Chapter 11
Spatial Data Infrastructure for Information Governance:
The Case Study From Pakistan

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ABSTRACT

By examining the case study of spatial data infrastructure (SDI) implementation in Pakistan and its relationship with information governance, this chapter contributed to a deeper understanding of how effective spatial data management can support information governance objectives. A feasibility study is ongoing to establish NSDI in Pakistan. Moreover, a provincial-level SDI under PULSE is also planned. However, challenges such as the absence of uniform standards, a poor technology setup, and a shortage of qualified manpower are associated with NSDI implementation in Pakistan. By enhancing data quality and consistency and facilitating data sharing & collaboration, NSDI Pakistan would strengthen information governance in Pakistan by supporting decisions as well as policymaking. The findings and recommendations will help policymakers and practitioners in Pakistan, as well as researchers interested in the fields of spatial data infrastructure and information governance, advance their understanding and implementation of these critical concepts.

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INTRODUCTION

Information is an embodiment form of knowledge. It serves as a conduit that molds the mental status and physical reactions of its recipients (Farradane, 1979). This notion exceeds simple communication and encompasses many factors including data, text documents objects, or events (Buckland, 1991). By acknowledging information as a multidimensional concept encompassing different formats and mediums, a better understanding of its role in constructing intellectual and physical realities can be materialized.

As far as governance is concerned, information becomes an anchor for all governments being one of the major tools through which governments can play numerous roles (C. C. Hood, 1983; C. Hood & Margetts, 2007). Therefore, the appropriate management of such information is crucial for governments in order to perform their numerous roles and functions. In the digital era when information becomes extremely important, the term "information governance" takes center stage. Information governance, coined by (C. Hood & Margetts, 2007) is a tight and intentional method of governing governmental information as well as addressing its rising importance in contemporary environments. This wide and readily evolving concept of information governance encompasses a range of rules to practices, as well as technological implications required for the lifecycle management of data and content (Kooper et al., 2011).

In recent years, policies that are used for different government procedures mostly depend on spatial data to fetch insights. Every day, lots of bytes of spatial data are generated through the public sector, private, and academic spheres. Second, social media can also be an important source of implicit and explicit geographical information. However, there is a significant challenge to effectively governing this large reservoir of geographical data.

Spatial Data Infrastructure (SDI) is a critical data framework implemented globally to facilitate e-governance and g-governance in diverse government sectors. Emerging technologies have revolutionized the implementation of SDI (Ahmad, 2023; Ahmad et al., 2023; Ahmad & Ali, 2023b) and the remarkable capabilities of SDI make it a valuable solution for tackling the numerous challenges related to information governance. In Pakistan SDI implementation at the national level is under process (Ahmad et al., 2022; Ahmad & Ali, 2023a), thus, it is useful to test the applicability of SDI in the context of information governance. Against this backdrop, the main objectives of this study are as under.

i. Explore the implementation of SDI in Pakistan
ii. Investigate the impact of SDI on Information Governance in Pakistan

To achieve the above-stated objectives, this chapter is structured in the following manner. First, in Section 2, the conceptual framework of SDI and information governance is presented to lay a solid foundation for understanding these concepts. Next, in Section 3, a case study of SDI implementation in Pakistan is showcased by shedding light on its current status and challenges. In Section 4, the crucial role of SDI in information governance in Pakistan is explored. Finally, a summary of our key findings and recommendations for policymakers and stakeholders is endorsed in the last section.

LITERATURE REVIEW

This section provides an overview of the key concepts involved in the chapter such as spatial data infrastructure and information governance.