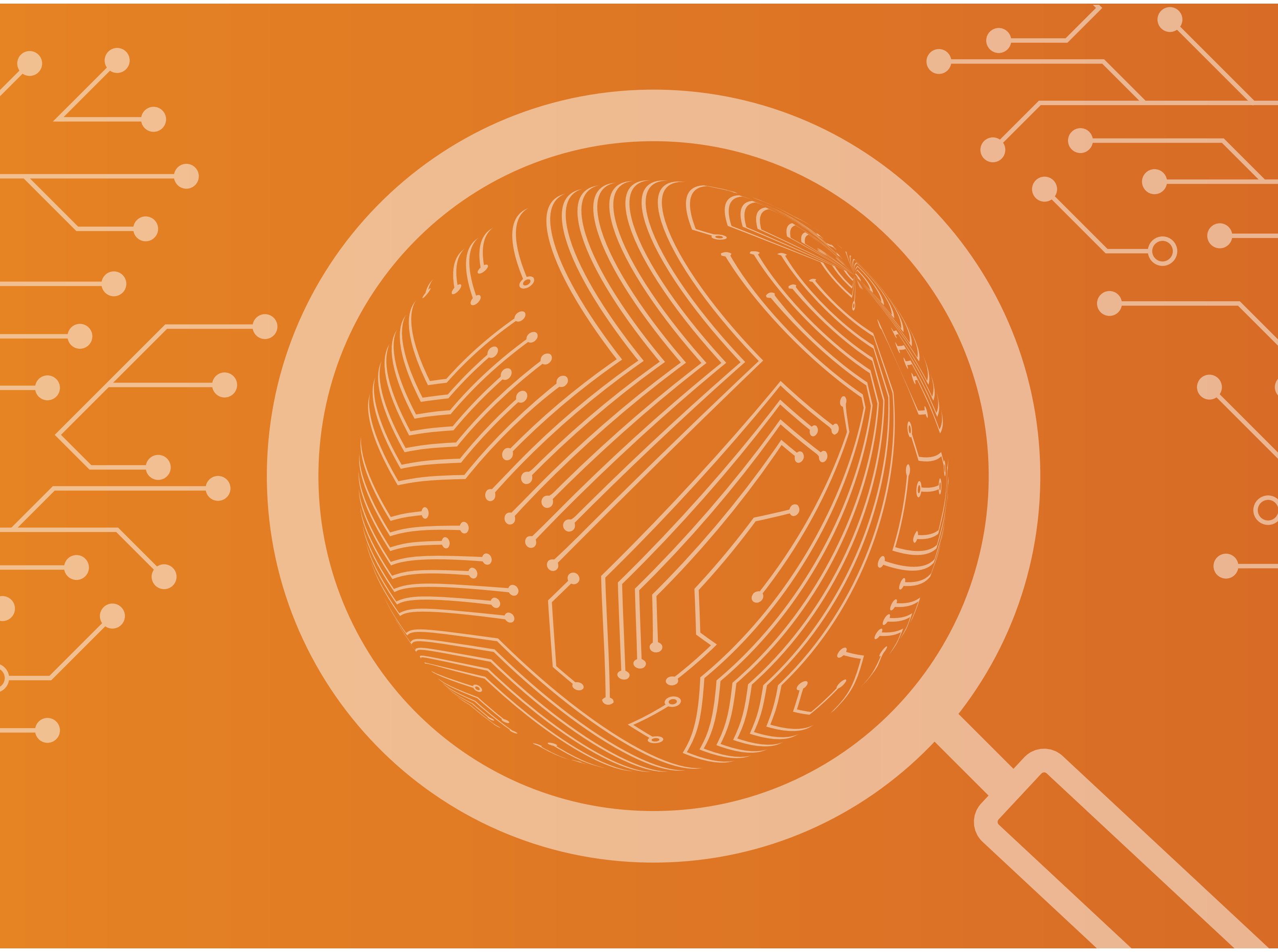
Assessing Scientific Research & Innovation

Study of frameworks and parameters for evaluating institutional research



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Assessing Scientific Research & Innovation:
Study of frameworks and parameters for evaluating institutional research

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Designed by
Ravi Kumar Yadav,
Centre for Civil Society

Contributed by
Pratyaksha Jha and Tarini Sudhakar
Centre for Civil Society

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For more information and other requests, write to:
Centre for Civil Society
A-69, Hauz Khas, New Delhi – 110016
Phone: +91 11 26537456
Email: ccs@ccs.in
Website: www.ccs.in

Assessing Scientific Research & Innovation

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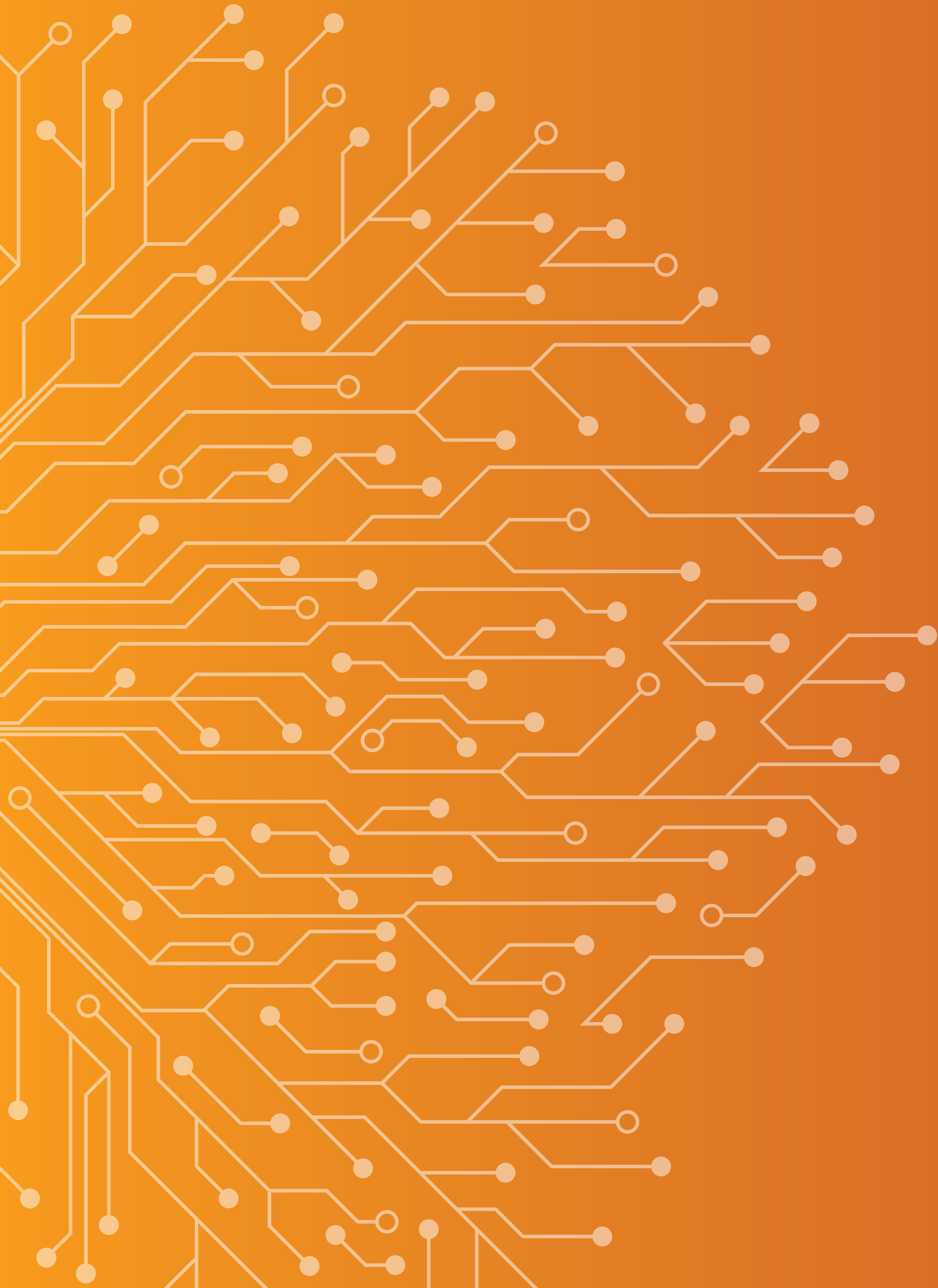

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List of Abbreviations

ARIIA	Atal Ranking of Institutions on Innovation Achievements
BERD	Business Expenditure on Research and Development
CII	Confederation of Indian Industry
CTIER	Centre for Technology, Innovation and Economic Research
EoDR	Ease of Doing Research
GDP	Gross Domestic Product
GII	Global Innovation Index
GoI	Government of India
GOVERD	Government Expenditure on Research and Development
HEIs	Higher Education Institutions
HERD	Higher Education Expenditure on Research and Development
ICAR	Indian Council of Agricultural Research
MSTI	Main Science and Technology Indicators
NIRF	National Institution Ranking Framework
OECD	Organisation for Economic Cooperation and Development
PSA	Principal Scientific Adviser
R&D	Research and Development
STI	Science, Technology and Innovation
WIPO	World Intellectual Property Organisation

01

Executive Summary

Across the world, innovation is understood as a key driver of economic progress. Fuelled by both public and private sources of investment, scientific research sits at the heart of countries' ability to achieve innovation success. India's budgetary allocations towards scientific research and development (R&D) have stood at 0.7% of the country's GDP through 2017-2018 and 2018-2019 (Department of Science and Technology 2019). This puts the country's spending in this area significantly behind OECD countries' average R&D expenditure of 2.37% as of 2017 (OECD 2019). While this in itself is an indicator that allows one to benchmark India's innovation systems against other countries, there is a need to examine how scientific research in the country is taking place, and what kind of outcomes it is yielding, to understand its contributions to innovation.

Indicators designed to measure innovation aim to evaluate research inputs, outputs, and other parameters as contributors to scientific development and innovation. The World Intellectual Property Organisation, in collaboration with INSEAD, releases the Global Innovation Index every year, using 81 such parameters to map innovation success for 132 countries. Four innovation indices used in India employ similar mechanisms across multiple parameters to measure the research contributions of higher education institutions (HEIs) and other scientific research organisations. The Evaluation of Science Indicators of Public Funded R&D Institutions and the Ease of Doing Research framework by the Indian Council of Agricultural Research examine the success of institutions in the space of publicly funded and agricultural research respectively. At the same time, the National Institution Ranking Framework and the Atal Ranking of Institutions on Innovation Achievements rank HEIs on the basis of how they contribute to innovation in the country.

This study aims to illustrate the present state of scientific research evaluation in India, and examine the role played by existing indices in shaping India's innovation ecosystem. Reviewing how these indices define and measure research helps illuminate the role of factors such as management of researchers, research practices and norms, quantity and quality of research output, and the socio-economic impact of research, in creating effective environments within which scientific innovation can take place.

02

Introduction

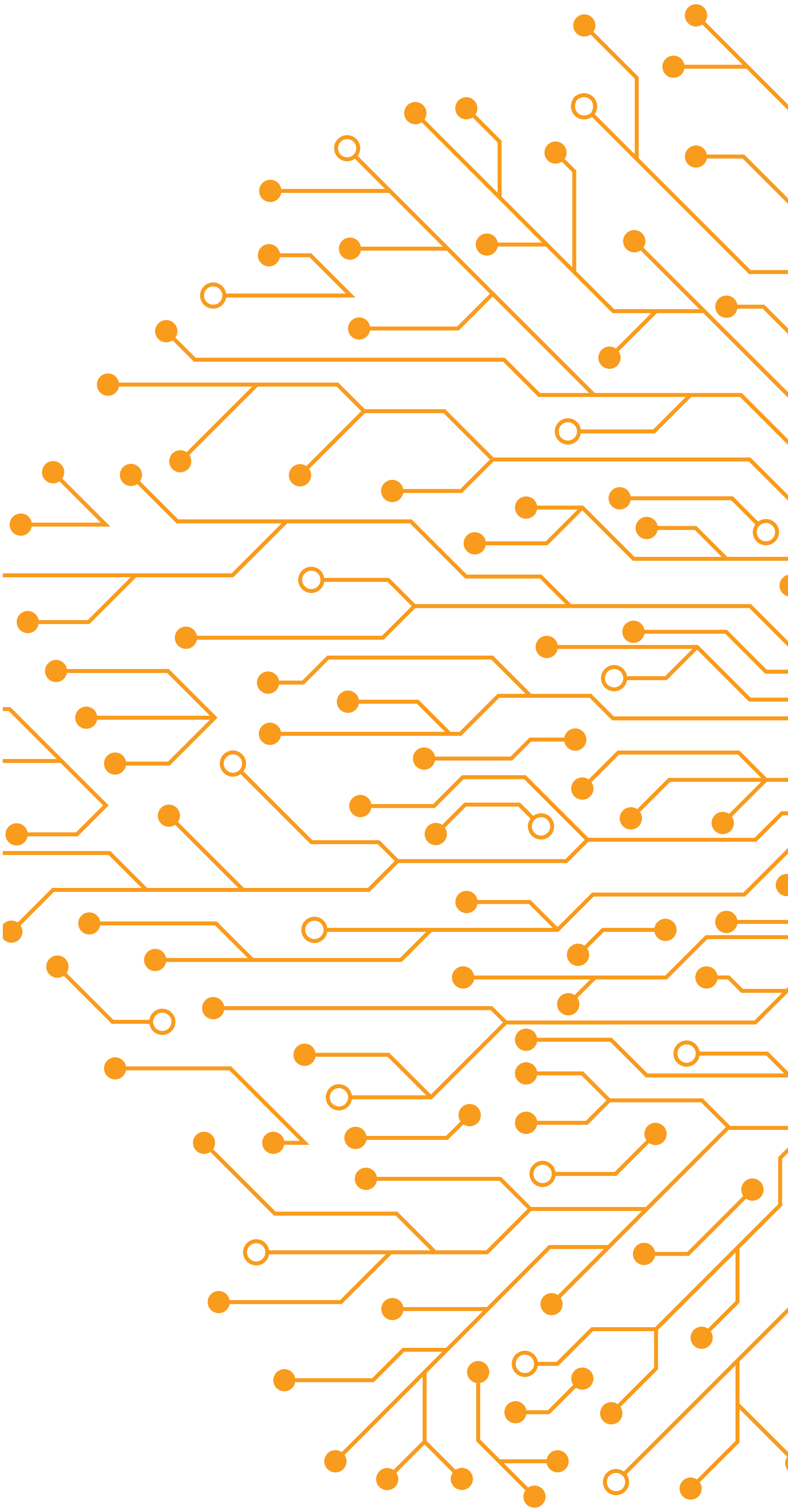
Innovation can broadly be understood as a process of technological advancement, typically accompanied with economic, social, and cultural changes that denote improvement in a particular sphere of existence. The process of innovation is closely aligned with academic research and knowledge production across different disciplines, with scientific and technological innovation constituting a big part of this process. Innovation is also often viewed as a driver of economic growth, and is thus given priority status within market economies. The relationship between scientific research and innovation is key to understanding how different regions and countries are able to effectuate improvements in quality of life.

Paul Romer (1990) highlights the role of endogenous technological change in innovation, positing that technological change arising from investment by profit-maximising agents is central to achieving economic growth. On the other hand, publicly funded scientific research is also considered an essential feature of effective national innovation systems (OECD 2015). Both public and private sources of scientific R&D are prominent contributors to innovation. Higher education institutions (HEIs) are a third prominent contributor to innovation-oriented research, and themselves draw funding from both public and private sources. In its Main Science and Technology Indicators (MSTI) database, the OECD (2021) offers a comparative look at member countries' government expenditure on R&D (GOVERD), higher education expenditure on R&D (HERD), and business expenditure on R&D (BERD). While GOVERD was notably higher than HERD and BERD from 1997 to 2006, this trend saw a shift in 2007, when all three forms of expenditure stood at approximately the same. As of 2018, HERD had grown substantially compared to GOVERD, and BERD stood higher than both other forms. These statistics imply that there are significant shifts and interplays in these sources of funding for scientific R&D, and that understanding how innovation functions at the country level entails devising parameters that can encompass all of them.

India's expenditure on scientific R&D stood at 0.7% of its GDP in 2017-18 as well as 2018-19 (Department of Science and Technology 2019). In comparison, the average R&D expenditure by OECD countries sat at 2.37% of their GDP as of 2017 (OECD 2019). At 4.55% and 4.54% of GDP respectively, Korea and Israel had the highest R&D expenditure among these countries (ibid.). The significant discrepancy between the OECD average and

India's research spend raises concerns around the efficiency of scientific research processes and the quality of scientific research outputs in the country. In light of this observation, selecting holistic, credible parameters is an important step towards understanding how innovation is faring in the country.

This study reviews existing approaches to measuring innovation in India. In order to do so, it examines several prominent mechanisms and frameworks that denote innovation success and excellence, and compares the parameters that they select to this end. In addition to painting a clearer picture of how innovation itself is conceptualised and defined at the macroscopic level, this review also highlights what parameters can be used to determine future science, technology, and innovation (STI) priorities and policies in the country.



03

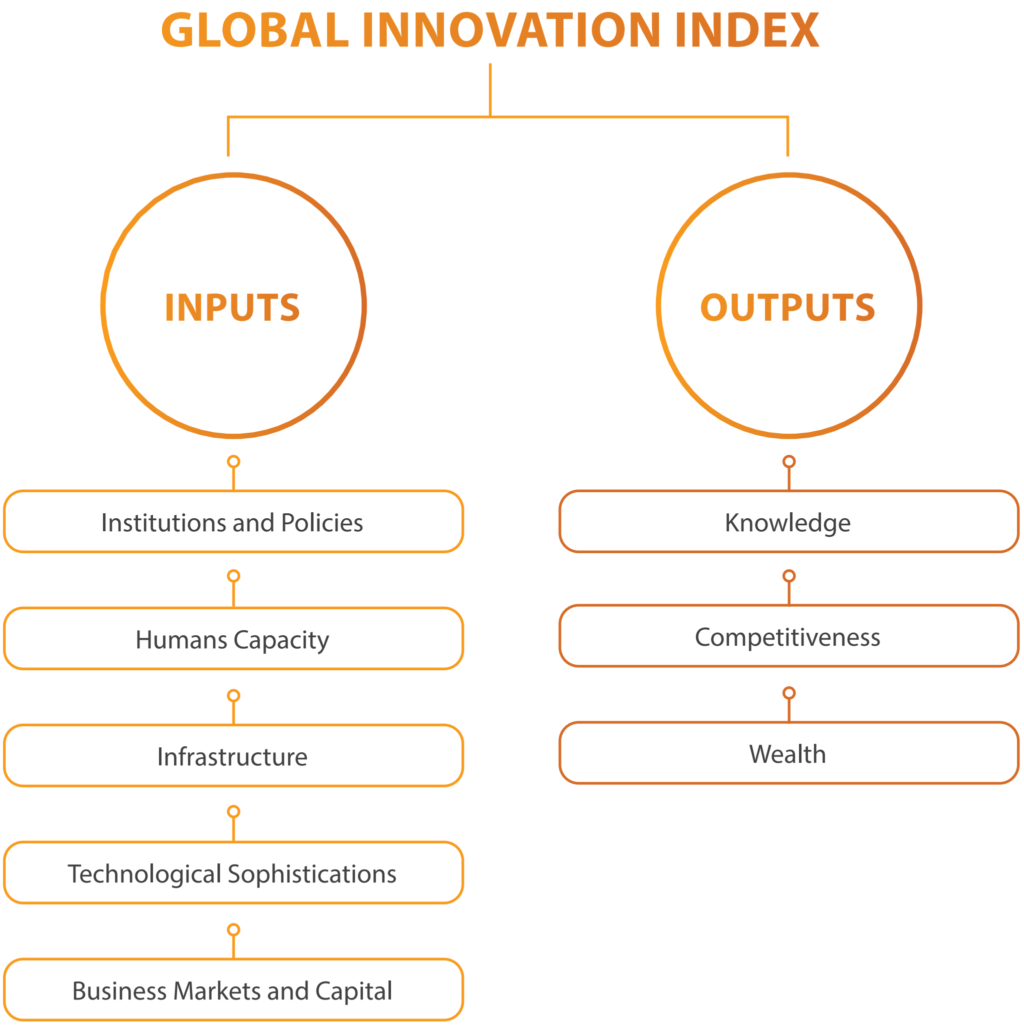
Global Innovation Index

The Global Innovation Index (GII) ranks economies across the world based on their performance on innovation metrics (WIPO, n.d.). It was devised by WIPO (World Intellectual Property Organisation), in collaboration with INSEAD, in 2007. From including 107 countries in its first report, it has grown to include 132 countries as of 2021. It strives to "capture as complete a picture of innovation as possible" (WIPO, n.d.). It selects approximately 80 parameters to ensure a holistic view of innovation, and includes measures in areas including political environments, education, infrastructure, and knowledge creation in different economies.

The conceptual framework of the GII draws upon two sub-indices to depict an aggregated picture of innovation— the Input Sub-Index, and the Output Sub-Index (WIPO 2021). The process of calculating a country's GII score involves calculating weighted average scores for these input and output pillars, disaggregated further into a total of 81 sub-pillar indicators in the 2021 report whose scores are normalised (ibid.). A score between 0 to 100 is assigned to each country for each of these 81 indicators, following which these scores are averaged out in order to assign a score to each input and output pillar, while the country's final score is calculated by further averaging out scores from the Input and Output Sub-Indices and coming up with a composite score for each country (ibid).

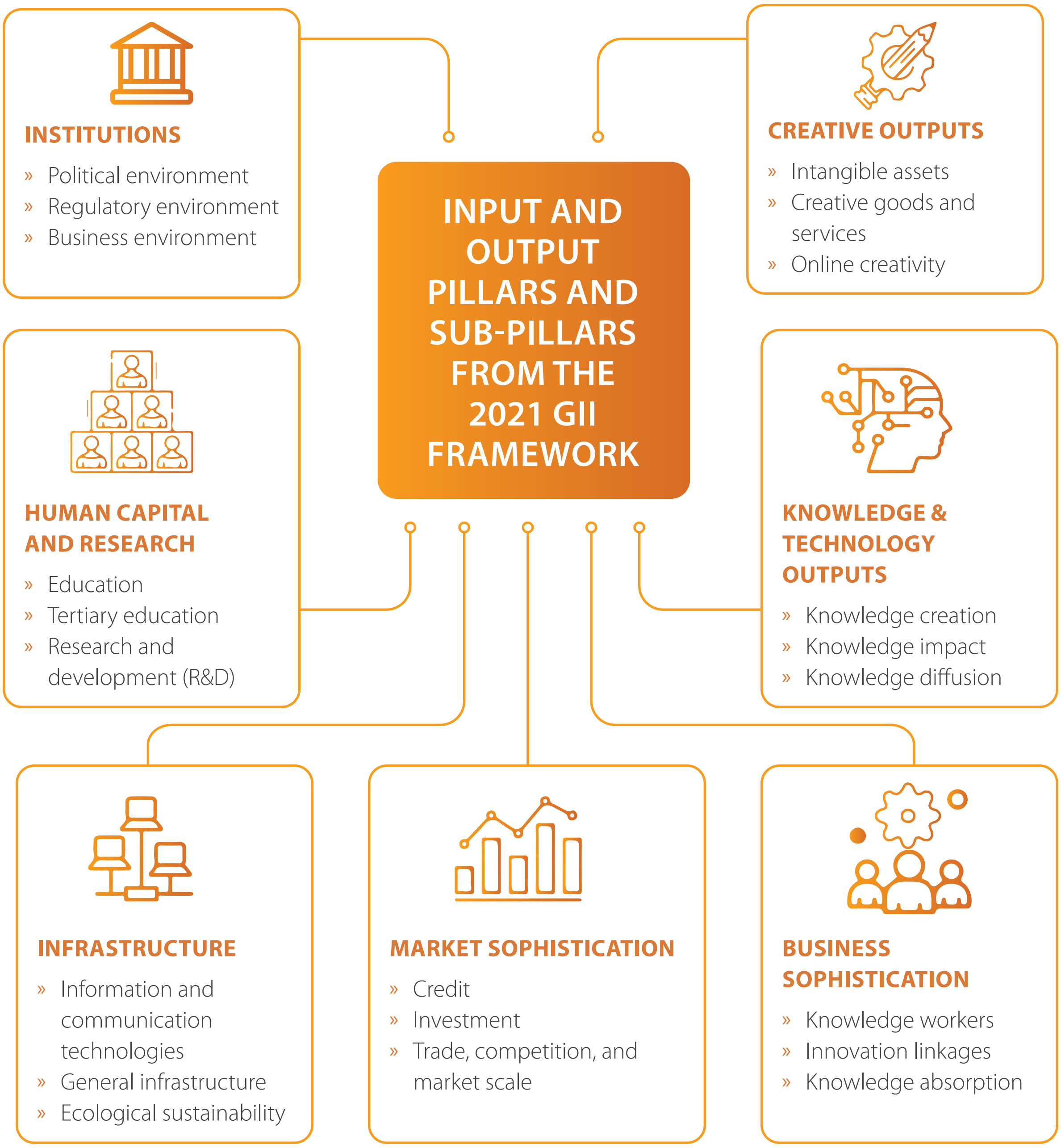
The indicators used by the GII have seen several changes between the 2007 and 2020 reports in which they are enumerated. A comparison between the two shows that outputs under the "competitiveness" and "wealth" sections have since been clubbed under knowledge and technology outputs, and a new category of creative outputs that includes creative goods and services, online creativity, and intangible assets has been added.

FIGURE 1.1 Input and Output Pillars from the 2007 GII Framework



Source: Adapted from WIPO, "The power of innovation" (2007).

FIGURE 1.2 Input and Output Pillars and Sub-Pillars from the 2021 GII Framework



Source: Adapted from WIPO, "Global Innovation Index 2021: Tracking Innovation through the COVID-19 Crisis" (2021).

For this year, India's GII rank stood at 46 (WIPO 2021).. For its income group ("lower middle"), India ranks higher than its counterparts in the following pillars— institutions, human capital and research, infrastructure, market sophistication, business sophistication, and knowledge and technology outputs (ibid.). However, when it comes to creative outputs, its contributions rank similar to other lower middle income countries' (ibid.). Across its 81 indicators, the report also notes 12 areas that are strengths for the country's innovation ecosystem, including the number of graduates in science and engineering, labour productivity growth, and cultural and creative service exports. Additionally, the report identifies 11 areas that are weaknesses for the country, including secondary school pupil-teacher ratio, environmental performance, and women employees with advanced degrees (ibid.). Notably, India's GII performance in 2021 positions it as a top performer within the lower middle income category, coming second to Vietnam (ibid.).

04

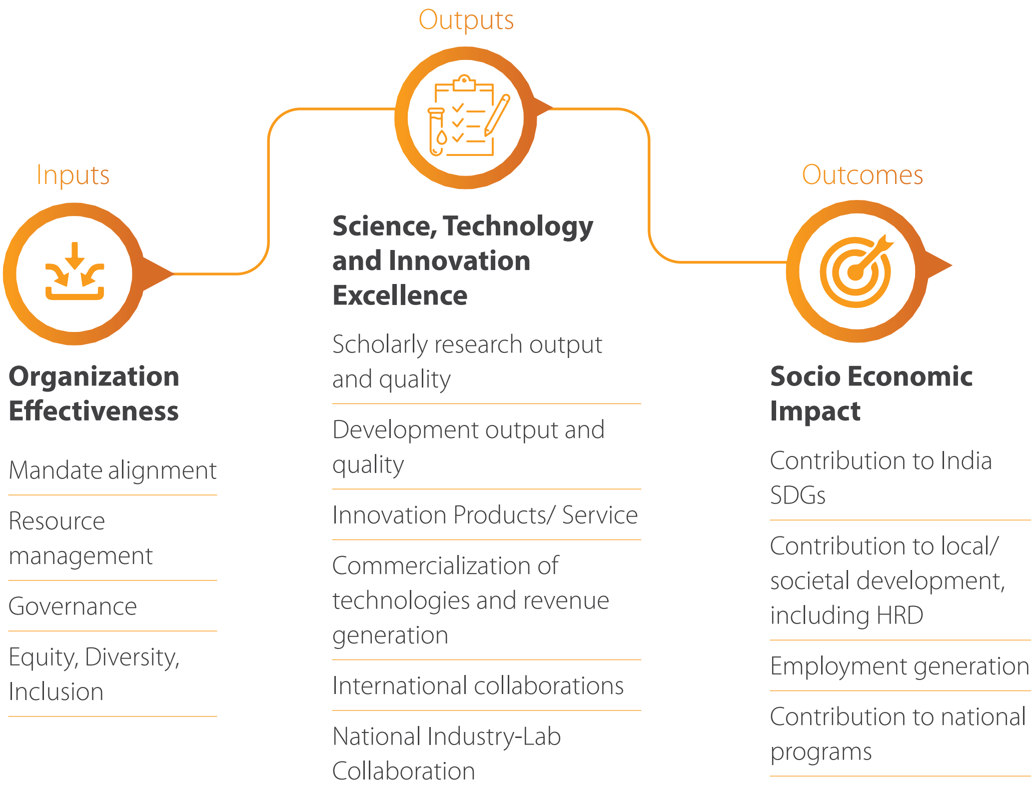
Evaluation of Science Indicators of Public Funded R&D Institutions

This framework aims to assess innovation excellence within public-funded R&D institutions in India, and has been developed by the Office of the Principal Scientific Adviser (PSA) to the Government of India (GoI). Its objectives are enumerated as follows (Office of the Principal Scientific Adviser to the Government of India n.d.-a):

- Infusing a spirit of competition among public funded R&D institutions to improve their outcomes
- Determining whether these institutions are working in accordance with their mandates, and if their mandates themselves require updation
- Assessing what interventions are required to improve the functioning of these institutions
- Ascertaining whether these institutions are successful in delivering outcome-oriented R&D
- Assessing what the productivity of these institutions indicates in terms of optimal utilisation of public funds
- Deriving actionable policy recommendations from these assessment processes

The development of the framework has been carried out by the Office of the PSA to the GoI, in collaboration with the Confederation of Indian Industry (CII) as their knowledge partner, and the Centre for Technology, Innovation and Economic Research (CTIER) as a provider of knowledge support (Office of the Principal Scientific Adviser to the Government of India n.d.-b). It suggests that R&D laboratories can be categorised into three groups— basic research labs, applied research labs, and service labs (ibid.). The framework seeks to provide indicators such that organisations can benchmark their performances vis-a-vis their counterparts in their respective categories. The assessment process requires participating organisations to nominate a nodal officer, who will collect internal data according to the requirements of the framework, have this data vetted by the organisation's director, and submit it on a web portal (ibid.). As of now, 354 R&D organisations' profiles have been "approved" by the Office (ibid.).

FIGURE 2.1 Broad Structure of the Evaluation of Science Indicators of Public Funded R&D Institutions Framework



Source: Adapted from Office of the Principal Scientific Adviser to the Government of India, "Broad Structure of the Framework" (n.d.-c).

05

National Institution Ranking Framework

The National Institution Ranking Framework (NIRF) was developed and implemented in 2015 by India's Ministry of Education (formerly known as the Ministry of Human Resource Development). It seeks to rank the performance of higher education institutions in the country across various parameters that denote academic success. The latest set of rankings for 2021 ranks 1,657 higher education institutions (Ministry of Education n.d.-a). In addition to an overall ranking, the NIRF also ranks them according to disciplines and categories— university, college, research, engineering, management, pharmacy, medical, law, architecture, and dental (ibid.). The parameters draw on recommendations from a core committee set up by the ministry. Institutions are required to submit the relevant data on a web portal (ibid.).

Institutions are eligible to be ranked under the NIRF if they fulfil one of two criteria— that they either have at least 1000 enrolled students on the basis of approved intake, or that they are centrally funded by the Government of India (Ministry of Education 2017). Institutions that are highly focused on a single discipline, but have less than 1000 enrolled students, are not eligible for the overall ranking, but can apply for a discipline-specific rank (ibid.). The parameters employed by the framework are organised into five broad headers, further divided into subheads, both of which are then assigned an overall weightage in the final ranking (ibid.). The weightage given to certain parameters is the same across the common and discipline-specific rankings, but others are assigned varying weightage in certain disciplinary rankings (ibid.).

In addition to following this methodology, the 2021 NIRF report draws data from third party sources including the Scopus (Elsevier Science) and Web of Science (Clarivate Analytics) databases for data on publications and citations (NIRF 2021). The rankings identify 16-18 parameters under the five broad headers discussed earlier (ibid.). Some of the parameters reflect global standards around teaching, learning, and research, while others including regional diversity, outreach, gender equity, and inclusion of underserved groups are tailored to the Indian context (ibid.).

FIGURE 3.1 Parameters employed by the NIRF

- **Teaching, Learning and Resources**
  - Student Strength including Doctoral Students
  - Faculty-student ratio with emphasis on permanent faculty
  - Combined metric for Faculty with PhD (or equivalent) and Experience
  - Financial Resources and their Utilisation
- **Research and Professional Practices**
  - Combined metric for Publications (PU)
  - Combined metric for Quality of Publications
  - IPR and Patents: Published and Granted
  - Footprint of Projects and Professional Practice
- **Graduation Outcomes**
  - Metric for University Examinations
  - Metric for Number of Ph.D. Students Graduated
- **Outreach and Inclusivity**
  - Students from Other States/Countries
  - Percentage of Women
  - Economically and Socially Challenged Students
  - Facilities for Physically Challenged Students
  - Perception (PR) Ranking
- **Perception**
  - Academic Peers and Employers

Source: Adapted from the Ministry of Education, Government of India, "Parameters" (n.d.-b).

06

Ease of Doing Research by the Indian Council of Agricultural Research

The Ease of Doing Research (EoDR) framework has been developed by the Indian Council of Agricultural Research (ICAR) to measure research success in agricultural research organisations (ICAR 2021). Key to this framework is the prioritisation of parameters that measure how easily researchers are able to achieve research outcomes within these organisations (ibid.). Crucially, it chooses to focus on intangible research inputs and highlights the need to consider them as factors that enable tangible inputs and effectuate better research outcomes (ibid.). It also seeks to identify problem areas and plan evidence-based interventions at the institute level, complementing national research performance frameworks that do so for national, regional, or sectoral planning (ibid.). Its stated goals include:

- Serving as a platform for researchers to reflect on research ecosystems and contribute to improving them through participative research governance
- Identifying problem areas within research processes in the country, and focusing on them to enhance research productivity and efficiency
- Creating parameters that institutions can use to track temporal changes within institutions, and therefore positively reinforcing them to institutionalise these standards
- Nurturing competitive spirit by providing organisations with rankings or benchmarks that they can use to measure themselves against one another

The EoDR framework offers several types of customisation to provide more effective parameters at the intra-institutional level. By accounting for scientists' feedback in terms of "relevance of indicators" and "stage of research" in parameters, it acknowledges that the relative importance of indicators might be different for different institutions as well as divisions and centres within them (ICAR 2021). It notes that indicators could impact any of three stages of research— (1) developing research projects, (2) implementing research projects, and (3) developing knowledge products (ibid.). This feedback from scientists can record variations between institutions based on age and quality of research infrastructure, as well as identify which stage(s) of research are being impacted by individual indicators (ibid.). However, the framework still specifies that these customisations ought to be applied only at the institutional or intra-institutional level, while the application of indicators must be in standardised and weighted form in the case of inter-institutional comparisons (ibid.).

FIGURE 4.1 Parameters employed by the Ease of Doing Research Framework

Human Resource Strategy

- Adequacy and Competency of Human Resource
- Timely Career Advancements
- Awards and Rewards

Research Infrastructure

- Lab and Other Infrastructure
- Field / Farm Facilities
- Library Resourcesv

Research Leadership

- Ability to Inspire and Lead
- Leadership Aptitude and Attitude
- Enhancing Institutional Visibility
- Facilitation for Funded Projects

Research Governance

- Delegation of Power and Work
- Facilitation by Admin/ Finance
- Supply of Research Inputs
- Adequacy and Access to Budget
- Rigor and Ease of Project Approval
- Monitoring and Evaluation
- Adequacy of Time Available
- Facilitation for Research Outputs

Research Culture

- Research Environment
- Congenial Social Environment
- Mentoring and Cooperation among Peers
- Facilitation in Research Project Development

Source: Adapted from the Indian Council of Agricultural Research, "Ease of Doing Research: A Methodological Framework for Agricultural Research Organisations" (2021).

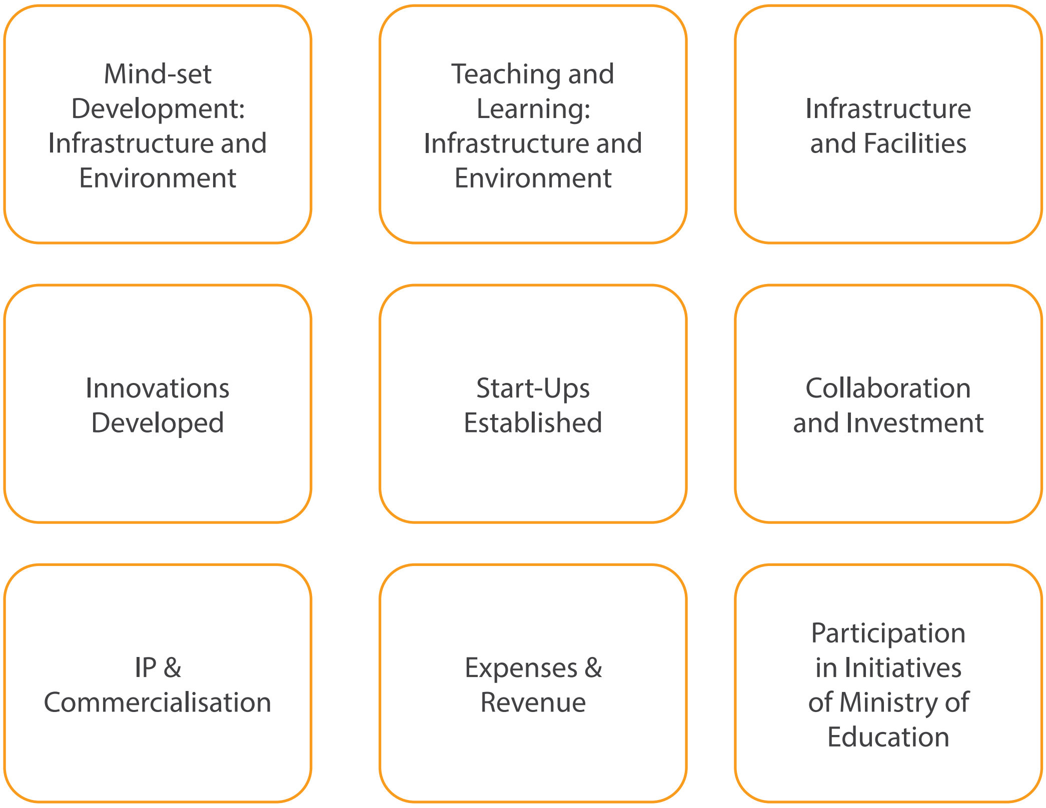
07

Atal Ranking of Institutions on Innovation Achievements

The Atal Ranking of Institutions on Innovation Achievements (ARIIA) was developed by India's Ministry of Education in order to systematically rank the country's major educational institutions and universities based on indicators linked to innovation and entrepreneurship development. It aims to measure the quality of innovations and their tangible impact, as opposed to focusing solely on the quantity of academic output and research publications (ARIIA, n.d.-a). In its 2021 report, it details its objectives as follows (ARIIA 2021):

- Mapping future directions for HEIs that helps establish strong startup ecosystems in campuses and regions
- Measuring innovation and startup ecosystems using parameters based on input, process, output, and outcome-based parameters
- Focusing on both quantitative and qualitative measures around startup ecosystems offered by institutes
- Measuring the impact created by innovations and startups from institutes within society and the economy
- Aiming at raising India's GII rank from 48 to top 30 over a period of 5 years

FIGURE 5.1 Parameters from the ARIIA Framework



Source: Adapted from the Atal Ranking of Institutions on Innovation Achievements , "Parameters" (n.d.-a).

The 2021 report employs 9 parameters, and specifies several sub-parameters under each (ARIIA 2021). It also classifies participating institutions into "Technical HEIs" and "Non-Technical HEIs" (ibid.). There is also a special category of "HEI exclusively for women's education" (ibid.). All of these institutions are further categorised into "public-funded institutions", including Institutions of National Importance, central universities, government and government-aided state and deemed universities, and government colleges, and "private/self-financed institutions", including private universities and deemed universities, and private colleges (ibid.).

08

Thematic Analysis of Innovation Indices

This section analyses the measures of innovation covered by the frameworks reviewed in this study, and identifies common themes within these indicators. It also points out certain unique parameters that are covered only by particular indices.

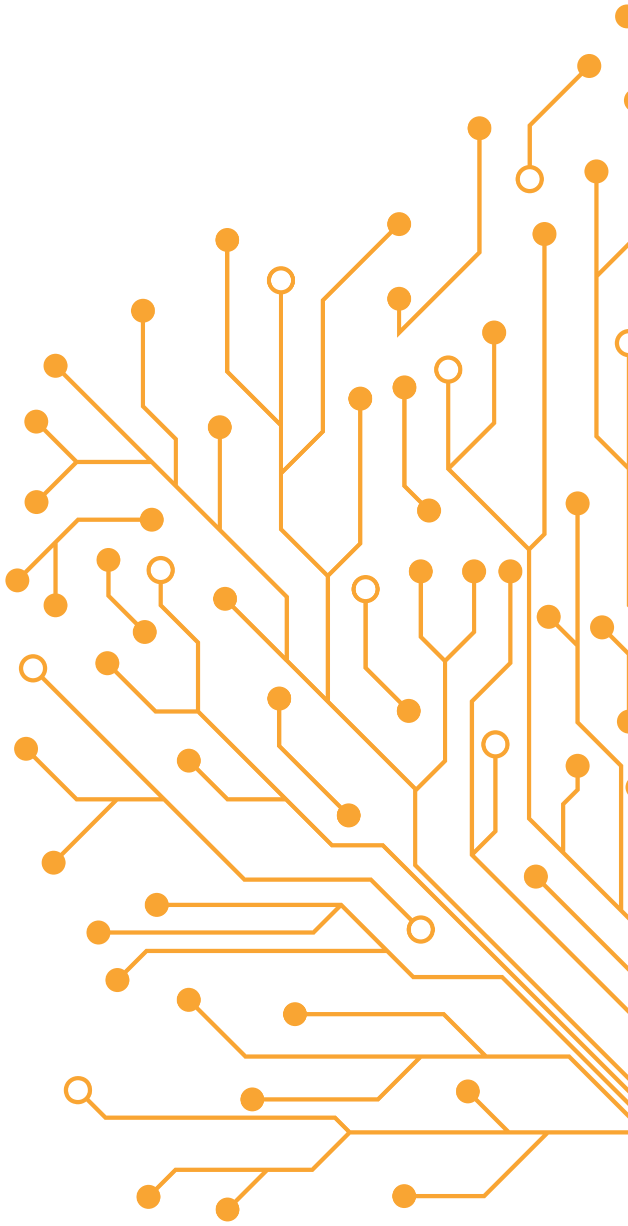
1. Conducting Research

Across indices, indicators linked to research processes cover numerous aspects including the number of researchers in institutions, the research infrastructure available within them, and the number and types of publications that are released by them. Each of these parameters evaluate the effectiveness of systems of research within institutions. However, parameters linked to market demand, contribution to wealth, socio-political impact, diffusion of research insights into society, and overall contributions to creating innovation at a macroscopic level are not prominent within these indices. Instead, they focus on research activity at the institutional level. As a result, there is little data yielded that can be used to clearly link outcomes from frameworks such as NIRF, EoDR, and ARIIA to India's GII performance, and the country's larger STI policy ecosystem.

Notably, the EoDR framework developed by ICAR is the only one that examines "research culture", or funding for projects under "research leadership". This is plausibly a function of the framework highlighting the need for more detailed qualitative insights on how research is being carried out. It is important to highlight here that this framework is focused on agricultural research organisations. Identifying qualitative parameters and coming up with comparative qualitative data on research institutions entails selecting indicators that are often specific to discipline and context, ie. what a conducive research culture looks like is highly dependent on what indicators of research success are prioritised by a particular discipline. Coming up with qualitative parameters that encompass different fields and disciplines, then, is a far more exhaustive task.

2. Human Resource Management

Another vital aspect of assessing innovation covers research personnel employed by institutions, and their skills and contributions to research activity. Indicators linked to this include the number of full-time faculty, skills and adequacy of staff when it comes to research, and sometimes also the number of postgraduate and doctoral students engaging in research within institutions. Here, again, ICAR's EoDR framework is the only one that includes a more qualitative approach to measuring human resource management in research institutions, by incorporating career progression metrics. These metrics measure how faculty and staff contributing to research are progressing in their careers in terms of being promoted, tenured, or otherwise acknowledged for their contributions.



3. Perception

Perceptions of employers, industry leaders, and academic peers can be incorporated into research evaluations in order to draw on their domain expertise. Given discipline-specific differences in what constitutes relevant, credible, and good quality research, these perceptions add crucial contextual information to data from other indicators. Two of the evaluation frameworks discussed in this study, the GII and the NIRF, cover such perception-based insights within their mandate. While the GII includes qualitative data from the World Economic Forum in its reports, the NIRF includes perception surveys with academic peers and employers.

09

Conclusion

Existing models for measuring scientific innovation in India tend to focus on the role of HEIs. Different governmental authorities and bodies have developed these indices to measure particular aspects of research success and quality R&D output, with the primary aim of generating comparative scientific research assessment data that institutions can use to increase their contributions to innovation. The GII appears to play a role in shaping these measurement indices in two distinct ways. First, the goals set out by these indices often envisage the future of India's innovation ecosystem with reference to its GII performance. Some indices explicitly highlight an improvement in India's GII rank as a desired outcome of research evaluation, while others reiterate that strengthening scientific research processes and outcomes is a key policy priority for the country at present. Second, the model of evaluation set out by these indices also mirrors the approach taken by the GII. Instead of collecting and analysing only one kind of data, they employ parameters and sub-parameters that cover a breadth of considerations around research quantity and quality.

At the same time, the existence of multiple indices that have significantly overlapping mandates and goals makes it hard to determine governmental priorities linked to scientific innovation. Arguably, the evaluation outcomes yielded by them can be optimally used by institutions to benchmark their research performance against one another in a broad sense. However, a lack of centralised policy priorities within the innovation sphere is manifested in the usage of different indicators to measure similar outcomes by multiple indices. As a result, institutions participating in multiple evaluations are unlikely to be able to create precise roadmaps towards improving their contributions to innovation. The ever-growing implications associated with the concept of innovation itself point to a need for more centralised, well-calibrated indices whose parameters are based on clear STI priorities. This, in turn, calls for more legislative consensus around what needs to be prioritised, in alignment with the country's economic goals. The draft Science, Technology, and Innovation Policy (STIP), released by the Indian government in 2020, highlights some of the country's future goals in this space, and represents a crucial step forward in this direction.

10

Bibliography

Atal Ranking of Institutions on Innovation Achievements. n.d.-a. "Welcome to ARIIA." Accessed on 30 December 2021. https://www.ariia.gov.in/About/ARIIA.

—. n.d.-b. "Parameters." Accessed on 30 December 2021. https://www.ariia.gov.in/#Parameters.

—. 2021. "Atal Ranking of Institutions on Innovation Achievements 2021." https://www.ariia.gov.in/pdf/ARIIA2021RankingReport.pdf.

Directorate for Science, Technology and Innovation (OECD). 2019. "OECD Main Science and Technology Indicators R&D. Highlights 2019." https://www.oecd.org/sti/msti2019.pdf.

Indian Council of Agricultural Research. 2021. "Ease of Doing Research: A Methodological Framework for Agricultural Research Organisations." https://naarm.org.in/wp-content/uploads/2021/01/EaseofDoingResearch-MethodologicalFrameworkforAgricultureResearchOrganizationsThinkTankPolicyPaperofICAR-NAARM.pdf.

Ministry of Education, Government of India. n.d.-a. "About NIRF: Overview." Accessed on 30 December 2021. https://www.nirfindia.org/About.

—. n.d.-b. "Parameters." Accessed on 30 December 2021. https://www.nirfindia.org/Parameter.

—. 2017. "India Rankings 2017." https://www.nirfindia.org/2017/flipbook/2017/index.html#p=1.

—. 2021. "India Rankings 2021." https://www.nirfindia.org/nirfpdfcdn/2021/flipbook/index.html#p=1.

OECD. 2015. "The Innovation Imperative: Contributing to Productivity, Growth and Well-Being." https://doi.org/10.1787/9789264239814-en.

—. 2021. "Main Science and Technology Indicators." Accessed 30 December 2021. https://www.oecd.org/sti/msti.htm.

Office of the Principal Scientific Adviser to the Government of India. n.d.-a. "Evaluation of Science Indicators of Public R&D institutions." India Science Indicators. Accessed on 30 December 2021. http://www.indiascienceindicators.gov.in/.

—. n.d.-b. "A Manual for Participating Organisations." India Science Indicators. Accessed on 30 December 2021. http://www.indiascienceindicators.gov.in/Home/Manual.

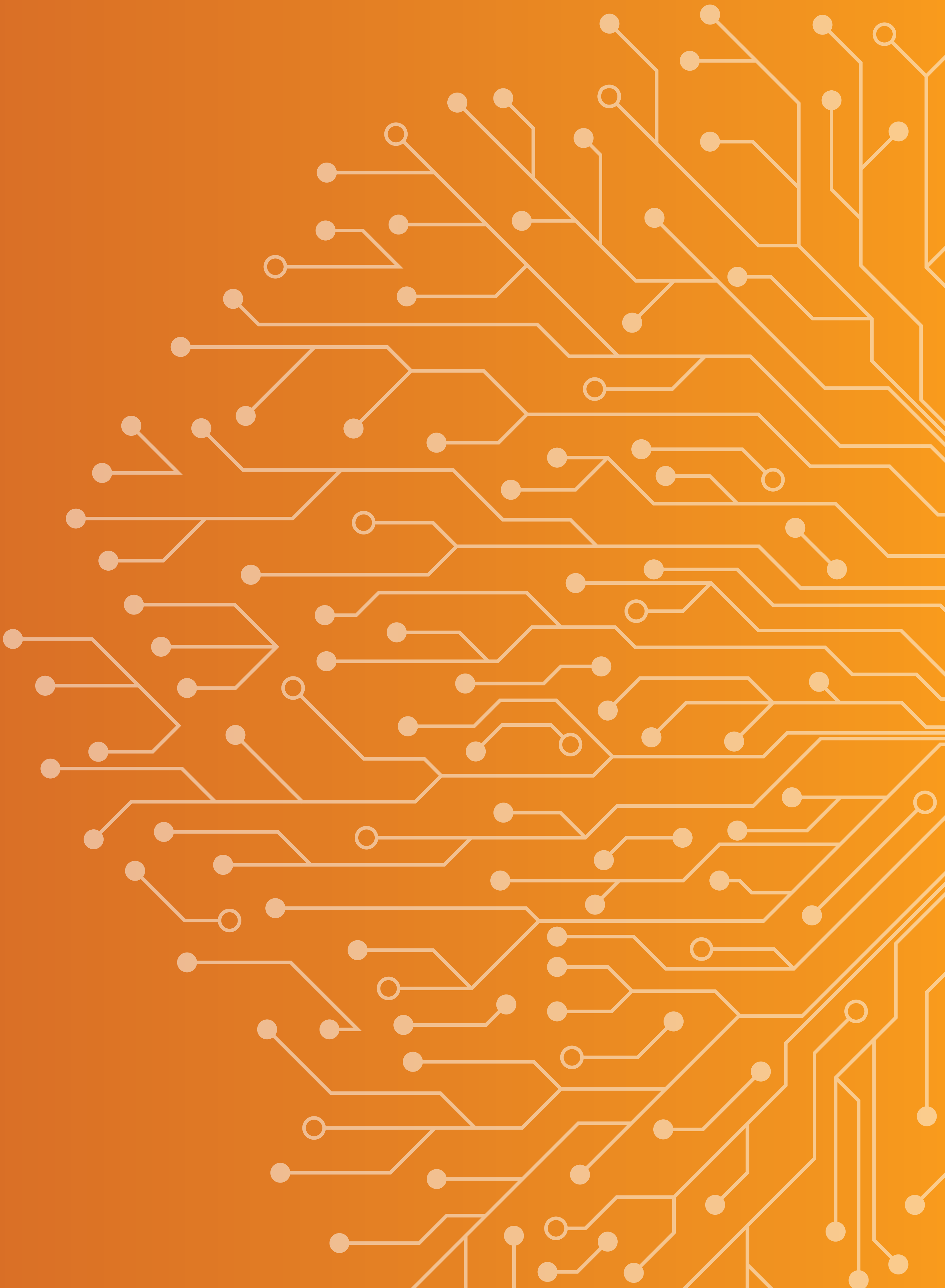
—. n.d.-c. "Broad Structure of the Framework". India Science Indicators. Accessed on 30 December 2021. http://www.indiascienceindicators.gov.in/Home/Framework.

Romer, Paul M. "Endogenous Technological Change." 1990. Journal of Political Economy 98, no. 5 (October): S71–102. http://www.jstor.org/stable/2937632.

WIPO. 2021. "Global Innovation Index 2021: Tracking Innovation through the COVID-19 Crisis." Accessed 30 December 2021. https://www.wipo.int/global_innovation_index/en/2021/.

—. 2021. "Global Innovation Index 2021 (14th Edition)." https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2021.pdf.

—. 2007. "The power of innovation." http://english.www.gov.cn/r/Pub/GOV/ReceivedContent/Other/2016-08-12/GII-2007-Report.pdf.



CENTRE FOR CIVIL SOCIETY
A-69 Hauz Khas, New Delhi – 110016
Phone: +91 11 2653 7456 | Website: www.ccs.in