Chapter 11
The Integral Relationship Between Innovative Technology and Sustainability Governance

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ABSTRACT

This study analyzes the relationships and connections between the technology innovation and sustainability governance. It is assumed that advanced technologies provide the tools to achieve the sustainability governance. The method employed is the meta analytical and meta cognitive, reflective and descriptive based on conceptual, theoretical and empirical review of the literature. It is concluded that the tools of innovative technology has direct effects on sustainability governance. The relationship between innovative technology and sustainability governance is integral, as advanced technologies often provide the tools needed to achieve sustainability goals.

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INTRODUCTION

The relationship between innovative technology and sustainability governance is integral: advanced technologies supply the tools needed to meet sustainability goals, while governance frameworks ensure those tools are deployed ethically and effectively for long-term societal benefit. This study presents the principal connections between these two domains.

There remains a clear gap between the theory and practice of sustainability-management governance. The term sustainability derives from the Latin "sustinere"—sus ("upwards") and "tenere" ("to keep"). Existing literature, grounded in content-analysis research, offers a conceptual framework for sustainability governance (Seuring & Müller, 2008). In this context, sustainability is understood as a principle, philosophy, and managerial approach that safeguards resources for the needs of the present generation and for those of generations to come (Grant, 2010).

A systematic literature review identified core themes and challenges, particularly in sustainable supply-chain management and environmental logistics—and grouped them for synthesis. From a systems perspective, the theories and practices of sustainability governance rely on holistic thinking and analyses of components, their interconnections, and interdependencies (Senge, 1990; Patton, 2002). Society must translate such insights into creative, future-oriented solutions.

Interdisciplinary approaches are therefore essential. The literature urges methodologies that combine perspectives from multiple fields—especially in urban environments, where effective governance demands collaboration among diverse stakeholders (Maharramli & Romolini, 2023). These stakeholders include investors, suppliers, creditors, employees, customers, governments, activists, communities, and the general public (Burhan & Rahmanti, 2012). Governments, businesses, and civil society share responsibilities to respect human dignity, protect the environment, and manage scarce resources for a better quality of life.

Additional contextual and causal conditions include participatory commissions, public hearings, and the activation of local organisations. Both theoretical and empirical work highlight sustainability challenges linked to planning, funding, and competition in implementation.

Non-profit organisations (NPOs) face pronounced sustainability challenges—particularly financial—that can hamper empowerment programmes. Although NPOs set both financial and non-financial targets, the latter often remain ambiguously defined (Baumüller & Grbenic, 2021). An integrated framework for NPO sustainability therefore spans formulation, process design, strategy implementation, outcome assessment, and continuous refinement, enabling practitioners to pinpoint the factors that shape multi-dimensional sustainability challenges.