



Collaboration between Government, Academia and Industry in Promoting Innovation: A Public Administration Perspective Focusing on Assam and North East India

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Abstract:

Government-University-Industry collaboration is now viewed as an essential factor in the growth of innovation driven development in today's public administration. A renewed policy interest in collaboration between Government, University, and Industry was generated in India through policies such as Startup India, Atal Innovation Mission, and National Education Policy (NEP) 2020; these policies have created a new institutional framework for cooperation in creating knowledge and transforming economies. This paper aims at exploring how the governmental-university-industry cooperation promotes innovations in Assam and the North East Region of India; this region has been traditionally considered as underdeveloped but strategic. Using a qualitative-descriptive analysis methodology based on secondary data from government publications, policy documents, and literature of academics, the study analysed the existing institutional frameworks, innovation systems and the barriers of innovation in the region. The study highlighted various initiatives in the field of innovation, including the Assam Start-up Policy, Incubation Centers in State Universities, Collaborations with Public Sector Undertakings, and Emerging Industry Linkages in Agriculture, Tea, Biotechnology and Information Technology Sectors. According to the author, the effective Public Administration plays a catalytic function for development of innovation, through establishment of coordination of policy, building of capacity of institutions and inclusive regional development. The study pointed out the existing gaps in terms of infrastructure deficit, Limited presence of the industries, and Weaknesses in University-Industry Interactions, and presented the possibilities of the reinforcement of the inter-governmental interaction. Finally, the paper proposed the policy measures for promotion of cooperation between stakeholders for Sustainable Development and Innovation Driven Development in Assam and the North East.

Keywords: National Education Policy (NEP), Sustainable Development, Startup India.

1. Introduction:

Public Policy and Governance in a knowledge driven economy are both focused on the issue of innovation. From a public administration perspective, innovation is an institutional outcome that can be influenced by three factors; namely institutional coordination, the nature of the design of a policy, and the capability of the State. Etzkowitz and Leydesdorff's (2000) 'Triple Helix' model is a framework for understanding IAG (industry-academia-government) collaboration. The Triple Helix model describes governance processes that involve networks of public institutions, private sector entities and knowledge producing entities.

The potential for IAG collaboration in Assam and the North East region of India is significant. This is due to the fact that this part of the country suffers from many structural disadvantages including; geographical isolation, lack of a viable industrial base and insufficient research capacity. In response to these challenges, it is common for governments to develop innovation policies that aim to include the regional university, the local industry, and the public agencies in order to achieve their goal of developing their regions.

2. Review of Literature:

The concept of collaboration between government, academia, and industry has been extensively discussed in innovation studies through the Triple Helix Model, originally proposed by Etzkowitz and Leydesdorff (2000). The model emphasizes the evolving roles of universities as knowledge producers, industries as innovation implementers, and governments as facilitators through policy and regulation. Subsequent studies highlight that such collaboration enhances regional innovation systems, promotes technology transfer, and strengthens economic competitiveness, particularly in developing economies.

From a public administration perspective, scholars argue that the state plays a crucial coordinating role in fostering collaborative governance for innovation (Ansell & Gash, 2008). Public institutions are not merely regulators but active enablers that design policy frameworks, provide funding, and create institutional platforms for interaction among stakeholders. In the Indian context, innovation-led governance has gained prominence through policy instruments such as *Startup India, make in India*, *Atal Innovation Mission*, and *National Education Policy (NEP) 2020*, which stress industry–academia linkages and regional innovation ecosystems (NITI Aayog, 2018; Government of India, 2020).

Existing literature on North-East India indicates persistent structural constraints such as inadequate industrial base, limited research infrastructure, geographical isolation, and weak market linkages (Baruah, 2017; Planning Commission, 2014). Studies focusing on Assam highlight the potential of universities, research institutes, and public sector undertakings in sectors like tea, agriculture, biotechnology, and oil, but also point to weak institutional coordination and limited private sector participation (Gogoi & Dutta, 2019). While some scholars have examined innovation policies at the national level, there remains a significant gap in region-specific studies that analyze government–academia–industry collaboration from an administrative and governance standpoint in Assam and the North-East. This paper seeks to address this gap.

3. Objectives:

1. To examine the role of government–academia–industry collaboration in promoting innovation from a public administration perspective in Assam and North-East India.
2. To analyse the policy framework, institutional mechanisms, and challenges affecting collaborative innovation in the region.

4. Methodology:

The study adopts a qualitative and descriptive-analytical research design, suitable for examining institutional collaboration and governance processes in public administration. The research is based entirely on secondary data sources, including government policy documents, official reports, academic journals, books, university publications, and reports from national and state-level agencies such as NITI Aayog, Ministry of Education, Department for Promotion of Industry and Internal Trade (DPIIT), and Government of Assam.

5. Theoretical Framework:

The present study is grounded in an integrated theoretical framework that draws primarily on the Triple Helix Model of Innovation, supplemented by Collaborative Governance Theory and New Public Administration perspectives on the developmental role of the state. Together, these theories provide a

comprehensive lens to analyse institutional collaboration, governance mechanisms, and innovation outcomes in the context of Assam and North-East India.

Triple Helix Model of Innovation:

The Triple Helix Model, developed by Etzkowitz and Leydesdorff (2000), conceptualizes innovation as an outcome of dynamic interactions among government, academia, and industry. In this framework, universities act as knowledge producers and innovation hubs, industries function as agents of commercialization and application, and governments serve as facilitators by creating enabling policy, regulatory, and financial environments. The model is particularly relevant to regional development contexts, where coordinated institutional roles are necessary to overcome structural constraints. In the case of Assam and North-East India, the Triple Helix framework helps explain how public administration can stimulate innovation by strengthening university–industry linkages, promoting incubation ecosystems, and aligning state policies with regional economic priorities.

Collaborative Governance Theory:

To complement the Triple Helix approach, the study employs Collaborative Governance Theory (Ansell & Gash, 2008), which emphasizes structured cooperation between public and non-state actors in policy implementation and service delivery. From a public administration standpoint, innovation is increasingly governed through networks rather than hierarchical state control. This theory highlights the role of administrative leadership, institutional trust, and inter-organizational coordination in fostering effective collaboration. Applied to the North-Eastern context, collaborative governance explains how state governments, higher education institutions, public sector undertakings, and private enterprises can jointly address regional development and innovation challenges.

Developmental and Facilitating Role of the State:

The framework is further informed by the **developmental state perspective**, which views government as a proactive agent in guiding economic and technological development through strategic interventions, capacity-building, and institutional support. In regions like Assam and the North-East, where market forces alone may be insufficient, public administration assumes a catalytic role in mobilizing resources, reducing regional disparities, and ensuring inclusive innovation. Policies such as NEP 2020 and state-level startup initiatives reflect this shift toward a facilitative and coordinating administrative role.

Conceptual Integration:

By integrating these theoretical perspectives, the framework positions **public administration as the central coordinating force** that enables interaction among academia and industry, shapes innovation policy, and ensures region-specific governance solutions. The theoretical framework thus provides a robust analytical basis for examining institutional collaboration, policy effectiveness, and innovation outcomes in Assam and North-East India.

6. Analysis of Data:

Government Involvement: Innovation Governance in Assam & North East

1. AIM in North East Region:

The NITI Aayog's Atal Innovation Mission (AIM) has developed a number of Atal Tinkering Labs (ATLs) at schools and other institutions in Assam, Meghalaya and Arunachal Pradesh. The ATLs provide opportunities for early-stage innovation and connect education to industry relevant skills demonstrating the government as an enabler of innovation (NITI Aayog, 2018).

2. North East Council (NEC) & Innovation Support:

The North East Council (NEC), promotes research, entrepreneurial spirit, and capacity building in association with universities and technical institutions. Research funded by NEC is often related to academic research that aligns to the developmental needs of the region i.e., agro based industries, bamboo technologies and renewable energy etc.

3. Assam Start-up- The Nest:

Assam's start-up initiative and incubation center, 'The Nest' at Guwahati, provides an environment for collaboration amongst State Government departments, universities and local entrepreneurs. This initiative exemplifies state led innovation governance and demonstrates how the government can create an institutional structure that fosters interactions between industry and academia.

The Academic Role: Assam's & the North East's Academic Institutions as the Regional Engine for Innovation

Due to the relative lack of larger-scale industrial operations, universities and academic institutions in the State of Assam and the North East are key drivers of regional innovation.

Examples of Major Institutions Involved

- IIT Guwahati conducts collaborative research with various industry sectors and Government Departments, specifically within the fields of biotechnology, flood management, artificial intelligence and energy research.
- Tezpur University has engaged in both industry-linked research and in innovation that is oriented toward the needs of its local communities with an emphasis on environmental and ecological studies.
- Assam University (Silchar) supports the State through its contribution to the skill development of people living in the region; in addition, it conducts research that is relevant to the specific needs of the region in conjunction with other Government Agencies.

In terms of public administration, these institutions act as the State's knowledge partners and contribute to support the State's ability to develop policy based upon evidence and foster innovative solutions that meet the unique needs of the region.

The Role of Industry: Local and MSME-Based Innovation

In contrast to developed areas, innovation in the North-East is primarily carried out through local industries as well as Micro, Small, and Medium Enterprises (MSMEs).

Illustrative examples are:

- Units involved in agro-processing collaborating with agricultural universities
- Research institutions and government departments collaborate on bamboo and handloom products
- Academic institutions and state agencies conduct research for the tea industry

These collaborations between government departments and MSMEs/industries are facilitated by government departments via financial assistance, technological aid and market linkages indicating a "development administration" approach to innovation.

7. The Challenges of the North East from a Public Administration Perspective:

There are several ongoing challenges from the Public Administration viewpoint which include;

1. A limited industrial base is an obstacle to developing links between industry and academia.
2. State institution capacity limitations.
3. The lack of adequate funding for research and development activities.
4. Connectivity and infrastructure problems;
5. Insufficient involvement by the private sector.

These challenges show that strong coordination by the state and the necessary administrative capacity, particularly in periphery areas are needed.

8. Future Direction: Enhancing Regional Innovation Governance

The reform of public administration should aim at strengthening IAG cooperation in Assam and in the North-East by focusing on:

1. Strengthening State Universities as Innovation Centers
2. Improving the Coordination Role of the NEC
3. Supporting Linkages between MSMEs and Universities
4. Deconcentrating the Governance of Innovation to Regional Institutions
5. Building Capacity among Public Officials in Innovation Management

These actions will help to synchronize innovation policy with both inclusive regional development and cooperative federalism.

9. Conclusion:

Collaborative Industry – Academia – Government models represent an innovative way to govern innovation. In Assam and the North-East, which are characterized by persistent structural and development issues, the government is playing a key role in facilitating collaboration. The existence of initiatives such as Atal Innovation Mission, Assam Startup, NEC funded programs and university led incubators demonstrates how relevant collaborative governance is becoming. In terms of Public Administration, effective IAG collaboration can improve state capacity, enhance policy outcomes, and contribute to balanced regional development. It is therefore crucial that the coordination of governance and the functioning of institutions be strengthened so that the innovation potential of the North-East is realized.

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