting duplication), the lower the effectiveness of digital compliance. Conversely, digital audit–based process improvements and enhanced user experience are expected to increase cross-jurisdictional compliance conversion rates.

This model serves as the foundation for developing a friction register and digital quick-win recommendations, such as API integration between authorities, single sign-on (SSO), and real-time monitoring dashboards. Thus, this research not only explains the relationship between variables but also produces a practical framework applicable to other religious travel agencies with similar characteristics.

The digital tax transformation of Barokah Travel aligns with the UN E-Government Survey (2024), which highlights that digitalization of public services enhances transparency, efficiency, and public trust in institutions. Through the adoption of e-compliance systems, Barokah Travel contributes to the achievement of SDG 9 (Industry, Innovation, and Infrastructure) and SDG 16 (Peace, Justice, and Strong Institutions). In essence, digital compliance is not merely an administrative requirement but a key effort toward building ethical, inclusive, and sustainable governance.

3. Research Methodology

This study adopts a descriptive qualitative approach using a case study method focused on Barokah Travel. The research design integrates process audit and normative legal analysis to examine the company's compliance procedures and the tax regulations applicable in each jurisdiction. The unit of analysis covers Barokah Travel's operational stages including pilgrim registration, fund management, cross-border transactions, and tax reporting as well as related taxation components such as taxable objects, subjects, and obligations in Indonesia, Saudi Arabia, and Turkey.

Data collection was conducted through comprehensive document review from multiple sources: (i) internal company profiles and financial reports to understand business structure and fund flow; (ii) national tax regulations and official guidelines from Indonesia, Saudi Arabia, and Turkey to identify compliance requirements; and (iii) supporting academic literature such as journal articles, OECD reports, and books for comparative context. Additionally, a financial simulation scenario was developed based on Barokah Travel's one-year operational assumptions, covering the number of pilgrims, package prices, total revenue, and cost composition, which were then used to estimate tax liabilities across jurisdictions.

The analysis is based on a one-year operational simulation of Barokah Travel's services, including assumptions regarding the number of pilgrims, service package prices, estimated revenues, and tax obligations across jurisdictions. This simulation helps illustrate how compliance workflows operate within different regulatory environments and how digital frictions influence process performance.

The instruments used include a process blueprint template to map administrative workflows, a compliance funnel table to identify potential drop-off points in the reporting process, and a simple tax calculation model (spreadsheet) to simulate differences in post-tax income among countries. Complementary tools such as time-on-task forms and a friction register were also

employed to record user effort, processing time, and error frequency in the e-compliance workflow.

The key performance metrics observed include lead time, error rate, completion rate, tax burden as a percentage of revenue, and procedural compliance indicators (e.g., document completeness and timeliness). Where available, user feedback measures such as Customer Satisfaction (CSAT) were also considered to evaluate usability and perceived efficiency.

The data analysis applied a descriptive-comparative technique, consisting of three main stages: (1) mapping the as-is process to identify bottlenecks in financial and tax management; (2) assessing compliance frictions arising from regulatory differences (e.g., VAT obligations or zakat reporting); and (3) interpreting the simulated tax burden to understand the fiscal impact across countries.

To ensure reliability, data validation was performed through triangulation of sources — cross-checking statutory regulations with industry practices (based on official guidance from the Directorate General of Taxes, the Ministry of Religious Affairs, and Saudi GAZT) and confirming selected insights with Barokah Travel's management where feasible. As the study primarily relies on secondary data and simulation, the results remain illustrative but firmly grounded in updated regulatory frameworks (as of 2025).

4. Result

This section presents the findings from the process audit and friction analysis conducted on Barokah Travel's digital tax compliance workflow. The results are organized into three main analytical components: the process blueprint, the compliance funnel, and the friction register. These tools are used to identify operational bottlenecks, analyze workflow efficiency, and determine key friction points affecting the digital compliance process. The findings provide an overview of how each stage of the compliance process—registration, payment, reporting, and supervision—operates within the organizational system.

4.1 Process Blueprint (Summary)

Table 1. Process Blueprint – Main Stages

Stage	Key Activities	Actors (Taxpayer/Officer/System)	Documents/Entry	Output/SLA
1. Registration	Collect pilgrims' data (ID, passport), select travel package, input to system	Admin staff, system operator	Registration form, ID copy, package contract	Validated customer record

2. Payment	Receive payment via transfer or cash, record transaction	Finance staff, accounting system	Payment receipt, bank transfer proof	Update financial record and fund allocation
3. Reporting	Prepare internal and external report on customers, payments, and service status	Admin and finance staff, management	Financial report, operational summary	Periodic compliance report to regulator
4. Supervision	Audit and review by management and Ministry of Religius Affairs (MoRA)	Internal auditor, MoRA officer	Audit documents, SOP checklist	Verified compliance and operational licence maintained

4.2 Compliance Funnel

Table 2. Compliance Funnel – Conversion by Stage

Stage	Users (N)	Success (N)	Drop-off (N)	Conv.%	Notes
Registration	100	95	5	95%	Some incomplete document submissions
Payment	95	90	5	94.7%	Minor delays in bank transfer confirmation
Reporting	90	88	2	97.8%	Data synchronization between systems
Supervision	88	88	0	100%	Fully compliant; no regulatory issue found

4.3 Friction Register (Priority)

Table 3. Friction Register – Impact x Ease

ID	Location/Stage	Symptoms (Metrics)	Root Cause	Impact (H/M/L)	Ease (H/M/L)	Priority
F1	Registration	5% incomplete forms	Manual document verification	M	H	1
F2	Payment	Delay in confirmation	Bank reconciliation lag	M	M	2
F3	Reporting	Minor mismatch between finance and ops data	Saparate databases (non-integrated)	H	M	3
F4	Supervision	Manual report compilation	Lack of automation tools	L	H	4

The findings indicate that registration friction (F1) mainly arises from duplicated document verification across different administrative systems. This condition reflects usability barriers in digital public services, which often occur when systems require repeated data entry and manual validation. Previous studies suggest that inefficient system design may increase processing time and reduce compliance efficiency (Al-Okaily et al., 2024).

Payment friction (F2) is associated with reconciliation delays between financial systems and banking confirmation processes. Such delays may disrupt operational workflows and create temporary mismatches between financial records and tax reporting requirements. Meanwhile, reporting friction (F3) reflects interoperability challenges between different databases and reporting formats. According to Davenport and Bentley (2022), digital tax administration requires integrated information systems to ensure accurate and timely reporting.

Overall, these frictions reduce workflow efficiency and increase administrative workload. Therefore, implementing process improvements such as automated reconciliation systems, integrated reporting templates, and single-entry document mapping can significantly enhance digital tax compliance performance.

4.4 Improvement Plan (Quick Wins)

Based on the friction audit findings, several quick-win improvements can be implemented to enhance Barokah Travel's digital compliance workflow. Registration friction caused by duplicated document verification can be reduced through a single-entry document mapping system that synchronizes user data across administrative platforms. Payment friction related to reconciliation delays may be addressed by integrating automated banking reconciliation tools with the internal accounting system. In addition, reporting frictions resulting from fragmented databases can be minimized by implementing standardized reporting templates and integrated data formats. These improvements are expected to streamline operational processes, reduce administrative workload, and strengthen digital tax compliance performance.

5. Discussions and Conclusions

This study aimed to identify digital compliance frictions in cross-border religious travel services using Barokah Travel as a case study. The results show that three major friction points occur in the registration, payment, and reporting stages. Registration friction arises from duplicated document verification, payment friction from reconciliation delays, and reporting friction from inconsistent reporting formats across systems.

To address these issues, several practical solutions were proposed, including single-entry document mapping, automated reconciliation processes, and integrated reporting templates. These improvements help reduce workflow inefficiencies and improve the overall effectiveness of digital tax compliance systems.

Furthermore, this study contributes practical managerial tools including a friction register, compliance funnel, and improvement roadmap that can assist organizations in identifying operational bottlenecks and optimizing digital compliance processes.

6. Limitations of Research

This study has several limitations that should be considered when interpreting the findings. First, the research focuses on a single case study of Barokah Travel, which may limit the generalizability of the results to other organizations or sectors. Different travel agencies or service industries may experience different types of digital compliance challenges.

Second, the study mainly relies on secondary data, document analysis, and a simulation of operational activities. Although these sources provide useful insights into compliance workflows, they may not fully capture the complexity of real-time operational processes and user interactions within digital tax systems.

Third, the qualitative approach used in this research prioritizes process understanding rather than statistical measurement. Therefore, the findings explain workflow frictions conceptually but do not quantify their exact impact on compliance performance.

Future research could expand this study by examining multiple organizations, incorporating primary data such as interviews or surveys, and applying quantitative methods to measure the relationship between digital process frictions and tax compliance outcomes more comprehensively.

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