State-focused roadmap to India's "Vision 2030"

FICCI Higher Education Summit 2015

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Contents

Foreword

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By 2020, India is expected to be home to 1.35 billion people, of whom 906 million will be of working age. These 906 million will need jobs to sustain India's growth, and these jobs can only be provided by the sustained growth of the manufacturing and service sectors in India. The challenge ahead, therefore, is to create jobs to employ India's rapidly growing youth base. However, the demographic dividend will translate into a liability unless appropriate skills are provided to the Indian youth and workforce to retain global competitiveness.

In this context, FICCI's "Higher Education in India-Vision 2030" released in 2013 articulated the goals, policy imperatives and implementation roadmap to make higher education boost the growth of India to become third-largest US$10 trillion economy in the world. This paper articulated the vision for the Indian Higher Education system in 2030 as one which is not just best in the world, but also best for the world. It enumerates the key social, economic and intellectual imperatives for the higher education system in the context of India in 2030. It further highlights India's aspiration as a world leader in large-scale, affordable and quality higher education and sets out a roadmap to achieve it. This Vision was shared with all stakeholders in the public and private sector and many of the suggestions have been adopted by the Ministry of Human Resource Development, Government of India.

However, we believe that real action for development lies at the state-level. Inclusive economic and social development of states across all parameters will only take our country to the desired level of economic development. The states account for 99% of total HE institutions, 97% of enrolments and 67% of overall public spend. It is, therefore, our endeavor to translate this vision into reality and, thus, move the focus of execution from the national level to the state level. This endeavor aligns well with Rashtriya Uchchatar Shiksha Abhiyaan (RUSA), which focuses on developing a State Higher Education Plan (SHEP) – an over-arching plan/roadmap to strengthen the state higher education system.

This year's FICCI-EY report 2015 is aimed at developing strategies to align the FICCI Vision 2030 on higher education for the Indian states. This report will identify and prioritize key objectives for Higher Education system in states and provide a broad execution road-map to achieve the objectives of access, equity, quality and excellence. This report also entails few representative case studies of two Indian states and few Asian countries that have successfully developed strategies and are proactively working toward developing a definitive higher education vision.

We would like to extend our gratitude to all government officials, leaders from the higher education sector and industry who have shared their thoughts for the report. We are also grateful to the Ministry of HRD, Government of India, and all the sponsors and the partners for their support in organizing the FICCI Higher Education Summit 2015 titled "Transforming Higher Education : The Asian Imperative" on November 3-4, 2015 in FICCI, New Delhi. We are hopeful that the deliberations in the conference will not only help to further develop recommendations for making the vision a reality for Indian states but also for the Asian region as a whole.

Rajan Saxena
Co-Chairman,
FICCI Higher Education Committee

T.V. Mohandas Pai
Chairman,
FICCI Higher Education Committee

Indira Parikh,
Co- Chairman,
FICCI Higher Education Committee

Dear Readers

India currently has one of the largest enrolments in tertiary education across the world –30 million students in over 47,000 institutes spread over 29 states and 7 union territories across the country. With different priorities, languages, student interests and socio-economic challenges - Higher Education institutes under state government's control account for over 96% enrolments of the total and almost two-thirds of the total budgetary allocations. The constitution of India lists "Education" as a concurrent subject and the state governments have a big role to play in ensuring the access and quality of education being imparted to its citizens. Hence, any transformation in Higher Education ecosystem in India will have to be led by the states.

In 2013's EY-FICCI report, "Higher Education in India – Vision 2030", we articulated the vision for the Indian higher education system as one which is not just best in the world, but also best for the world. This year, we have taken this theme forward to explore what the states need to do in their capacity to make this vision a reality. However, the 29 states in India are at very different starting points in terms of the maturity of the Higher Education system and also logically have varied priorities. There is a strong need for each state to create a customized roadmap to bring about the change that is relevant to their regional imperatives.

This report takes an initial step towards helping states create their own roadmap for Higher Education transformation. Firstly, it articulates an objective framework- the **EY FICCI Higher Education Index**- to help understand the opportunities and challenges of HE delivery at the state level. This index can serve as a tool to state level policy makers to benchmark themselves against their peers, identify specific areas for improvements and monitor progress. Additionally, the report also attempts to categorize states in different categories based on our understanding of their maturity and priorities and provides suggestions on specific actions for quick impact.

The journey to transform our State Higher Education system will take vision, ambition and strong execution over a sustained period of time. But, the resultant impact on our economy, society and country as a whole will be tremendous.

It is our hope that this report can provide the impetus to get this transformation kick-started.

Nikhil Rajpal
Education Sector Leader and Partner
Ernst & Young LLP

Executive summary

By 2030, India will be amongst the youngest nations in the world with nearly 150 million people in the college-going age group. By 2030, the already existing challenges for Indian higher education – access, equity and quality – will only be greatly exacerbated unless we significantly transform our higher education model. In this context, the 2013 EY-FICCI report on "Higher Education in India: Vision 2030", tried to articulate an ambitious vision for higher education reform and lay out a roadmap to achieving it. However, the scale and complexity of the individual states, calls for a state specific approach to achieving this vision for India. All states need to adopt a transformative and innovative approach across all levers of higher education: from curricula and pedagogy to the use of technology to partnerships, governance and funding, to become globally relevant and competitive.

The states and UTs have shown varied success in providing equitable access, and varied higher education outcomes in terms of quality, relevance & excellence:

- Most UTs do not have universities and have less than 20 higher education institutes per lakh population whereas, Karnataka, Andhra Pradesh and Telangana have more than 60 institutes per lakh population.
- UTs like Puducherry, Chandigarh & Delhi have higher GER, good research output but have highest disparity between SC, ST and minority enrolments.
- Delhi, Tamil Nadu, Punjab offer better infrastructure for improving quality outcomes as opposed to states such as Meghalaya, Nagaland.
- Research Institutes with most number of publications are concentrated in a handful of states such as Tamil Nadu, Maharashtra, Karnataka and UP, and, 15 states in India do not have a single top ranked higher education institution.

Given the disparate current state, a one-size-fit-all approach towards transforming higher education is not feasible. There is a need for the states to discover their own strengths and weaknesses; recognize their natural strategies; and devise their sub-national action plans for their journey towards the Vision 2030.

The EY-FICCI Index has been developed with the intent to foster a healthy competition and promote collaboration among states to achieve the Vision 2030 goals. It provides an objective current status of higher education in the states/ UTs and helps them in defining a roadmap to align their state priorities towards the overall Vision 2030. It provides a simple indication of the higher education ecosystem in the state, which could be further broken down to identify key areas of focus. It relatively ranks each state as compared to the best-performing state under the following five parameters – Access, Equity, Relevance and Quality, Governance and Funding, and Excellence and positions them across four different quadrants in two dimensions across access and equity, and relevance and quality, governance and funding, and excellence. Basis the current status of the states on these parameters, they are grouped together in the following four sets -

- **Sustain Leadership (above average performance on both dimensions)**: This group comprises States with higher education systems, which are above-average across the composite scores for both access-equity dimension and relevance, quality, and excellence dimension. Tamil Nadu, Delhi, Chandigarh, Haryana, Kerala are few examples. Chandigarh has the highest GER of 57.3% followed by Puducherry with 45.8% and Tamil Nadu with GER of 41.1%. Delhi and Tamil Nadu have many top ranked higher education institutes. These states need to ensure that they invest the government focus and budgets towards sustaining their leadership in higher education space.
- **Deepen Impact (high performance on quality, low on access and equity)**: This contains the State higher education systems that rank high on relevance, excellence and quality outcomes to students; however, lack on ensuring equity and access for all. Maharashtra, Karnataka, Gujarat, West Bengal, Rajasthan are few examples. Karnataka has low rural penetration across the state (rural to urban institutes ratio of ~0.45) and a high GER variance among social groups (9%). While West Bengal has a GER of 15%, which is below national average and a high GER disparity across districts (~40%). The state need to focus on ensuring that the quality of their higher education system is penetrated equitably across their citizens.
- **Invest in Quality (High performance on access & equity, low on quality)**: This group highlights the State higher education systems that have above-average composite scores for access and equity, but offer poor quality education with low employability outcomes. Uttarakhand, Himachal Pradesh, Manipur, Mizoram are examples. These states have very few or no HEIs appearing in the top rankings and have a less number of Centres of Excellence and incubators. Only 2 of the universities in Himachal Pradesh have been accredited by NAAC.
- **Restructure (Below average performance on both metrics)**: This group encompasses State higher education systems that offer a poor quality education with low industry relevance, but have a more urgent imperative to expand access for all. Bihar, Chhattisgarh, Assam, Arunachal Pradesh, and Jharkhand are few examples. Bihar has the least number of HEIs per lakh population (only 7) and has a very high intra-state migrant students, highlighting disparity among districts. While Chhattisgarh has less than 15% (70) colleges are accredited by NAAC, out of which only 4 have been rated A, A+.

Once the states have been grouped as per the EY-FICCI Index, the states can then take a closer look at what steps are required to transform their higher education system. For this, we have outlined a three-step recommendation roadmap:

- **A list of "Core Action Points" that are common for all states**: The starting point for the journey towards the vision may be different, but the basic tenets of core transformation agenda remain similar. The states can develop a meta-university (choice of multi-discipline courses from various colleges) with partner states, set-up and strengthen the State Higher Education Councils (SHECs), foster competition and collaboration for research among institutes, etc.
- **Interventions specific for the four groups, including long term recommendations and a 300-day roadmap**: States with similar as-is scenario are grouped together and the roadmaps for each group have been proposed. The states could use the 300-day action plan as a starting point and then look at the group level recommendations based on the group they currently belong to. They may consider to launch initiatives for top 4-5 professional HEIs to reach global standards, invest in CoEs, incubators, research networks and IP development, promote institutional alliances, catalyse the State Private University Act to drive private investment, provide graded strategic and operational autonomy to affiliated colleges, offer targeted scholarships for under served communities etc.
- **The state-level recommendations**: The socio-economic considerations are likely to guide local actions in addition to the core and group roadmaps. The state action plan may look at budgetary constraints, unique demographic and geographic constraints, and the maturity of the higher education system.

The representative roadmaps for Karnataka and West Bengal have been developed based on the above, and has been included in the report as an example.

While the State Governments are taking several measures to improve their higher education systems, there is need for them to play a more active role in transforming the higher education system. The states still struggling with basic challenges can learn from the ones having strengths in those areas, while those having above average performance can try to emulate international best practices to become educational hubs. In this report, we have looked at some world-class higher education systems as well as some within country systems that could hold important guiding references for the state governments on taking appropriate measures to improve the quality of higher education.

Vision 2030 goals for Indian higher education

The higher education system has to make a major contribution for India to attain its growth potential

India in 2030: socio-economic context

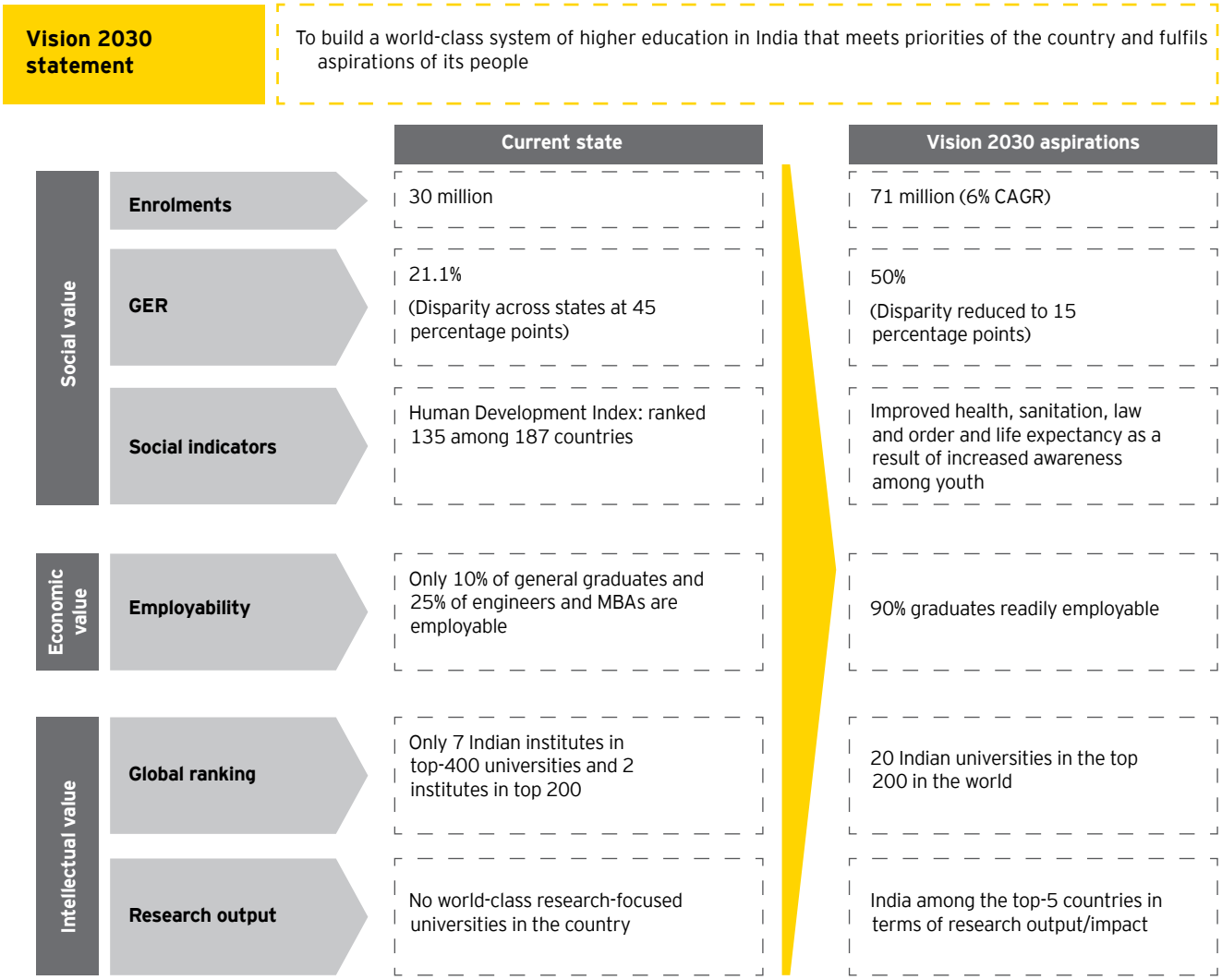
Demographic	▸ 145 million students in the higher education age group (18–23 years) Increasing income levels and urbanization
Economic	▸ Third-largest economy in the world ▸ Medium income country with a diverse industrial base ▸ Potential supplier of skilled manpower to labor-deficient markets, given median age of 32 years and a large projected labor surplus ▸ Potential to become a prominent R&D destination

Imperatives for higher education in India

Social imperatives	Economic imperatives	Intellectual imperatives
▸ **Additional capacity creation of 40 million to achieve a GER of 50%** ▸ **Affordable access to disadvantaged/ low-income segments** ▸ **Reduced disparity in GER** across geographies, and economic and social groups ▸ **Better informed and evolved society** – improved social indicators (life expectancy, health and sanitation, and law and order)	▸ **Skilled, job-ready** and **productive** workforce that will contribute significantly to India's global competitiveness ▸ Education/skills that enable students to become **entrepreneurs** ▸ Graduates with **global skills**, who can be employed by workforce-deficient countries ▸ Development of **successful economic models** at the grass-root (district/block) level through community engagement	▸ **High-quality research output** (in terms of patents, publications and global recognition) ▸ World-class **research eco-systems with adequate infrastructure** and **capabilities** (**including availability of funding/researchers**) ▸ Development of India as a **destination** for higher education for students, faculty, researchers and employers from all over the world

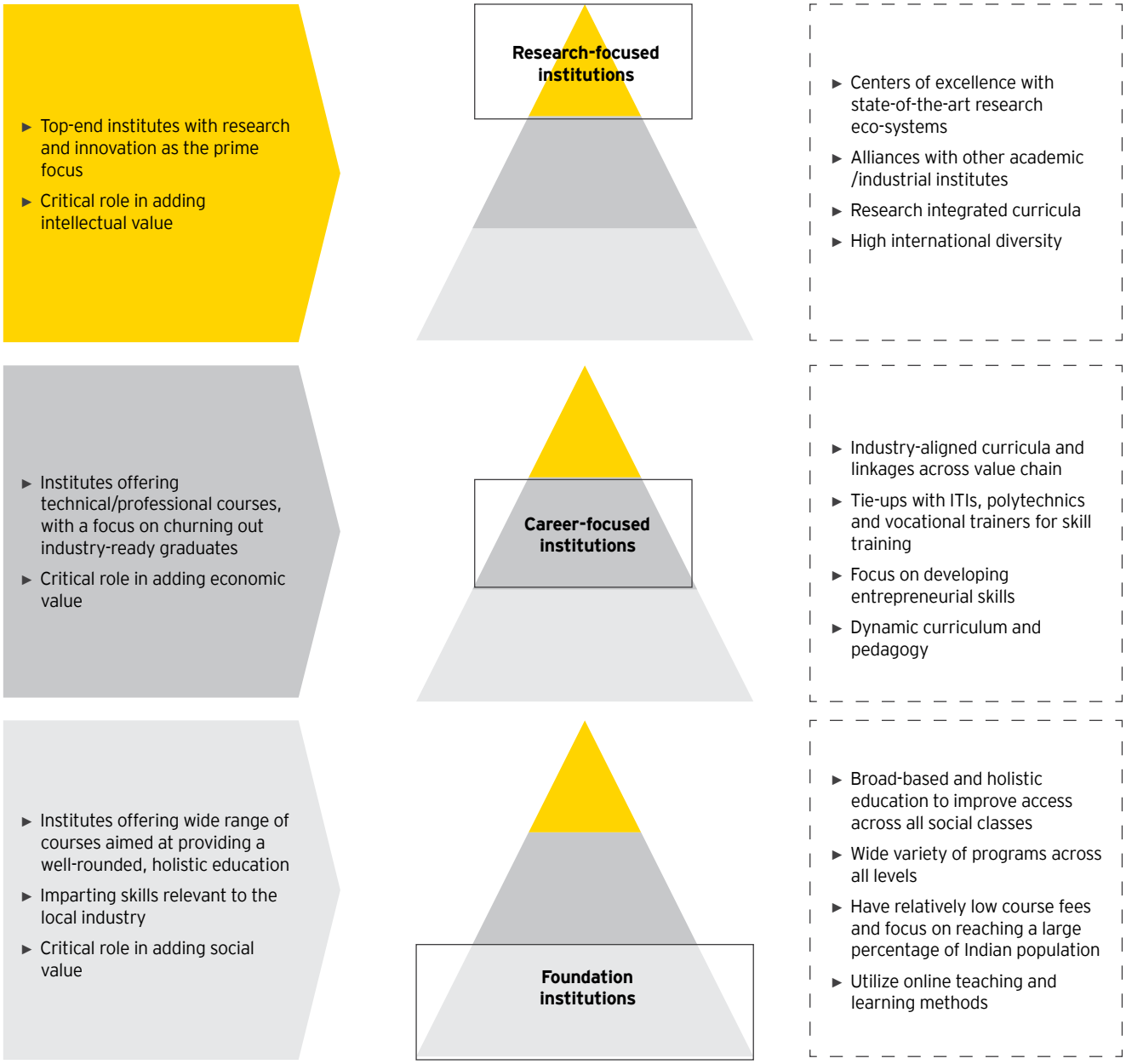
Source: EY projections using Census 2011 and MHRD 2016 population projections; EY-FICCI report 'Higher Education in India: Vision 2030', 2013

Indian higher education system must transform itself to deliver against the Vision



Source: AISHE Report, 2014; National employability report: graduates, 2013; QS World University Rankings, 2015-16; Eleventh Five Year Plan: Chapter on Higher and Technical Education, Human Development Report, 2014

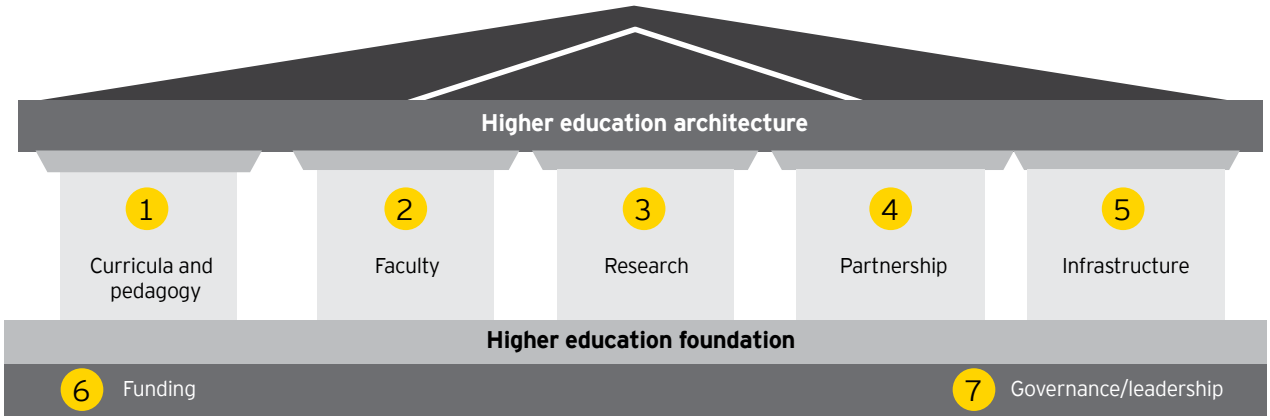
A key component of this transformation will be a three-tier system of institutions with different focus areas and objectives



These different types of institutes would require fundamentally different architectural and foundation elements

Source: EY-FICCI report 'Higher Education in India: Vision 2030', 2013

Structural changes will be required across all aspects of the higher education ecosystem



1

- Adopt a learner-centered paradigm of education
- Introduce multi-disciplinary, industry-oriented, entrepreneurship, and skill-based courses
- Include courses on social sciences and general awareness for societal development
- Encourage lifelong learning for professionals
- Provide students the choice of entry/exit from the higher education system
- Adopt new pedagogical techniques – blended learning, flipped classroom, experiential learning

2

- Ease faculty recruitment norms and offer incentives to attract faculty
- Retain high-quality faculty by implementing tenure-based and rewards-based systems
- Incentivize/facilitate faculty development and exchange programs with top-end institutions

3

- Attract best-in-class faculty to conduct research
- Adopt the mentor model to develop research capabilities in Indian institutions
- Promote collaborations with international institutions, industry, and research centers to generate high-quality basic and applied research
- Encourage community-focused/development- oriented research at academic institutions

4

- Strengthen industry-academia linkages across all aspects of the education value chain, from curricula and faculty to infrastructure, research, and placements
- Encourage tie-ups between higher education institutions and providers of skill-based training to conduct skilling modules

5

- Target capacity enhancement for socially and geographically deficient segments
- Incentivize high-quality private and foreign participation
- Widen access through virtual classrooms and MOOCs
- Leverage government initiatives in technology such as NKN, NMEICT

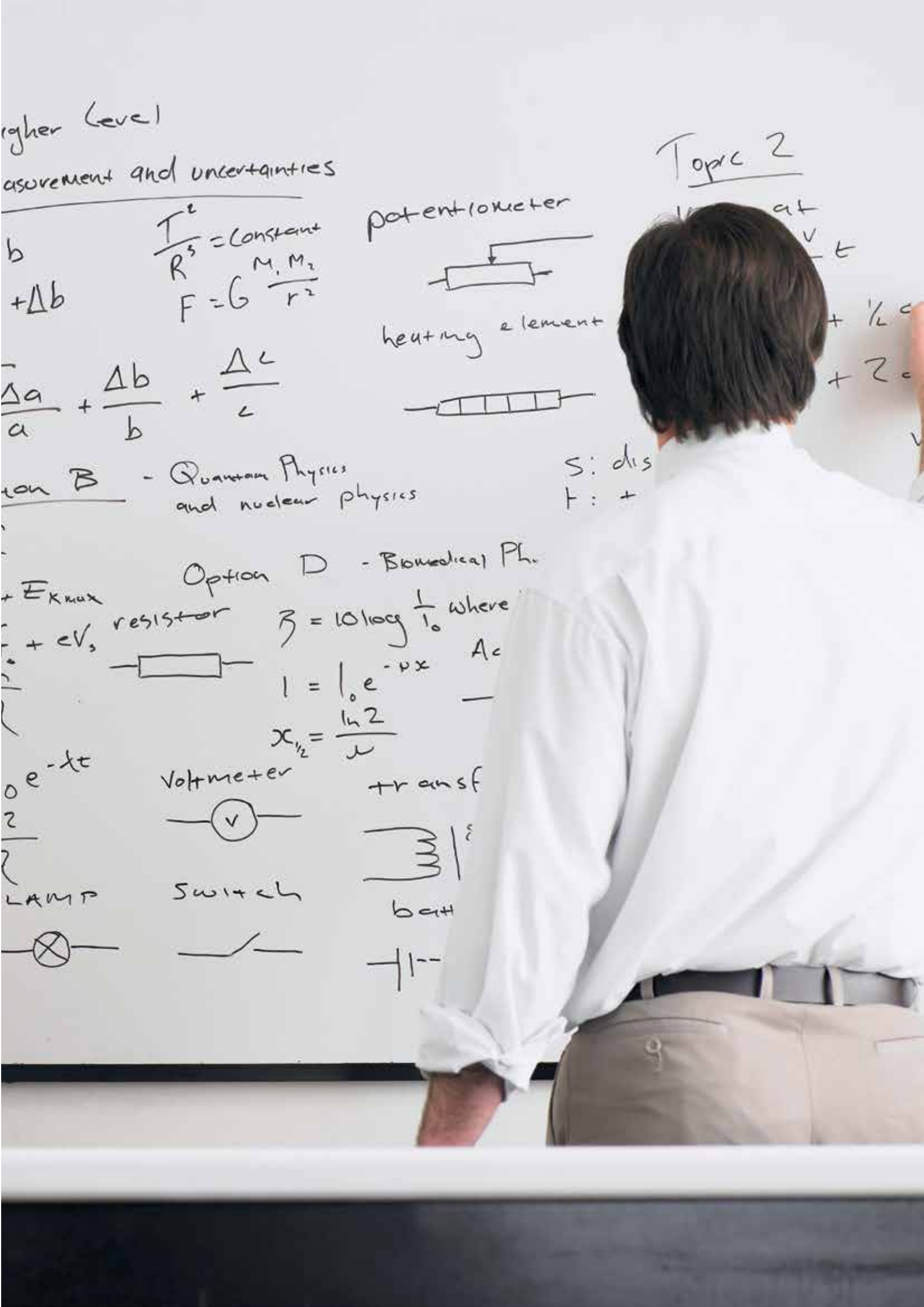
6

- Provide competitive access to public research grants to all institutions
- Encourage corporate and alumni funding
- Link public funding to institutional performance
- Promote individual-based funding

7

- Simplify the regulatory framework, increasingly move toward autonomy and self-regulation of institutions, introduce mandatory accreditation
- Enforce mandatory disclosure of key financial and operational information by all institutions, create a centralized repository of all higher education-related information in India
- Provide a thrust to internationalization of leadership, separate ownership and management for effective governance

Source: Higher Education in India: Vision 2030, EY-FICCI report, 2013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asurement and uncertainties
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potentiometer
heating element
Topic 2
- Quantum Physics and nuclear physics
Option D - Biomedical Ph.
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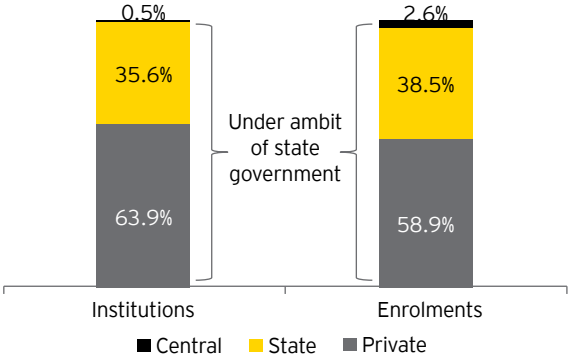
$+ eV_s$
resistor
$\beta = 10 \log \frac{I}{I_0}$ where
$I = I_0 e^{-\mu x}$
$x_{1/2} = \frac{\ln 2}{\mu}$
$e^{-\lambda t}$
Voltmeter
transf
LAMP
Switch
bath

Why states matter?

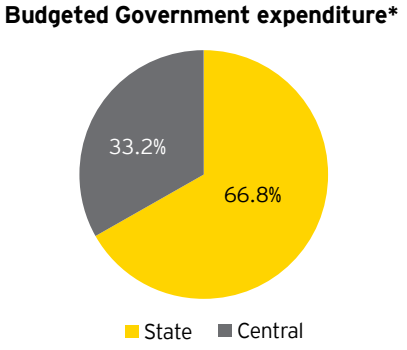
Major share of Indian states in higher education expenditure and enrolments makes them the epicentre for interventions in the higher education system

Almost 99% of the total higher education institutions and 97% of the higher education enrolments in India are under state control



Total institutions*: 46,430 Total enrolments*: 21.8 million

States contribute ~67% to the overall public spend on higher education



Total budgeted expenditure*: INR384.6 billion

Many states follow a regional medium of instruction in higher education, and also develop state-specific syllabi and curricula

"In many areas, the language of instruction has been changed from English to the regional medium, but this shift has not been accompanied by a similar change to an "Indian" curriculum or by other reforms. Indeed, as the colleges have expanded they have become less "national" in their emphasis and thus less involved with the nation-building process."

- Research Professor, CIHE- Boston College

- In 2012, nearly 60% students who were enrolled in MTU (formerly UP Technical University) came from a Hindi-speaking background. The state university had to start a linguistic empowerment cell on the campus last year that offers proficiency courses in English to its students free of cost.
- In 2010, several Tamil medium students who applied for the Tamil Nadu Engineering Admissions (TNEA 2010) for BE/B-Tech was 67,727, which constituted 40% of total 1.67 lakh applications. In the following academic year, Tamil medium of instruction was introduced in B.E. civil and mechanical courses at engineering colleges in Anna University as an experimental measure.

Rashtriya Uchchatar Shiksha Abhiyan (RUSA) launched in 2013 and will cover Twelfth and Thirteenth Five Year Plans

- Given the wide reach of the state university system and the limitations of the central system, there was a strong need for a strategic intervention that focuses on state-level management of HEIs.
- RUSA was launched in October 2013. It is a centrally sponsored scheme (CSS), aimed at providing strategic funding to eligible government and aided state HEIs.

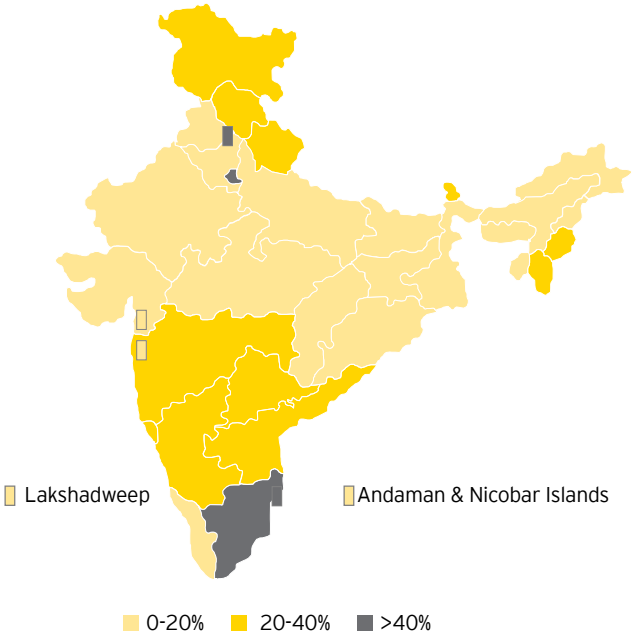
The scale and complexity of the higher education delivery system of Indian states entails the need for them to play a more active role in transforming the higher education system

* Data for 2011-12

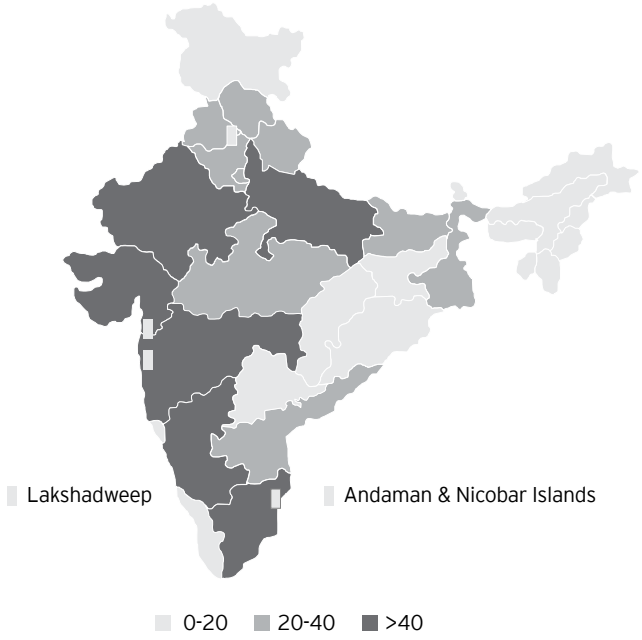
Source: ABE report, 2013; MHRD-RUSA website; 12th FYP Volume III; 'A Half-Century of Indian Higher Education: Essays' by Philip G Altbach, 2012; NAAC's Curricular aspects- case studies, 2008; 'Rise in Tamil medium BE aspirants', ToI, July 2010; 'Hindi language barrier trips Delhi University students', Dailymail, September 2012; 'Tamil medium instruction for engineering courses', The Hindu, April 2010

However, considerable disparity in enrolments and college density exists across states

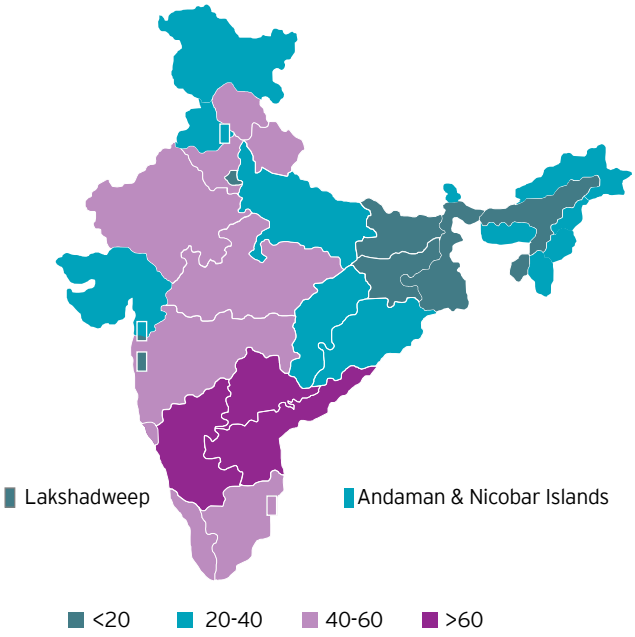
Gross enrolment ratio (GER)



Number of universities



Number of colleges and stand alone institutes per lakh population



Wide disparity seen among states under access metrics

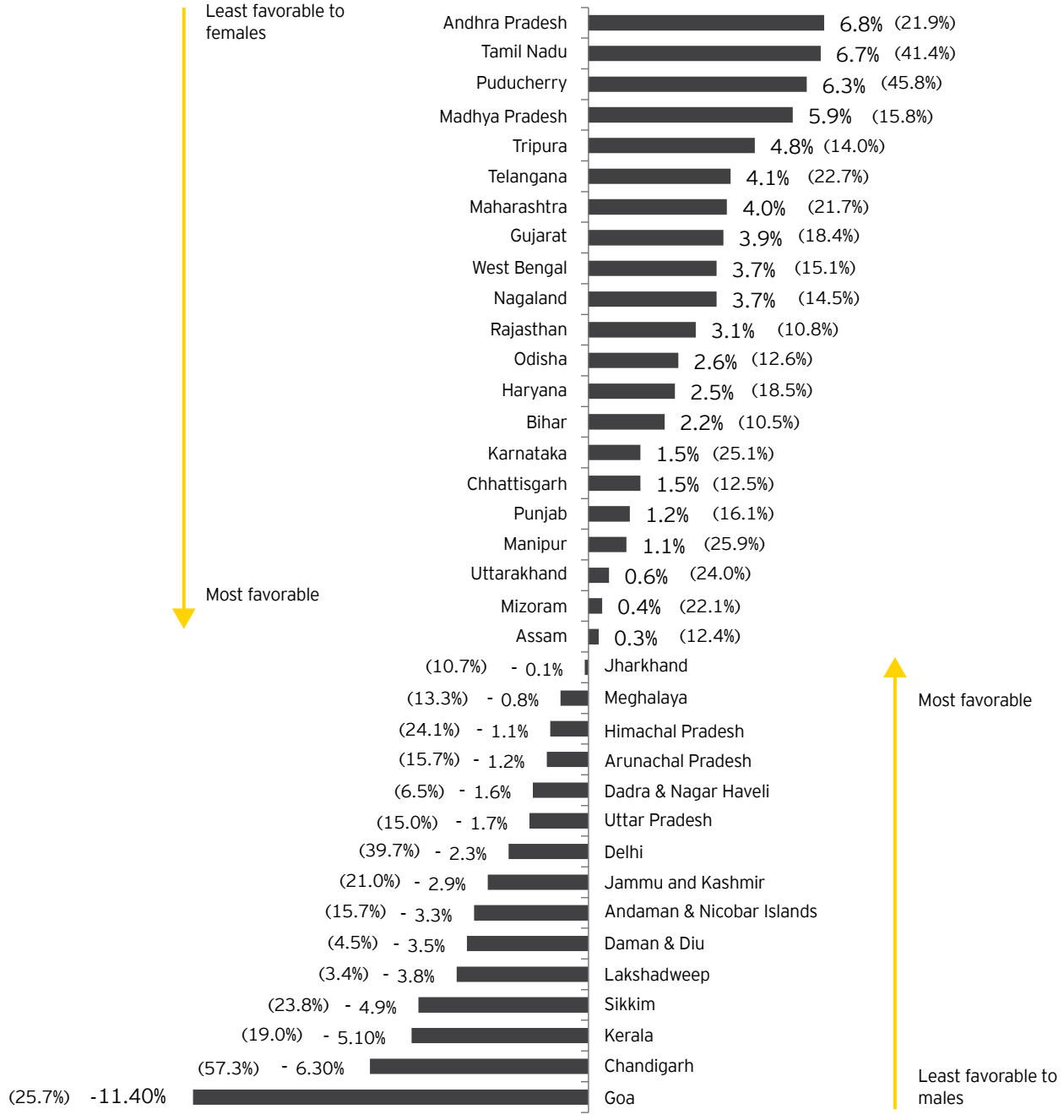
- States in North and South India have much higher enrolment ratios, while the states in central and eastern India lag behind in this regard.
- UP and Tamil Nadu have maximum number of universities – more than 50 public and private universities each; Arunachal, Chandigarh, Goa and NE states have five or fewer number of universities.
- Maharashtra has the maximum number of higher education institutions (7,552), but has less than 30% GER. Tamil Nadu has less than 5,000 higher education institutions and accounts for more than 40% GER.
- UTs other than Delhi and Chandigarh do not have universities and have less than 20 higher education institutions per lakh population; Karnataka, Andhra and Telangana have more than 60 institutions per lakh population.
- Bihar and Jharkhand have less than 10 higher education institutions per lakh population.

Source: AISHE, 2012-13; "BIMARU States: Need a Rethinking- IOSR Journal of Humanities and Social Science, July 2014

Gender disparity in higher education enrolments is prominently visible across the states in India

In terms of gender disparity, Jharkhand is the most equitable state, while Andhra Pradesh and Goa are more favorable to males and females, respectively

Variation in gender GER* (%), value in parenthesis is state GER (%)



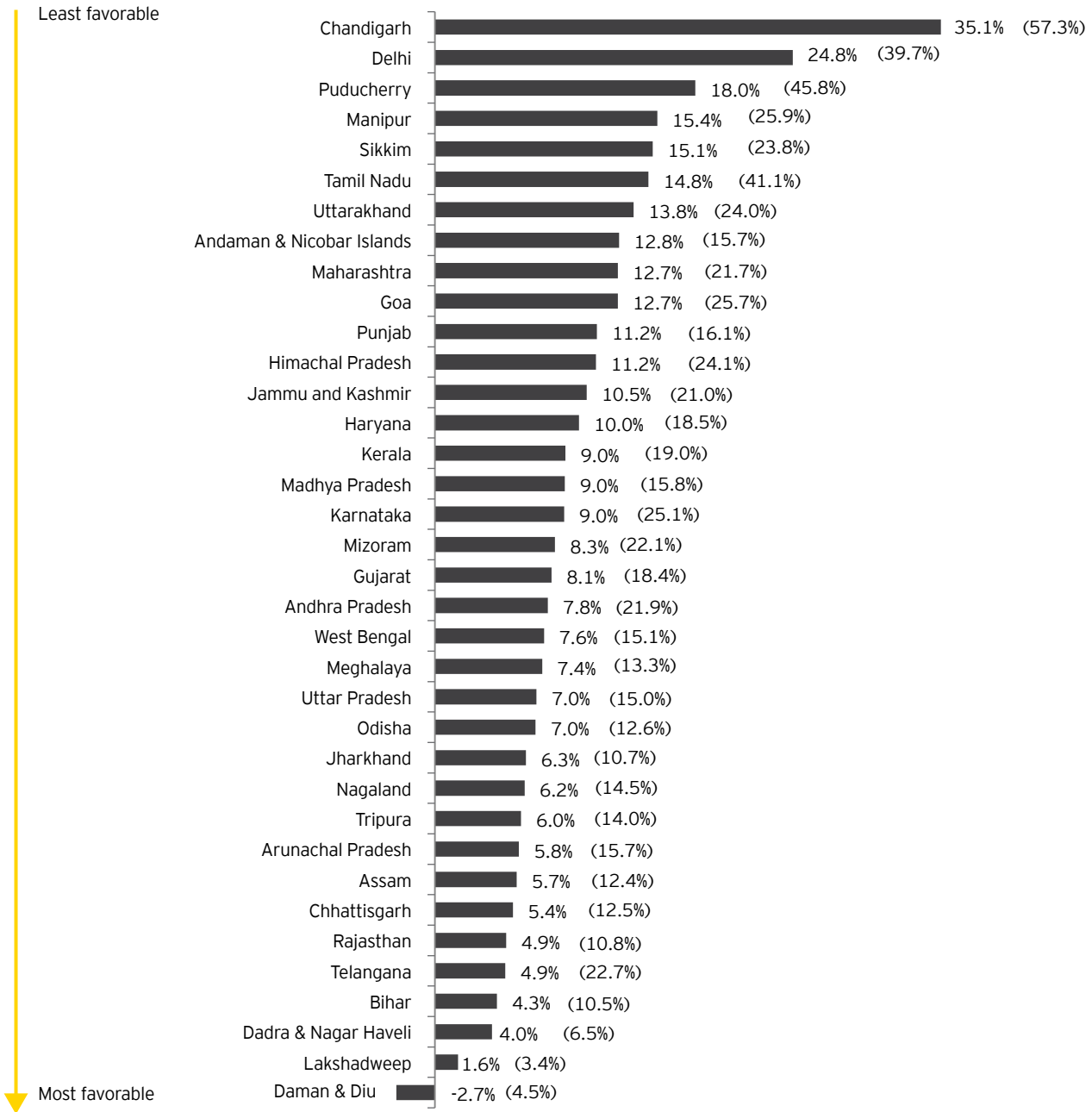
* Male GER - Female GER;

Source: AISHE 2012-13

Access to higher education is also fairly uneven across the country among social groups

Almost all states have a lower GER for SC, ST and minority groups with states such as Chandigarh, Delhi, Puducherry the most skewed in terms of variance

Variation in social group GER (%)*, values in parenthesis is state GER (%)

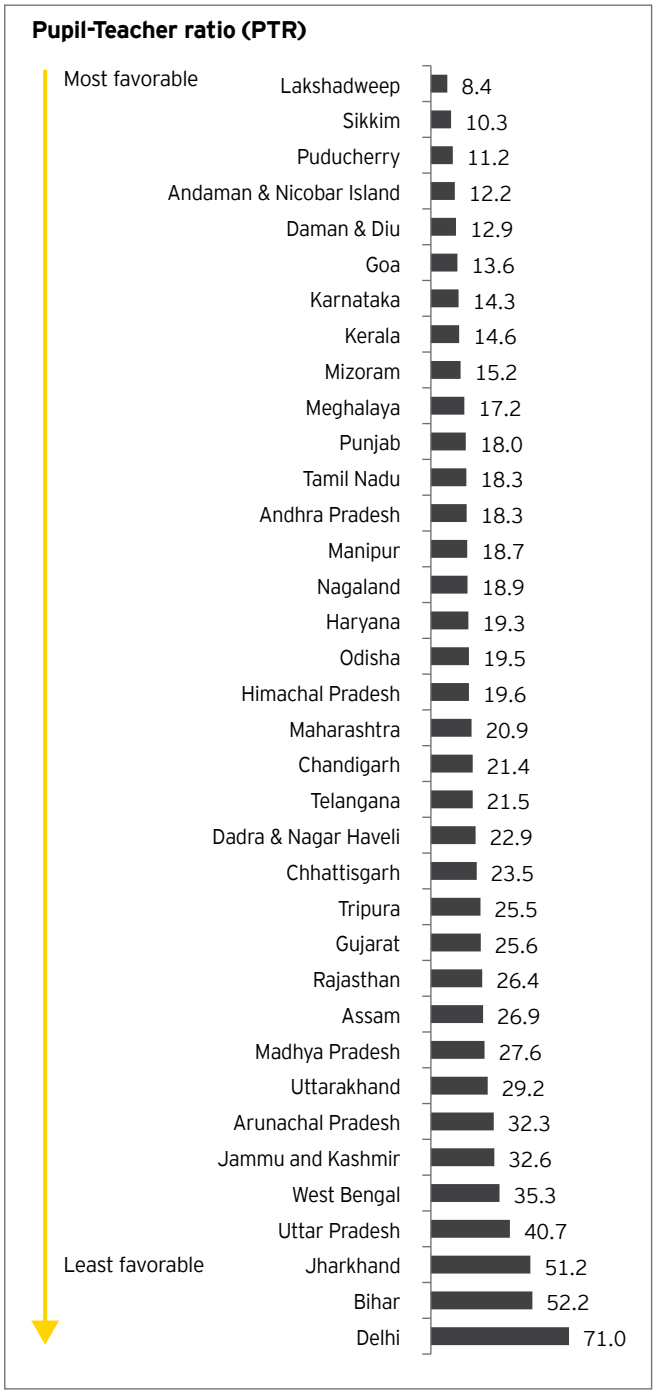


*Social group GER includes GER for SC, ST and Minority

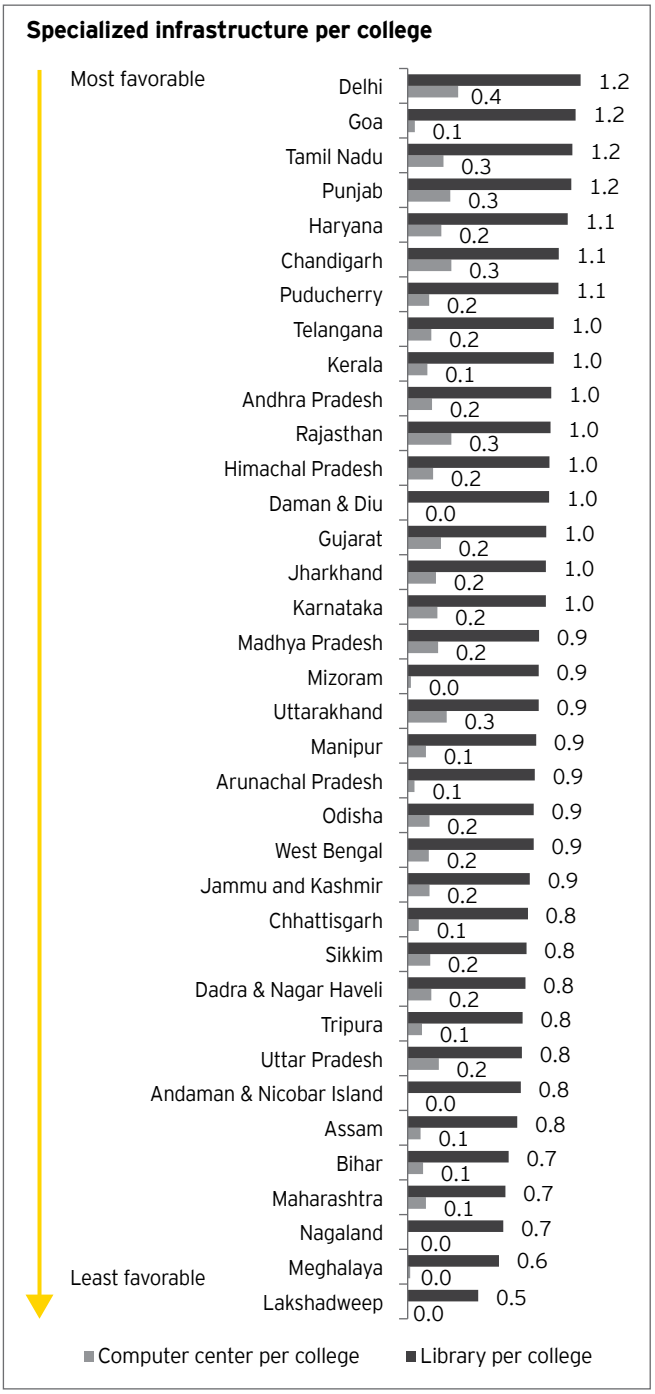
Source: AISHE 2012-13

Drivers of education quality also vary across states as can be seen in terms of availability of faculty and specialized infrastructure

States such as Sikkim, Karnataka, Kerala have a fairly good PTR as compared to states such as Delhi, Bihar and Jharkhand



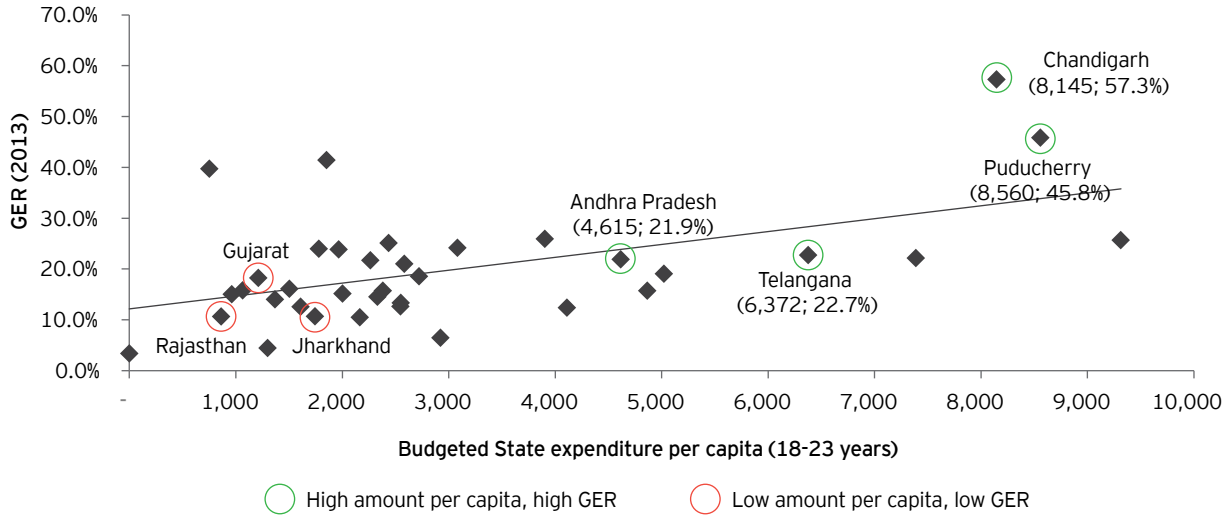
Delhi, Tamil Nadu, Punjab offer better infrastructure for improving quality outcomes as opposed to states such as Meghalaya and Nagaland



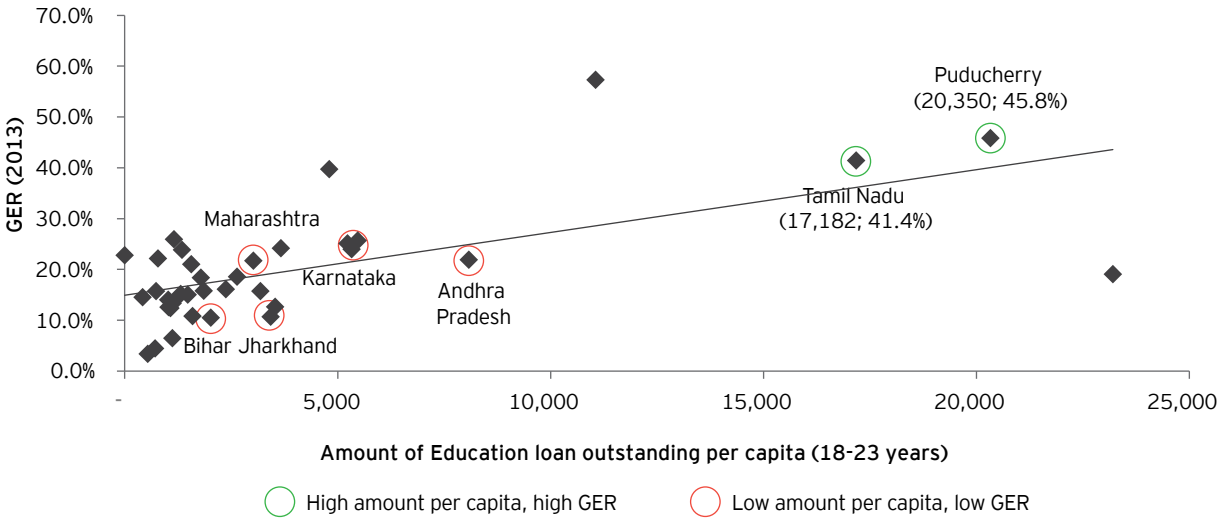
Source: AISHE 2012-13

Availability of funds from the state and other financial institutions are known to impact enrolments in many states and UTs

Impact of state government budgeted expenditure on higher education enrolments



Impact of bank loans on higher education enrolments



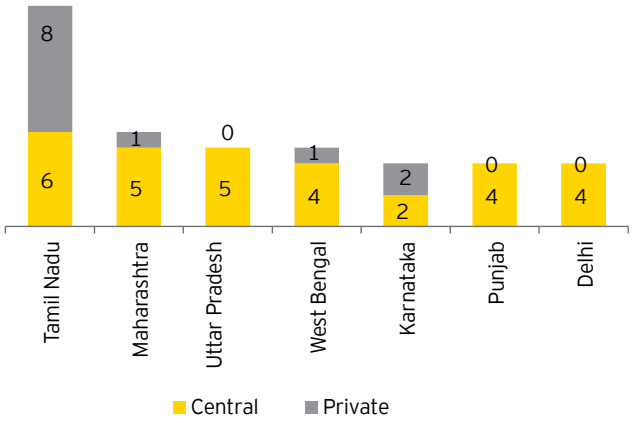
Many empirical studies and analyses show the effect of public expenditure and availability of finance and its impact on enrolments.
Budgeted state expenditure per capita and loan amount available per capita have shown to have a correlation with the GER. This is evidenced in states and UTs such as Chandigarh, Puducherry, Telangana and Tamil Nadu.

Source: RBI; AISHE, 2012-2013; ABE report, 2013

Majority of the research is driven by centrally sponsored institutions, while the state institutes lag behind

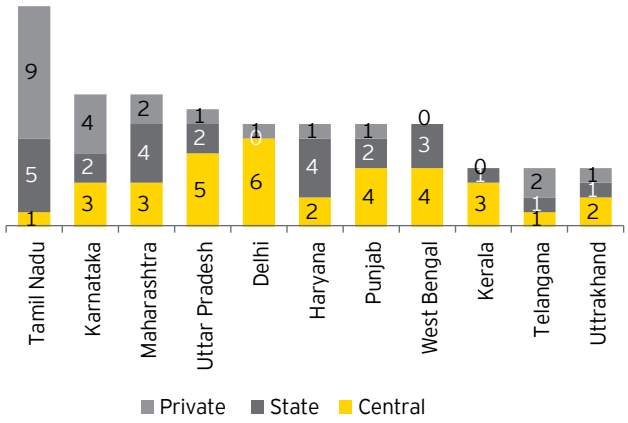
There are ~90 research focused universities in India, out of which more than 80% are centrally sponsored universities/institutes and three are state universities

Number of research focussed universities*



Top-ranked institutes in India are concentrated in few states; 15 states have no ranked institutes among top 100*

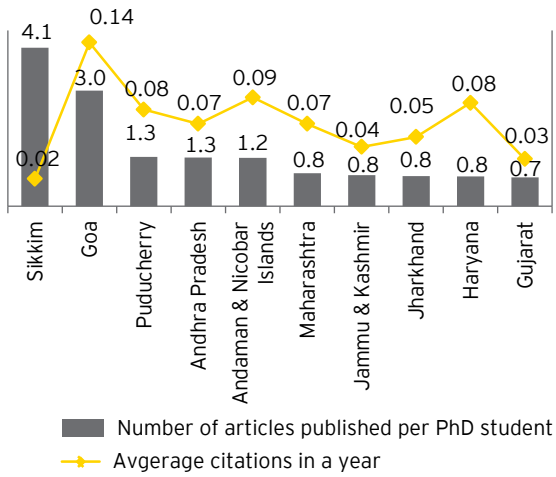
Top 100 institutes (public and private)**



*Private includes private deemed and State private universities; State includes State public universities; Central includes Government deemed universities and Institute of National Importance

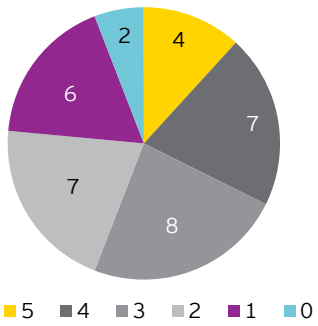
Sikkim has maximum articles published per PhD student, but their average citations per year are very little when compared to other states

Research output^



States and UTs with the highest h-index of 5 include Delhi, Maharashtra, Tamil Nadu and West Bengal

Number of states with their h-Index (2014)^



H-index measures the productivity and citation impact of publications

^ Lakshadweep has NIL; Data for Telangana included in Andhra Pradesh

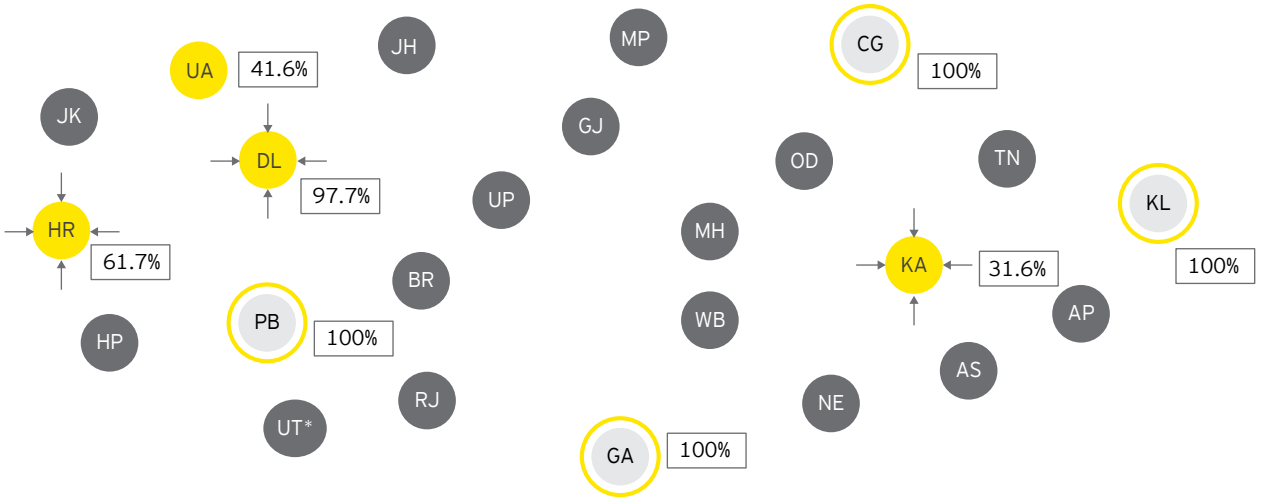
** Career360 Rankings 2014 methodology (accreditation, student-faculty ratio, research productivity, IP, avg. citations, publication count in referred journals as indexed in Web of Science)

Source: Indian Citation Index, 2014; AISHE, 2012-13; Career360 Rankings, 2014

Disparities across access, equity, quality, excellence are causing substantial migration for higher education – across and within states

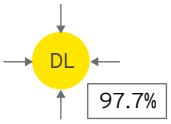
Overall extent of migration for education in India (15–32 year age group)

States with very high intra-state and inter-state migration



The image shows the movement of migrant students across state as well as across same/different districts of same state

- **Intra-state migration**: Out of all the migrant students currently studying in Chhattisgarh, 100% have migrated from different districts within Chhattisgarh itself, while none have arrived from other states.



- **Inter-state migration**: Out of all the migrant students currently studying in Delhi, 97.7% have arrived from other states, while just 2.3% migrated within same/different districts in Delhi itself.

* UT includes data for all the UTs except Delhi

Only a few of the states are perceived to be better

- Across India, only 17% of migration on account of education is inter-state in nature, while 83% of migration is across same/different districts of the same state. This highlights that there are major disparities within the state in terms of education infrastructure; the urban centers are perceived to have much better infrastructure.
- The most-important states from the perspective of migration for education are Uttarakhand, Karnataka, Haryana, Delhi, Chhattisgarh, Kerala, Goa and Punjab.
- Of these states, Uttarakhand, Karnataka, Haryana, Delhi are the main destinations for other states. Karnataka and Haryana, for example, are perceived to attract students because of the relatively high number of private universities and colleges, and better employment opportunities.
- Whereas, Chhattisgarh, Kerala, Goa and Punjab have migrations within the state. For example, in Chhattisgarh, people have to move to urban centers such as Bhilai and Raipur due to lack of good institutes elsewhere in the state.

Source: Internal Migration for Education and Employment among Youth in India, 2014

Central Government's RUSA scheme attempted to co-opt the states to improve the higher education system; however, it only covers government and aided institutions

Key features of RUSA

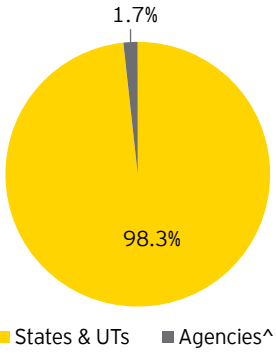
- Funding the state higher education system driven through state stakeholders vis-à-vis UGC
- Spread over the Twelfth and Thirteenth Plan period (2012-22)
- Implemented through the MHRD, with matching contributions from states and UTs

Funding under RUSA

Scheme Plan Period	Central contribution (INR billion)	State contribution (INR billion)	Total outlay (INR billion)
Twelfth Plan (2012–17)	162.3	66.3	228.6
Thirteenth Plan (2017–22)	534.5	218.3	752.8

As of 30 June 2015, a total of INR5, 150 million have been disbursed under RUSA

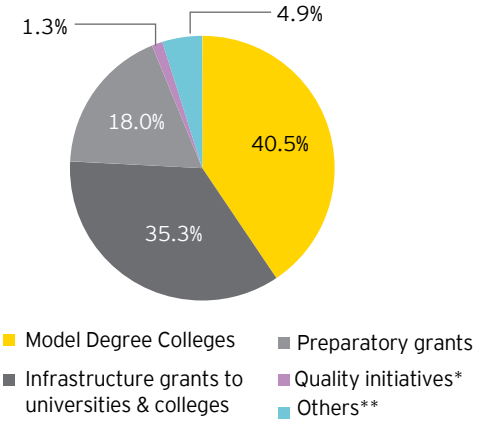
Share of funds released under RUSA



^Agencies include TISS, NAAC, CBSE, Directorate of Advertising and Visual Publicity and National Informatics Centre Service Incorporated

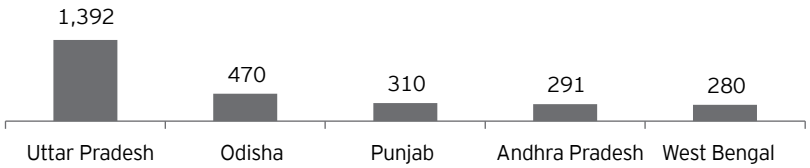
Funding to states and UTs is primarily allocated to improve access to higher education

Funds released to states and UTs by components



A total of INR5,060 million (98.3%) have been disbursed to various states and UTs under RUSA; states with the top five funding, account for 54% of the total funding

Top five states basis the amount released under RUSA (INR million)



States and UTs which have not yet joined RUSA

- Delhi
- Lakshadweep
- Meghalaya

*Includes management monitoring evaluation and research, faculty improvement and vocationalization
** includes creation of cluster universities, creation of professional colleges and equity initiatives

Source: MHRD-RUSA – status of funds (as on June 2015); 'States to get Rs.70,000cr to boost higher education', Livemint, October 2013

While SHECs have attempted to bring academic, administrative and governance reforms, there is still a need to strengthen their role and functions going forward

Prior to RUSA, states which had established their SHEC through an Act of the legislature

- Andhra Pradesh
- Gujarat
- Karnataka
- Kerala
- Maharashtra
- Tamil Nadu
- Uttar Pradesh
- West Bengal

- Before RUSA was introduced in 2013, few states had already established SHECs through an act of the state legislature as recommended by the NPE, 1986.
- After the introduction of RUSA, existing SHECs were appraised and new SHECs were formed in 29 states through an executive order.
- The RUSA scheme is aimed to bring academic, administrative and governance reforms in the state higher education system.
- SHECs have planning, monitoring and evaluation, quality assurance, advisory and funding functions within them. They are independent from the Central and state governments to bring in autonomy in their functions.

Responsibilities and tasks of SHECs across the levers of the higher education architecture

Architecture

Curriculum and pedagogy

- SHECs advise states on establishing standards in examinations, encourage innovations in curriculum development, restructuring and updating of syllabi in universities and colleges

Research focus

- Increase budgets for R&D to encourage culture of research and innovation
- Providing facilities for creating centers of excellence in frontier research areas

Faculty

- Establish a state-level faculty training academy
- Build capacity with respect to faculty – recruit, promote and develop quality faculty

Partnerships

- Encourage collaborations and faculty exchange between state/national level HEIs and foreign institutes

Infrastructure

- Support creation of clusters and zones in the state by combining colleges
- Set up community-based or skill-based colleges

Foundation

Governance

- SHECs ensure autonomy and accountability of HEIs
- Encourage HEIs to undergo NAAC accreditation through workshops
- SHECs advice state governments on academic input for policy formulation and implementation
- Knowledge consortium with representatives from the state government and VCs of state HEIs

Funding

- Performance-based funding/grants
- Power to advise the state government on fund allocation to institutions and develop guidelines for the same
- Administer research grants received from national and international agencies

Source: 'State Higher Education Councils in India- opportunities and challenges', World Bank report, 2014

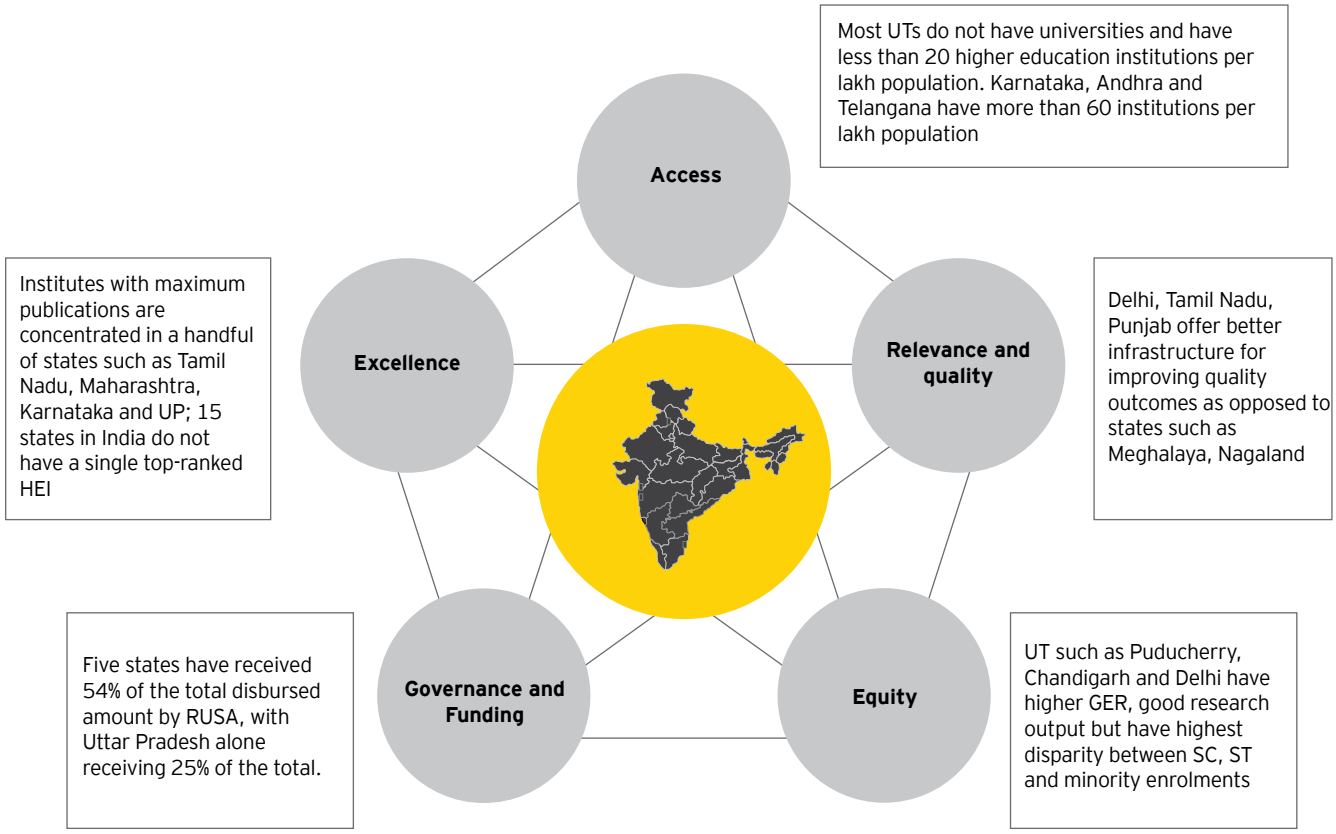
With different starting points, a one size fit all approach for all states will not yield desired results

Vision 2030

To build a world-class system of higher education in India that meets priorities of the nation and fulfils the aspirations of its people

Key challenges

Different starting points and level of maturity – varied success in providing equitable access, and mixed higher education outcomes in terms of quality, relevance and excellence



Given the disparate current state, a one size fit approach towards transforming higher education would not work. There is a need for the states to discover their own strengths and weaknesses; recognize their natural strategies; and devise their sub-national action plans for their journey towards the Vision 2030

The EY-FICCI Index

A robust, data-driven methodology has been used to develop the EY-FICCI Index

Objective of the EY-FICCI Index:

- The EY-FICCI Index has been developed with the intent to foster a healthy competition and promote collaboration among states to achieve the Vision 2030 goals.

Methodology of the Index:

- Given the significant performance variations across states, the EY-FICCI index relatively ranks each state as compared to the best-performing state under the following five parameters – access, equity, relevance and quality, governance and funding, and excellence.
- Metrics used by AISHE-MHRD in measuring the annual state higher education performance have been used as reference, to build the EY-FICCI index. However, MHRD largely measures the "input"- related parameters and some quality parameters into the higher education system
- To make a more comprehensive index that reflects the overall quality of a state's higher education system, some additional metrics have been included:
  - Input metrics related to governance structure, state budget, migration for employment
  - Output metrics, such as share of top-ranked HEIs, research-focused HEIs, research output such as avg. citations among others
- The final set of metrics under each of the five parameters are outlined on the following page.
- Data has been collected from credible government sources, and cross-validated with alternate sources. Leading education experts have been consulted to finalize weightages for the five parameters and constituent metrics.
- On each metric, states have been given a score in relation to the best-performing state. A cumulative score has then been calculated for each parameter based on the final weights.
- Finally, access and equity scores have been combined into one dimension for all states. Similarly, relevance and quality, governance and funding, and excellence scores have been combined into another dimension.
- Composite scores on both dimensions have been plotted to group all states and UTs into four quadrants shown on page 29 of the report.

Use of the Index:

- States and UTs can, in turn, build their own EY-FICCI index to promote a sense of competition and cooperation among their own universities and colleges, public and private alike.
- They could also draw guidance from the state-specific and long-term recommendation roadmap to develop a state-level education policy and action plan in the next 300 days.

A robust, data-driven methodology has been used to develop the EY-FICCI Index

EY-FICCI Index: aim and importance

The EY-FICCI Higher Education Index measures the current status of higher education in the states/UT and provides them a roadmap to align their state priorities toward the overall Vision 2030. The index provides a simple indication of the higher education ecosystem in the state, which could be further broken down to identify key areas of focus.

The index is based on the following dimensions:

Access

Institutional access

- GER
- Approved seats/population (18–23 years)

Geographical access

- Ratio of rural to urban HEIs
- Intra-state migration for education (15–32 years)

Equity

Social equity

- Gender variation in GER (male GER: female GER)
- SC enrolment variation
- ST enrolment variation
- Minority enrolment variation

Economic equity

- Access to Education loan per capita (18–23 years)
- Interest subsidy available per student
- Amount of scholarships per enrolment

Governance and funding

State-level governance

- Private sector participation in higher education – via SPU route
- Number of state private universities
- Maturity of SHEC

State funding for Higher Education

- Higher education budget as percentage of total state budget

Relevance and quality

Relevance of learning

- Inter-state migration for employment (15–32 years)
- Percentage of foreign student enrolments

Quality of inputs and faculty

- Student-teacher ratio
- Faculty in leadership positions per college
- Library per college
- Laboratory per college
- Computer center per college

Quality and accreditation

- Percentage of universities accredited by NAAC
- Percentage of universities rated A, A+ by NAAC
- Percentage of colleges accredited by NAAC
- Percentage of colleges rated A, A+ by NAAC

Excellence

Research infrastructure

- Number of CoEs in the state
- Number of incubators in the state
- Number of research-focussed institutions
- Institute of national Importance

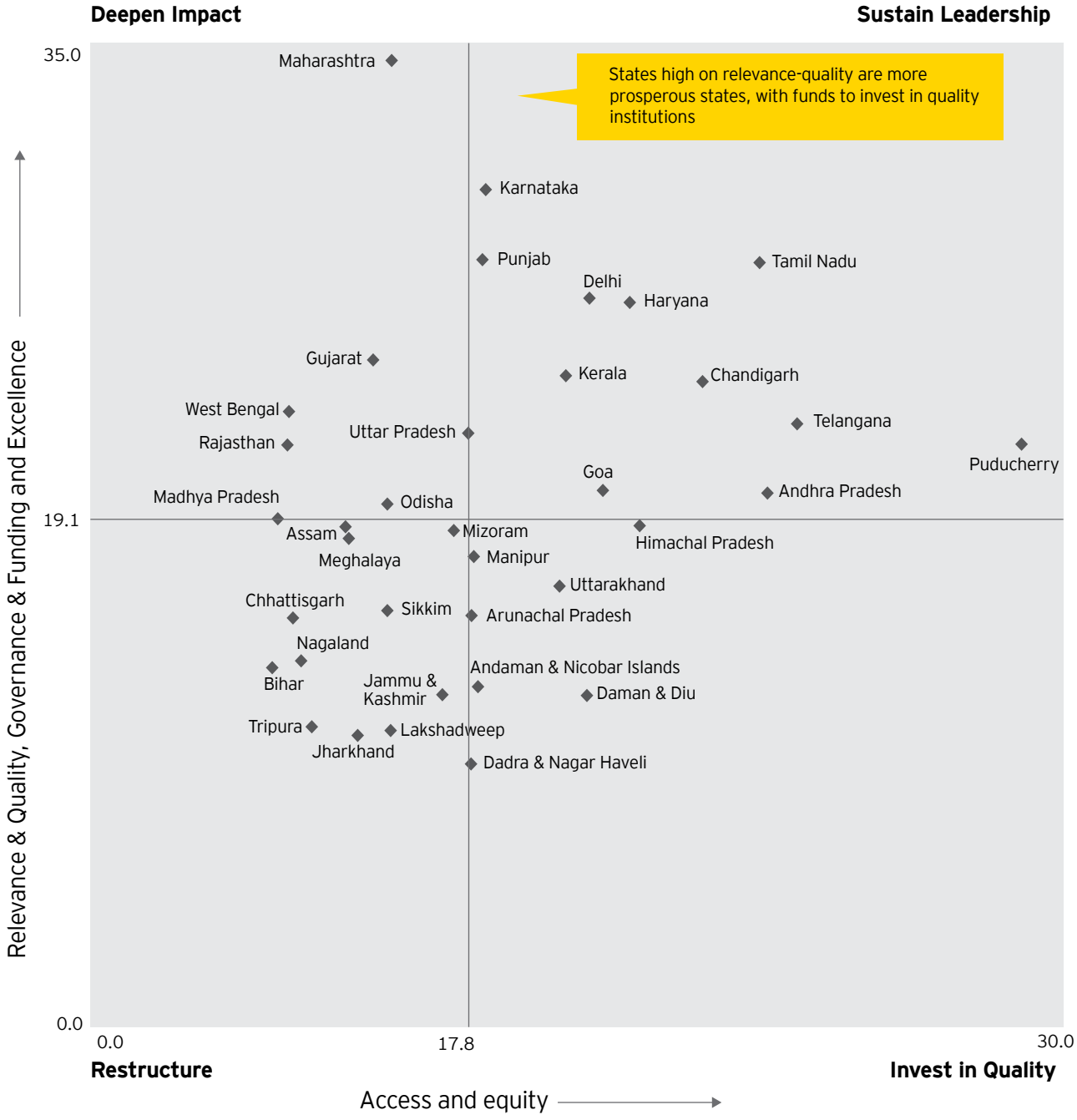
Research output

- Papers published per faculty
- Citations per publication
- Ratio of part-time teachers to regular teachers

Ranking of Institutes

- Number of colleges featuring in top Institutes across various streams – Humanities, Commerce, Science, Engineering, Law, Medicine, Business

Hence, states have been categorized in four groups based on their current maturity; the roadmap for them to embark toward the vision needs different focus areas



- States low on relevance-quality dimension are either small states or economically poor states, with insufficient funds for improving quality.

Even if states fall in the same quadrant, their underlying maturity across the dimensions could vary significantly

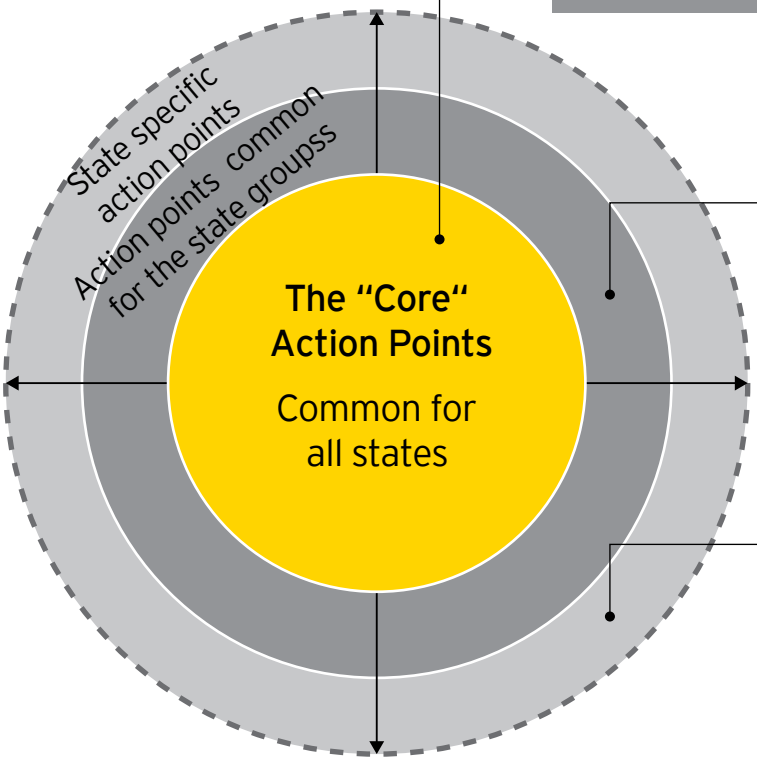
Two states from the same quadrant but different maturity levels: sub-scores on the five dimensions

Parameters	Access	Equity	Governance and funding	Relevance and Quality	Excellence
Weightage	25%	25%	10%	20%	20%
Madhya Pradesh - Deepen impact	13.9		19.2		
	5.7	8.2	4.0	9.4	5.7
33.1	▸ Low GER of 15.8% , with very low approved intake per college going population	▸ GER variation for SC/ST (6%-10%) higher than national average	▸ Has an SPU act, with 15 SPUs and 3 DUs ▸ No SHEC in place	▸ Has high student faculty ratio (~28) ▸ Low accreditation rate (26% for universities & 6% for colleges)	▸ Only 5 top-ranked institutions across MBA & law
Maharashtra - Deepen impact	16.2		32		
	8.1	8.1	5.4	11.7	14.9
48.2	▸ Above-average GER (21.7%) with moderate approved intake per college going population	▸ Barring SC, GER variation for ST, minorities, & women (4%-17%) higher than national average	▸ Has SPU act, moderately active SHEC, 4 SPUs & 21 DUs	▸ Moderate student faculty ratio (21) ▸ High accreditation rate (22% for universities & 60% for colleges)	▸ Highest no. of top-ranked institutions (73) across all major disciplines

While the two states fall in the same quadrant, Maharashtra is far ahead of Madhya Pradesh in terms of excellence, quality and access, but marginally lags the latter in equity. Hence, recommendations for the two states is likely to differ, despite being in the same quadrant.

The Way Forward

The path to transformation for each states is bound to be different due to different start points of various states



1

Every state needs to transform

The best states such as Tamilnadu, Karnataka and Delhi are far from the Vision 2030 goals. The starting point for the journey toward the vision may be different, but even the top states have a fair distance to go – the basic tenets of core transformation agenda remains similar.

2

The states are broadly grouped under 4 categories

States with similar as-is scenario are grouped together and the roadmaps for each group are proposed based on the gaps today, providing the direction toward, which the state higher education budgets may be prioritized.

3

The roadmaps have to consider local issues

The socio-economic considerations is likely to dictate local actions in addition to the core and category roadmaps. The state action plan may look at budgetary constraints, unique demographic and geographic constraints, and the maturity of the higher education system.

1

A long-term recommendation roadmap (Core Action Points) are common for all states (1/2)....

Enhance access

Reduced "Distance to Institute" by opening new institutes in rural/semi-urban areas

Open new Universities/colleges in self financing mode

Use technology to enable low cost models of education delivery through online/blended learning

- Allow/setup universities to impart education through online/distance/blended delivery
- Foster digital content creation to allow reuse of content and alleviate faculty shortage
- Invest in technology and communications infrastructure (e.g. data centres, platforms, optical fibre lines etc.) to deliver low-cost, high quality online education access with quick turnaround
- Individually or jointly develop a meta-university with partner states, offering courses across disciplines and colleges on a single massive open online course (MOOC) platform

Re-enroll people who missed out on higher education

- Allow state community colleges within the higher education system to enable multiple points for student entry and exit

Promote equity

Financing for higher education to students from social groups

- Setup state credit default guarantee to increase student loans from financial institutions
- Targeted scholarships/vouchers for low-income SC, ST, minority, general and women students, empowering them to attend institutions of choice
- Ensure information dissemination and transparent selection for scholarships/financial aid among target communities
- Include traditional vocational trades into higher education curriculum to attract marginalized candidates
- Reduce distance to institute to promote female enrolment in rural and semi-urban areas

Measure relevance and quality through outcomes

Focus on continuous curriculum improvement across the higher education system

- Mandate regular review and update of curriculum through industry stakeholder feedback
- Link learning outcomes to employability through vocationalization of higher education system
- Offer multi-lingual, skilling courses relevant to local industry talent needs
- Strengthen meta-universities by developing online network with top out-of-state universities and researching effective online curriculum and teaching methods

Grant public and private HEIs graded autonomy based on performance, to:

- Independently devise norms to recruit leadership and faculty
- Create new, industry-relevant programs and periodically review/update curriculum
- Independently decide admission criteria, intake and fees

Invest in data collection and analysis to transparently measure quality of learning outcomes

- States should publish the results of all institutes to allow students to make informed choices
- Foster competition among institutes to attract students
- Have periodic accreditation checks for reported data accuracy
- Create lateral entry track for industry experts to join teaching cadres

A long-term recommendation roadmap (Core Action Points) are common for all states (2/2)....

Targeted governance and funding

Attract private investments in capital and content

- Establish SPU and PPP acts and provide easy access to land to attract private and public-private investment in infrastructure, especially in underserved areas
- Develop policy for self-financing institutions with quality checks on academic matters
- Allow freedom for fixation of fee at private institutes/universities within UGC guidelines

Co-ordinate policy action in higher education space

- Set-up the State Higher Education Council (SHEC) to drive progress toward Vision 2030
- SHEC functions to include coordinating interventions across central and state funding

Improve data driven informed decision making

- Promote information disclosure by all HEIs within the state for accountability
- Link public funding to mandatory accreditation of public universities and affiliated colleges

Incentivize quality

- Foster competition and collaboration for research among institutes for grant funding from state
- Promote state's research HEIs capabilities by permitting mentorship from globally renowned or best-in-class, Indian institutions

Develop self-sustaining ecosystem for funding of higher education

- Combine cost-sharing policies for institutes with need-based scholarships or loans to ensure that even as the burden of support shifts, low-income students may still have access.
- Collaborate with banks to set up default guarantee funds for higher education loans, to foster lending for education loans
- Target funding toward quality rather than physical infrastructure – with checks to ensure equity and access

Drive excellence in education

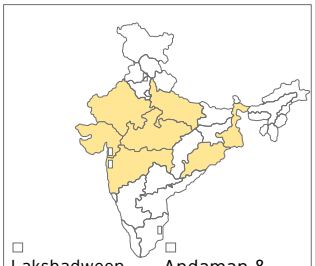
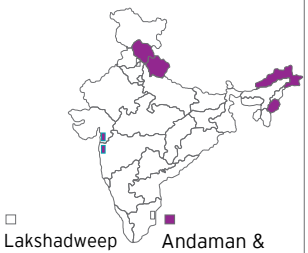
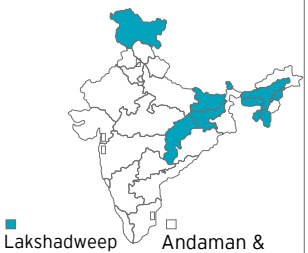
Facilitate research and academic excellence through policy interventions

- Facilitate HEIs to offer twinning programs/faculty exchange collaborations with foreign HEIs by signing bilateral agreements, organizing and inviting delegations
- Incentivize HEIs-local industry alliances to collaborate on curriculum update, setting up centers of excellence and faculty-industry personnel exchange
- Introduce tenure track/adjunct faculty track for focused research

Policymakers should consider the unique historical, political, and economic characteristics of their states when seeking to increase access or improve the quality of higher education. What works in one state may not work in another. Indeed, even within a state, policies may vary in their effects – for example policies aimed at expanding geographic access vary in how they affect female enrolment. This highlights the need to have different focus areas for the state policymakers – these indicative roadmaps are detailed for each of the groups of states

2

Growth path in each group of states is bound to be different due to different start points of various states

Strategy	States	Key features	Objectives	Key action points
Sustain Leadership ▸ Above-average performance on both dimensions		▸ Economically advanced states and UT, with mature educational institutes	▸ Look to substantially increase Education Services contribution to state GDP by attracting foreign and Indian students	▸ Create roadmap for becoming education hubs of global repute ▸ Identify and support top institutes to get into global top rankings ▸ Promote research that serves local industry – make higher education engine behind the local industry ▸ Provide industry status to education enabling better financing
Deepen Impact ▸ High performance on quality, low on access & equity		▸ Mostly large states with established urban centers of education	▸ Ensure that the quality and relevance of the existing system reaches all	▸ Identify areas/districts with low access through focused study and develop plan to enhance access in these areas ▸ Attract private participation in higher education in under served areas through incentive and policy structure ▸ Promote online/distance modes of higher education coverage ▸ Develop and offer curriculum in local languages
Invest in Quality ▸ High performance on access & equity, low on quality		▸ Group of geographically distant small states and Union Territories	▸ Radically improve student relevance, output, & research / innovation ecosystem	▸ Set up a research-focused university/RFI for local issues of relevance e.g. Tribal Affairs, Hill Sciences, Ocean studies ▸ Allocate grants for research and look for endowments from local industry/social groups ▸ Look at Meta University model to foster quality and research ▸ Offer scholarships for faculty development/Doctoral studies
Restructure ▸ Below-average on both dimensions		▸ Large states with low economic output and Island groups	▸ Design low cost and capital efficient delivery models and solicit private capital in higher education	▸ Scale up quickly with online/blended/distance education models of higher education ▸ Offer targeted scholarships for under served communities ▸ Target vocationalization of education ▸ Attract private participation in higher education in under served areas through incentive and policy structure

Sustain Leadership

↑ Access-equity ↑ Quality-excellence
Characteristics and recommendation roadmap

Definition

- States with higher education systems, which are above-average across the composite scores for both access-equity dimension and relevance, quality, excellence and governance dimension
- Tamil Nadu, Delhi, Haryana, Punjab, Goa, Kerala are few examples

Score band

- Access-equity score: 20.8-26.9
- Relevance-quality-governance-excellence score range: 16.7 to 30

"State needs to promote autonomy for top-performing HEIs, and the IIIT Delhi act can be a shining example to learn from"

- Dr. Pankaj Jalote, Founding director, IIIT Delhi

Recommended interventions

Curricula
- Institute research-oriented, multidisciplinary curriculum in top 4-5 HEIs as part of mentorship MoUs
- Strengthen IP filings and reputed twinning programs in top 4-5 HEIs
- Encourage top HEIs to consult low-performing state HEIs on content

Faculty
- Retain quality faculty in top 4-5 HEIs via tenure, research perks and autonomy
- Introduce faculty exchanges/sabbaticals with global HEIs/companies
- Ease recruitment norms (e.g. permit contracting of stalwarts on competitive pay, industry visiting faculty)

Research
- Assist top HEIs to strike mentorship, twinning and research MoUs with at least 2-3 globally renowned institutions
- Incentivize 2-3 industry-sponsored CoEs to commercialize new products and intellectual property development

Partnerships
- Incentivize 4-5 HEIs to seek mentorship from foreign HEIs and local industry, while offering consulting services to lagging HEIs
- Create regional HEI associations to monitor and promote a minimum of B+ NAAC accreditation for all members

Infrastructure
- Develop a research-focused knowledge network by linking 4-5 top HEIs and 2-3 industry-sponsored labs to catalyze innovations in research and education
- Invest in a research center, COEs, or incubator in top-10 percentile of institutions

Governance/leadership
- Mandate set-up of an IP department to manage all IP filing processes for top-notch, university innovations
- Reduce the burden on public universities by:
  - Shifting responsibility to conduct exams to an independent exam board
  - Providing graded autonomy to at least top 5-6 percentile of affiliated colleges

Funding
- Invest in attracting foreign students from South, Southeast Asia and African regions – to eventually become a regional education hub
- Encourage top-tier 4-5 HEIs to develop strong alumni and corporate CSR funding channels for research and IP development
- Facilitate 1-2 international delegations to mobilize research partnerships and funding for top HEIs

States in the "Leadership" group need to benchmark with global best-in-class institutions to push institutional quality, autonomy, and research to the next level.

Source: "Comparison of India's science research with China, US, UK and Japan," EE Herald, January 2012

Case study: Singapore

The top performing states in India could learn from the transformation of Singapore into an international higher education hub in the last two decades

The journey to transformation in Singapore provides a roadmap to enhance higher education in some Indian states

- From a standing start in 1960s, Singapore is now widely recognized to have one of the world's leading economies and most advanced and successful education systems.
- The country has made great progress by implementing a wide variety of initiatives, the number of HEIs have increased from just 6 in 2000 to 28 in 2015; the university enrolments have gone up from 37,648 in 2000 to 57,117 in 2010; number of foreign students from zero in 2000 to ~75,000 in 2014.

Governance

- Implemented Private Education Act, 2009
- Enhanced Registration Framework lays down the mandatory registration requirements and legislative obligations
- Under the EduTrust Certification Scheme, private education institutions need to be certified before offering placement for international students

Quality

Under the Global Schoolhouse initiative:

- Local universities collaborated with foreign universities to provide joint programs from bachelor degree level to PhD
- Since 2002, 10 foreign institutions such as INSEAD and Tisch School of the Arts have established branch campuses in Singapore

Excellence

- Established five Research Centres of Excellence in local universities
- Set up research centers in collaboration with foreign universities
- Launched a fellowship scheme to provide a research grant
- Started sector-specific accelerator programs
- Launched an equity-based co-financing option for Singapore-based start-ups
- Launched a start-up grant of up to S$50,000 for entrepreneurs

Relevance

- Human capital development was formulated to boost worker training and skill upgrade
- Manpower 21 Plan lays down six core strategies –manpower planning, lifelong learning, talent augmentation, manpower development, workplace transformation and partnerships

Success so far...

Access		Relevance/Quality	Excellence
▸ Polytechnics enrolments: 80,900 (2010) ▸ Universities enrolments: 57,117 (2010)	▸ 28 HEIs (junior colleges, Institute of Technical Education, art schools and universities) (2015)	▸ 75,000 foreign students (2014) ▸ 80% employment rate,15-64 years (2014)	▸ Globally ranked institutions – 2 in top 20 (2015) ▸ Global Innovation Index World Rank – 7 (2015)

States such as Tamil Nadu, Karnataka, Delhi could take cues from Singapore to improve their higher education systems into becoming a hub for education

Source: 'Bringing out Your Best with Different Learning Styles', Post-secondary education, MoE Singapore; 'Internationalization of Tertiary Education Services in Singapore, October 2012; Singapore Yearbook of Manpower Statistics, 2015; QS University Ranking, 2015-16; GII, 2015; 'Launch of Manpower 21', Singapore government press release; NRF website

Deepen Impact

↓ Access-equity ↑ Quality-excellence
Characteristics and recommendation roadmap

Definition

- State higher education systems that rank high on relevance, excellence and quality outcomes to students; however, it lacks on ensuring equity and access for all.
- Maharashtra, Karnataka, Gujarat, West Bengal, Rajasthan are few examples

Score band

- Access-equity score: 16 to 20.8
- Relevance-quality-governance-excellence score range: 16.7 to 30

"IGNOU has identified 120 districts pan-India with GER of 3%-7% to identify prospective learners and launch onsite admission drives"

- IGNOU Regional Director

Recommended interventions

Curricula
- Launch 6–8 skilling and entrepreneurial programs as per local employment needs to expand enrolment
- Incentivize top 5% foundation institutions to share curricula with rest
- Develop engaging, multilingual content and pedagogy for online/blended learning

Faculty
- Ease recruitment norms to hire visiting/full-time post-graduate faculty with relevant experience as compared to doctorates
- Incentivize faculty in public HEIs to create online content and undertake short rural teaching assignments

Research
- Research on effective online pedagogy and outreach methods with best-in-class online education institutions globally
- Set-up 8–10 industry-sponsored centres of excellence to solve local socio-economic problems

Partnerships
- Direct central funding to catalyze 1–2 model, university PPP campuses in under-represented districts
- Partner with local industry and vocational training institutes to enable multiple points to enter and exit the higher education system

Infrastructure
- Invest in technology (data centres, platforms etc.,) and share public HEI infrastructure/content to enable low-cost, decent quality access with quick turnaround
- Incentivize private investment in 2–3 model community colleges for mainstream higher educationdrop-outs

Governance / Leadership
- Provide overarching SPU act, easy access to land, and education cluster facilities to accelerate private institutional expansion in under-represented areas
- Establish a strong SHEC and distance/online/blended models of education to accelerate enrolment penetration

Funding
- Allocate increased share of GSDP and attract CSR funding to improve GER in backward regions
- Provide scholarships/education loans to minority/SC/ST/economically backward districts
- Provide research scholarships to increase faculty aspirants in rural/backward districts

States in the "Deepen Impact" quadrant need to attract private investment and deploy technology for equitable access to higher education among all districts and social groups

Source: "Comparison of India's science research with China, US, UK and Japan," EE Herald, January 2012

Case study: Tamil Nadu

Tamil Nadu's experience of doubling GER in less than a decade – distance education and encouraging private participation may show the way

Tamil Nadu's journey to expanding rapid access in higher education

- Tamil Nadu achieved a GER of 41.4% in 2013, a rapid increase from 20% in 2007.
- It is among the highest GER growth performances in India in recent times.
- Key levers of change were a conducive policy environment for expansion of self-financing institutions, targeted public and distance HEI investment in underpenetrated districts, and launch of industry-relevant programs to maintain employability outcomes.

Governance

- TN SHEC is among the most active across states.
- It facilitated rapid public, private and tech-enabled higher education expansion.
- It has earmarked 1.5% of GSDP, the highest allocation among states for higher education.
- It plans to fortify regulatory framework for private players.

Public/private growth

- It permitted rapid scale-up of self-financing institutions*, comprising 90%+ of engineering, dental, homeopathy and management HEIs.
- IIIT, an institute of excellence, was set up in public-private partnership mode.
- In past three years, 797 new arts/science courses were launched in government colleges.

Quality

- COEs were set up with the auto, renewable, bio, nanotechnology, construction and water management sectors.
- It invested in several quality initiatives in 10 universities
  - PG CoE/labs (INR25 cr.)
  - Curriculum update (INR10 cr.)
  - Faculty/ student exchange (INR4.5 cr.) with British HEIs
  - Incubation center (INR2.7 cr.)
  - Industry alliance cell (INR2 cr.)
  - Entrepreneurship/skilling centres (INR2 cr.)
  - Reputed foreign visiting faculty (INR1 cr.)

Technology-enabled

- TN Open university piloted community colleges in 4 under-represented districts at ~11L / college, later to expand to all districts.
- It operates extension centers to expand PG education in remote areas.
- Content cells (5 cr.) were set up to centrally create/ share multi-modal learning material.
- Smart classes/VCs (2 cr.) connecting 10 public universities

Success so far...

Access	Governance	Quality	Excellence
▸ GER (2013): 41.4% ▸ ~3.5 rural institutes for every urban institute	▸ Facilitating a maximum number of 28 HEIs to acquire deemed university status	▸ 50% universities and 25% colleges accredited by NAAC, vis-à-vis national average of ~31% and 15.5% respectively	▸ Hosts 6 Institutes of National Importance, highest in India ▸ High no of COEs (33) and incubators (54)

Tamil Nadu SHEC has demonstrated unwavering focus in facilitating public/private investment and deploying technological infrastructure to achieve the unparalleled growth in GER.

Source: 'Governance of Technical Education in India', World Bank Working Paper No. 190, 2010

Invest in Quality

↑ Access-equity ↓ Quality-excellence
Characteristics and recommendation roadmap

Definition

- State higher education systems that have above-average composite scores for access and equity, but offer poor quality education with low employability outcomes
- Uttarakhand, Himachal Pradesh, Manipur, Mizoram are examples

Score band

- Access-equity score: 20.8 to 26.9
- Relevance-quality-governance-excellence score range: 10.3 to 16.7

"One of the agendas being pushed by the state is, granting autonomy to colleges; another being where we can convert many colleges into a cluster"

– A SHEC Member

Recommended interventions

Curricula
- Credit-based and skill-oriented curriculum harmonized across top HEIs to increase subject and college choices
- Attract industry in academic council for top 5% HEIs to validate curriculum and promote multi-disciplinary electives
- Mandate curriculum review/update

Faculty
- Grant top HEIs increased autonomy to recruit faculty (e.g., industry and academic stalwarts as adjunct faculty)
- Retain quality faculty through tenured career and monetary/research perks
- Introduce faculty exchanges/sabbaticals with globally reputed HEIs

Research
- Provide high autonomy levels to the 1–2 best-performing research HEIs via legislative acts
- Build technology-enabled, knowledge-sharing network of top research institutions within state
- Build industry-sponsored, COEs to commercialize new products

Partnerships
- Seek mentorship from leading institutions of top-quadrant states
- Develop public accreditation agency and regional college associations that jointly contribute human resources to the accreditation effort, seeking to achieve at least B+ rating for all members

Infrastructure
- Invest in education hubs and world-class educational facilities (e.g., COEs, labs) for network of top-quality institutions
- Develop a meta-university (online platform) for top domestic HEIs by sharing curriculum/resources with best HEIs in top-quadrant states

Governance/leadership
- Establish SHEC that focuses on regulating HEIs on academic rather than infrastructure standards
- Provide graded strategic and operational autonomy to affiliated colleges depending on performance
- Set up autonomous exam board to reduce university burden

Funding
- IInvest in corpus fund, wherein returns can finance subsidized loans and quality initiatives in public HEIs
- Deploy institutional funding basis periodic peer review and accreditation performance
- Encourage top-tier institutions to develop strong alumni and corporate funding channels
- Invest in competitive grants for research, COEs, and incubators for world-class research HEIs

States in the "Invest-Quality" group need to focus on periodic institutional accreditation and increased autonomy for high-performing institutions

Source: "Comparison of India's science research with China, US, UK and Japan," EE Herald, January 2012

Case study: Maharashtra

Maharashtra has among the highest record of accredited HEIs – due to sharp government focus on private expansion and upholding continuous improvement

Maharashtra's journey to building relevance and excellence in higher education

- Maharashtra rapidly expanded private technical education in 1980s/90s and facilitated quality through rigorous accreditation requirements among private institutions
- Going forward in 2014–15, the state has taken several initiatives to improve equity in higher education:
  - Propose set-up of "Higher & Professional Education Financing Corporation (HIPEC)", professionally run autonomous body providing soft loans to students (@4%) and to institutions (40% below market rate).
  - State CSR cell for higher education development through increased corporate sponsorship
  - Set up of MAHED, an independent legal entity providing regulatory oversight and autonomy to HEIs
  - Plans to invest in communications infrastructure (MS Edunet) to link all HEIs and meta-university, state-level MOOC, to offer choice of courses and colleges to students
  - MIS Implementation plan 2015 by GoM to collect higher educational statistics from all HEIs in the state

Expansion

- Maharashtra had limited capacity and quality institutions, post bifurcation with Gujarat
  - IIT Bombay set up in 1958 by the GoI
  - One polytechnic institute in Pune
  - By 1978, 16 engg. degree institutions and 50 diploma colleges were set up

Governance

- Directorate of higher education formed in 1984
- Maharashtra University Act passed in 1994, replacing the 1974 Universities Act
- HIPEC fund initiated with few 1000 cr. from state, and enhanced via student/faculty contributions and investment returns

Relevance and quality

- A government resolution was passed to accelerate the process of assessment and accreditation (A/A)
- Quality assurance cell (QAC) set up in 2002
- A manual in Marathi given to facilitate colleges from rural areas to prepare their SSRs
- By 2003, 350 colleges prepared their SSRs (self-study reports)

Excellence

- Reputed HEIs (e.g. IISER/TIFR/TISS) house four centers of excellence (COEs)
- State Plan for Vision 2020 to attract private sector investment into IT and engineering sectors

Success so far...

Access and Governance/funding	Equity	Relevance	Quality/excellence
▸ GER: 22% ▸ SCOPE state scholarships for 21,748 technical education students p.a. from minority social groups	▸ Educational loan outstanding/18–23 yr. old: INR 2.4L. ▸ SNDT women's university set up in 1915, first MH university to be granted five-star rating by NAAC.	▸ 75% employability of software engineers in IT roles ▸ NMIMS best rated in industry engagement by NAAC ▸ Attracts 13% of foreign students in the country	▸ Three top-ranked engg. colleges and six top-ranked medical colleges ▸ 60% colleges accredited by NAAC (India's highest) ▸ Highest no. of articles and citations in 2014 ▸ IGIDR, only research university to secure A++ grade (score of 95.15%)

Maharashtra has made rapid strides to ensure high quality of its top institutions through strong governance focus on quality and continuous NAAC accreditation

Source: 'State-wise analysis of accreditation reports-Maharashtra', NAAC; Directorate of higher education, Maharashtra state website

Case study: Haryana

Haryana's steady governance focus on underserved regions and quality private participation has resulted in strong overall performance across the two dimensions

Haryana's journey to improving equitable geographical access and attracting quality private HEIs

- Haryana has made balanced progress in improving its GER and developing high-quality private HEIs.
- Since 2000, Haryana formulated a clear education policy that directed officials to attract private and invest public capital in rural areas.
- It has facilitated development of high-quality, private HEIs by establishing an overarching SPU act as well as setting up Rajiv Gandhi Education city.
- While only 12% of universities are accredited, all of those accredited have achieved an A/A+ rating. Due to its perceived high-quality education, 62% of migrant students are from outside Haryana.

Governance and funding

- Education Policy in year 2000- directed to expand capacity in rural areas, attract private capital, and make programs more job-oriented
- Established an SPU act, while meeting equity objectives too by requiring reservation/ scholarships for 25% students from SC/ST groups

Access and equity

- After 2000, 34 new rural government colleges were set up.
- No fees were charged for girls in HEIs up to BA., B.Com and B. Sc. and promoted private sector to launch women-only HEIs.
- It was made mandatory for govt. lecturers:
- To serve for first 3 yrs. in rural areas to become eligible for award of Senior Scale and
- 5 years of Service in rural area for grant of Selection Grade

Quality

- Have mandated accreditation and self-study report submission for all HEIs
- Since 2000, all govt. colleges have been inspected once annually, with additional random inspections to ensure:
  - Min. 180 teaching days
  - Club classes of common subjects to optimize faculty
  - Conduct monthly tests
  - Not allow lecturers for private tuition

Excellence

- Attracted leading HEIs to Rajiv Gandhi Education City (for e.g., IIMR, AIIMS-II, defence univ. and private HEIs (OPJ, Ashoka etc.)
- Among the best ICT access in HEIs due to optional subject since 2002 – roped in 2 IT service firms for infrastructural and technical support, teacher training to all public HEIs

Success so far...

Access	Equity	Relevance	Excellence
▸ GER (2013): 19% ▸ Attracted 17 SPUs	▸ Female GER 2.5% lower than male GER (19.6%) ▸ 16% HEIs are women-only HEIs	▸ 27% colleges NAAC accredited (above national average) ▸ Of NAAC-rated HEIs, all universities and 13% colleges rated A /A+	▸ Four top-ranked eng./law/MBA colleges each and 1 INI ▸ 43 COEs, highest due to education hub

Haryana has made considerable improvements in equitable higher education access across districts as well as elevating quality of top-performing institutions

Source: 'State-wise analysis of accreditation reports-Haryana', NAAC

Restructure

Access-equity Relevance-quality Characteristics and recommendation roadmap

Definition

- State higher education systems that offer a poor quality education with low industry relevance, but have a more urgent imperative to expand access for all
- Bihar, Chhattisgarh, Assam, Arunachal Pradesh, and Jharkhand are few examples

Score band

- Access-equity score: 16 to 20.8
- Relevance-quality-governance-excellence score range: 10.3 to 16.7

"Our universities are beset with problems of faculty and quality. Mandatory NAAC accreditation will improve the quality of education"

Senior official, AP SHEC

Recommended interventions

Curricula

- Expand enrolment by launching 6–8 new skilling programs relevant to local industry
- With Central Government support, work with top quadrant states (e.g., Lakshadweep could work with Kerala) to re-use multi-modal content
- Create vernacular language content

Faculty

- Ease recruitment norms to hire visiting/full-time PG faculty with industry experience as compared to doctorates
- Incentivize online content creation and short rural teaching stints
- Facilitate faculty training with faculty from top regional HEIs

Research

- Research on effective online pedagogy and outreach methods with best-in-class online education institutions globally
- Set up 4–5 industry-sponsored COEs to solve local socio-economic problems

Partnerships

- Partner with seven to eight local corporate entities and skilling institutes to increase flexibility of entering and exiting the higher education system
- Seek mentorship/ paid services from two to three leading HEIs in top-quadrant states
- Enable intra-country, faculty/student exchange programs to facilitate promotion of best practices

Infrastructure

- Use RUSA funds to set-up community/model colleges
- Provide easy access to land/facilities to facilitate private expansion in backward areas
- Invest in online course technology and share public infrastructure to increase access

Governance/leadership

- Establish SPU act, easy access to land, and public-private partnership framework, and then permit private sector to lead infrastructure expansion in under-represented areas
- Regulate HEIs on broad academic guidelines, and leave operational decisions to administrators
- Set up SHEC and encourage private investment in online/blended education

Funding

- Allocate high share of GSDP for improved GER
- Invest in corpus fund, with contributions from institutes and students, and fund returns can be used to finance subsidized education loans
- Provide scholarships to underserved social groups
- Deploy RUSA funding to provide research scholarships to increase faculty aspirants in rural/ backward districts and upgrade select HEIs

States in the "Restructure" group can facilitate public-private investment, work with best institutions from top-quadrant states, and deploy technology to improve access and quality

Source: "Comparison of India's science research with China, US, UK and Japan," EE Herald, January 2012

Case study: Malaysia

Its higher education system today is a net exporter of education services – a turnaround from 1990s when Malaysians were the biggest migrant student population – thanks to some far reaching policy interventions

Malaysia's journey to expanding access and improving quality in higher education

- Malaysia has made significant progress in improving its higher education system, most notably in broadening access and expanding overall system and institutional quality.
- Key levers of change were the support of the private sector, and the investment made by the Government.
- Key achievements include a 70% increase in enrolments during 2002–2012 to achieve a gross higher education enrolment rate of 48%; a three-fold increase in number of research articles published by Malaysian universities during 2007–2012; 11% yearly growth in number of patents from 2007–2011.
- The country has recently launched "Malaysia Education Blueprint 2015–2025 (Higher Education)" to further improve its higher education system

Governance and funding

- Currently allocates 7.7% of its budget for higher education
- Established a council* to determine policy and co-ordinate the development of tertiary education
- Granted more administrative and financial autonomy to public universities**
- Introduced regulatory changes to promote private sector participation***

Excellence

- Introduced twinning programs with countries such as the US, the UK, Australia
- Scholarships for International Students to pursue advanced academic studies in Malaysia
- Launched 1MET program to facilitate hands on entrepreneurship bootcamps

Quality

- Launched a programme (SETARA) for rating performance of under-graduate teaching and learning in universities and university colleges and another programme for rating polytechnics
- MOHE provides financial assistance for suitably qualified lecturers from Malaysian Universities to pursue higher education qualifications at overseas institutions

Access

- Offered scholarships to students, through sponsorship programs
- Promoted distance education and online learning, more than 90,000 students currently enrolled
- Higher education for Malaysians in public HEIs has so far been almost completely subsidised, 90-98%
- PTPTN Education Loan Scheme provides loan at 3% p.a., for students in local (public/private) HEIs

Success so far...

Access	Governance	Quality	Excellence
▸ GER: 48% (2012) ▸ Enrolments in higher education: 1.2 million (2012)	▸ Number of HEIs: More than 600, out of which ~500 are private and 4 are foreign branch campuses	▸ Foreign students: 103,000 (2013) ▸ Graduate employability: 75% ▸ Masters and PhD enrolments: 3rd among ASEAN	▸ Number of research focused universities: 5 ▸ Global University Rankings (QS): 1 in Top 200, 5 in Top 400 (2015)

Malaysia has made substantial advances in strengthening its higher education system through strong governance, focus on equitable outreach and quality outcomes.

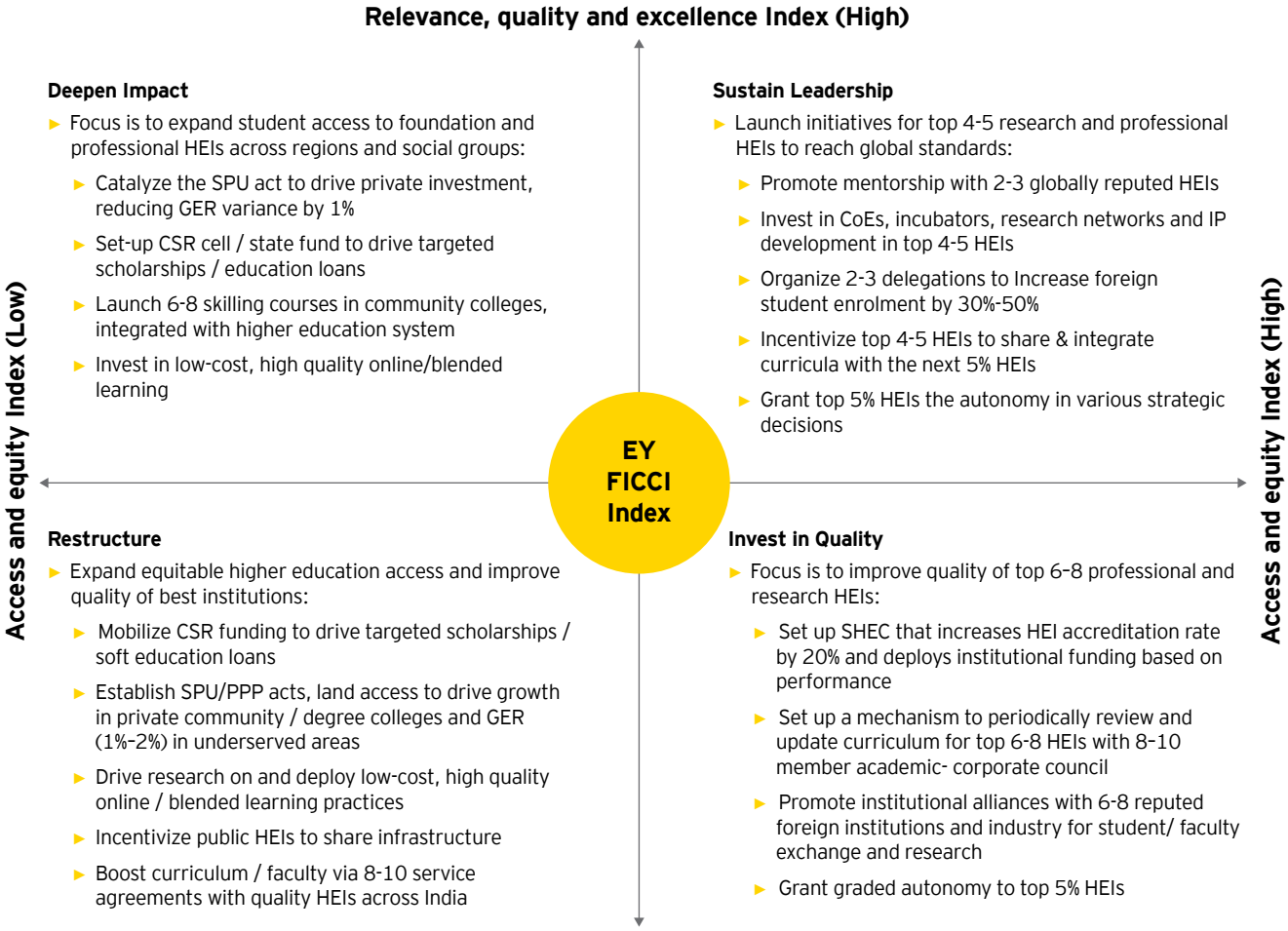
Note: *National Council of Higher Education Act, 1996 ; ** Universities and University Colleges (Amendment) Act, 1996 ; ***The Private Higher Education Institutions Act, 1996

Source: MOHE's international higher education scholarships; 'Malaysia Education Blueprint 2015-2025', MOHE; 'Higher education in Malaysia: Increasing access and quality', Perdana Leadership Foundation

300-day action plan

States may start implementing their roadmaps with a 300-day action plan with measurable outcomes

300-day action plan



Deepen Impact

- Focus is to expand student access to foundation and professional HEIs across regions and social groups:
  - Catalyze the SPU act to drive private investment, reducing GER variance by 1%
  - Set-up CSR cell / state fund to drive targeted scholarships / education loans
  - Launch 6-8 skilling courses in community colleges, integrated with higher education system
  - Invest in low-cost, high quality online/blended learning

Sustain Leadership

- Launch initiatives for top 4-5 research and professional HEIs to reach global standards:
  - Promote mentorship with 2-3 globally reputed HEIs
  - Invest in CoEs, incubators, research networks and IP development in top 4-5 HEIs
  - Organize 2-3 delegations to Increase foreign student enrolment by 30%-50%
  - Incentivize top 4-5 HEIs to share & integrate curricula with the next 5% HEIs
  - Grant top 5% HEIs the autonomy in various strategic decisions

Restructure

- Expand equitable higher education access and improve quality of best institutions:
  - Mobilize CSR funding to drive targeted scholarships / soft education loans
  - Establish SPU/PPP acts, land access to drive growth in private community / degree colleges and GER (1%–2%) in underserved areas
  - Drive research on and deploy low-cost, high quality online / blended learning practices
  - Incentivize public HEIs to share infrastructure
  - Boost curriculum / faculty via 8-10 service agreements with quality HEIs across India

Invest in Quality

- Focus is to improve quality of top 6–8 professional and research HEIs:
  - Set up SHEC that increases HEI accreditation rate by 20% and deploys institutional funding based on performance
  - Set up a mechanism to periodically review and update curriculum for top 6-8 HEIs with 8–10 member academic- corporate council
  - Promote institutional alliances with 6-8 reputed foreign institutions and industry for student/ faculty exchange and research
  - Grant graded autonomy to top 5% HEIs

Roadblocks

States need to be cautious about certain roadblocks in pursuing their respective roadmap toward Vision 2030:

- Making budget allocation choices between access-equity dimension and quality-excellence dimension can be controversial and needs constant balancing
- Legislative consensus on important reforms, such as SPU act, faculty recruitment norms etc., are highly political and slow to progress
- There is a strong inertia against accreditation; it can be broken only through stringent measures such as performance-linked funding.

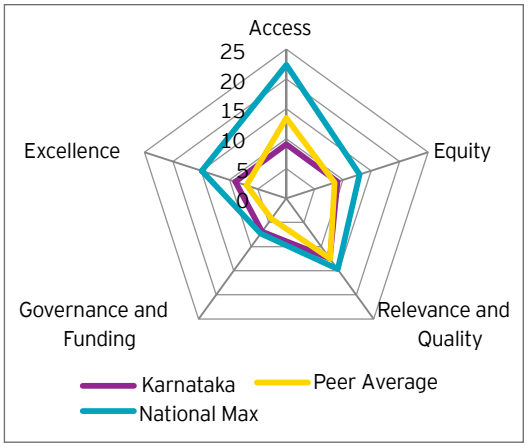
Disclaimer: This action plan will vary across states based on starting date of implementation and current scenario of the states (as per the placement in the quadrant)

Representative states' roadmap

3

Karnataka

Karnataka's as-is assessment shows low rural penetration resulting in issues of access and equity; however, it has made great progress in relevance, quality and excellence



District	#
Highest-performing districts	
Dakshin Kannada	10
Bengaluru	8
Dharwad	7
Gulbarga	6
Lowest-performing districts	
Bellary, Haveri, Koppal, Chikkaballapur	2

Colleges per ten thousand population of 18-23 years

- Dakshin Kannada, Bangalore, Dharwad and Gulbarga have more than seven colleges per ten thousand population whereas, Bellary Koppal, Chikkaballapur, Chamrajnagar and Haveri have two
- Site selected at Dharwad for IIT
- Active SHEC and state knowledge commission
- Innovative programs such as Naipunya Nidhi and Hosa Hejje to improve and develop skills of students from disadvantaged socio-economic background

SWOC analysis

Strengths

- High GER (25.1%) above the national average
- More than 60 HEIs per lakh population
- Third-best state in the country with PTR of 14.3
- More than 82% private HEIs (11 SPUs, 15 DUs)
- Most private universities created by an Act of the state legislature
- Highest number foreign students enrolled (13,241)
- High h-index of 4; three top-ranked research universities in BRICS and ASIA*; 11 research HEIs in India with high quality output**
- High inter-state migration due to perceived quality and better educational outcomes

Weakness

- Low rural penetration across the state (rural to urban institutes ratio of ~0.45)
- High GER variance among social groups (9%) and across gender (2%)
- 47% of female enrolments although the state has a dedicated women's university, Karnataka State Women's University
- All colleges not yet connected/ digitized by ICT/ wi-fi enabled
- Not many courses delivered through MOOCs, currently present in few institutions across few courses

Challenges

- Karnataka State Innovative Universities Bill not passed yet
- No detailed SPU act, hence, no clear policy framework or regulations for establishment of private universities or self-financed institutions
- No integration of research of UG/PG level with PhD
- Too many colleges affiliated to a single university, therefore straining the quality of higher education
- No regular revision of curricula, faculty recruitment/development norms, institutional assessment or formal state-level accreditation present

Opportunities

- MoU with Australia recently signed
- Well-established, top-ranked research universities in the state
- Private sector participation in higher education
- Active SHEC and knowledge commission with a Vision 2020 plan
- Established businesses across Engineering, IT/ITES and Biotech for research and employment
- One of the top industrial output in the country, ranked third for receiving FDI and state identified as top four innovation hubs by WEF
- E-administration across all HEIs can be implemented

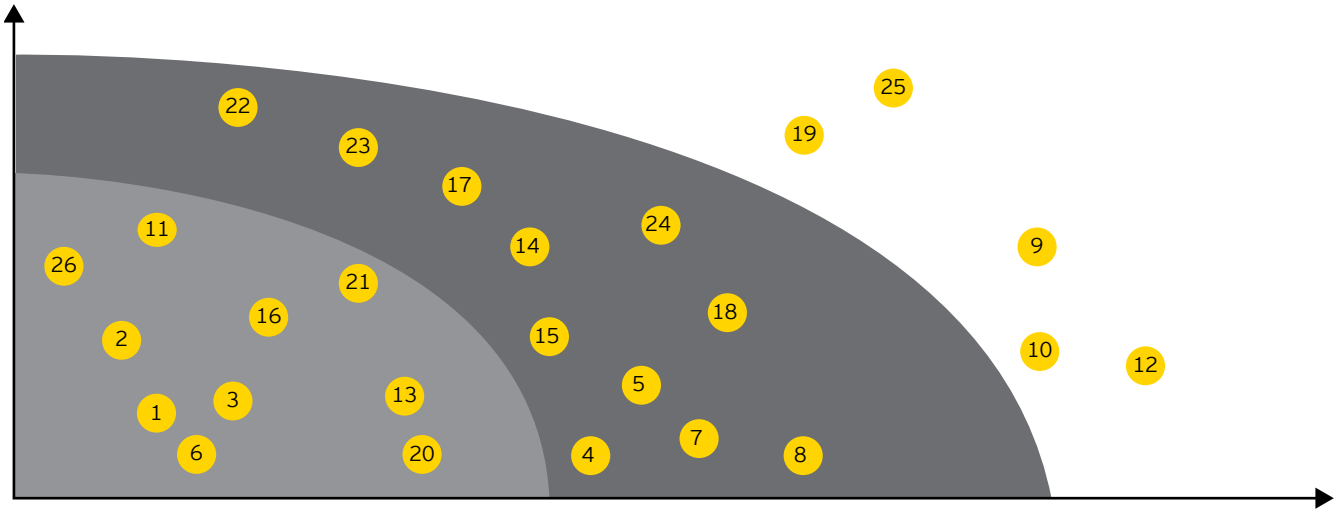
*(IISc, Manipal university, University of Mysore) QS Top 200 BRICS universities 2015; QS Asia Top 200 universities, 2015;
** (Bangalore university, Gulbarga university, IISc, JNCASR, Karnataka university, Kuvempu university, Mangalore university, Manipal university, NIMHANS, NIT-K, University of Mysore) from 'The performance of research-intensive higher educational institutions in India', CURRENT SCIENCE, VOL. 107, NO. 3, 10 AUGUST 2014

Source: AISHE, 2012-13; Indian Citation Index, 2014; QS Rankings, 2015; KSHEC website; Invest Karnataka government website; Higher education Vision 2020 document, Government of Karnataka, 2012; ' To exchange and learn best practices in education', DTE Karnataka newsletter, March 2015

Disclaimer: These two states have been randomly selected to represent as-is scenario and recommendation roadmap

Karnataka: recommendation roadmap

State attracts most foreign students and has high research output; however, it needs to focus on becoming a regional hub for higher education with a new state education policy



Wave 1 – Within 300 days | Wave 2 – Within 3 years | Wave 3 – Long term

Curriculum

1. Initiate development of online delivery-oriented content by enabling SHEC
2. Mandate curriculum review for all state universities every three years by panel consisting of academia and industry
3. Initiate review of the Engineering/Professional college curriculum by joint panel of councils and industry
4. Increase courses in liberal arts, humanities and social sciences targeted toward global student audience

Faculty

5. Provide autonomy to faculty to carry out research and consulting assignments
6. Develop a "mentorship" model where a senior faculty mentors junior faculty members in each district
7. Tenure-based and rewards-based system to retain high quality faculty
8. Faculty and leadership development through exchange programs with top HEIs in India and abroad

Research

9. Incentivize/part-fund industry sponsorship for applied research and set up centers of excellence
10. Develop Karnataka as a research hub by partnering with top HEIs to invest in key research projects
11. Host 5 International roadshows for mobilization of faculty/students for education/collaborative research

Partnerships

12. Foster tie-ups with top 10 HEIs in the world to develop affordable courses in the state; twinning programs etc.,
13. Set up at least 5 global research and academic partnerships with global HEI of repute
14. Industry-academia linkage to build on all aspects- curriculum, faculty, research and placements

Infrastructure

15. Individually or jointly develop a meta-university with partner states, offering courses on a single massive open online course (MOOC) platform
16. Reduce "Distance to Institute" by opening self- financing institutes in 20 least-covered blocks every year
17. Have community colleges in hub and spoke model in each district with flexible entry and exit

Funding

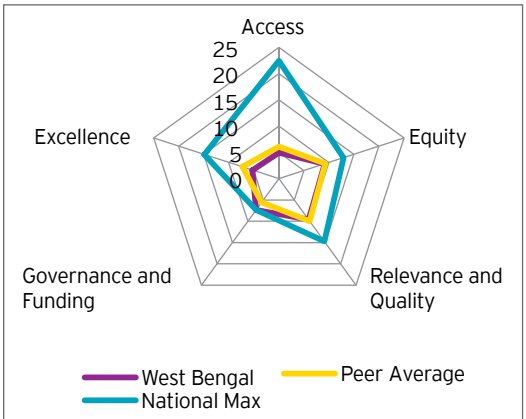
18. Transition to a quality and outcome-based funding for HEI instead of grant-based funding for infrastructure
19. Targeted scholarships to students from weaker sections
20. Create Credit Default Guarantee fund to act as guarantor for education loans from banking system

Infrastructure

21. Form a state education policy with clear policy framework on new establishments, quality assurance and periodic revision
22. Provide graded autonomy to affiliated colleges to maintain quality
23. Tie-up with an independent agency for state-level assessment and accreditation to govern, advocate and measure quality
24. Strengthen SPU Act with incentives to support establishment of more self-financed institutions in under served districts
25 Link funding of public institutes to achievement of a pre-agreement target around enrolments, placements, rankings, accreditation, research, etc.
26. Set up an IPR and marketing support body at the state level for IP monetization and to attract foreign researchers/students

West Bengal

West Bengal has an active SHEC; however, solving inequitable access across districts needs targeted focus



District	#
Highest-performing districts	
Kolkata	4
Darjeeling	2
Bardhhaman	1
Lowest-performing districts	
Koch Bihar, Jalpaiguri, Uttar Dinajpur	Less than 1

Colleges per ten thousand population of 18-23 years

- State's overall GER is low at 15%.
- There is a huge variation in GER across districts with Kolkata at more than 50%; Howrah and West Midnapore at ~11%.
- Colleges per lakh population (18-23 yrs.) is very uneven – very high in Kolkata v. too low for Dinajpur.
- The state hosts 10 top-ranked HEIs and 4 institutes of national importance.

SWOC analysis

Strengths

- Strong initiatives from the Government including, UG syllabi revision, science research infrastructure improvement fund (WBDST), teacher-student faculty exchange programs with HEIs from other states, and state-wide university network
- Expansion of higher education access by setting up aided HEIs and attracted 7 SPUs through its act
- Passed the OBC Reservation Bill mandating reservation of 17% seats in all state-aided HEIs
- Presence of strong research-oriented HEIs

Weakness

- GER of 15% below national average
- High GER disparity across districts, e.g., Kolkata's GER (50%) higher than Howrah's GER (11%)
- Low penetration of HEI in rural areas – 49% HEI in rural areas for almost 68% rural population – leading to large "Distance to Institute"
- Curriculum and students not aligned to industry needs – reflected in decline in Engineering seats from 42K in 2014 to 36K in 2015 due to college shutdown

Challenges

- Equitable access to HE across districts and social groups is challenge
  - General GER has positive variance of 4.8% over SC GER, 7.8% over ST GER and 9.8% over minority GER
- High share of professional programs are of poor quality – e.g. shut down of low-quality engineering colleges resulting in enrollments reduction from >18,000 in 2014 to 17,000 in 2015

Opportunities

- Strong government focus toward education
- State vision document for 2020 and 2030 prepared by Education Commission
- WBSCHE has recently become the nodal Center for NBA, technical and management education accreditation agency for East and NE Indian states
- Data hub, State Higher Education Information Networking can monitor progress

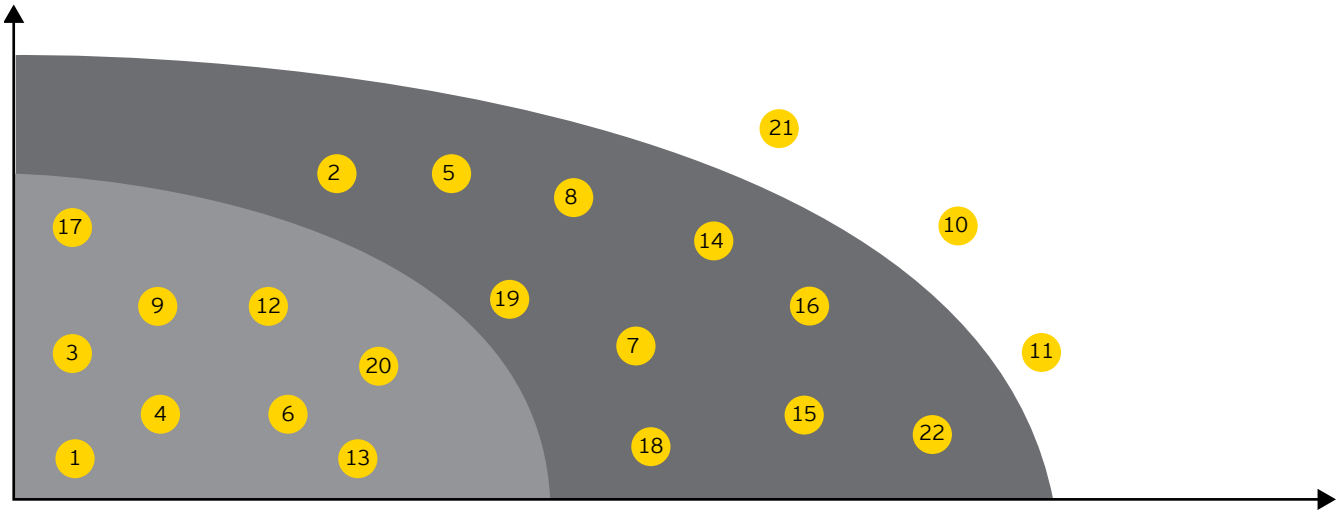
West Bengal has taken initial, standalone steps to increase private SPU capacity, improve access for OBC group, and focus on NBA accreditation

Source: 'For improvement of science and technology infrastructure, (WBDST-FIST) IN HIGHER EDUCATIONAL INSTITUTIONS', 2014-15; WBSCHE website; 'Problem of plenty: Engineering seats lying vacant in West Bengal', Business Standard, August 2010

Disclaimer: These two states have been randomly selected to represent as-is scenario and recommendation roadmap

West Bengal: recommendation roadmap

Furthermore, the state and council need to have an integrated strategy to dramatically improve higher education access and equity



Integrated strategy: Target initiatives in online/blended learning, vocationalization of higher education, and mobilizing private capital to improve district-wise and state-wide GER.

Curriculum

1. Build on UG syllabi revision to launch 6–8 skilling/ entrepreneurial courses with industry partners to improve rural GER
2. Develop English/Bengali online content for 8–10 most employable programs in underserved areas
3. Mandate curriculum review for all state universities every three years by panel consisting of academia and industry

Faculty

4. Ease recruitment norms in underserved districts to hire visiting/full-time faculty with PGs and relevant experience as compared to doctorates
5. Developing a "mentorship" model where a senior faculty mentors junior faculty members in each district
6. Providing autonomy to faculty to carry out research and consulting assignments

Research

7. Increase GER via research on effective online pedagogy and outreach with best-in-class online HEIs globally
8. Attract private investment to WBDST fund to do industry-relevant research at top HEIs
9. Tie up with local industry to develop research-oriented CoE for agriculture – jute/tea/rice/seafood

Partnerships

10. Extend the State-wide University Network by requiring top 10% HEIs to partner with bottom 30% HEIs for resource-sharing and accreditation
11. Initiate twining programs with global HEI to foster updated curriculum and research
12. Partner with service providers to set and operate career guidance helpline in the state to guide students

Infrastructure

13. Lower "Distance to Institute" by opening self-financing institutes in 20 least covered blocks every year
14. Have community colleges in hub and spoke model in each district with flexible entry and exit
15. Invest in technology (data centers, platforms) and share public HEI infrastructure to quickly enable low-cost, high quality access

Funding

16. Set-up state corpus fund, with CSR contributions, to finance tuition waiver/soft loans
17. Provide soft loans/targeted scholarships for promoting access to self-financing institutes
18. Provide research scholarships in top 5%–10% of rural HEIs to increase faculty aspirants

Infrastructure

19. Formulate PPP policy and ease access to land/facilities to attract private investment in low GER districts
20. Develop online/blended education policies to drive investment from private and existing open universities in 7–10 study centers in underpenetrated districts
21. Develop policy guidelines and standards to provide higher education credits for VET courses developed by top sectors
22. Promote West Bengal as education hub for students from Bangladesh/Myanmar/SE Asia

FICCI Higher Education

FICCI has been playing a proactive role in the Policy Advocacy of Higher Education sector supported by the Higher Education Committee, comprising key representatives from leading Higher Education Institutions/Universities, Industry and the Government. The Committee is chaired by **Mr TV Mohandas Pai**, Chairman, Manipal Global Education Services Pvt. Ltd (MaGE) and co-chaired by **Prof Rajan Saxena**, Vice Chancellor, NMIMS University and **Dr Indira J Parikh**, President, FLAME, Pune.

The Higher Education Committee predominantly focusses on:

- Providing a platform for policy advocacy and influencing reforms pertinent to the industry needs
- Creating sustainable linkages between Industry and Academia
- Facilitating networking and knowledge sharing
- Promoting collaborative ventures in academic exchanges, industry oriented research/ consultancy and value added services

Some of the ongoing initiatives of the Higher Education Committee are;

- FICCI is actively involved in the **Planning and Reform** Process by being engaged with the Ministry of Human Resource Development, (MHRD) GoI
- FICCI has been pro actively participating in the development process by initiating activities like creation of the **National Functional Knowledge Hub (NKFH)** to facilitate Industry–Academia linkages with the aim to improve the quality of graduating students. This initiative has been acknowledged by MHRD, GoI and the erstwhile Planning Commission, which has also incorporated it the XIIth Plan document.
- FICCI plays a critical role in the **Internationalization Of Indian Higher Education** by organizing overseas missions and hosting foreign delegations in India. FICCI facilitates campus interactions, seminars, focused one-to-one interactions with Universities, think tanks, research organizations, etc.
- The **FICCI Higher Education Summit** is one of the most awaited international events. It brings together key policy makers, educationists and the corporate sector and serves as a networking platform for all stakeholders of Higher Education.

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About EY's Education Sector Practice

Education is a focus sector for EY. We provide strong capabilities as advisors in this sector through a dedicated team of sector professionals. Our team combines deep insights with strong practical operational experience to provide implementable solutions that lead to tangible and sustained value creation.

EY's education practice has successfully completed numerous assignments over the last several years, covering all aspects of the education sector in India. The firm's clients include government bodies, reputed Indian and international educational institutions, industry bodies, private equity funds as well as corporate houses interested in the education space.

EY's education-centric research and analysis is encapsulated in a range of education thought leadership reports that are widely quoted by sector professionals.

Our services

We provide end-to-end solutions to suit the requirements of clients from all segments of the industry. The following is a snapshot of our services:

Pre-entry	Establishment	Growth	Stability
▶ Market landscaping ▶ Entry strategy formulation ▶ Feasibility Study ▶ Location Assessment ▶ Regulatory insight ▶ Structuring for fund raising ▶ Forms of presence ▶ Tax exemptions ▶ Commercial diligence ▶ JV/Strategic partner search	▶ Business planning ▶ Franchisee Strategy ▶ Marketing strategy ▶ Project management ▶ Industry-focused program development ▶ Approval assistance ▶ Inbound investment structuring ▶ Assistance in Entity structuring ▶ Valuation and business modeling ▶ Establishment Program Management Office ▶ Digital Strategy	▶ Growth strategy ▶ Organization Structuring ▶ Internal Audit ▶ International expansion strategy ▶ Standard operating procedures ▶ Expatriate taxation ▶ Representation before Indian statutory and fiscal authorities ▶ Fund raising and M&A advisory ▶ Transaction Support ▶ Corporate Finance Strategy	▶ Business process improvement ▶ Performance Management ▶ CSR ▶ Compliance Reviews ▶ Strategic cost management ▶ Ranking and Brand enhancement ▶ Technology Enabled transformation

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Glossary

AIIMS	All India Institute Of Medical Science
AISHE	All India Survey on Higher Education
ANIIMS	Andaman & Nicobar Islands Institute of Medical Sciences
BA	Bachelor of Arts
BCoM	Bachelor of Commerce
BRICS	Brazil, Russia, India, China and South Africa
CAGR	Compounded Annual Growth Rate
CBSE	Central Board of Secondary Education
CIHE	Center for International Higher Education
CMC	Christian Medical College & Hospital
CoE	Center of Excellence
CSR	Corporate Social Responsibility
ENGG	Engineering
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GER	Gross Enrolment Ratio
GJ	Gujarat
GoI	Government of India
GSDP	Gross State Domestic Product
HEI	Higher Education Institution
HHI	Household Income
ICT	Information and Communication Technology
IGNOU	Indira Gandhi National Open University
IIIT	Indraprastha Institute of Information Technology
IIMR	Indian Institute of Management, Rohtak
IISER	Indian Institute of Science Education and Research
INI	Institute of National Importance
INSEAD	Business School, Singapore
IP	Intellectual Property
IPR	Intellectual Property Right
IT/ ITeS	Information Technology/ IT enabled services
ITI	Industrial Training Institute
JIPMER	Jawaharlal Institute of Postgraduate Medical Education and Research
MAHED	Maharashtra State Council for Higher Education and Development
MBA	Master of Business Administration
MCED	Maharashtra Centre For Entrepreneurship Development
1MET	1Malaysia Entrepreneur
MHRD	Ministry of Human Resource Development
MOHE	Malaysia's Ministry of Higher Education
MOOC	Massive Open Online Course
MoU	Memorandum of Understanding
MTU	Mahamaya Technical University
NAAC	National Assessment and Accreditation Council
NBA	National Board of Accreditation
NKN	National Knowledge Network
NMEICT	National Mission on Education through Information and Communication Technology
OBC	Other backward caste
OPJ	O.P. Jindal Global University
PG	Postgraduate
PhD	Doctor of Philosophy
PPP	Public Private Partnership
PTPTN	Perbadanan Tabung Pendidikan Tinggi Nasional (PTPTN)
PTR	Pupil-Teacher Ratio
QS	Quacquarelli Symonds
R&D	Research & Development
RFI	Research Focussed Institution
RUSA	Rashtriya Uchchatar Shiksha Abhiyan
SC	Scheduled Caste
SCOPE	Scholarships available for studies in India only
SETARA	Malaysian Ranking System of the Best Universities in Malaysia
SE Asia	South-east Asia
SHEC	State Higher Education Council
SHEP	State Higher Education Plan
SNDT	Shreemati Nathibai Damodar Thackersey Women's University
SNU	Shiv Nadar University
SPU	State Private University
ST	Scheduled Tribe
TIFR	Tata Institute of Fundamental Research
TISS	Tata Institute of Social Sciences
UGC	University Grants Commission
UT	Union Territory
UG	Undergraduate
VET	Vocational education and Training
VC	Video conference
WEF	World Economic Forum
ISB	Indian School of Business
NALSAR	National Academy of Legal Studies and Research
UA	Uttarakhand
JK	Jammu & Kashmir
HR	Haryana
DL	Delhi
HP	Himachal Pradesh
PB	Punjab
JH	Jharkhand
BR	Bihar
RJ	Rajasthan
UP	Uttar Pradesh
MP	Madhya Pradesh
MH	Maharashtra
OD	Odisha
WB	West Bengal
GA	Goa
NE	North-eastern states
KA	Karnataka
CG	Chhattisgarh
AS	Assam
TN	Tamil Nadu
AP	Andhra Pradesh
KL	Kerala

Annexure

The EY-FICCI index is based on five broad parameters (Access, Equity, Governance and Funding)

Access (30%)		
Parameters	**Description**	**Weight**
Institutional Access		
GER	Total enrolments / Total 18-23 year population	10%
Availability of seats/population (18-23 years)	Total approved seats / Total population in 18-23	10%
Geographical Access		
Ratio of Rural to urban HE institutes	Rural institutes / Urban institutes	5%
Geographical spread	Migration for Education in the Same State and Other states (15-32 years)	5%

Equity (20%)		
Parameters	**Description**	**Weight**
Social Equity		
Gender Variation in GER (M/F GER)	[Total male enrolment/Total male population (18-23 years)] - [Total female enrolment/Total female population (18-23 years)]	4%
SC enrolment variation	[Total enrolment/Total population (18-23 years)] - [SC enrolment/SC population (18-23 years)]	4%
Minority enrolment variation	[Total enrolment/Total population (18-23 years)] - [Minority enrolment/ Minority population (18-23 years)]	4%
ST enrolment variation	[Total enrolment/Total population (18-23 years)] - [ST enrolment/ST population (18-23 years)]	2%
Economic Equity		
Amount of Education loan outstanding / number of accounts	Amount of Education loan outstanding per account	2%
Interest Subsidy available per student	Net Subsidy Claim for Education Loans / Number of students	2%
Amount of scholarships per enrolment	Amount of scholarships per enrolment (Budgeted Exp on Education)- Amount given as scholarship by the state to each student enrolled	2%

Governance & funding (10%)		
Parameters	**Description**	**Weight**
State-level Governance		
Private Sector Participation in the state's HE system – via SPU route	Presence of overarching SPU Act/ Presence of individual Acts for private universities- State private university Act passed in the state/ Individual Acts passed by state legislature for individual private universities	2.5%
Number of State Private universities	Total number of state private universities in the state	2.5%
Maturity of SHEC	Presence and functioning of the state's higher education council	2.5%
State funding for Higher Education		
HE budget as % of total State budget	State's budgeted expenditure on higher education as a percentage of it's total budgeted expenditure	2.5%

The EY-FICCI index is based on five broad parameters (Relevance and Quality, Excellence)

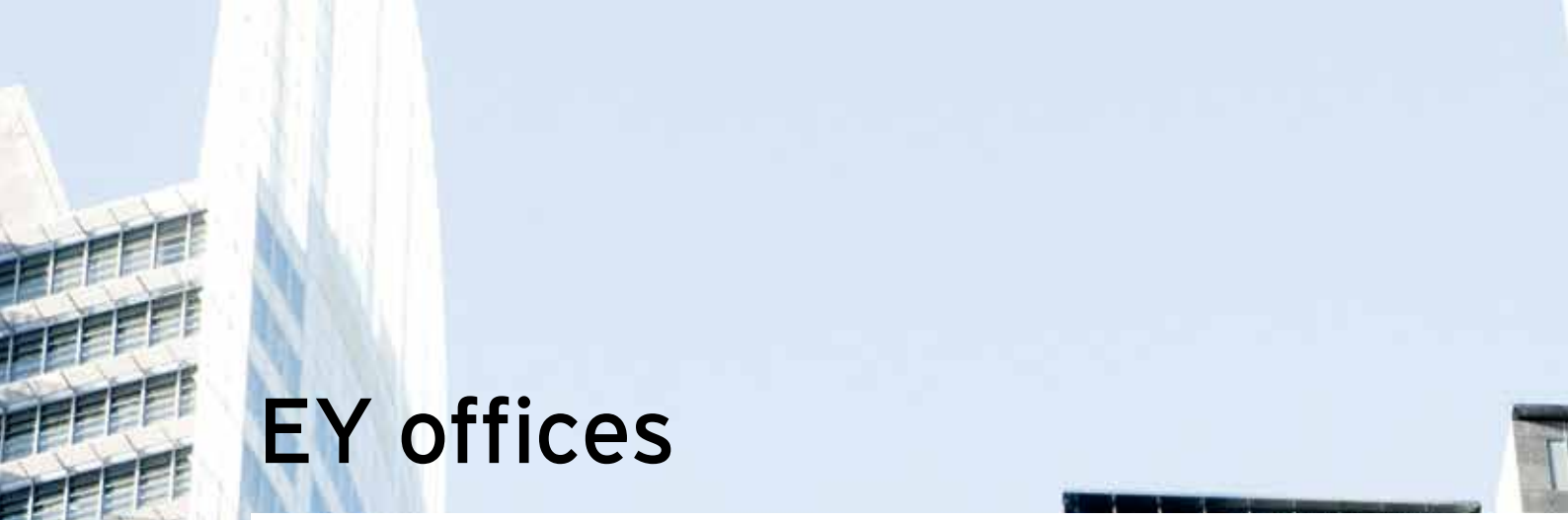
Relevance & quality (20%)		
Parameters	**Description**	**Weight**
Relevance		
Employability	Migration for Employment in the Same State & Other States (15-32 years)	3%
Inward mobilisation of foreign students	Foreign student enrolment / Total enrolment	1%
Quality of Inputs and Faculty		
PTR	Pupil teacher ratio	6%
Faculty in Leadership positions per college	Number of teachers at leadership / Number of colleges	2%
Library per college	Number of libraries/number of colleges	1%
Laboratory per college	Number of Laboratory/number of colleges	1%
Computer Centre per college	Number of Computer Centers/number of colleges	2%
Quality and Accreditation		
% of universities accredited by NAAC	Number of universities accredited by NAAC / Total number of universities	1%
% of universities rated A, A+ by NAAC	Number of universities rated A,A+ by NAAC / Total number of universities accredited by NAAC	1%
% of colleges accredited by NAAC	Number of colleges accredited by NAAC / Total number of colleges	1%
% of colleges rated A, A+ by NAAC	Number of colleges rated A,A+ by NAAC / Total number of colleges accredited by NAAC	1%

Excellence (20%)		
Parameters	**Description**	**Weight**
Research Infrastructure		
Number of CoEs	Number of Centers of Excellence	1%
Number of Incubators	Number of business incubators and start-up accelerators in a state	1%
Number of Research focussed institutions	Total number of research focussed universities, colleges and stand alone institutions	2%
Institute of National Importance	Number of Institutes of National Importance in the state	2%
Research Output		
Articles published in a year per faculty	Number of articles published in a year (2014) / Total faculty	2%
Citations per publication	Number of times the article is cited in a year (2014)	2%
Ratio of part-time teachers to regular teachers	Number of Part-time teachers / Sum of teachers at leadership, professors, lecturers	3%
Ranking of Institutes		
# colleges featuring in Top Institutes across various streams – Humanities, Commerce, Science, Engineering, Law, Medicine, Business	Number of colleges featuring in rankings of outlook for a particular state across multiple streams	7%

States are rated on key parameters and relatively graded

State	Access	Equity	Relevance & quality	Governance & funding	Excellence
Andaman & Nicobar Islands	8.4	10.5	10.5	0.6	3.3
Andhra Pradesh	16.2	7.7	10.4	5.0	4.5
Arunachal Pradesh	5.8	12.0	8.9	3.7	3.9
Assam	4.4	10.8	8.5	5.3	5.2
Bihar	3.2	10.5	6.0	5.1	3.9
Chandigarh	16.2	6.4	13.5	3.9	5.6
Chhattisgarh	4.6	9.5	8.5	4.3	3.6
Dadra & Nagar Haveli	6.7	11.1	10.3	-	2.1
Daman & Diu	7.3	13.0	11.9	-	2.4
Delhi	13.1	7.2	10.6	3.1	11.6
Goa	8.6	12.0	14.7	1.8	3.5
Gujarat	6.6	9.2	10.9	7.1	5.7
Haryana	12.6	8.5	13.0	6.2	6.1
Himachal Pradesh	12.6	8.7	9.9	4.8	4.3
Jammu & Kashmir	7.1	10.2	9.7	1.8	2.8
Jharkhand	4.6	10.9	6.5	2.7	4.0
Karnataka	9.1	9.0	12.5	6.9	9.0
Kerala	8.8	11.0	11.5	5.6	6.1
Lakshadweep	5.4	10.8	10.3	-	3.0
Madhya Pradesh	5.7	8.2	9.4	4.1	5.7
Maharashtra	8.1	8.1	11.7	5.4	14.9
Manipur	8.2	9.7	12.2	2.6	3.5
Meghalaya	4.1	11.2	10.7	4.3	3.8
Mizoram	5.2	12.3	12.3	4.0	2.6
Nagaland	4.2	10.2	9.5	2.0	3.6
Odisha	6.2	9.9	9.6	4.6	5.4
Puducherry	22.4	6.7	14.3	1.8	5.2
Punjab	8.0	10.0	14.1	5.3	7.1
Rajasthan	4.6	9.5	9.7	5.6	6.0
Sikkim	7.5	9.8	11.3	2.2	2.9
Tamil Nadu	17.7	6.1	12.4	3.1	10.9
Telangana	15.5	9.0	10.6	3.8	7.5
Tripura	5.5	9.0	9.1	0.7	3.6
Uttar Pradesh	6.8	11.0	8.9	4.8	7.9
Uttarakhand	10.7	8.9	10.0	2.6	4.4
West Bengal	4.9	9.1	9.6	7.3	5.3

Notes:



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A non-government, not-for-profit organization, FICCI is the voice of India's business and industry. FICCI has direct membership from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 83,000 companies from regional chambers of commerce.

FICCI works closely with the government on policy issues, enhancing efficiency, competitiveness and expanding business opportunities for industry through a range of specialized services and global linkages. It also provides a platform for sector specific consensus building and networking. Partnerships with countries across the world carry forward our initiatives in inclusive development, which encompass health, education, livelihood, governance, skill development, etc. FICCI serves as the first port of call for Indian industry and the international business community.