

# ENHANCING CRITICAL INFRASTRUCTURE RESILIENCE THROUGH NETWORK GOVERNANCE: A REVIEW OF THE LITERATURE

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## 1. BACKGROUND

- Critical infrastructures are vital for society but face risks due to their interconnected nature.
- Protecting critical infrastructures is challenging because they involve multiple stakeholders.
- This review explores network governance's role in promoting critical infrastructure resilience.

## 2. RESEARCH AIM

- To develop a state-of-the-art review of network governance to increase critical infrastructure resilience, and
- To get an understanding of common gaps in research and practice.

## 3. RESEARCH QUESTION

- How does network governance impact critical infrastructure resilience?
- What lessons can we learn from global network governance practices?

## 4. METHODOLOGY

- Employs a narrative literature review based on Cronin et al. (2008) and Grant & Booth (2009).
- Explored different domains using the four central themes proposed by Rydén Sonesson et al. (2021): Interdependency, Collaboration, Information-sharing, and Responsibility.
- This review was conducted from 2001 to 2023 using Scopus and Google Scholar and extended by cross-referencing selected papers to identify additional relevant documents.

## 5. PRELIMINARY FINDINGS AND DISCUSSION

### •Interdependency.

- Understanding and recognising critical infrastructure interdependencies among all stakeholders is crucial.
- Enhancing resilience requires collaborative efforts, coordinated risk mitigation strategies, and comprehensive governance frameworks.

### •Collaboration.

- Effective network governance, driven by strong leadership collaboration, enhances resilience by organising resources, managing conflicts, and gaining support.
- Addressing collaboration challenges, overcoming organisational barriers, and enhancing institutional connectivity are essential for improving disaster response and overall resilience.

### •Information-sharing.

- Effective information sharing and mutual trust among stakeholders are essential for resilience.
- All stakeholders must overcome information-sharing-related issues, including a lack of reliable information, standardised protocols, and reluctance to share sensitive data.

### •Responsibility.

- Clear roles and responsibilities are essential for managing interdependencies, especially during crises.
- A central coordinating actor and robust frameworks are needed for managing emergencies effectively.

## 6. CONCLUSION

- Identifying interdependencies informs mitigation strategies.
- Effective management involves collaboration across stakeholders.
- Network governance facilitates cooperation, coordination, and resource sharing.
- Accurate decision-making relies on information flow among stakeholders.
- Defining roles and responsibilities within interconnected entities is crucial, especially during crises.

## 7. FURTHER RESEARCH

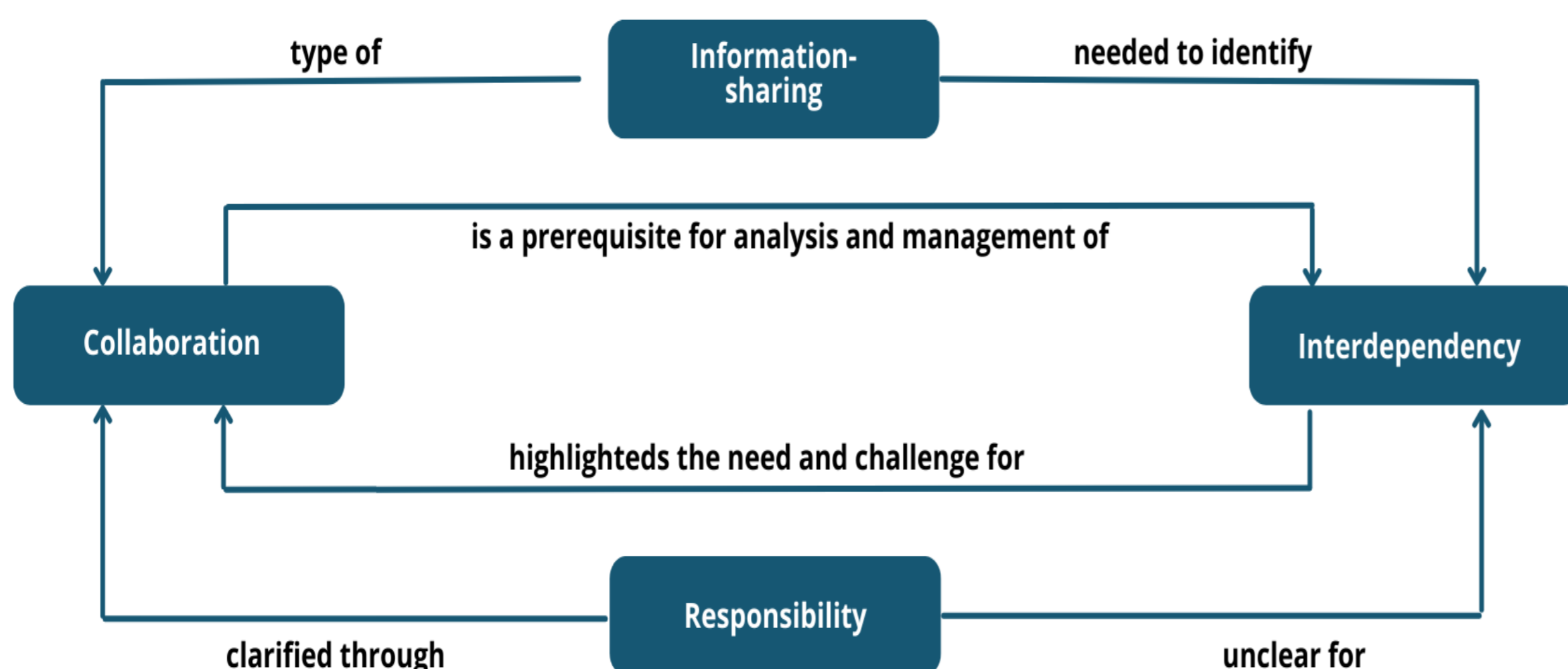
- Conduct detailed case studies on industries or regions which involved multisector.
- Conduct detailed stress test scenarios to ascertain the resiliency of critical infrastructure and all stakeholders.

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The findings overarching relation to and implications for the four explored central domains (adapted from Rydén Sonesson et al. (2021).