

# Optimizing Compliance: Comparative Study of Data Laws and Privacy Frameworks Extended Abstract

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**Abstract.** *The study explores challenges in complying with multiple data privacy laws with a Systematic Literature Review (SLR), assessing similarities and differences among them. After validation through a survey, findings highlighted a lack of theoretical and practical knowledge about Brazil's General Data Protection Law (LGPD). Using Framework Analysis, we proposed a tool by correlating key legislative points and providing insights into data privacy compliance.*

## 1. Introduction

The increase in both digitization and personal data shared intensifies privacy violation risks, making data protection a global issue. To comply with multiple laws, companies have to consider local and extraterritorial scope [Hornuf et al. 2023]. However, there is a lack of consolidated guidelines on how to treat international data aligned with different laws [Sangaroonsilp et al. 2023]. Developers also face challenges with technical aspects of laws, hindering unified secure practices [Canedo et al. 2022].

This work summarizes the assignment made for JISA 2025 [Rocha and Canedo 2025], which compares data laws, identifies key challenges for compliance, and proposes a practical guide.

## 2. Research Design

SLR focusing on two key points was conducted: similarities and differences between five laws — LGPD, GDPR, ADPPA, Australian Privacy Act, and CCPA — and the challenges and techniques used by organizations and developers. Framework Analysis mapped techniques to clarify the laws' convergences and divergences. A survey validated the challenges in the Brazilian context. The results were categorized using Grounded Theory, proposing an interactive guide showing how frameworks relate to the laws. The guide was verified and refined based on the survey. Additional research details are available on Zenodo [Rocha and Canedo 2024].

## 3. Results and Discussion

Findings show that the GDPR provides the best personal data protection coverage, followed by the LGPD [Lorenzon 2021]. U.S. laws, like the CCPA, emphasize profit over privacy [Anwar et al. 2018], while the Australian Privacy Act, being older, has a limited scope. The main challenge is the understanding of the laws: from 122 responses, over 50% struggle with the theory, and almost 43% don't know how to apply it technically.

## 4. Proposed Guide

The proposed 5L2FGuide, with open-source code on GitHub, assists developers and organizations with compliance across multiple data laws. It features gamified and interactive comparisons between laws, their alignment with frameworks, and mapped challenges and techniques. Survey feedback praised its simplification of laws and clarity through references. Final improvements included a glossary and a Portuguese version.

## 5. Conclusion

The SLR showed that GDPR and LGPD are the most comprehensive, while ADPPA and the Australian Act offer less coverage. Developers' main difficulty is the lack of knowledge. To address this, we proposed a guide comparing laws, frameworks, and mitigation techniques. Future work may include case studies and expanding the legal scope.

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