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**SCHOOL OF
PUBLIC POLICY**

Issue

Brief

Series



“Navigating India’s Data Sovereignty”

Issue Brief: IB-2026-54

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Cite this report as: Raj, K. (2026) “Navigating India’s Data Sovereignty” [online]. Available at: <https://www.kspp.edu.in/issue-brief/navigating-indias-data-sovereignty>

Navigating India's Data Sovereignty

Introduction

India is emerging as a digital power which has placed its data at the middle of both its engagement at international level and its vision of domestic governance. India has one of the world's largest populations, which produce a huge amount of agriculture, health, demographic and mobility data. As a result of this, India has an extremely big pool of information that is very important for worldwide scientific collaboration. At the same time the global scientific community is rapidly heading towards an open science paradigm, allowing for the unrestricted cross-border access of datasets, research outputs and scientific methods.

However, simultaneously India is constructing a strong argument around data sovereignty, saying that the data which is created in India must remain subject to Indian jurisdiction, ethical oversight and regulation (Agama Law Associates, 2025). The root cause of this concern is that there is a fear of data exploitation by foreign corporations, geopolitical misuse, and the threat that unrestricted data flows may diminish the control of India over critical areas like health, security and digital infrastructure. The main issue of India present digital diplomacy is the imbalance between these two imperatives that is sovereign authority and scientific openness. This policy brief explores how India will be able to manage this concern in such a way that could protect national interest while supporting active participation in the international scientific network.

Policy Rationale

The requirement of an effective policy strategy arises from a quick growth of global standards on scientific data sharing and digital cooperation. From the last couple of years, these

foreign organizations have actively supported openness. The recommendations given by UNESCO on open science, advises nations to increase the availability of scientific data to the global community and this is encouraged by nearly all member states including India (UNESCO, 2021). Such expectations recur in climate accords, WHO pandemic frameworks, agricultural knowledge sharing networks and international accords on artificial intelligence. India cannot afford to be indifferent in such a backdrop, especially when several of these areas are integral to its own developmental and strategic interests (Basu, 2024).

Meanwhile, India's domestic policy thinking has moved decisively toward sovereignty-based data governance. Drafts of data protection laws in our country, discussions on non-personal data and the language used in other policy documents stand testament to repeated stress on the nation's control over data flows. The concept that "data is a strategic resource" (Wadhvani Foundation, 2021) has been firmly established among policy-makers in India today. Without a clear linkage between domestic priorities and external commitments, there is the danger of Indian signalling being inconsistent and, thereby, its negotiating leverage in world forums getting weakened.

The global digital order is fragmenting too with competing models of regulation emerging regionally. The EU prefers rights based and regulation heavy approach, the United States advocates for open flows to promote innovation and technology leadership, while China promotes a strict cyber sovereignty model that prioritises control and localisation (Arroyo et al., 2023). India is constantly looking for a neutral ground, blending aspects of each model while upholding its strategic autonomy. Therefore, to preserve uniformity in India's diplomatic interactions and to establish India as a reliable and considerate participant in international rule-making, a clear policy position on open science and data sovereignty is crucial.

Policy History

Over the past ten years, India's perspective on data sovereignty and open science has changed through a sequence of policy, legal and diplomatic shifts. Moreover, a major turning point was 2017 Supreme Court's Puttaswamy judgement (Supreme Court Observer, n.d), which noted the right to privacy as a fundamental right, asked the state to create an effective data protection system and raised personal data as a constitutional concern. After this judgement there was a spark in the policy process that started with the 2018 draft Personal Data Protection Bill (S.S. Rana & Co, 2020), and that was influenced by the EU's GDPR and seeks to control state monitoring, approval, and cross-border data transfers.

In 2019, Personal Data Protection Bill (The Digital Personal Data Protection Bill, 2023) was proposed which had a lot of governmental powers and a strong data localization agenda and this bill was referred to the Joint Parliamentary Committee but later it was criticized for large exemptions and mainly risks to civil rights, and eventually it was withdrawn in 2022. It was then replaced with the Digital Personal Data Protection Bill, 2022, by the government and this bill suggested a more moderate approach to localization and had its main focus on data principal and data fiduciaries.

In August 2023, (Burman, 2023) the Digital Personal Data Protection Act, was passed by the Parliament and this was the result of the whole process. This act established a horizontal framework for digital personal data, rights and obligations, penalties, and a Data Protection Board of India. In 2025(Gour, 2025), the act was operationalized and phased compliance was also introduced by additional notifications and regulations, this strengthened the whole system of

India's domestic data protection and at the same time preserving some governmental discretion for the safety of citizens and order.

Moreover, there is the One Nation One, Subscription (ONOS) (Madalli, 2025) Policy which is considered as India's daring attempt to democratize the usage of scientific journals and build an open science environment. This history shows how the negotiations are going on between the level of control required to protect sovereignty and for scientific advancement, how much transparency is essential.

Stakeholder Analysis

There are diverse and many competing Stakeholders who have shaped India's Policy landscape:

Government: Data protection laws are established and enforced by the government to protect the interest of the public and national security and with this government also manages huge volumes of Public data. To maintain a balance between sovereignty and openness, the regulatory role is essential.

Private Sectors and Publishers: Such groups handle and use huge amounts of data, also access to scientific research is governed by these. The way they adhere to restrictions influence the availability of knowledge, innovation and economic growth.

Public and Civil Society: The citizens of a nation own their personal information and they demand for transparency also they want privacy. Civil society encourages fair access to digital resources and advocates for the protection of rights.

Research and Academic Community: Most of the institutions and researchers depend on unrestricted access to data and online publications for scientific advancement. Also, they participate in the implementation of data management in their jobs.

International Partners: Many foreign countries and multilateral organizations are there who influence global data guidelines and policies. The involvement of such organizations affects the capacity of India for negotiation and international collaboration.

Theoretical Framework

The framework which fits well for exploring data sovereignty, open science and digital diplomacy is the Data Governance framework (Kaulgud, 2022). Also, a systematic approach to data management is provided by this framework through various procedures, well-defined policies and roles and ways in which a balance can be maintained between value creation and risk reduction in data use.

There are four main questions which are addressed by the Data Governance framework and those are: why there is a requirement of data governance, what are data assets that need to be regulated, who are the accountable stakeholders, and how can we successfully implement the governance. It puts a strong emphasis on policies and the developing norms that are there to look after sovereignty and Individual rights while aligning with the purpose of scientific collaboration and national interest.

This framework has some of the important components such as policy formulation and development, usage of technology, operational procedures, and ongoing monitoring and evaluation (Kaulgud, 2022). For instance, India having this aspiration of becoming a trustworthy

player in the global digital diplomacy, then this framework may help as it incorporates ethical consideration and adheres to global legal norms. In order to identify gaps in the regulations, to look for the stakeholder duties, and implementation issues, policymakers can use this framework to assure whether India's policies on open science and data sovereignty achieve national objectives or not, also while maintaining a trust with other nations.

Policy Analysis

India needs to take a note for digital diplomacy that the data is neither common for everyone nor it is uniform and that different sets of sensitivity require different types of regulations. Robust control is mandatory for the data which is sensitive such as geographic information, health records etc. because there is a strong possibility that there could be misuse of data from its exposures. Datasets which are less sensitive like agricultural production and environment could be provided under various limited frameworks to foster international cooperation. For instance, data with low sensitivity pose minimal risk and those can be shared freely to boost scientific advancement like biodiversity observation or some kind of research.

However, despite this India is proactive in scientific data sharing initiatives globally, taking major steps in contributing to WHO for pathogen monitoring (Gyan, n.d.), climate modeling etc. such initiatives mostly lack in a unified national policy, and there is a possibility that it can result in conflicting diplomatic positions.

Adoption of an open data ecosystem provides many important scientific benefits to India like better cooperation globally, more research visibility and quick innovations, also India will get advantages which are crucial for growing its R&D footprint and academic status. After doing

the analysis, it is noted that if India has to promote partnerships with other nations while securing its sovereignty, it needs to maintain a balance between both.

Recommendations

1. *Enhance accountability and regulatory transparency:* To safeguard the privacy of the public and foster their trust, there should be clear regulations and impartial oversight to limit the numerous exceptions.
2. *Data Sensitivity Classification:* To strike a successful balance between transparency and security, classify data sensitivity into different categories with particular policies.
3. *Capacity Building and Investment in Infrastructure:* There is a need to modernize the institutional infrastructure especially in research and government sectors because this will promote digital literacy and maximize the advantage of open science.
4. *Foster Stakeholder Participation:* Public, academia, civil society should participate and have a meaningful say in the development and execution of policies, so that there will be social equality.
5. *Aligning with International Standards while Preserving National Interest:* The best way to do this is to harmonize the data governance framework with global standards.

Diplomatic Implications

India's position in global conversations is also shaped by its digital diplomacy and that trend, as it turns out, is over digital trade, data sovereignty and open science. India has been an aid and norm setter in global digital governance as it carries on the local laws that conforms with

international standards. It also controls and manages an access to sensitive data flow as well. "It is a two-pronged strategy that will drive strategic autonomy and also allow India space both for capital and scientific (autonomy) in global negotiations. With the ONOS and research partnership strategy, it is visible that India supports open science and this will help in enhancing its soft power.

Implementation Considerations

1. *Coordinated Policy*: To design open science and data sovereignty policies or to refine them, involve various ministries, regulatory bodies or sectoral organisations(Madalli, 2025b).
2. *Monitoring and Evaluation*: Policy effect metrics need to be clearly defined, for instance, quality, accessibility, equity and innovative results also, only adapt those strategies which are essential(Madalli, 2025b).
3. *Protecting Innovation and rights*: Any sort of restriction like content moderation or localization of data must be applied in transparency and that should be aligning with the constitution principals.
4. *Public Empowerment*: To build confidence in research and the digital ecosystem, education and public outreach needs to be encouraged also at the same time making rights and responsibilities clear.

Conclusion

The decisions that are taken by India for data governance will be structured by its scientific capability and diplomatic influence. It is very important for a country like India to

strike a balance between international cooperation and strategic autonomy. Rather than choosing one from data sovereignty or open science, it should go for a digital diplomacy strategy that preserves national interest while encouraging international engagement.

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