POLICY
INNOVATION
LAB

Policy Advice Systems and Digital Tools in Policymaking: India

September 2025

Stellenbosch
UNIVERSITY
IYUNIVESITHI
UNIVERSITEIT

School for Data Science and Computational Thinking

Contributing Researchers

RESEARCHERS:

Prof Pregala Pillay
School of Public Leadership (SPL),
Director: Anti-Corruption Centre for Education and Research of Stellenbosch University (ACCERUS)

Prof Ram Kumar Mishra
Former Director, Institute of Public Enterprise, India

RESEARCH SUPPORT:

Mr Deepak Narayanam (PhD Student)
School of Public Leadership, Faculty of Economic and Management Sciences,
Stellenbosch University

Ms. Kadumuri Neeraja (PhD Student & Research Scientist)
Management and Social Science Research Centre, India

Mr. Ray Clemence Tondoi (PhD Student)
School of Public Leadership, Faculty of Economic and
Management Sciences, Stellenbosch University

SUPPORTED BY:

Dr Itai Makone, Dr Gray Manicom, and Prof Willem Fourie
Policy Innovation Lab
School of Data Science and Computational Thinking
Stellenbosch University

www.policyinnovationlab.sun.ac.za

Table of contents

List of Figures and Tables

Abbreviations

AI	Artificial Intelligence
AIM	Atal Innovation Mission
CBGA	Centre for Budget and Governance Accountability
CPR	Centre for Policy Research
DMEO	Development Monitoring and Evaluation Office
DPDP	Digital Personal Data Protection
DPI	Digital Public Infrastructure
GIS	Geography Environmental System
ICRIER	Indian Council for Research on International Economic Relations
ICT	Information Communication Technology
IPE	Institute for Public Enterprise
NDAP	National Data Analytics Platform
NIPFP	National Institute for Public Finance and Policy
NITI Aayog	National Institution for Transforming India
OSS	Open-source software
PAC	Public Affairs Centre
PAS	Policy Advisory Systems
PMFBY	Pradhan Mantri Fasal Bima Yojana
PPP	Public Private Partnerships
SDGs	Sustainable Development Goals
SLMs	Small Language Models
UPI	Unified Payments Interface

Executive Summary

Main Objectives:

- This study seeks to map key policy actors, identifying the institutions and individuals that influence and shape India's Policy Advisory Systems (PAS).
- It also aims to analyse the integration of digital tools and AI technologies within India's policymaking processes to understand their contribution to effective policy advice.
- Lastly, the study intends to extract cross-national lessons by formulating tailored recommendations that can strengthen South Africa's PAS, drawing from India's experiences and proven practices.

Research Methodology:

This study is based on a desktop research review, involving a systematic analysis of secondary data sources. It draws upon a diverse range of materials, including academic literature, policy documents, institutional reports, and relevant case studies. Additionally, the methodology incorporates the review of documentation related to India's digital policy initiatives, particularly the IndiaAI Mission, to understand the technological dimensions of policy advisory systems.

Key findings:

- India's PAS operates at multiple government levels, often guided by ministry-specific manuals.
- Advisors (including chief economic and scientific advisers) and secretaries play central roles.
- AI integration, especially under the India AI Mission 2024, enhances:
  - Decision-making precision
  - Public service efficiency
  - Resource optimisation
- Challenges persist:
  - Bureaucratic inertia
  - Political interference
  - Limited data analytics capacity
- Despite constraints, PAS demonstrates:
  - Strong community engagement
  - Efforts to overcome cultural and language barriers
  - A shift toward secure, inclusive AI-based platforms

Key recommendations:

Policy Advisory Systems (PAS) are pivotal for good governance, providing policymakers with high-quality advice by generating knowledge relevant to policy issues and recommending effective solutions. This summary examines India's PAS and highlights lessons that South Africa can adopt to enhance its systems. Effective policy advice is crucial for informed decision-making, resource allocation, stakeholder engagement, and adaptability. It plays a significant role in addressing challenges posed by the dynamic geopolitical landscape.

India's PAS operates at various government levels, guided by ministry manuals. Key agencies and organisations provide valuable insights to decision-makers. Each ministry has advisors, with some appointing chief advisors (e.g., chief economic adviser, chief scientific adviser). Secretaries to the Government of India also play a significant advisory role, often relying on major consulting firms.

Since 2019, India has made notable progress in integrating AI into decision-making processes. The IndiaAI Mission 2024 aims to drive economic development and sustainable growth through digital transformation, with AI tools now widely used across various ministries to enhance efficiency, reduce resource consumption, and improve public service delivery. India's PAS faces several challenges, including bureaucratic inertia, political interference, and limited capacity for data-driven decision-making. Despite these hurdles, PAS collaborates closely with communities, overcoming cultural and language barriers. AI is being leveraged to enhance security, reliability, accessibility, and affordability, moving away from external open-source platforms.

South Africa can enhance its PAS by adopting digital technologies and AI, similar to India's approach. This can be done through:

1. Developing a robust Digital Public Infrastructure (DPI), which is essential for efficient, **data-driven policy advisory systems**.
2. Encouraging the use of **open-source software** and **open data** to foster innovation, transparency, and evidence-based policymaking.
3. Leveraging **big data** to improve decision-making and governance efficiency.
4. Establishing **strong legal frameworks and centralised services**, which can address security concerns and ensure reliable digital tools.
5. Emphasising community consultation to enhance the inclusivity and effectiveness of PAS.

By learning from India's experiences and integrating digital technologies, AI, and robust infrastructure, South Africa can strengthen its policy advisory systems, leading to better governance and socio-economic development.

This paper therefore, pursues three core objectives: first, to map the key actors and institutional processes shaping policy advisory systems in India; second, to examine the digital tools and technologies currently employed in India's policymaking landscape; and third, to distil actionable recommendations for South Africa, drawing on insights and best practices from the Indian case study. This study is based on a comprehensive desktop research review of secondary data sources. It involved the systematic analysis of existing literature, policy documents, institutional reports, and case studies related to digital development and policy advisory systems (PAS) in India.

INDIA

1. Introduction

PAS play an increasingly important role in establishing inclusive, adaptive, and inclusive public policy as countries negotiate ever-more complicated governing environments. India's evolving PAS offers valuable insights, particularly in its integration of digital technologies and stakeholder engagement.

This study on PAS in India constitutes the following objectives:

- To identify the key entities, actors, and processes internal to the central government of India. This objective focuses on understanding and analysing how the PAS works in India and the key lessons and constructive good practices of policy advice in India.
- To explore how India uses AI and digital tools to contribute to improving PAS. The objective seeks to understand how AI and digital tools are being utilised to enhance policy advice.
- Make recommendations to PAS that apply to the South African context and improve South Africa's policy advisory framework.

The paper first describes the political and policy background of policymaking in India before delving into each goal in the several parts that follow.

1.1 Political and Policy Context

According to the World Bank (2025), India is one of the fastest-growing economies in the world, with a population of around 1.46 billion. Over the past few decades, it has transitioned from a primarily agrarian economy to a more diversified one, with significant contributions from manufacturing and services. The country has made remarkable progress in reducing extreme poverty, with estimates suggesting that between 2011 and 2019, the share of the population living below the extreme poverty line was halved. However, inequality remains a challenge, with a Gini index of around 35 over the past two decades. Despite its economic growth, India faces several socio-economic challenges ranging from headline employment, poverty and inequality, education and literacy, to infrastructure deficiencies, and corruption.

India follows a federal parliamentary democratic system, meaning governance is divided between the central government and state governments, with elected representatives making decisions. The President of India is the ceremonial head of state, while the Prime Minister leads the government and exercises executive power. India operates under a three-tier system of governance:

1. **Central Government** - Responsible for national policies, defence, foreign affairs, and economic planning.
2. **State Governments** - Handle regional matters like law enforcement, healthcare, and education.
3. **Local Governments (Panchayati Raj & Municipalities)** - Manage grassroots governance in villages and cities, ensuring local development.

This system was strengthened by the 73rd and 74th Constitutional Amendments, which empowered local bodies to make decisions on community development. India's policymaking follows a structured approach:

1. **Agenda Setting** – Issues are identified through public demands, political priorities, of crises. Policy formulation – Experts, ministries, and think tanks draft proposals based on research and stakeholder consultations.
2. **Legislation & Approval** – Policies are debated in Parliament (Lok Sabha & Rajya Sabha) and passed as laws.
3. **Implementation** – Bureaucracy and government agencies execute policies at the national and state levels.
4. **Evaluation & Feedback** – Policies are assessed for effectiveness, and adjustments are made if needed.

India's governance system ensures checks and balances through an independent judiciary, which interprets laws and safeguards constitutional rights. The National Institution for Transforming India (NITI Aayog) plays a key role in policy planning and economic strategy.

2. Methodology

We conducted a comprehensive desktop research review of secondary data. This involved analysing existing literature, reports, and case studies on digital development and PAS in India. The secondary data sources included academic journals, government publications, policy briefs, and reputable online databases. This approach allowed for a broad understanding of the current state of PAS in India and the identification of best practices and successful implementations.

3. Policy Advisory Systems

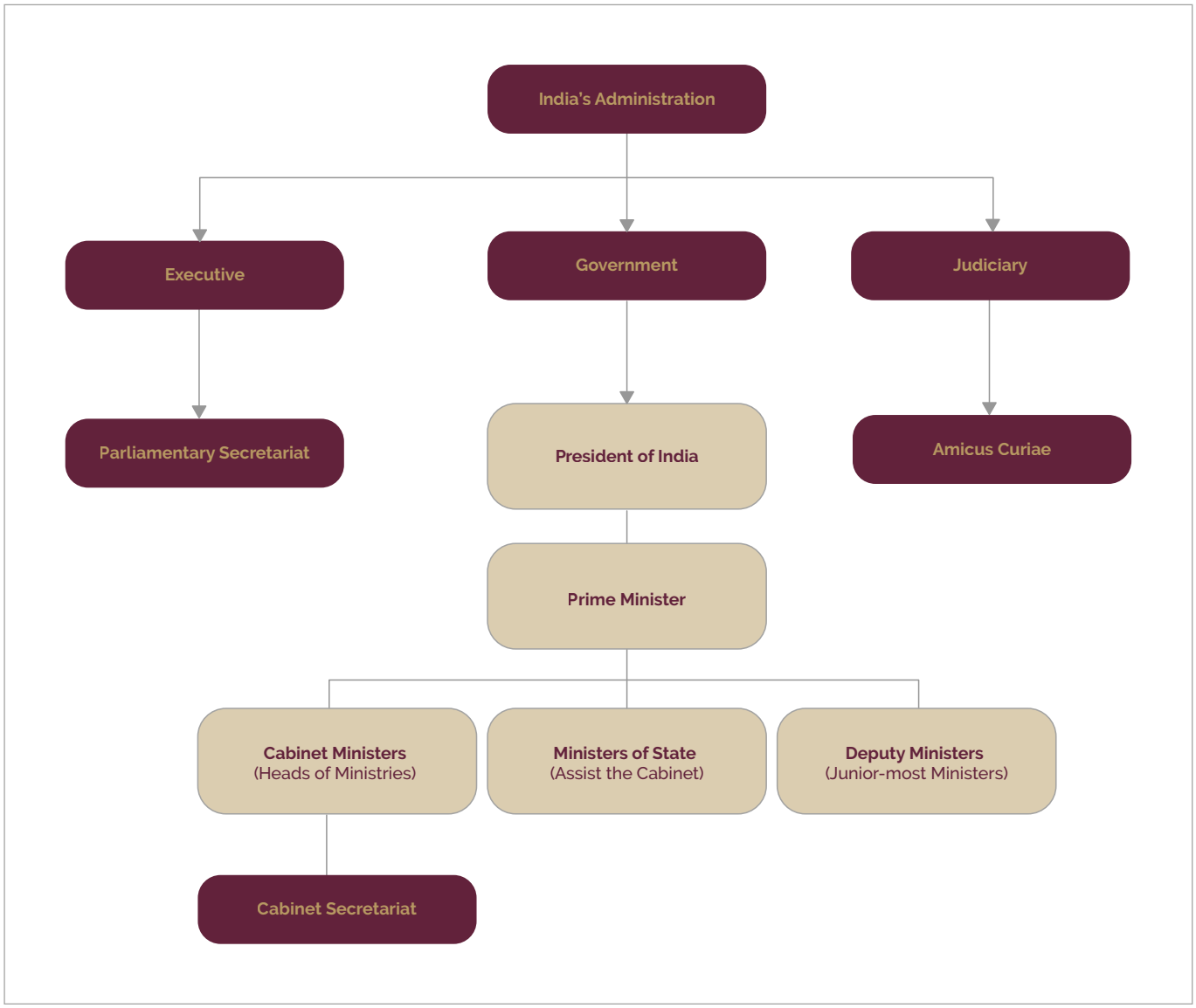
3.1 Introduction: Policy Advisory Systems in India

PAS can be defined as the production of knowledge relevant to a policy problem and offering recommendations for possible solutions. It involves activities such as research, data analysis, proposal development, consultation with stakeholders, and guiding policy through governmental processes. The focus of policy advising in government is on analysing public issues and formulating solutions. With the rise of new advice sources, including consultancies, think tanks, and political aides, the role of public service has changed, particularly in the Westminster tradition, where PAS has undergone major change. Different players with varying interests and resources interact inside political and economic institutions in a good PAS. For public policy to be effectively made, it is essential to comprehend these players and how they interact. In India, PAS dynamics have led to a rethink of the received knowledge about the insider-outsider and technical-political divides in policy advice, leading to more nuanced descriptions of PAS configurations.

3.2 Ecosystem for the Functioning of Policy Advisory Systems

The PAS is serving the three limbs of the Indian Administration at different levels, dictated by needs and provisions incorporated in their manuals. The chart below shows the structure of the Indian Administration and the various nodes of the central government:

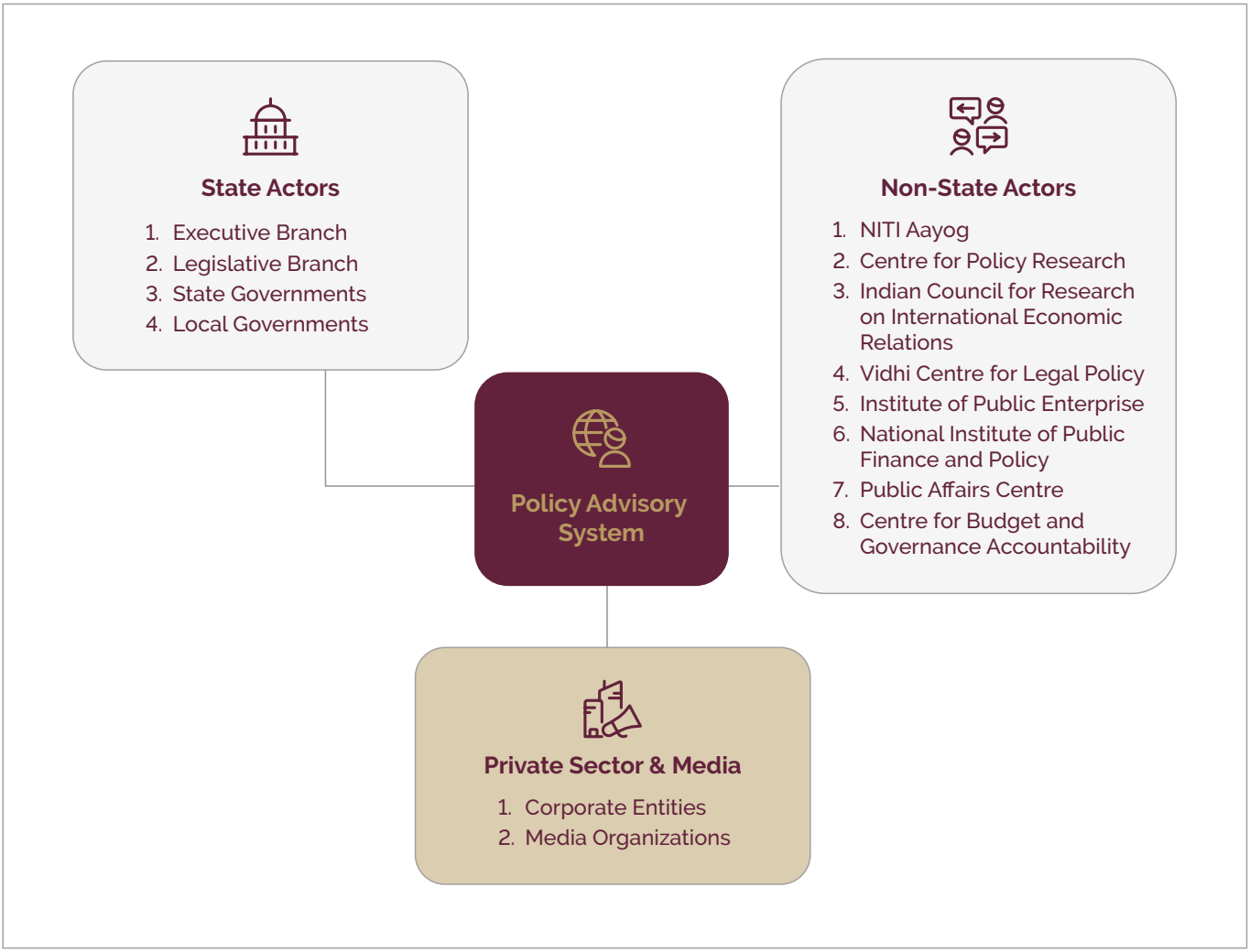
India Figure 1: Structure of the Indian Administration



Source: *Authors (2025)*

In India, PAS actors play a crucial role in governance, policy-making, and implementation. These actors can be categorised into state actors (government bodies) and non-state actors (private entities, think tanks, and civil society organisations). Key PAS actors and their relationship with the government are explained in the following figure:

India Figure 2: PAS Actors and Government in India



Source: *Authors (2025)*

3.2.1 State Actors (Government Institutions):

These official government bodies responsible for policy formulation, execution, and governance are:

1. **Executive Branch:** Includes the President, Prime Minister, Cabinet Ministers, and Ministers of State, who oversee governance and policy implementation.
2. **Legislative Branch:** Parliament (Lok Sabha & Rajya Sabha) debates and passes laws, assisted by Parliamentary Committees (Public Accounts, Estimates, Ethics, etc.).
3. **Judiciary:** The Supreme Court, High Courts, and District Courts ensure legal compliance and constitutional integrity.
4. **State Governments:** Each state has a Chief Minister, State Cabinet, and Legislative Assembly, handling regional governance.
5. **Local Governments:** Municipalities and Panchayati Raj institutions manage grassroots governance.

3.2.2 Non-State Actors (Policy Advisors & Think Tanks):

These entities provide research, policy recommendations, and advocacy.

1. **NITI Aayog:** The government's primary policy think tank, advising on economic and social strategies.
2. **Centre for Policy Research (CPR):** Conducts independent research on governance and policy.
3. **Indian Council for Research on International Economic Relations (ICRIER):** Focuses on economic policy.
4. **Vidhi Centre for Legal Policy:** Provides legal research to improve governance.
5. **Institute of Public Enterprise (IPE):** Specialises in public enterprise management.
6. **National Institute of Public Finance and Policy (NIPFP):** Advises on fiscal policies.
7. **Public Affairs Centre (PAC):** Works on governance and service delivery improvements.
8. **Centre for Budget and Governance Accountability (CBGA):** Advocates for transparent governance.

3.2.3 Private Sector & Media:

1. **Corporate Entities:** Engage in Public-Private Partnerships (PPPs) for infrastructure and economic development.
2. **Media organisations:** Influence governance by shaping public opinion and holding officials accountable.

3.3 PAS actors interact with the government as explained below:

- **Policy Formulation:** Think tanks and advisory bodies provide research-based recommendations.
- **Legislation & Implementation:** Government institutions draft, debate, and enforce policies.
- **Public Engagement:** Civil society organisations advocate for policy changes and monitor governance.
- **Judicial Oversight:** Courts ensure policies align with constitutional principles.

NITI Aayog is the policy advisory body of the Government of India, established in 2015 to replace the Planning Commission (Next IAS, 2024, p. 2). It provides strategic, economic, and technical advice to the central and state governments, ensuring effective policy formulation.

3.4 Major Initiatives of NITI Aayog

- The **Atal Innovation Mission (AIM)** promotes innovation and entrepreneurship across India by establishing tinkering labs and supporting startup incubation programmes.
- The **SDG India Index** serves as a national tracker, monitoring progress toward the Sustainable Development Goals at both the central and state levels.
- The **Development Monitoring and Evaluation Office (DMEO)** is responsible for assessing the performance and impact of government schemes to ensure evidence-based policymaking.
- The **Aspirational Districts Programme** aims to transform underperforming districts through targeted data-driven interventions and community-based governance.
- The **Digital Public Infrastructure initiative** advocates for scalable technology platforms, such as India Stack, to enable inclusive and accessible digital transformation.

Structure

- Chairperson: The Prime Minister of India.
- Vice Chairperson: Appointed by the Prime Minister.
- Governing Council: Includes Chief Ministers and Lieutenant Governors.
- Experts & Committees: Advice on specialised policy matters.

Key Roles

- Aspirational Districts Programme: Focuses on underdeveloped regions.
- Atal Innovation Mission: Supports startups and technology.
- National Data & Analytics Platform: Provides open access to government data.
- Health & Education Reforms: Strengthens healthcare and digital education.

NITI Aayog plays a vital role in India's governance, ensuring data-driven policy-making and national development. India's governance system thrives on collaboration between state and non-state actors, ensuring effective policy-making and implementation.

The PAS in India functions in two ways, offering advice either upon request or on its own initiative through routine submission of reports or preparing reports on issues of significance (NITI Aayog, 2022). Policy advice is frequently sought, among other things, in sectors such as energy, financial inclusion, trade, defence, agriculture, industry, education, technology, and external affairs (Reserve Bank of India, 2019; KPMG India, 2023). The policy-making process is multifaceted and involves numerous stages and stakeholders. The process is designed to be inclusive and deliberative, ensuring that a wide range of socio-economic and political factors are considered. The Cabinet, led by the Prime Minister, plays a central role in formulating and approving major policies and decisions. Various committees, such as the Economic Affairs Committee and the Parliamentary Affairs Committee, provide detailed analyses and recommendations to ensure well-informed decisions. Each Ministry has advisors, whereas in some ministries, this practice culminates in the appointment of a chief, such as a chief economic adviser or a chief scientific adviser. The Secretaries to the Government of India are expected to tender advice on the subjects allotted to the concerned ministries. The dependence on consultants can also be seen primarily in the four biggies, and these are Deloitte, PricewaterhouseCoopers (PwC), Ernst & Young (EY), and KPMG. These companies are important in forming government policy, providing strategic advice, conducting evaluations, and supporting implementation in areas such as finance, infrastructure, technology, and governance. Additionally, non-political groups, private players, and civil society organisations actively participate in the policy formulation process, making it a collaborative effort. These can access PAS for the requisite inputs (PwC India, 2025).

3.5 Limitations of PAS

India's policy advice system is relatively inclusive, involving various stakeholders, including government bodies, academic institutions, and civil society organisations. However, it faces challenges such as bureaucratic inertia, political interference, limited capacity for data-driven decision-making, and budgetary constraints (Mittal & Pani, 2022, pp. 105–106). Although the policy advisory system works with the community and is also supported by people, it has its problems, among other things, related to culture, language, and political affiliation.

3.6 Summary

In India, PAS involves a network of decision-makers, knowledge producers, and knowledge brokers who contribute to policy formulation. The key players include government officials, bureaucrats, think tanks, academic institutions, private sector consultants, and civil society organisations. The process begins with problem identification, followed by research and analysis, where experts provide insights and recommendations. Policymakers then engage in consultations and deliberations, considering political, economic, and social factors before drafting policies. The final stage involves policy implementation and evaluation, ensuring effectiveness and necessary adjustments. This system enables informed decision-making, balancing technical expertise with political considerations to shape India's governance framework.

4. Digital Tools Used to Improve Policymaking in India

4.1 Introduction

The objective of this section is to understand how AI and digital tools are being utilised in India to enhance policy advice. The AI is opening new doors for PAS to meet long-standing challenges like bureaucratic inertia, political interference, limited capacity for data-driven decision-making, and budgetary constraints. The AI-powered policy advisory system will open a new but significant chapter in the art and science of policy advisory systems. The Information Technology Act, 2000, its amended rules, 2023, and the Digital Personal Data Protection (DPDP) Act, 2023 provide measures for data security and privacy for developing and using big data. India relies significantly on open-source software platforms. Nevertheless, the country has begun efforts to create its artificial intelligence systems, focusing on enhancing security, reliability, accessibility, affordability, and the ability to tailor solutions to specific needs.

4.2 Interplay of AI and PAS

As AI is making inroads in the Indian public policy advisory systems, from a slow start in 2019, India has come a long way in using AI in its internal decision-making processes. The Ministry of Electronics and Information Technology (MeitY) is the primary driver of AI initiatives in India. It oversees the IndiaAI Mission, which aims to strengthen the country's AI ecosystem through innovation, ethical practices, and inclusivity. AI tools, supported by initiatives like the IndiaAI Mission, enhance policy-making by analysing large datasets, predicting outcomes, and ensuring effective governance (Press Information Bureau, 2024).

The India AI Mission plays a crucial role in enhancing policy advisory systems by providing data-driven insights, AI-powered analytics, and sector-specific AI applications. One of its key pillars, the IndiaAI Datasets Platform, streamlines access to high-quality, non-personal datasets, enabling policymakers to make informed decisions. Additionally, the IndiaAI Compute Capacity initiative supports advanced AI research by deploying 10,000+ GPUs and facilitating large-scale policy simulations and impact assessments. The mission also promotes Responsible AI, ensuring transparency, fairness, and accountability in AI-driven policy recommendations. By integrating AI into governance, the India AI Mission strengthens evidence-based policymaking, particularly in sectors like healthcare, agriculture, and education.

4.3 Digital and AI tools used to Improve Policymaking in India

This section seeks to highlight some of the digital tools and AI for the PAS used in India. We are looking for answers to the following questions:

- What AI tools are used for policy advice, and what do they do?
- Which policy advisory bodies manage and use such tools?
- Who do they send their data, analysis, or model results to?
- What parts of policymaking do such tools advise? (Agenda setting, formulation, adoption, implementation, or monitoring and evaluation)
- Which policies have benefited from such tools, or which parts of policymaking have been made efficient?

India is utilising digital tools and AI to improve its policy advisory systems. Technologies such as GIS and cloud computing provide critical insights for urban planning, resource allocation, and disaster management. AI applications are diverse, addressing challenges in sectors like healthcare (disease prediction), agriculture (crop management), education (customised learning), and finance (fraud detection) (EY, 2025). Ethical concerns, such as data privacy and algorithm bias, remain important areas for improvement. The National Committee on Responsible and Trustworthy AI emphasises fairness, transparency, and inclusivity in AI adoption (Press Information Bureau, 2025).

PAS in India relies on a mix of government agencies, think tanks, academic institutions, and private sector consultants to provide evidence-based recommendations. While DPIs such as Aadhaar, UPI, DigiLocker, and NDAP play a crucial role in governance, their direct use in policy formulation is less clear. Policymakers typically receive data-driven insights from research institutions, analytics firms, and government data platforms, rather than conducting analysis themselves. AI-powered tools, such as predictive analytics and machine learning models, are increasingly used to assess policy impact, optimise welfare schemes, and improve service delivery. However, platforms like DigiLocker primarily serve as service delivery mechanisms, rather than policy advisory tools. The integration of AI and DPI into policy advisory remains an evolving space, with efforts to enhance data-driven decision-making through initiatives like GovAI.

4.4 The Need for Developing Digital Public Infrastructure (DPI) for Policy Advisory Systems

DPI helps policymakers address challenges in resource allocation, disaster management, and social welfare distribution. DPI platforms like Aadhaar and UPI enable efficient identification and distribution of resources to targeted beneficiaries, ensuring transparency and reducing leakages. Predictive analytics and real-time data from DPI systems help policymakers anticipate disasters, allocate relief measures, and coordinate responses effectively (Sahu, Upadhayay, Singh, & Sharma, 2024). Platforms such as DigiLocker and CoWIN streamline the delivery of welfare schemes, ensuring accessibility and inclusivity. DigiLocker itself is primarily a document storage and verification tool, not a policy advisory system. However, platforms that aggregate and analyse DigiLocker data could be used for policymaking. For example, the National Data Analytics Platform (NDAP) enables policymakers to access and analyse structured datasets, including those related to citizen documentation, financial inclusion, and service delivery (Kamath, 2021). DigiLocker contributes to e-governance by streamlining access to verified documents, which can indirectly support policy decisions. The data are presented to policymakers through interactive dashboards, analytical reports, geospatial mapping, predictive analytics models, real-time alerts and notifications, and stakeholder consultations.

4.5 Unbundling Digital Tools

Unbundling digital tools involves breaking down complex systems into modular components to enhance adaptability and efficiency. In India, this approach enables policymakers to develop flexible and tailored solutions for addressing public needs. For instance, initiatives like Aadhaar and UPI illustrate the potential of modular infrastructure in improving governance and service delivery (Economic Times, 2024). Similarly, frameworks like the Beckn Protocol support decentralised digital services in areas like healthcare, education, and mobility (Routledge, 2023). Despite its benefits, challenges such as interoperability issues, data privacy, and the digital divide remain significant concerns. To overcome these, India must prioritise capacity building, ensure robust governance, and foster public-private partnerships (Aapti Institute, 2025).

4.5.1 Open-Source Software

Open-source software (OSS) is a key driver of innovation in policy advisory systems, allowing for reduced dependency on proprietary technologies while fostering collaboration and transparency. In India, OSS initiatives like OpenForge demonstrate their transformative potential. OpenForge, a government-supported platform, enables developers to co-create, share, and reuse code for e-governance applications, enhancing scalability and cost-effectiveness (Drishti IAS, 2022). OSS plays a significant role in Policy Advisory Systems (PAS) in India, particularly in data analysis, governance transparency, and collaborative policymaking. The Government of India has actively promoted OSS adoption through policies like the Policy on Adoption of OSS and frameworks for OSS integration in e-governance systems .

4.5.2 Open Data

Open data initiatives in India play a transformative role in promoting transparency, accountability, and evidence-based policymaking. The NDAP, launched by NITI Aayog, is a landmark initiative aimed at democratising access to public datasets. NDAP consolidates data from central and state governments, presenting it in a user-friendly and machine-readable format. This platform enables policymakers, researchers, and civil society to analyse trends, identify gaps, and make informed decisions (KPMG, 2023).

There are systems in place that help policymakers analyse trends, identify gaps, and make informed decisions, but the extent to which they conduct analysis themselves varies. Platforms like the NDAP provide structured datasets that policymakers can use for decision-making. Additionally, KPMG's insights platform offers industry trends and actionable intelligence. In practice, policymakers often rely on research institutions, think tanks, and consulting firms to conduct detailed analyses and provide reports. While some government agencies have in-house analytics teams, many decisions are informed by external reports and expert recommendations rather than direct data analysis by policymakers themselves.

One notable application of open data is in the Pradhan Mantri Fasal Bima Yojana (PMFBY), a crop insurance scheme. PAS utilises publicly available satellite data to assess crop health and estimate losses to ensure timely and accurate insurance claims for farmers (Drishti IAS, 2023).

4.5.3 Open Artificial Intelligence

Open AI frameworks play a pivotal role in fostering inclusivity and accessibility for diverse Stakeholders. India's IndiaAI Mission emphasises the development of indigenous AI solutions tailored to the nation's unique social and linguistic diversity. A key initiative under this mission is Bhashini, an open AI platform designed to integrate multiple Indian languages (IndiaAI, 2025). This platform aims to bridge linguistic divides and make digital tools more accessible to individuals from varied linguistic backgrounds. This enables the PAS to understand challenges at the grassroots level and offer practical, real-world insights.

Local language models have been instrumental in helping policymakers understand grassroots challenges in India, particularly in education, governance, and healthcare. One notable example is the M-TALL Akhra initiative in Jharkhand, which developed mother-tongue-based multilingual education programs to address learning gaps among tribal children (Pattanayak, 2022). This initiative used local language models to design pedagogical strategies and teaching materials, ensuring that policymakers could make informed decisions about language-inclusive education policies.

Small Language Models (SLMs) have been deployed to bridge the digital divide in rural India, enabling local governance and policy formulation. These models help policymakers analyse regional disparities, linguistic diversity, and mobile-first user behaviour, ensuring that policies are tailored to local needs.

4.5.4 Open Content Adhering to Privacy

Open content initiatives, such as those governed by Creative Commons licensing, strike a balance between accessibility and privacy compliance. They enable the ethical sharing and reuse of publicly available content while respecting data protection laws. An exemplary initiative is DigiLocker, a digital document storage platform that provides secure and convenient access to personal documents. By adhering to the DPDPA's privacy norms, DigiLocker ensures that user data is handled responsibly, fostering digital inclusivity while prioritising privacy.

4.6 International and Domestic Laws

India has established a robust legal framework to regulate digital tools and AI in policy advisory systems. Domestically, the Information Technology Act of 2000 serves as a cornerstone for electronic governance, with provisions like Section 43A addressing data privacy breaches. The Digital Personal Data Protection Act (DPDPA) further emphasises informed consent and accountability in data handling, ensuring ethical AI deployment.

4.7 Security and Privacy

To address security concerns in e-mail deployment, the Government of India (GoI) mandates the exclusive use of its centralised e-mail service, overseen by the Implementing Agency (IA). This ensures uniform policy implementation, secure data management, and seamless migration (Ministry of Electronics & IT, 2025). Centralising emails helps make policy implementation uniform by ensuring consistent communication, streamlined decision-making, and improved accountability. When all policy-related emails are managed through a centralised system, policymakers and administrators can standardise messaging, improve coordination, enhance compliance tracking, reduce redundancy, and strengthen security.

4.8 Challenges

Digital tools and AI used in PAS face a variety of hurdles that demand careful attention. A key issue is unintentional bias, where AI systems may embed societal prejudices, causing inequitable policy recommendations. Moreover, privacy and security concerns arise due to the vulnerability of sensitive data utilised in policymaking, requiring robust protection. The challenge of accountability is notable, as opaque "black-box" models hinder tracking and understanding AI's decision-making processes (Karma Advisory, 2024). However, India faces challenges such as funding constraints, privacy concerns, and the digital divide (UNESCO, 2023).

4.9 AI as a Public Policy Advisory Tool

Artificial Intelligence (AI) has permeated various ministries and departments of the Government of India, including the Ministry of Corporate Affairs, the Ministry of Home Affairs, the Finance Ministry, the Department of Administrative Reforms and Public Grievances, and the Ministry of Electronics and Information Technology. These ministries require policy advice on both generic and specific issues from time to time to design, implement, monitor, and, if necessary, initiate mid-course corrections. All such programmes seek policy inputs and are supported by the requisite mechanisms. Below, we discuss how AI is used by a few ministries in operating their key programmes.

The Ministry of Corporate Affairs, set up for itself the task of promoting ease of doing business in India, ensuring real-time corporate compliance monitoring, reducing regulatory delays, enhancing transparency, and facilitating paperless corporate governance. In 2021, the Ministry of Corporate Affairs launched MCA21 V3.0, an upgraded portal facilitating the electronic filing of corporate documents and public access to corporate information. This platform leverages AI to organise and analyse stakeholder inputs, producing analytical reports that expedite policy decisions. The integration of AI has streamlined regulatory processes, enhancing transparency and efficiency in corporate governance. MCA21 V3.0 is the latest version of the Ministry of Corporate Affairs (MCA) online compliance and regulatory filing portal in India. It is a data-driven AI-enabled platform designed to enhance compliance, streamline corporate filings, and improve governance (Ministry of Corporate Affairs, 2021).

The other platforms such as are:

1. **IndiaAI Datasets Platform** - This initiative provides structured, high-quality datasets to policymakers, enabling data-driven decision-making in sectors like healthcare, agriculture, and education.
2. **National Data Analytics Platform (NDAP)** - Developed by NITI Aayog, NDAP aggregates and visualises government datasets, helping policymakers identify trends, gaps, and policy impacts.
3. **AI for Social Good Initiatives** - Various AI-driven projects focus on predictive analytics for disaster management, healthcare optimisation, and financial inclusion, ensuring evidence-based policymaking. These platforms, like MCA21 V3.0, leverage AI to streamline governance, enhance transparency, and improve policy formulation.

The Finance Ministry in India has been leveraging AI to enhance efficiency and transparency in income tax administration. The key AI applications relate to the detection of tax evasion, faceless assessments, integration with other databases, predictive analytics, and social media analysis.

The Department of Administrative Reforms and Public Grievances (DARPG) has used digital tools in AI in its internal processes related to grievance redressal. The effective redressal of public grievances is one of the most important aspects of Indian democracy. The Centralised Public Grievance Redress and Monitoring System (CPGRAMS) is an online platform available to citizens 24/7 to lodge their grievances with the public authorities on any subject related to service delivery. It is a single portal connected to all the Ministries/ Departments of the Government of India and the States. Every Ministry and State has role-based access to this system. CPGRAMS is also accessible to citizens through a standalone mobile application downloadable through the Google Play Store and a mobile application integrated with the Unified Mobile Application for New-age Governance (UMANG). Citizens can access the system online through the portal. The efficacy of the CPGRAMS portal has been an important thrust area of the nation's Grievance Redressal Systems.

The Ministry of Electronics and Information Technology (MeitY) launched the National AI Portal, INDIAai, serving as a central hub for AI-related news, research reports, and case studies. This initiative fosters collaboration among stakeholders, promotes AI adoption, and supports innovation across sectors. The portal has become a valuable resource for policymakers, industry professionals, and researchers.

Policy Advisory Systems (PAS) are crucial for good governance, providing policymakers with quality advice by analysing public problems and developing informed recommendations. PAS helps in enhancing policy capacity. PAS plays an important role during poly-policy crises. India has developed a strong PAS, incorporated advanced tools and techniques, and is backed by the necessary digital infrastructure to offer critical inputs for governance decisions. India's use of Geographic Information Systems (GIS), cloud computing, and AI tools, supported by initiatives like the IndiaAI Mission, has significantly improved policy-making across various sectors. A great example is that GIS is used in disaster management and environmental conservation. Cloud computing is used in data storage, software deployment, and remote collaboration. The government has set up data centres and has adopted the cloud to support India's digital economy. Apart from that, the Indian government has launched initiatives like BHASHINI, which uses AI for multilingual digital services, and AIKosha, a platform supporting AI innovation. The IndiaAI Mission aims to build a comprehensive ecosystem that fosters AI innovation by democratising computing access, enhancing data quality, developing indigenous AI capabilities, attracting top AI talent, enabling industry collaboration, providing startup risk capital, ensuring socially impactful AI projects, and promoting ethical AI. This mission drives India's AI ecosystem's responsible and inclusive growth through the following seven pillars.

5. Recommendations for South Africa's Policy Advisory System

Drawing from India's experience, South Africa can adopt a multi-pronged approach to build a more inclusive, efficient, and data-driven policy ecosystem. India's success lies in its strategic integration of AI across governance structures, supported by robust digital public infrastructure, open data ecosystems, and inclusive innovation frameworks. These lessons offer a roadmap for South Africa to modernise its policy advisory mechanisms. This can be achieved through: These recommendations focus on how South Africa can leverage AI specifically to enhance the design, implementation, and responsiveness of policy advisory systems, drawing directly from India's experience.

5.1 Recommendations Policy Advisory Systems:

1. Foster Innovation and Academia-Industry Collaboration

Policy advisory systems thrive when they are informed by cutting-edge research and grounded in local realities. India's M-TALL Akhra initiative, which brought together universities and the government to develop AI-based multilingual education tools, exemplifies how innovation ecosystems can support inclusive policymaking. South Africa should foster similar collaborations to generate context-specific AI tools that inform policy decisions in sectors like education, agriculture, and health.

2. Develop Inclusive AI Policies and Local Language Models

Inclusivity is essential for effective policy advice. India's Bhashini platform, which supports AI in multiple Indian languages, ensures that policy tools are accessible to diverse linguistic communities. South Africa, with its 11 official languages, can benefit from developing local language AI models that allow policymakers to gather insights from all regions and communities, ensuring that no group is excluded from the policy process.

3. Strengthen Regulatory Tools and Governance

A robust legal framework is foundational for ethical and effective AI use in policymaking. India's Information Technology Act and DPDPA provide clear guidelines for data protection and AI deployment. South Africa should similarly update its digital governance laws to ensure that AI tools used in PAS are transparent, accountable, and aligned with constitutional values. This will also build public trust in AI-driven policy decisions. Legislative and policy frameworks like the Protection of Personal Information Act (POPIA), the Cybercrimes Act 2020, and the National Policy on Data and Cloud (2024) can continue to be reviewed, aligned, and effectively applied across the board to ensure that AI systems used in policymaking are compliant with data privacy standards, transparency, and accountability are embedded in AI-driven decision-making, and that protecting the integrity of digital policy platforms.

4. Enhance Cybersecurity and Legal Safeguards

Policy advisory systems often handle sensitive data. India's centralised email systems and cybersecurity protocols, managed by the Ministry of Electronics and IT, ensure secure communication and data integrity. South Africa should invest in similar infrastructure to protect policy data from breaches, misinformation, and manipulation, especially as AI systems become more integrated into decision-making. As AI is developing faster and is integrated into important spaces like Policy Advisory Systems, pieces of legislation like POPIA and the Cybercrimes Act should continuously be reviewed to offer a comprehensive legal framework that supports the ethical, secure, and effective use of AI and digital tools in South Africa's policy advisory systems.

5. Build Research Capacity and Support Think Tanks

India's collaboration between NITI Aayog and institutions like the IITs has led to the development of AI tools that directly inform national policy. South Africa should invest in building the capacity of local think tanks, research institutes, and universities to conduct AI policy research. This will ensure that PAS is informed by rigorous evidence and grounded in local expertise. Think tanks like the Institute for Security Studies (ISS), Policy Innovation Lab: Stellenbosch University, and Development Policy Research Unit (DPRU)- University of Cape Town, to mention just a few, should be strengthened and meaningfully engaged to offer support in policy development, implementation, and evaluation.

6. Develop Specialised AI Solutions for Governance

AI can be tailored to address specific governance challenges. India's MCA21 V3.0 platform uses AI to monitor corporate compliance in real-time, reducing regulatory delays and improving transparency. South Africa can adopt similar tools in areas like tax administration, municipal governance, and environmental monitoring to enhance the precision and accountability of policy implementation.

7. Expand ICT Education and Training

For AI to be effectively integrated into PAS, public officials must be equipped with the necessary skills. India's IndiaAI Mission includes training programmes for civil servants. South Africa should follow suit by embedding AI literacy into public administration training and offering continuous professional development. This will ensure that policymakers can interpret AI-generated insights and apply them appropriately. Specialised courses from institutions of higher learning for policymakers can make a huge difference so that they are well abreast with the fast developments in AI and how this is reshaping policy-making and implementation processes.

8. Ensure Policy Continuity and Reduce Political Interference

India's long-term digital strategies, such as Digital India and IndiaAI, have remained consistent across political administrations, enabling sustained progress. South Africa should embed digital transformation and AI strategies within national development frameworks to ensure continuity, reduce politicisation, and maintain momentum in PAS reform.

5.2 Recommendations for Digital Tools that Improve Policymaking:

1. Invest in Infrastructure and Resource Allocation

Digital infrastructure is the backbone of modern policymaking. India's Unified Payments Interface (UPI) and Direct Benefit Transfer (DBT) systems have demonstrated how digital platforms can reduce costs, eliminate fraud, and improve service delivery. South Africa should invest in similar infrastructure to support AI-enabled platforms for welfare, healthcare, and education, especially in rural and underserved areas. This will enable real-time data collection and feedback, which are essential for adaptive policymaking.

2. Bridge the Digital Divide through Inclusive Infrastructure

India's BharatNet project aims to provide broadband connectivity to all villages, ensuring that rural communities are not excluded from digital governance. South Africa can adopt a similar approach to ensure that all citizens, regardless of geography, can access digital services, participate in policy consultations, and offer platforms for continuous feedback. This is critical for ensuring that PAS reflects the needs of the entire population.

3. Treat Digital Transformation as a Public Good

India treats platforms like DigiLocker and NDAP as digital public goods, offering secure and decentralised access to documents and data. South Africa should adopt this philosophy by ensuring that digital services in healthcare, education, and mobility are universally accessible. This approach supports equitable policymaking by ensuring that all citizens benefit from digital advancements.

4. Adopt Open Standards and Ensure Interoperability

India's use of open-source platforms like OpenForge has enabled scalable and cost-effective e-governance. South Africa can benefit from adopting open standards to ensure interoperability across government systems, reduce vendor lock-in, and future-proof its digital infrastructure. This will also facilitate data sharing and integration across departments, improving the coherence of policy advice.

5. Improve Coordination and Stakeholder Consultation

Effective policymaking requires input from a wide range of stakeholders. India's collaborative platforms like NDAP and OpenForge were developed through partnerships with academia, civil society, and the private sector. South Africa should establish inter-agency task forces and formal consultation mechanisms to ensure that PAS is informed by diverse perspectives and grounded in real-world needs.

6. References

Aapti Institute (2025). *Bridging technology and society*. Available at: https://aapti.in (Accessed: 19 March 2025).

Adom, R.K. and Simatele, M.D. (2024) 'Overcoming systemic and institutional challenges in policy implementation in South Africa's water sector', *Sustainable Water Resource Management*, **10**(69). Available at: https://doi.org/10.1007/s40899-024-01040-3 (Accessed: 13 March 2025).

Bhashini (2025) *National Language Technology Mission*. Available at: https://bhashini.gov.in/about-bhashini (Accessed: 28 May 2025).

BlueKraft (2025) *AI and Big Data in public policy: Shaping India's governance model*. Available at: https://www.bluekraft.in/ai-and-big-data-in-public-policy-shaping-indias-governance-model/ (Accessed: 2 April 2025).

Christensen, J. (2021) 'Expert knowledge and policymaking: A multi-disciplinary research agenda', *Policy & Politics*, 49(3), pp. 455–471. Available at: https://doi.org/10.1332/030557320x15898190680037 (Accessed: 13 March 2025).

DARPG (2024) *Comprehensive Guidelines for Handling Public Grievances*. Department of Administrative Reforms and Public Grievances. Available at: https://darpg.gov.in/sites/default/files/Comprehensive_guidelines_for_handling_the_Public_Grievances.pdf (Accessed: 28 May 2025).

DARPG (2025) *Centralised Public Grievance Redress and Monitoring System (CPGRAMS)*. Department of Administrative Reforms and Public Grievances. Available at: https://darpg.gov.in (Accessed: 28 May 2025).

Department of Communications and Digital Technologies (DCDT) (2023) *South Africa's Artificial Intelligence (AI) planning*. Available at: https://www.dcdt.gov.za/images/phocadownload/AI_Government_Summit/National_AI_Government_Summit_Discussion_Document.pdf (Accessed: 22 March 2025).

Department of Communications and Digital Technologies (DCDT) (2023) *South Africa's Artificial Intelligence Planning: Adoption of AI by Government*. Available at: https://www.dcdt.gov.za/images/phocadownload/AI_Government_Summit/National_AI_Government_Summit_Discussion_Document.pdf (Accessed: 10 March 2025).

Department of Communications and Digital Transformation (DCDT) (2021) *Draft national policy on data and cloud*. Available at: https://www.gov.za/sites/default/files/gcis_document/202104/44389gon206.pdf (Accessed: 10 March 2025).

Department of Economic Affairs (2024) *Report of India's G20 task force on digital public infrastructure*. Government of India.

Direct Benefit Transfer Mission (2025) *Official website*. Available at: https://dbtbharat.gov.in (Accessed: 19 May 2025).

Drishti IAS (2023) *Digital Public Infrastructure*. Available at: Drishti IAS.

Drishti IAS (2023) *Pradhan Mantri Fasal Bima Yojana*. Available at: https://www.drishtiias.com (Accessed: 7 May 2025).

Economic Times (2023) 'Over $459 billion transferred through DBT in last 8 years: Nirmala Sitharaman', *The Economic Times*, 14 March. Available at: https://economictimes.indiatimes.com/news/india/over-459-billion-transferred-through-dbt-in-last-8-years-nirmala-sitharaman/articleshow/114489100.cms (Accessed: 9 May 2025).

Economic Times (2024) *Aadhaar, UPI, DPI: The other key systems that serve as building blocks for India's digital evolution*. Available at: https://government.economictimes.indiatimes.com (Accessed: 9 May 2025).

EY (2025) *India's Strategic AI Policy: Balancing Innovation & Responsible Deployment*. Available at: https://www.ey.com (Accessed: 15 May 2025).

Fourie, W., Makone, I. and Manicom, G. (2024) *Fast-Tracking Digital Transformation: A Framework for South Africa's Public Sector*, School for Data Science and Computational Thinking, Stellenbosch University. Available at: https://policyinnovationlab.sun.ac.za/wp-content/uploads/2024/07/Framework-for-digital-transformation_final.pdf (Accessed: 23 March 2025).

Gillwald (2020) *Digital futures: South Africa's digital readiness for the 'fourth industrial revolution'*. Research ICT Africa. (Accessed: 22 March 2025).

Government of India (2025) *Union Budget 2025: Highlights on India's AI Mission and National AI Strategy*. IndiaAI Mission. Available at: https://www.indiaai.gov.in (Accessed: 5 May 2025).

Haokip, G. T. (2025) *Policy Formulation and Development in India*. Indira Gandhi National Tribal University. Available at: IGNTU e-Pathshala.

Haridas, G.; Sohee, S.K. and Brahmecha, A. (2023) The Key Policy Frameworks Governing AI in India Available at https://accesspartnership.com/the-key-policy-frameworks-governing-ai-in-india/ (Accessed: 5 May 2025)

India Today (2025) *AI-driven crowd management at Maha Kumbh Mela 2025*. Available at: India Today.

IndiaAI (2025) *The IndiaAI Mission*. Available at: https://indiaai.gov.in (Accessed: 28 May 2025).

INDIAai (2025) *The National AI Portal of India*. Ministry of Electronics and Information Technology. Available at: INDIAai.

International Trade Administration (2024) *South Africa Digital Economy*. Available at: https://www.trade.gov/country-commercial-guides/south-africa-digital-economy (Accessed: 22 March 2025).

Kamath, S. (2021) 'Digital India Initiatives with Special Reference to Digital Locker', *IJISC*, **8**(1), pp. 45–57.

Karma Advisory (2024) *Responsible AI Policy Development Framework*. Available at: https://karmaadvisory.com/responsible-ai-policy-development-framework/ (Accessed: 28 May 2025).

Kaur, J. (2025) 'The rise of artificial intelligence and the legal challenges of algorithmic accountability in India', *Lawful Legal*, 19 January. Available at: https://lawfullegal.in/the-rise-of-artificial-intelligence-and-the-legal-challenges-of-algorithmic-accountability-in-india/ (Accessed: 16 May 2025).

Kondo, K. (2024) 'Institutional Leadership and the Challenge of Policy Implementation: The Case of South Africa's Extended Public Works Programme', *Journal of Public Administration*, **59**(1). Available at: https://doi.org/10.53973/jopa.2024.59.1.a3 (Accessed: 13 March 2025).

Kouroutakis, A. (2024) 'Rule of law in the AI era: Addressing accountability and the digital divide', *Discover Artificial Intelligence*, **4**(11). Available at: https://doi.org/10.1007/s44163-024-00191-8 (Accessed: 16 May 2025).

KPMG (2023) *India's open data initiative: Opportunity for states*. Available at: https://kpmg.com (Accessed: 5 May 2025).

KPMG India (2023) *Government and Public Services: Advisory Support*. Available at: https://kpmg.com/in/en/services/advisory/consulting/government-and-public-services.html (Accessed: 8 July 2025).

Lugtu, R. (2025) *The growing AI divide*. Available at: https://www.institutefordigitaltransformation.org/the-growing-ai-divide/ (Accessed: 28 May 2025).

MeitY (2023) *Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Amendment Rules, 2023*. Ministry of Electronics and Information Technology. Available at: MeitY.

MeitY (2024) *IndiaAI Mission Overview*. Ministry of Electronics and Information Technology. Available at: MeitY.

Ministry of Corporate Affairs (2021) *MCA21 V3.0: Transforming Corporate Governance in India*. Available at: Ministry of Corporate Affairs (Accessed: 15 May 2025).

Ministry of Electronics & IT (2021) *Policy on Open Standards for e-Governance*. Available at: https://www.meity.gov.in (Accessed: 15 May 2025).

Ministry of Electronics & IT (2025) *Draft Digital Personal Data Protection Rules*. Available at: https://pib.gov.in (Accessed: 15 May 2025).

Ministry of Electronics & IT (2025) *Guidelines for E-mail Management and Effective E-mail Usage*. Available at: http://www.deity.gov.in (Accessed: 16 May 2025).

Ministry of Electronics and Information Technology (2025) *Official website*. Available at: https://www.meity.gov.in/6 (Accessed: 16 May 2025).

Mittal, R. and Pani, N. (2022) *Policy Challenges 2019–2024*, Centre for Policy Research. Available at: https://cprindia.org/wp-content/uploads/2022/03/Policy-Challenges-2019-2024.pdf (Accessed: 8 July 2025).

National Artificial Intelligence Portal of India (2025) *Official website*. Available at: https://indiaai.gov.in (Accessed: 28 May 2025).

Next IAS (2024) *NITI Aayog (National Institution for Transforming India)*. Available at: https://www.nextias.com/blog/niti-aayog/ (Accessed: 8 July 2025), p. 2.

South African Government (2020) *National Policy Development Framework 2020*.

NITI Aayog (2022) *Annual Report 2022–23*. Government of India. Available at: https://www.niti.gov.in/sites/default/files/2023-02/Annual-Report-2022-2023-English_06022023_compressed.pdf (Accessed: 8 July 2025).

NITI Aayog (2023) *National Strategy for Artificial Intelligence*. Available at: NITI Aayog.

OECD (2017) *Policy Advisory Systems: Supporting Good Governance and Sound Public Decision Making*. OECD Publishing, Paris.

OECD (2017) *Policy Advisory Systems: Supporting Good Governance and Sound Public Decision Making*. OECD Publishing. Available at: https://doi.org/10.1787/9789264283664-en (Accessed: 28 May 2025).

OECD (2021) *An overview of national AI strategies and policies*. OECD Publishing. Available at: https://goingdigital.oecd.org/data/notes/No14_ToolkitNote_AIStrategies.pdf (Accessed: 28 May 2025).

OECD (2025) *The main policy issues that surround AI*. Available at: https://oecd.ai/en/ai-policy-issues (Accessed: 28 May 2025).

Pattanayak, B. (2022) 'Primary education in children's mother languages: A bright example from Jharkhand, India', *ALSphere*. Available at: https://alsphere.org/wp-content/uploads/2022/06/Primary-Education-in-Childrens-Mother-Languages-by-Mr.-Binay-Pattanayak.pdf (Accessed: 16 May 2025).

Press Information Bureau (PIB) (2025) *Draft Digital Personal Data Protection Rules, 2025*. Press Information Bureau. Available at: PIB.

Press Information Bureau (PIB) (2024) *India's Digital Revolution: Transforming Infrastructure, Governance, and Public Services*. Available at: https://pib.gov.in/PressReleaseIframePage.aspx?PRID=2082144 (Accessed: 28 May 2025).

Press Information Bureau (2024) *Declaration on Digital Public Infrastructure, AI and Data for Governance*. Available at: https://pib.gov.in/PressReleasePage.aspx?PRID=2074832 (Accessed: 28 May 2025).

Press Information Bureau (2024) *IndiaAI Mission Calls for Proposals in Second EoI Round*. Available at: https://pib.gov.in (Accessed: 19 May 2025).

Press Information Bureau (2024) *Quad principles for inclusive and sustainable digital public infrastructure*. Available at: https://pib.gov.in/PressReleasePage.aspx?PRID=2057472 (Accessed: 28 May 2025).

Press Information Bureau (2025) *Government of India Expands AI-Driven Skilling*. Available at: https://pib.gov.in (Accessed: 19 May 2025).

PwC India (2025) *Government & Public Sector Advisory Services*. Available at: PwC India.

Reserve Bank of India (2019) *National Strategy for Financial Inclusion 2019–2024*. Available at: https://www.rbi.org.in/commonman/upload/english/content/pdfs/english_16042021.pdf (Accessed: 8 July 2025).

Reserve Bank of India (2025) *RBI Bulletin*. Available at: https://rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=22994 (Accessed: 28 May 2025).

Routledge (2023) *The Dazzle of the Digital: Unbundling India Online*. Available at: https://www.routledge.com (Accessed: 28 May 2025).

Sahu, P., Upadhayay, S., Singh, A. and Sharma, J. (2024) 'AI in disaster response: Real-time predictions and relief management', *International Journal of Novel Research and Development (IJNRD)*. Available at: https://www.ijnrd.org/papers/IJNRD2410244.pdf (Accessed: 28 May 2025).

Seopetsa, T. (2020) 'Challenges facing the implementation of public policies in South Africa since the dawn of democracy', *Educor Multidisciplinary Journal*, **4**(1).

Telecommunication Engineering Center (TEC) (2020) *Artificial Intelligence (AI) Policies in India: A Status Paper*. Available at: AI Policies in India A Status Paper final.pdf (Accessed: 28 May 2025).

Think20 India (2023) *Open data as the backbone of digital public infrastructure: Prioritising high-value datasets for effective governance*. Available at: https://t20ind.org/research/open-data-as-backbone-of-digital-public-infrastructure/(Accessed: 19 May 2025).

Tiwari , S. (2025) Smaller, Smarter, Stronger: How SLMs Are Fueling India's Grassroots Tech Growth: India's linguistic diversity, regional disparities, and mobile-first user base make SLMs particularly compelling, Available at https://www.entrepreneur.com/en-in/news-and-trends/smaller-smarter-stronger-how-slms-are-fueling-indias/491100 (Accessed: 19 May 2025)

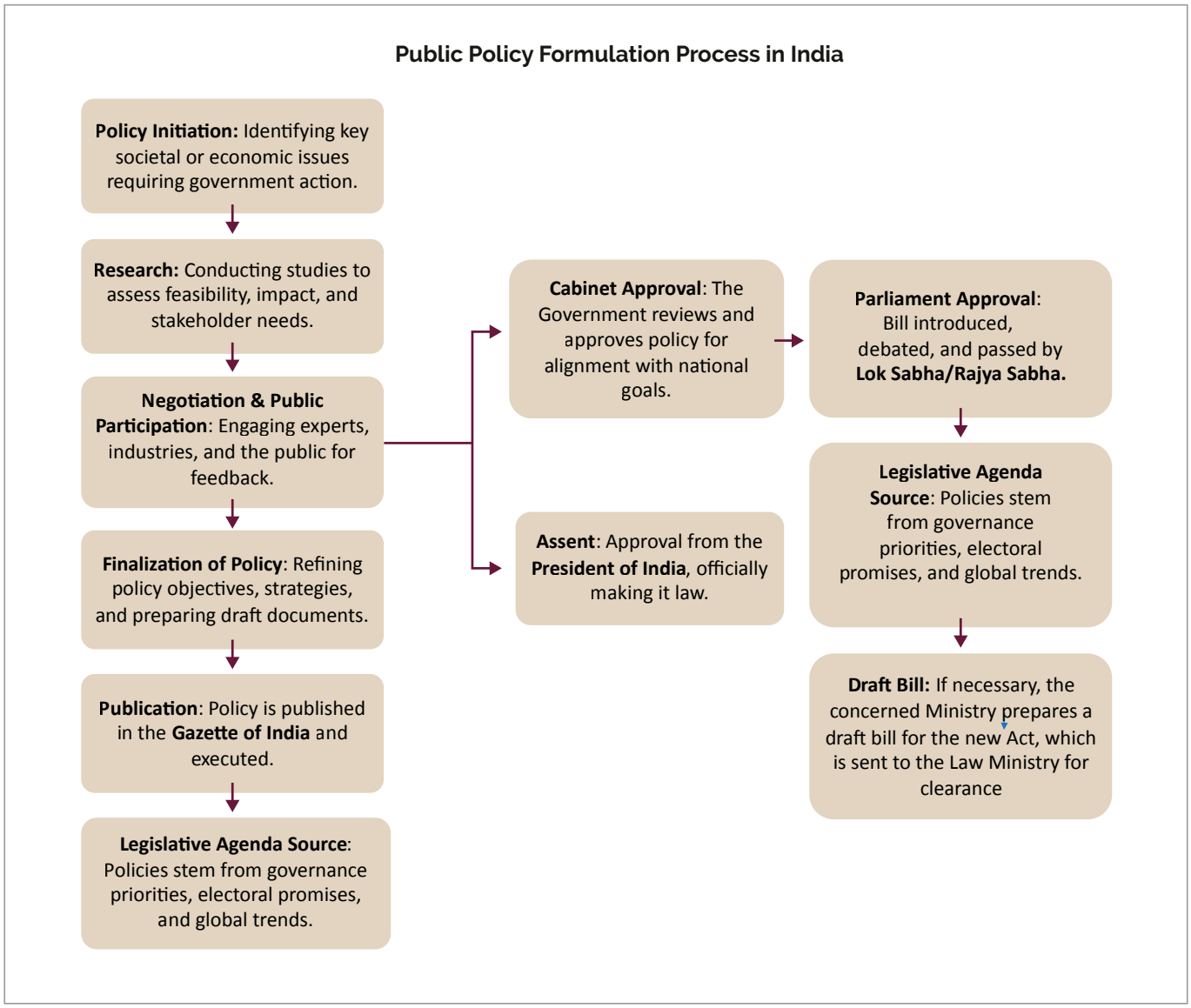
UNESCO (2023) *Digital Public Infrastructure – Lessons from India*. Available at: https://en.unesco.org (Accessed: 28 May 2025).

Vision IAS (2024) *Digital Public Infrastructure (DPI)*. Available at: https://visionias.in (Accessed: 8 May 2025).

Desai, V.T., Marskell, J., Marin, G. and Varghese, M. (2023) 'How Digital Public Infrastructure Supports Empowerment, Inclusion, and Resilience', *World Bank Blogs*, 15 March. Available at: https://blogs.worldbank.org/digital-development/how-digital-public-infrastructure-supports-empowerment-inclusion-and-resilience (Accessed: 18 May 2025).

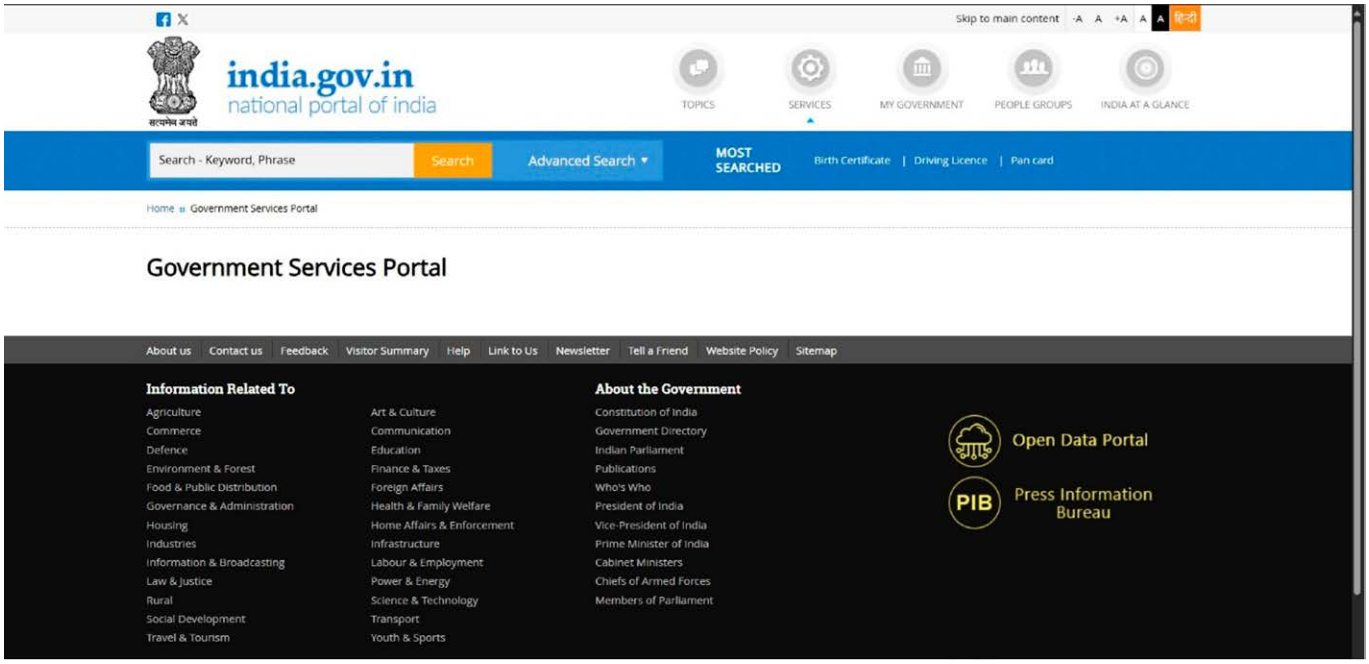
World Bank Group (2021) *The role of digital in the COVID-19 social assistance response*. Washington, D.C.: World Bank Group. Available at: https://openknowledge.worldbank.org/handle/10986/35229 (Accessed: 28 May 2025).

Appendix A



***Source**: Researchers own design*

Appendix B



Source: Government Services Portal | National Portal of India