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## Data Sovereignty and the Political Economy of Digital Public Infrastructure: Reconfiguring State Capacity in the Information Age

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Abstract

The increasing centrality of data in economic and governance systems has led to the emergence of data sovereignty as a critical dimension of political economy. Digital public infrastructure (DPI) has become a foundational mechanism through which states manage data flows, service delivery, and economic coordination. This paper examines the relationship between data sovereignty and state capacity through a political-institutional framework. Using the Digital Sovereignty Capacity Framework (DSCF), the study analyses data governance structures, institutional coordination, and accountability mechanisms. The paper argues that contemporary state capacity is increasingly defined by the ability to govern data ecosystems effectively, positioning digital public infrastructure as a central pillar of modern governance.

Keywords: Data sovereignty, digital public infrastructure, political economy, state capacity, governance

JEL Classification: D73, O33, H11, L86

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### 1. Introduction

The digital transformation of economies has fundamentally altered the nature of governance. Data has emerged as a strategic resource, shaping economic value, administrative processes, and policy decision-making. As digital systems expand, questions of control, ownership, and regulation of data have become central to political economy.

Digital public infrastructure (DPI) represents an institutional response to these challenges, providing platforms for identity, payments, and data exchange. These systems are not merely technological tools but governance frameworks that structure state–society interactions.

This paper argues that state capacity in contemporary democracies is increasingly determined by the ability to govern data systems through institutional frameworks that ensure coordination, control, and accountability.

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### 2. Literature Review

This study integrates insights from three strands:

\* Institutional Political Economy

(North, 1990; Acemoglu & Robinson, 2012) — institutions as determinants of economic outcomes

\* Digital Economy and Data Governance

(Varian, 2019; Srnicek, 2017) — data as an economic asset and coordination mechanism

\* State Capacity and Governance

(Fukuyama, 2013; World Bank, 2017) — institutional effectiveness in governance

Recent scholarship highlights that data governance is reshaping the relationship between states and markets, making sovereignty over data flows a key governance challenge.

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### 3. Analytical Framework: Digital Sovereignty Capacity Framework (DSCF)

#### 3.1 Data Governance Capacity (DGC)

Refers to the ability of institutions to regulate, manage, and secure data flows across economic and administrative systems.

This includes:

- \* regulatory frameworks for data usage
- \* institutional control over data infrastructure
- \* standards for interoperability and access
- \* mechanisms for data protection and security

#### 3.2 Institutional Coordination (IC)

Refers to alignment across institutions managing digital infrastructure, economic policy, and governance systems.

This includes:

- \* coordination across administrative agencies
- \* integration of digital systems into governance processes
- \* alignment of technological and policy frameworks

#### 3.3 Accountability and Trust Systems (ATS)

Refers to institutional mechanisms that ensure transparency, oversight, and public trust in digital governance.

This includes:

- \* grievance redress mechanisms
- \* audit and oversight systems
- \* procedural safeguards for data usage

### 4. Methodology

The study adopts a qualitative political economy approach involving:

- \* institutional analysis

\* comparative governance perspective

\* literature synthesis

The approach focuses on conceptual and institutional explanation rather than empirical modelling.

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## 5. Data Governance and State Capacity

Data governance capacity is central to modern state functionality. Institutions that effectively regulate data flows enhance administrative efficiency and economic coordination.

From a political economy perspective, data functions as both a resource and a governance mechanism, making its regulation critical to state capacity.

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## 6. Institutional Coordination in Digital Systems

Digital governance requires coordination across multiple institutional domains. Fragmentation can undermine efficiency, while coordinated systems enhance governance outcomes.

Institutional integration ensures that digital infrastructure supports both economic and administrative objectives.

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## 7. Accountability and Trust in Data Governance

Trust is essential in digital governance systems. Institutions must ensure transparency, accountability, and procedural fairness to maintain legitimacy.

Effective accountability mechanisms mitigate risks associated with data misuse and enhance public confidence.

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## 8. Discussion

The DSCF demonstrates that data sovereignty is not merely a regulatory issue but a broader governance challenge. Institutional capacity determines whether digital systems enhance or undermine governance outcomes.

This perspective reframes state capacity as a function of digital governance capabilities.

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## 9. Conclusion

This paper concludes that digital public infrastructure and data sovereignty are central to contemporary governance. State capacity in the information age depends on institutional ability to manage data ecosystems effectively.

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Future governance will increasingly be defined by digital institutional capacity rather than traditional administrative strength.

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