

Book Review: Innovation and Public Policy in India

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Abstract The role of innovation in economic growth and development is extensively recognized today. Innovations allow firms to stay ahead in a competitive environment while also playing a leading role in developing a nation or a region. The capacity to solve critical problems depends on the generation of innovations. Innovations are more important for a developing nation as only through them, they can find appropriate solutions to the issues unique to their context. A robust roadmap that fosters and nurtures innovations in a country has thus become an essential aspect of public policy. In this context, the book *The Black Box: Innovation and Public Policy in India* by Prof. Rakesh Basant provides an overview of the innovation landscape in India and the challenges it faces in building a robust entrepreneurial and innovation ecosystem in the country. The author provides an extensive analysis of different actors within India's innovation system and recommends policy initiatives to boost and foster innovation.

Keywords Innovation policy, India, Innovation ecosystem, university-industry linkages

I. Book Details

Book title: *The Black Box: Innovation and Public Policy in India*
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II. Book Review

The role of innovation in economic growth and development is extensively recognized today. Innovations allow entities to stay ahead in a dynamic environment while also playing a leading role in developing a nation or a region.

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The capacity to solve pressing problems depends on the generation of innovations. Innovations are more important for low-income regions as only through them, they can find appropriate solutions to the issues unique to their context. A robust roadmap that fosters and nurtures innovations in a country has thus become an essential aspect of public policy.

Fagerberg (2017) writes that the term 'innovation policy' gained popularity in the 1990s when OECD and various national governments started paying attention to innovation. The term 'innovation policy' is used in diverse ways. It is either conceptualized broadly to include all the policies that affect innovations or specifically used for a single policy designed to influence innovation (Edquist, 2005). In this book, Prof. Basant acknowledges the broader meaning of innovation policy as "any policy instrument that influences an economic agent's decision about development, adaptation, and adoption of an innovation" (pp. 73). In this context, the book explores the emerging challenges for the innovation policy in India and the significant sectors/technologies requiring urgent consideration.

In the first chapter, the book explains the background and context. The primary questions that the book attempts to answer are detailed here, such as, how does one define innovation, what activities undertaken by different economic actors are relevant for developing innovation capabilities, what are the new policy initiatives that India have tried in the recent years, and what policy initiatives are needed to nurture innovation in the Indian economy. The chapter explains some of the book's key concepts, such as innovation, economic entities, and the impact made by public policies on innovation.

Innovation is defined in several ways and includes technological innovation and organizational and marketing innovations. The focus of this book is only on technological innovations, and therefore in the second chapter, Prof. Basant presents a detailed discussion on this concept. As there are multiple types of innovations defined in academic literature, this chapter discusses the main terms: product, process, and organizational innovations. Measuring innovation is also a key challenge for any nation as not all indicators of measurements such as patents, R&D, technological exports, and publications provide a holistic picture. The chapter uses secondary data from the World Bank survey in India to highlight methodological problems in measuring innovations.

Multiple actors play a role in the innovation process. These actors comprise individuals, firms, academic institutions, government bodies, financial institutions. It is the linkages and interactions between these actors that the author defines as the nation's innovation ecosystem. The second chapter deliberates on the three major frameworks that have shaped the literature on innovation linkages between various institutions: National Innovation System (NIS), the triple helix paradigm, and University-Industry Linkages (UILs). Overall, the chapter provides a comprehensive overview of the literature on

innovations, innovation ecosystem, and evolution in the innovation process models.

As mentioned before, the book undertakes a broad conceptualization of innovation policy, including all policy instruments that impact the innovation-related decisions of the different actors. Prof. Basant argues that the impact of policy can either be on the supply or demand of innovation or it could affect the competition and contagion (spillover benefits) conditions faced by firms. In the third chapter, the book presents an empirical and theoretical review of the literature to explore specific policies like industrial policy, trade policy, FDI policy, IPR policy, S&T policy, and their impact on innovation. The various studies reviewed in the chapter also outline the complexities in establishing and analyzing linkages between public policy and innovation because of the measurement-related issues.

While the second and third chapters discuss innovation literature and empirical studies globally, emphasizing the relationship between innovation and policy, the fourth chapter focuses on India. The innovation inputs and outputs are analyzed to provide an overview of the Indian innovation landscape. Data on input measures like R&D expenditure whereas output measures like patents and trends in export of technology-specific goods and services, FDI, R&D investment by MNCs in India give a synopsis of innovation activity in India and how it fares compared to technologically advanced nations.

Education is an integral part of the NIS for any nation as it provides skilled human resources to the institutions engaged in innovation (Mowery and Sampat, 2005). Lately, universities' knowledge and innovative potential have also received due consideration. Chapter 4 also highlights critical aspects of the university-industry linkages in India. The chapter details the current challenges Higher Education Institutions (HEIs) face in India that hampers their ability to innovate. The author argues that "structural changes in higher education are required in order to make HEIs capable of responding to emerging challenges and effectively play the role they are expected to play in the NIS" (pp. 208). The chapter also discusses recent progress in financing and supporting innovation-based start-ups in India through venture funds and incubators.

Financing is a significant constraint in developing a start-up ecosystem in India. Finance is required not only to develop an innovation but also to take it to the market. The discussion and analyses of Chapter 4 continue in the fifth chapter by focusing on innovation financing. The author provides a case study of Infuse Ventures, a policy experiment undertaken at the Centre for Innovation, Incubation and Entrepreneurship (CIIE) at the Indian Institute of Management Ahmedabad (IIMA). This policy experiment was "designed to address market and government failures that exist in developing economies like India in the provision of venture capital to start-ups in the clean energy space" (pp. 214). The

experiment provides valuable learning for other incubators on how to diversify and be financially sustainable.

The final chapter summarizes the book's key takeaways and provides suggestions on policy initiatives required to accelerate innovations in India. Prof. Basant stresses that focus of the policy should be on developing innovation capabilities in the country. India's need should be to ensure lower cost of capital, infrastructure to support innovation, and restructuring of the HEIs. The chapter also presents specific areas of focus, such as the need for policy initiatives for growing entrepreneurial ecosystems and a mission-driven approach for crucial sectors in the country.

Overall, the book presents the current scenario of innovation and the public policy connection in India in a detailed manner. It also pinpoints the challenges and issues ailing the Indian innovation system. The section on the HEIs in India is comprehensive as it points the conditions which resulted in HEIs becoming "the weakest link in the innovation ecosystem in India" (pp. 178). Though the book's focus is on innovation systems within the formal structures of the economy, the arguments and analysis could have been made more exhaustive by having a section on the informal sector in India. The lack of acknowledgment of India's humongous informal sector and its innovations was surprising. Much of the well-known work on this area comes from the author's colleague at IIMA, Prof. Anil Gupta (for instance: Gupta, 2016). Thus, an analysis of this alternative discourse on innovations and the policy initiatives adopted to institutionalize them would have provided a holistic picture of the innovation landscape in India. Nevertheless, the discussions and critical arguments made in the book are helpful for both policymakers and practitioners. The insights are also valuable for scholars and academics who wish to undertake future research in the domain of innovation studies in India.

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