

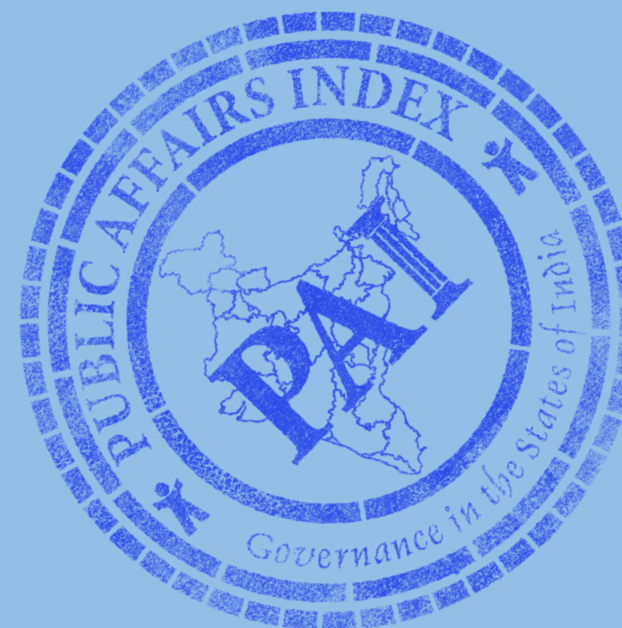
3 Pillars | 5 Themes | 13 SDGs | 49 Indicators

PUBLIC AFFAIRS INDEX

Governance in the States of India | 2019



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Public Affairs Index - Governance in the States of India - 2019

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Public Affairs Centre (PAC) engages in action research focussing on Sustainable Development Goals (SDGs) in the context of India. PAC is a not for profit Think Tank established in 1994 with a mandate to improve the quality of governance in India. The Centre is also a pioneer in deploying innovative Social Accountability Tools (SAT) to measure the quality and adequacy of public services. Over the years, its scope of work has expanded to include the whole gamut of research-advocacy-action to lead evidence-based research on governance across sectors, geographies and populations in India. PAC ensures that gender is an over-arching theme in all its focus research areas.

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A think tank committed to good governance, PAC is twenty-five years old, and has consistently adopted the cause of the citizen in the formulation, implementation and review of government programmes in the country. The well-known Citizen Report Card (CRC) is one of its early social accountability tools that assisted the government in understanding the opinion of the people on the nature and quality of the programmes put into place by the government and its many agencies. Over the years, it has brought out several treatises and publications that reflect its concern towards good governance and citizen engagement.

In denomination and in terms of contribution, PAC is now considered within the fraternity of think tanks that promote and support evidence-based policy design, formulation and implementation.

3 Pillars | 5 Themes | 13 SDGs | 49 Indicators

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Governance in the States of India | 2019



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PREFACE



*G. Gurucharan, Director
Public Affairs Centre*

Public Affairs Centre (PAC) launched the Public Affairs Index (PAI) in 2016.

After three years of the annual ranking of states on governance performance, we decided to pause and ponder some essential questions: how might we use evidence and methodological rigour to strengthen the empirical relationship between governance and development outcomes; might we adopt a prescriptive approach to the concept of and the basis for measurement of subnational governance in India; can the quest towards the Sustainable Development Goals (SDGs) and the three bases for human development – growth, equity, and sustainability serve as the building blocks for a robust, sensitive, and inclusive composite index (CI); What purpose should such measurement serve, and who might use the data generated, analysed, and interpreted, and to what end?

PAI 2019 is the result.

It does not seek to provide comprehensive answers to all the overarching questions. The object was not to propagate a purely academic or doctrinaire view of the measurement of governance. Social science research is critiqued as far removed from real-world problems. Development praxis equally is criticised for not relying on empirical evidence and analysis. PAI 2019 strives to strike a balance and provide in the treatment of the subject, a bridge between research and the real world. It is a conscientious effort to present a scientific, yet practically useful data-based framework to measure the quality of governance in the states of India.

PAI 2019 is a four-tier CI measuring governance in the states.

It is based on data sourced from the government. It provides a statistically rigorous and scientific analysis of the governance performance of the states on carefully chosen indicators relevant to sustainable development. The low values of specific component indicators and their relationship with the CI at all the three levels of SDG, Theme, and Pillar, provide an empirical diagnosis on where the states are faltering and why; and point to what kinds of reforms might be considered. It provides each state with an evidence-based toolkit to enable it to undertake its own gap analysis and develop a reform road map.

PAI 2019 explores governance in the states as a broad process that can potentially democratise development, expand economic and social opportunities and contribute in significant ways towards a more sustainable and equitable growth path for India. In developing the central arguments, we have relied on this approach; drawn on empirical findings for emphasis where necessary; analysed data that is relevant and used inter-state comparisons to draw on the eclectic learning of different states.

If India is to contribute meaningfully to the goal of the UN 2030 agenda, of travelling on 'the road to dignity by 2030: ending poverty, transforming all lives, and protecting our planet', the states need to act with sagacity and resolve. The challenge is in the praxis. Should we fail, there will be no excuses to salve our collective conscience. It is our fervent hope that the states will use PAI 2019 as a transformative tool to advance the objectives of growth, equity and sustainability for their citizens.

G. Gurucharan

Director,
Public Affairs Centre
Bangalore
2019



Gurucharan Gollerkeri is the Director, Public Affairs Centre (PAC), Bangalore. A civil servant from the Indian Administrative Service, in the higher echelons of Government for over 34 years, he retired as Secretary to the Government of India, in 2016. He served with distinction as the first director of the India Centre for Migration (ICM), a policy 'think-tank' on International Migration, during 2010-13. Based on his work at the ICM, he co-authored 'Migration Matters: Mobility in a Globalizing World' (OUP, 2016). In 2004-05, Mr. Gollerkeri was a Visiting Fellow at the Centre for Public Policy at the Indian Institute of Management, Bangalore. Mr. Gollerkeri spearheaded the PAI 2019 project.



Dr Asha Subramanian headed the Centre for Open Data Research (CODR) at the Public Affairs Centre with a focus on applying data sciences research to promote data empowered decisions towards good governance. She holds a Ph.D in Data Science from the International Institute of Information Technology, Bangalore and a Masters in Statistics from Indian Statistical Institute, Calcutta. Her research interests include knowledge representation and reasoning models, semantic web, machine learning and graph networks, particularly focusing on developing unique models that can bring all these technology domains together to better understand data and its context. She led the team in applying scientific techniques to arrive at the model of PAI 2019.



Udit Dutta is a Senior Programme Officer at the Public Affairs Centre, Bangalore. She was the Team Lead for this flagship project – PAI 2019. She has played a key role in developing the PAI 2019 model, data analysis and co-authoring the chapters. She was also responsible for managing the team and for ensuring veracity of the data. She has completed her Masters in Economics, with a specialisation in Development Studies, from Symbiosis School of Economics, Pune. Her research interests include Development Economics, Public Policy, Human Rights and Inequality.



Aparna Sivaraman is a Programme Officer at the Public Affairs Centre, Bangalore. With a Bachelor's degree in Economics and a Master's degree in Public Policy, Aparna's research interests include qualitative and quantitative analyses in the areas of gender equality, migration, economic development and intellectual property. She is currently part of the core research team studying the causes of India's declining female labour force participation as a part of the Southern Voice State of the SDGs project. For PAI 2019, she was involved from the stage of the development of the model to data collection, analysis and co-authoring the chapters of the report.



Mrinalini Kabbur is a Senior Data Analyst at the Centre for Open-Data Research (CODR), Public Affairs Centre (PAC). She provides data analysis and reporting support in various domains such as education, health, women & child development, food security and migration. She is adept with various statistical and machine learning algorithms for primary and secondary data like Exploratory and Confirmatory Factor Analysis, Structural Equation Modelling, Principal Component Analysis, Linear and Logistic Regression, Decision Trees, Random Forest and Cluster Analysis. She was responsible for the application of scientific techniques to arrive at the composite index - PAI 2019 and data analysis.

ACKNOWLEDGEMENTS

We would like to extend our sincere thanks to our Chairman, Dr. K Kasturirangan, for his invaluable support to ensure that the study is scientifically rigorous and meets global standards.

Thanks are due to all the Board Members of PAC for their expert inputs in shaping this report.

We would like to place on record our appreciation to the Director, PAC, Mr. G. Gurucharan, without whose insightful advice, expert comments and continued motivation, this report would not be in its present shape. His suggestions have enriched the findings of the study.

The team would like to extend their gratitude to Dr. Meena Nair, Head of Research, PAC for her research guidance.

We would also like to thank Mr. Sanjaya Krishnamurti, Senior Fellow, PAC for his support.

Our appreciation is due to Ms. Anoushka Roy, student from National Law School, and Ms. Avani Darne and Ms. Vidushi Pant, students from Symbiosis School of Economics, for their sincere efforts in data collection and analysis. Thanks are also due to Ms. Raghavi Purimetla, student from Azim Premji University for assisting in data collection.

Last but not the least, thanks are due to each and every staff of PAC for their support in ensuring the successful completion of this project.

The Public Affairs Index (PAI) is a data-based framework that measures the quality of governance at the subnational level, and ranks the states of India on a composite index (CI). States are classified in two categories - large and small – using population as the criteria. PAI 2019 constitutes a paradigm shift from the earlier three editions, in its approach, and in the scientific rigour of its methodology. PAI 2019 has the essential features to serve as a diagnostic toolkit to assess governance performance objectively.

Chapter III elaborates on the methodology. However, a brief overview on the approach to and the scientific rigour of PAI 2019 will not be out of place at this juncture.

First, the approach: the three dimensions of sustainable development - growth, equity, sustainability - as the overarching goals of governance constitute the bases in our approach to measuring the performance of the states. They are the three pillars on which the CI is constructed. Each of the three pillars is circumscribed by five governance praxis themes that influence the pace and the direction of development outcomes, in substantive and context-specific ways, in small or great measure. These five governance themes have been integrated into the assessment and include – Voice and Accountability, Government Effectiveness, Rule of Law, Regulatory Quality and Control of Corruption. At the bottom of the pyramid the component indicators are mapped to 13 Sustainable Development Goals (SDGs) relevant to the states in the quest for sustainable development. This forms the foundation of the conceptual framework of our approach. The choice of the component indicators that go into the calculation of the CI were dictated by the objective of uncovering the complexity and the multidimensional character of development governance. The choice of indicators was influenced by the purpose, conceptual relevance, consistency, and the availability of data.

Second, the scientific rigour of the methodology: unlike in previous years, PAI 2019 eliminates subjective weights and uses logarithmic transformation to address the problem of skewness. This has helped in making the patterns in the data more interpretable; and has proved valuable to meet the assumptions of inferential statistics. It also recognises that the CI may not be truly multidimensional if the component indicators have high co-relationships among themselves. Therefore, the Principal Component Analysis (PCA) technique was applied to enable self-selection of standalone component indicators, eliminating auto co-relationships. The raw data for the various indicators were first converted to scaled scores (using normalised Z scores) that appropriately aligned with the direction of the indicator. A composite index was calculated at each level of the data structure. A variation of the 'Manhattan Distance' was applied for aggregating the individual components at the levels of indicator, SDG, and theme to arrive at the CI. PAI 2019 is therefore a scientific, robust, sensitive and inclusive measure of governance in the states of India.

Chapter I draws attention to the importance of subnational governance in India, as the building blocks of both competitive (horizontal) and cooperative (vertical) federalism, in the context of the country's development trajectory. It highlights the imperative for the state

governments to perform better if the national goals of growth, equity and sustainability are to be achieved in substantial measure. In this context, it emphasises the need for an empirical evidence-based understanding of why the state governments perform well or poorly, and points to the state-specific findings from PAI 2019 - sectoral and geographic - as potentially the basis for modernising and reforming subnational governance in India.

Chapter II explores the complex relationship between governance performance and development outcomes; and the difficulties in measuring governance in its multiple dimensions. It elaborates on the scientific rigour of PAI 2019, resulting in a paradigm shift in the measurement of governance: an amalgamation of 100 component indicators, 10 themes, and 30 subjects, of PAI 2018, metamorphosing into 49 standalone indicators, 3 pillars, 5 themes, and 13 SDG in constructing the CI, this year. The 49 indicators include some of the indicators from PAI 2018 that were statistically significant and the relevant indicators identified by the Ministry of Statistics and Programme Implementation (MoSPI) and the NITI Aayog.

Chapter IV deals with the first of the three pillars – Equity. It explores the practical bases of equity and examines the political economy of exclusion, from the perspective of the states. The equity pillar subsumes all five themes of PAI 2019 and uses 23 component indicators to assess the performance of the states on equity along three dimensions - economic, social, and gender. In this pillar, Tamil Nadu tops the ranking with an index value of 0.782. This is followed by Chhattisgarh (0.514), West Bengal (0.378), Kerala (0.358) and Punjab (0.216). While Kerala ranks fourth in equity, it ranks first in the overall PAI 2019 index. On the other hand, Madhya Pradesh (-1.084), Haryana (-1.134), Odisha (-1.227), Karnataka (-1.371) and Telangana (-1.732) find their places at the bottom of the rankings. Karnataka stands second last in this pillar, however, it stands fourth in the overall PAI 2019 index. In the case of the small states, Himachal Pradesh ranks first with a score of 1.889, followed by Meghalaya (1.788), Nagaland (1.374), Manipur (1.216) and Mizoram (1.087). It is interesting to note that four of the north-eastern states are at the top of the rankings. Himachal Pradesh performs well in this pillar as well as in the overall PAI 2019 index. At the bottom, lie the states of Jammu and Kashmir (0.460), Uttarakhand (-0.045), Sikkim (-0.229), Arunachal Pradesh (-0.255) and Delhi (-2.285). Delhi not only ranks last in the small states' category, but also amongst all states taken together. Besides, the state also performs poorly in the PAI 2019 overall.

Chapter V deals with the second of the three pillars - Growth. It dwells on India's growth challenge and the concerns that need attention in the ensuing months. The growth pillar subsumes two governance themes – Government Effectiveness and Regulatory Quality; and uses 21 component indicators to rank the states on growth performance. At the overall pillar level, the performance of the states on growth provides an insightful picture. Amongst the large states, Kerala tops the rankings with a score of 1.308 indicating a performance above the average. This is closely followed by Haryana with a score of 1.11. The other top performing states include Karnataka (0.979), Andhra Pradesh (0.940) and Telangana (0.753). Interestingly, 4 out of the top 5 states belong to Southern India with Tamil Nadu being the only South Indian

state not in the top 5. While Tamil Nadu ranks second in the overall PAI 2019 Index, its performance in the pillar of Growth has a score of 0.650. At the bottom of the rankings are the states of West Bengal (-0.460), Odisha (-0.852), Uttar Pradesh (-1.165), Assam (-1.531) and Bihar (-1.595) whose performance is well below the average. These states incidentally also feature at the bottom of the overall PAI 2019 Index.

Chapter VI reflects on the spectre of the Anthropocene and the impending crises that it portends in a business as usual scenario. It points out that climate change appears to be a clear and present danger, bringing with it the danger of all-round development decline, unless concerted climate action is initiated. It emphasises that the burden of this responsibility will fall on the state governments - with local action for mitigation and adaptation being the focus. The importance for the states to build a resource efficient path for progress, focussing on water efficiency, land-use efficiency, and energy efficiency; and towards this the need for enhanced institutional capabilities and evidence-based public policy is highlighted. PAI 2019 has defined sustainability from two perspectives - Government Effectiveness and Regulatory Quality. Sustainability has been measured as the effectiveness of the Government in undertaking measures that encourage the use of non-conventional sources of energy, conservation of forests and prevention of land from desertification. On the other hand, the policies implemented by the State Government for waste management and combating pollution have been included. This pillar of sustainability is an amalgamation of five diverse indicators that measures the initiatives taken by the states to use renewable sources of energy in the form of solar, wind, hydro and thermal, increase forest cover, process solid waste in the urban areas and reduce air pollution (PM10) in the cities.

Karnataka tops the rankings under this pillar with an index score of 1.45, followed by Kerala (1.367), Tamil Nadu (1.036), Telangana (0.956) and Andhra Pradesh (0.471). All the top five performing states of this pillar belong to Southern India. At the bottom lie the states of Odisha (-0.837), Haryana (-0.844), Rajasthan (-0.878), Uttar Pradesh (-1.04) and Jharkhand (-1.821). Interestingly, three of these five states (Jharkhand, Uttar Pradesh and Odisha) feature at the bottom of PAI 2019. In case of small states, Arunachal Pradesh ranks first with a score of 1.904, followed by Manipur (1.362), Meghalaya (1.343), Mizoram (1.252) and Goa (0.376). It is interesting to note that four out of the five states belong to the North-East of India. Similarly, at the bottom lie the states of Tripura (-0.28), Nagaland (-0.313), Uttarakhand (-0.369), Jammu and Kashmir (-1.539) and Delhi (-1.696). It is to be noted that Delhi, which fares poorly in this pillar, performs poorly in equity as well as in the overall PAI 2019 index.

Chapter VII synthesises the three major streams of sustainable development and ponders the macroeconomic transition occurring in India. It situates the process of the democratisation of development at the intersection of the Malthusian - Darwinian dynamic. PAI 2019 places equal importance on the 3 pillars of equity, growth and sustainability. The overall PAI 2019 rankings of the large and small states provide some interesting insights. Taking into account the various facets of governance, these rankings aim to hold up a mirror to the progress made by the states while providing direction on the potential areas of intervention.

Among the large states, Kerala emerges first with an index score of 1.011. The rankings provide some interesting findings. The first is the significant gap between the scores of Tamil Nadu that features second at 0.823 and that of Andhra Pradesh, ranked third, whose score is 0.353. Interestingly, apart from the top 6 states, all the other states also record scores that are below average. This indicates a significant variation in sub-national governance across the states. Another fact is the presence of 4 of the 5 Southern states among the top 5 states (Kerala, Tamil Nadu, Andhra Pradesh, Karnataka and Punjab), with the exception of Telangana which finds itself at the 7th position. At the bottom of the rankings are the states of Assam (-0.494), Bihar (-0.658), Jharkhand (-0.769), Uttar Pradesh (-0.864) and Odisha (-0.972).

In the small states category, Goa leads the ranking with a score of 1.1 followed closely by Himachal Pradesh (0.985), Meghalaya (0.891), Arunachal Pradesh (0.619) and Mizoram (0.581). There are no large variations in the index scores among the small states unlike in the case of the large states. The states featuring amongst the bottom include, Uttarakhand (-0.042), Tripura (-0.068), Nagaland (-0.174), Jammu and Kashmir (-0.426) and Delhi (-1.214). An interesting thing to note is that both the top and bottom performing states with all states taken together belong to the small states category, namely Goa and Delhi respectively.

Finally, to provide a Pan-India perspective, PAI 2019 presents a **cluster analysis**. One of the three clusters includes the states of Uttar Pradesh, Bihar, Jharkhand, Chhattisgarh, Madhya Pradesh, Odisha, Assam, West Bengal and Tripura. The cluster is characterised by moderate performance in the equity pillar but below average performance in both the pillars of growth and sustainability. The bottom 5 large states as per the PAI rankings fall under this cluster. **It is interesting to note that 96 of the 100 aspirational districts as identified by the NITI Aayog, too, fall under this cluster.** Thus, PAI 2019 has helped unravel the patterns of exclusion occurring in the development process in India. This should trigger more evidence-based research to find answers to what is an endemic problem.

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CHAPTER I - THE IMPORTANCE OF SUBNATIONAL GOVERNANCE



CHAPTER I – THE IMPORTANCE OF SUBNATIONAL GOVERNANCE

“Mankind has a disconcerting way of dealing with problems only when the clock has begun to strike twelve. It solves problems which are upon us, not those which experts anticipate for the future... once some of the problems cited here are upon us, it will be too late... Yet, we do not want to allow anyone to tell the rest of us precisely what needs to be done...”

- Dahrendorf (2002:342)¹

The Building Blocks of Federalism

Governance, simply put, is what governments do. In essence, governments exercise authority on behalf of its citizens. In 'Leviathan', his classic treatise on the management of power, Thomas Hobbes, argued that the monarch must have enough authority to enforce peace, to ensure the safety and the prosperity of the citizens. Machiavelli, on the other hand, in his much celebrated but some would say cynical classic 'The Prince', repeatedly stressed that the Prince had to build the state on the goodwill of the people. This duality in the concept of governance can be traced closer home, to Kautilya's 'Arthashastra', in which the inherent conflict between 'Danda' – coercive authority and 'Dharma' – the common good; remains the fundamental dichotomy of a statist conception of governance, down to the present times.

As an action-research organisation, the question the Public Affairs Centre (PAC) asks is, 'What are the key governance elements against which states must be measured and against which they must measure themselves'? This introduction sets out the theoretical and empirical objectives of the Public Affairs Index (PAI) 2019, analysing the governance imperatives at the state level and situating them in the national context. Since independence, there has been an underlying tension between two seemingly incompatible ideas; the autonomy of the states, on the one hand and the ever-growing centre through national laws and institutions, on the other. Autonomy implies

the right of each state to its own public policies and development strategies germane to its people, geography and stage of development. National laws, development policies and flagship programmes, especially when covering the vast range of matters that they now encompass, imply a serious limitation of autonomy. In this development dialectic, neither can triumph over the other. Only a harmonious and constructive development strategy that acknowledges the national imperatives, but at once supports the states to craft innovative and resolute governance can enable us to face the myriad challenges ahead. The NITI Aayog calls this cooperative federalism working in tandem with competitive federalism. PAI 2019, as in the past, focuses on the quality of governance in the states of India and ranks them on performance measured by data-based, objective indicators. PAC has, over the last 25 years, strived to mainstream social accountability in governance, assessing the quality of governance from the bottom-up, and giving voice to the citizens. The Citizen Report Card (CRC) pioneered by PAC, garnered hard evidence to establish that poor governance was the result of inefficient and suboptimal use of public funds and widespread rent seeking and its consequence - the inadequacy and poor quality of public services. The demand side perspective that it gave and the insights drawn, pointed to the need for a scientific, data-based framework to assess the quality of governance in the states that can constitute the starting point for an effective need-based response and for reform priorities. In the backdrop of the rising challenge of balancing growth, equity and

¹ Dahrendorf, R. (2002). Towards the Twenty-First Century. In M.E. Howard and W.R. Louis (eds), *The Oxford History of the Twentieth Century*, Oxford University Press

sustainability, the quality of subnational governance assumes greater significance than in the past. The ubiquity of and the ever growing centre in the federal polity, has meant that states are at risk of becoming subalterns and their governance practices receiving considerably less academic attention and lesser still reform impetus, than the changing state-market relations.

PAI 2019 focuses on the areas of economic development and social welfare from the lens of an assortment of policy domains and instruments pertaining to both economic development and social welfare. Using a rigorous data-based framework, it maps state performance and changing socio-economic relations and discusses them in relation to the country's development trajectory. It examines how central top-down policies and subnational bottom-up approaches intertwine and asks whether the Indian states act as mere implementers of the Centre's policies, or instead create own initiatives for implementation of the Sustainable Development Goals (SDGs), and with what results.

The role of the states in national governance becomes important because it provides an operational framework and the mediation structures necessary, to mainstream the marginalised citizenry. This role is often crucial for bridging social, cultural and power gaps. To understand inequality and exclusion, PAI 2019 considers important political economy aspects of development: the political weakness of the intended beneficiaries - the poor and the excluded

- as an organised interest group. Organised community action by the economically and socially marginalised - agricultural labourers, small and marginal farmers, artisans, self-employed in household enterprises and casual non-agricultural labourers - who constitute the bulk of the poor, is fragmented and infrequent. In India, as elsewhere in the world, the importance of understanding not merely the impersonal forces of economic development – natural and man-made – but to understand the dynamics of human relationships and the motives that guide human action, for a just, equitable and humane society, is only now being appreciated. Among the many philosophic underpinnings of such a scientific enquiry will be the balance between the two essential goals of Liberty and Equality. In the words of Justice Venkatachaliah (2017)², former Chairman PAC, “A perfect balance is perhaps unattainable, but the nearest approximation that will allow the blossoming of a social conscience that will help feed the hungry, provide homes for the homeless, and opportunity for the disadvantaged, should be the first principle”.

Understanding what makes state governments perform well or poorly in advancing growth, equity, and sustainability and why, holds great practical use in public policy and governance. There is no better way to do this than by marshalling evidence and measuring performance on a comprehensive and composite governance

² Justice Venkatachaliah, M.N. (2017). Annual Report 2016-17, Public Affairs Centre.

index. An assessment of the roles and responsibilities of the states must be seen in the backdrop of the Neoliberal approach that the country has pursued over a quarter of a century past and over which the states have little control. The as yet unresolved quest for the right balance between the state and the market has contributed to a wide range of economic, social and ecological problems. The question of why exclusion occurs and at what stage, in public policy and practice, presents a complex research question. First, the underlying causes are often inter-generational and context-specific. Second, the power relations and the sociology of exclusion in society directly impacts the patterns of inequality and exclusion in human development. Four important challenges for India are: reducing inequality and enhancing productivity inclusion; restructurising agriculture and allied sectors to support rural livelihoods; enlarging manufacturing to create more jobs and initiating effective climate change action for long term sustainability. It is important to understand the subnational governance challenges that underlie these seemingly intractable problems that we face as a country. Not unexpectedly, little is heard of the progress in the 'minimum government, maximum governance' slogan announced with considerable publicity in 2014; for conceptually, it offers little by way of governance principles, and therefore does not serve as a guide to action. What is clear is the ever-growing state in the federal sense, whether at the cost of the states and their ability to undertake independent initiatives is something to ponder,

CHAPTER I - THE IMPORTANCE OF SUBNATIONAL GOVERNANCE

especially in the human development sectors, and in upholding the rule of law and in maintaining law and order.

The Imperatives of Sub-national Governance

So how should one think of the underlying governance challenges that the states face?

At the heart of the challenge is the propensity to concentrate power and control at the top, among a small number of party men and select bureaucrats raising concerns on the longer-run consequences to governance institutions. This is as true for the States as for the Centre. Few states have acted substantively in implementing the 73rd and 74th amendments to strengthen the third tier of governance. Little has been done in most states on the transfer of funds, functions and functionaries to reinforce the principle of subsidiarity. Little do states realise that their performance, is in substantive ways, influenced by how well or poorly the sub-state governance apparatus performs. In the same vein, national governance performance is not the mere combination of the Centre's initiatives combined with the aggregate performance of the states. Most definitely, states have a multiplier effect and impact the patterns of growth, equity, and sustainability in the country in ways that 'the whole is more than the sum of its parts'. The significance of sub-national governance structures is often mistaken to merely represent the principle of devolution of funds or the decentralisation of governance. This interpretation denudes subsidiarity of its dialectics, thus reducing a potentially

transformative process that can resolve social contradictions, into a mechanical process. Rarely, if ever, is strengthening of subnational governance seen as a governance strategy requiring a greater role for the sub-national governments in combating a given social problem. Sub-national governance, particularly in India's context is in fact, in its philosophic as well its dynamic operational sense, a powerful social mobilisation principle for governance. The principle of Subsidiarity - that the centre must only perform those tasks that the states cannot - holds that where households, communities, or community groups can effectively address a given problem, then they should. Inability to engage the community in the governance process and an excessive reliance on the state bureaucracy has often meant policies and interventions that potentially are not responding to the felt needs of the citizens, or worse still, running counter to the development objectives sought to be achieved. For instance, agriculture is a state subject and has seen the least progress in how agriculture production can be transformed. Its governance remains archaic, market restrictions constraining and policies distortionary. Government control of the sector makes it politically valuable, hence the incentives to keep it largely unreformed, as with the wider state bureaucracy.

Democratising Development

In this situation of inadequate institutional strength and efficiency, combined with poor governance processes, there is a real danger that

those most in need of state intervention - the disadvantaged and the vulnerable - will bear the brunt of the absence of good governance. This in fact is the primary differentiator in the relative governance performance between states. Thus far, development praxis in India was suffused with a strong, perhaps excessive, national focus due to the strong centralised federal system and the decisive role of the central government. In recent years, research on subnational governance has thrown up evidence on the vital role that subnational governments play in policy formulation and its implementation. This is particularly true in addressing some of the most urgent human development issues that the country faces: resource imbalance and regional disparities; the problem of exclusion resulting in denial of basic needs to a substantial proportion of the population; marginalisation and discrimination of people based on caste, creed, language and gender; absence of the rule of law and hence the denial of safety, security and opportunities to participate in governance and significant decline in the ecology and environment, posing serious sustainability risks. PAC's experience with Citizen Report Cards (CRC), provides an empirical basis that much more can be done by the states, especially on the quality of governance that directly affects ordinary citizens. There is a strong correlation between good governance institutions and processes and outcomes, especially those that benefit the vulnerable and the disadvantaged populations, even if the link between government

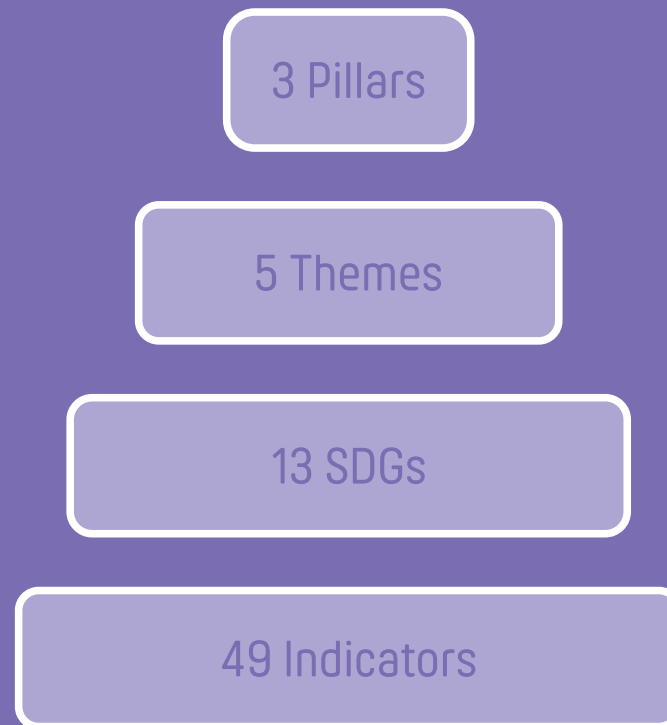
policy and the benefits to citizens appears tenuous. At the subnational level therefore, good governance and its measurement is best built from bottom up and it would be axiomatic that the centre must enable subnational governments to perform better, and there is no better strategy than to advance the principle of subsidiarity.

Strengthening subnational governance is the process of democratising development. To achieve this, there is need to better understand the potential of the subnational states for innovation, experimentation, as well as the drivers of policy change. It is as important to identify the risks, especially in national programmes such as the implementation of the SDG Agenda, of why single states can ignore the collective action problem, and act independently of the centre or the other sister states. The constitutional scheme for separation of powers and distribution of responsibilities is also problematic. For instance, the state governments have exclusive jurisdiction over school education, public health and sanitation, agriculture, land, and the police. Yet, the centre has an overwhelming presence in these very sectors. In assessing bottom-up action especially for human development progress, the potential of the states should not be overestimated. Several states face severe resource constraints and are overly dependent on fiscal transfers from the centre. What is clear though, for a country of India's size and diversity, as well as the complex economic and political dynamics, development strategy cannot be driven solely by the Union

Government in a top-down manner. In the institutional scope for action as concerns the 2030 UN SDG Agenda, subnational governance in India possesses a significant degree of autonomy and self-rule for action. The resource constraint problem that many states face will need to be addressed through optimisation solutions applying computational game theory and data science use case applications that help prioritisation of expenditure and resource allocation. The PAI 2019 provides a robust and scientific framework to measure these important elements of governance. It argues that in essence, governance is best measured by outcome and efficiency indicators and by measures of social accountability. It also demonstrates that Indian states do not act as mere implementers of central top-down policies, rather India's states experiment with individual approaches that are context and region specific and resource sensitive. The state-specific findings from PAI 2019 - sectoral and geographic - can potentially constitute the basis for modernising and reforming subnational governance in India. It can also help reflect the unity in diversity, for after all, the challenge of pluralism is the challenge of modern society – of maintaining growth with equity and balancing it with sustainability – under conditions of constant and unpredictable change, over time and space. The states of India must constitute the first, and in time, a formidable level of response to this challenge.



CHAPTER II – THE MODEL OF PAI 2019: ADDRESSING THE DIFFICULTY IN MEASURING GOVERNANCE



CHAPTER II - THE MODEL OF PAI 2019

“We are like travellers navigating an unknown terrain with the help of old maps, drawn at a different time and in response to different needs. While the terrain we are travelling on, the world-society of states has changed, our normative map has not”

-Benhabib (2005: 11)¹

The Approach to Measurement

The empirical relationship between governance and improved development outcomes as evidence-based, is perhaps tenuous, but experience suggests that poverty, deprivation, and exclusion are most often associated with poor governance. Since a little over a decade, especially after the great recession of 2008, there is a widespread and growing body of work exploring the dynamic between governance and characteristics of development trajectory of a country, triggering concerted efforts to measure governance. It is necessary to note that the origins of the idea in the last decade of the 20th century, of measuring governance and its subsequent development was not value-neutral. Rather, it was donor-agency driven and hence served specific purposes. The conceptual problem of the early measures of governance was simply, that it was intrinsically immeasurable and the solution of using proxy variables and perception analysis were criticised as subjective. The second-generation measures at the turn of the century, led by the World Bank, responded with more objective measures based on multidimensional indices. PAI 2019 makes a departure from both approaches, advisedly, for both philosophic and utilitarian reasons, and adopts a prescriptive orientation to the concept of and the basis for measurement of subnational governance in India. The prescriptive orientation is led by the quest for sustainable development and the responsibility that the states in India share to pursue and achieve the three bases for human development - growth, equity and sustainability.

PAI 2019 is a conscious effort to present a

scientifically sound, methodologically rigorous, and practically useful data-based framework to measure the quality of governance in the states of India, and rank them. A caveat would be in order, though. Few studies have attempted to identify and understand what specific aspects of governance influence outcomes and how. The effort of PAI 2019 has been to use indicators that measure access to or denial of access to basic human development entitlements for citizens and whether the governance process makes it easier or harder for the disadvantaged and the vulnerable people to advance. It must be added, however, that the choice of indicators to construct the composite index was constrained and hence determined by the availability of data across all states. The availability of data, especially quality data – temporal and spatial – is a government-wide problem in India. There is little data on important variables of interest for many states and even less that is comparable in any meaningful way. The other issue that emerges is the difficulty in hermetically separating governance performance from governance process and hence to ensure that the measurement is both coherent and critical. PAI 2019 builds into the model adequate scientific rigour, choosing data fields that stand the test of validity, reliability and comparability.

The PAI 2019 model is predicated on measuring governance as a process that creates objective conditions for a three-tier autonomy for all citizens: rights-based entitlements, aspiration-based economic opportunities and capacity-based agency for civic participation. Simply put, it seeks to draw attention to those areas of governance performance that the states need to pay attention to, if better outcomes are to be achieved. There is

¹ Benhabib, S. 2005. *'The Right to have Rights in Contemporary Europe'*, Georgetown University, Centre for Democracy and civil Society.

ADDRESSING THE DIFFICULTY IN MEASURING GOVERNANCE

little doubt that governance matters and in a country like India - the union of a set of diverse and disparate states - subnational governance matters even more. Measuring governance has its uses: firstly, it has instrumental value, of supporting optimisation solutions for resource constrained state governments through evidence based decision-making in the allocation of scarce resources. Secondly, in the prioritisation of expenditure, it has process value, in enhancing transparency, supporting progressive policies, improving programme design, and strengthening institutions by using objective value-based indicators to monitor progress and evaluate outcomes. The substantive use of measuring the quality of governance in the model lies in the remarkable specificity of the problems and the opportunities that it points for each state, no matter its rank; in highlighting the urgent need for enforcing the rule of law, to prevent egregious acts of the administrative apparatus of the state and hold it to account - preventing gender-biased sex selection at birth for example, above all else in a particular state; and in evaluating efforts to support reform, and in informing decisions about what reforms to implement and how.

PAC's experience over the last four years leading up to PAI 2019, raised several questions: What exactly is PAI measuring? Do the indicators truly measure what they purport to measure? What purpose should such measurement serve? What results does PAI seek? Who will use the data generated, analysed and interpreted; and to what end? Public governance after all, is a multidimensional and fuzzy concept, especially because of sharp variations in the objective conditions across the states of India. PAC also

recognises that little attention, if any, is given to the ways in which the data is generated and how it might actually be used to make a difference and lesser still, to the needs of those who might use the data - civil society and the citizens. Therefore, PAI 2019 did not wish to fail in addressing these issues. So, it was decided that neither the indicators nor the process of measurement are an end in themselves. The greater challenge was to reflect on the development or governance pathways, highlighted by the indicators as targets that need to be pursued by specific states to produce better development outcomes and the incentives that the states might have for reforming the institutions and processes of governance.

The approach and expectation of the uses of PAI 2019 data and findings are two-fold. First, it ought to enable each state to develop its own theory of change, targeting outcomes of interest. The focus of such outcomes must be towards sustained action, as might best result in advancing inclusive growth, expanding equity and reinforcing sustainability - as might be prioritised based on felt needs. Thus, the etiology and the diagnosis for each state varies, as should the intervention plan. With this in mind, PAI 2019 includes state-wise fact sheets that show a broad report card - positives and negatives - of its performance, pointing to what the pace and direction of development praxis might potentially focus on moving forward. PAI 2019 also highlights the need for state governments to modernise the governance system in the states, especially on the production and use of public data, to promote effective, efficient and transparent public policies. PAI 2019 is in this sense, a sustained effort to demonstrate how data can be used to draw

insights, assign objective values and drive evidence-based decisions, and how best this might be done. It must be read in the wider context of the efforts of PAC to build a scientific, sustainable and reliable model for developing data-based frameworks that can support progressive development praxis.

The Evolution of PAI

The first edition of the PAI was launched in 2016 and ranked the Indian states based on 68 indicators spread across 25 focus subjects culminating in 10 broad themes. The launch of PAI 2016 garnered positive media attention and was taken note of by state governments, academic institutions and civil society organisations. The second edition of PAI, launched in 2017, comprised 10 themes, 26 focus subjects and 82 indicators. PAI 2017 was a significant contribution to the literature on governance in India, due to the inclusion of a special chapter on Inequality. The third edition, PAI 2018, an amalgamation of 10 themes, 30 focus subjects and 100 indicators, was well received by the public and media. PAI 2018 featured a special chapter on the Children of India, which dealt with the status of children in the country.

From a methodological perspective, PAI 2019 is the culmination of an effort to make the governance measurement model scientific, rigorous and objective. It is a big leap forward.

The Rationale Behind the Big Leap

While PAI 2018 was ambitious in including 100 indicators, this was also its major weakness. The problem was not one of precision but of reliability.

CHAPTER II – THE MODEL OF PAI 2019

The PAC team recognised that it was important to eliminate the subjectivity in the model. In the calculation of values, it was necessary to apply a more rigorous and scientific methodology and to eliminate auto co-relationships in the indicators to arrive at a parsimonious but more reliable set of standalone indicators that are observable. This necessitated the deployment of Factor Analysis (FA) and Principal Component Analysis (PCA).

The previous editions of PAI, were critiqued on four counts. The model of PAI 2019, responds to the observations made and attempts to fill all the gaps and bring out a model best-fitted to measure governance.

The present model addresses the lacunae in the following manner:

1. PAI 2018 was an amalgamation of 100 indicators. The large number of indicators led to a much deeper problem – the existence of auto co-relationships.

Thus, it was decided to consider only those specific indicators that were statistically significant and impact Governance the most. PAI 2019, therefore, consists of 49 carefully selected indicators, with each measuring one aspect of governance. The method of Factor Analysis (FA) was deployed to identify the indicators, narrowed down from an initial set containing more than 100 indicators. PAC is confident that the selected indicators are mutually exclusive and hence are not correlated to each other.

2. In all the previous editions of PAI, weightages were assigned either equally or based on subjective judgement. This method of assigning

weights was critiqued by scientists, economists, and academicians. The PAI 2019 model uses the Principal Component Analysis (PCA) to generate objective scores and rank the states.

3. Until PAI 2018, the model was a mix of indicators that measured governance at all levels – institutions, processes and outcomes. It was, however, argued that including institutions and processes in the model would not portray the real performance of the states. Thus, in PAI 2019, a conscious effort has been made to include only outcome indicators.

4. Lastly, the previous editions, did not measure the delta, i.e. analysing how each state performed over a certain period. To eliminate the bias of legacy data, a delta analysis is useful to identify the states whose catch up effect has been higher than the top performers. Thus, a separate section on delta analysis has been incorporated in PAI 2019.

The Structure of PAI 2019

Measuring governance is a challenge. This issue becomes increasingly complex especially in a diverse country like India, where each state is socially, culturally, economically and politically different. PAC thus identified three broad pillars namely **Growth, Equity and Sustainability** that encapsulate governance. From a development perspective, it is axiomatic that there must be synergies between all the three pillars. It is impossible to believe that two of the three pillars are enough, growth and sustainability without equity; growth and equity without sustainability; equity and sustainability without growth.

The three pillars - Growth, Equity and Sustainability – constitute the constructed variables for the index. Thus, it is important to identify variables of interest to measure these constructed variables. The five themes under these pillars that serve as the variables of interest are borrowed from the well-established World Governance Indicators (WGI, 2010)²:

1. Voice and Accountability (VA)

The extent to which a state's citizens are able to participate in the governance process not as mere beneficiaries but as agents of change

2. Government Effectiveness (GE)

The adequacy and quality of public services, the quality and the capacities of the civil service and the quality of and the capacities for policy formulation and programme implementation

3. Regulatory Quality (RQ)

The ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development and for the allocation of common property resources

4. Rule of Law (RL)

The extent to which agents have confidence in and abide by the rules of society and in particular the quality of contract enforcement, policing and the maintenance of law and order

5. Control of Corruption (CC)

The extent to and the modes by which the exercise of public power and authority for private gain, including both petty and grand forms of

² Kaufmann, D., Kraay, A., & Mastruzzi, M. (2010). *The Worldwide Governance Indicators*: Retrieved from <http://info.worldbank.org/governance/wgi/pdf/wgi.pdf>

ADDRESSING THE DIFFICULTY IN MEASURING GOVERNANCE

corruption, as well as 'capture' of the state by elites and private interests, can be prevented.

PAC has also incorporated the relevant Sustainable Development Goals (SDGs) in the model to align PAI with the global standards. PAI 2019 includes thirteen SDGs, namely:

-  1. SDG 1: No Poverty
-  2. SDG 2: Zero Hunger
-  3. SDG 3: Good Health and Wellbeing
-  4. SDG 4: Quality Education
-  5. SDG 5: Gender Equality
-  6. SDG 6: Clean Water and Sanitation
-  7. SDG 7: Affordable and Clean Energy
-  8. SDG 8: Decent Work and Economic Growth
-  9. SDG 9: Industry, Innovation and Infrastructure
-  10. SDG 10: Reduced inequalities
-  11. SDG 11: Sustainable Cities and Communities
-  12. SDG 15: Life on Land
-  13. SDG 16: Peace, Justice and Strong Institutions

The last tier of the model is the most crucial part that specially measures each of the variables of interest. PAC has identified 49 indicators that would help in defining the constructed variables that measure Governance. The details of the indicators are provided in the pillar-wise chapters and in the Annexure.

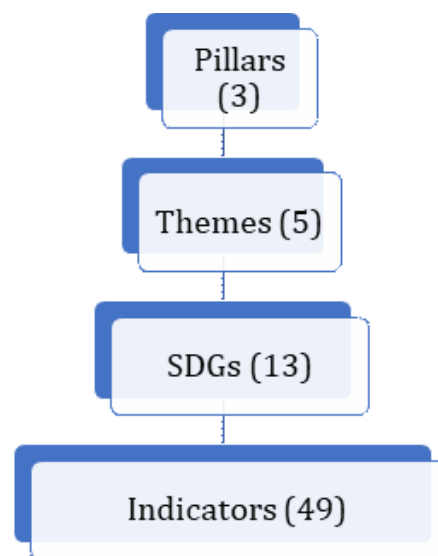


Figure 1: Model of PAI 2019

Significance & Relevance

Measuring the quality of governance at the sub-national level assumes significance due to the roles and responsibilities conferred on the states as per the Constitution of India. The diversity present in the country also means that a one-size-fit-all policy is not the solution for sustainable development, placing more focus on the states to develop and promote policies at the sub-national level to ensure 'good governance'. Rankings at the state level are relevant from a policy praxis perspective because they provide the state governments with a marker of their current performance while highlighting areas for improvement.

By adapting the themes from the World Governance Indicators, PAI 2019 provides a

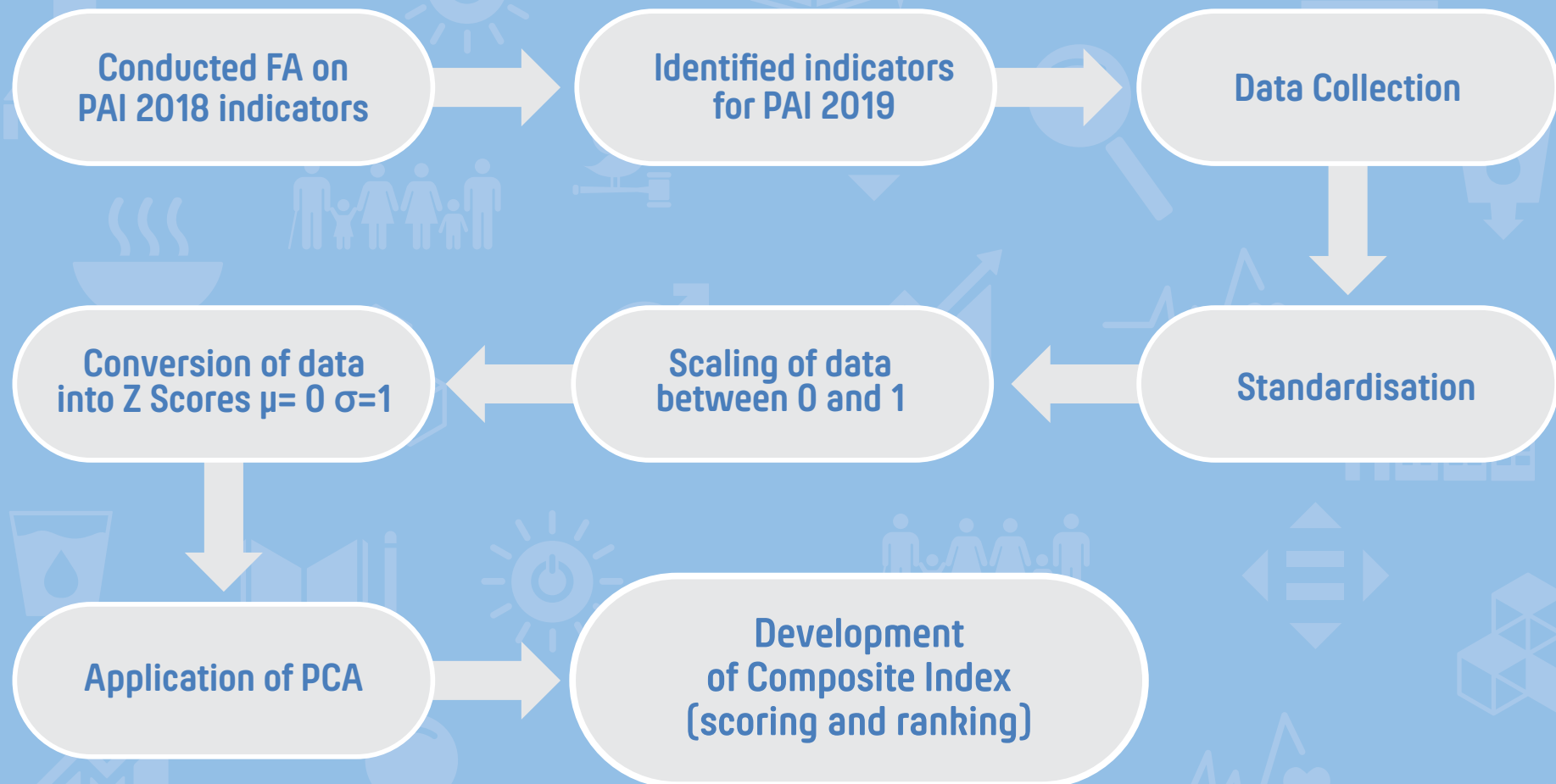
global standard for the measurement of the quality of governance in Indian states.

The development agenda across the world is also being shaped by the United Nations 2030 Sustainable Development Goals, which provides a common agenda for development. While the SDGs provide countries with targets and indicators to measure performance, they are at a global level and must be contextualised for the Indian development perspective. The identification of indicators for the measurement of the SDGs is undertaken by the Ministry of Statistics and Programme Implementation (MoSPI) and the NITI Aayog, Government of India, which also coordinates the efforts of the Central and State Governments and institutions.

Keeping in mind the above, the model of PAI 2019 incorporates both elements of global governance indices and the SDGs. The pillars of the Index, namely, Growth, Equity and Sustainability form the cornerstone of the SDG Agenda. The PAI 2019 model also integrates 13 of the 17 SDGs, selecting only those Goals where the state governments have a role to play. The 49 indicators have been chosen from multiple sources. This includes the indicators from PAI 2018 that were statistically significant along with indicators identified by the Ministry of Statistics and Programme Implementation (MoSPI) and NITI Aayog. The indicators were then mapped to the relevant SDGs. The aim is to provide states with concise and actionable points for policy intervention while at the same time aligning with the SDG Agenda.



CHAPTER III - METHODOLOGY



CHAPTER III - METHODOLOGY

Background

Creating a composite index from several governance indicators is a complex phenomenon that involves appropriate scaling, weighting and aggregation measures. These measures need to take into account skewness in data, outliers, spread of data or large variance and the direction of indicators. Each of these specific data characteristics tend to bias the composite index thus skewing the ranking results.

PAI 2016, 2017 and 2018 used weighted averages at each level of aggregation, where the weights were either uniformly distributed or assigned using subjective analysis by domain experts.

The PAI 2019 model eliminates the subjectivity of weights and uses a scientific mechanism to arrive at a composite index. This composite index carefully avoids the problem of outliers and skewed data using appropriate scaling before computing the composite index. The aggregation uses a self-selection mechanism to calculate a composite index at each level with no reliance on subjective weights.

PAI 2019 – Computing the Composite Index

The model of PAI 2019 is structured below – The 49 indicators at the bottom most layer are mapped to the respective SDGs in a manner that each indicator maps to exactly one SDG. Each of the SDGs at the “SDG layer” maps to one of the Themes in the “Theme Layer” and likewise each of the Themes map to the respective Pillars in the

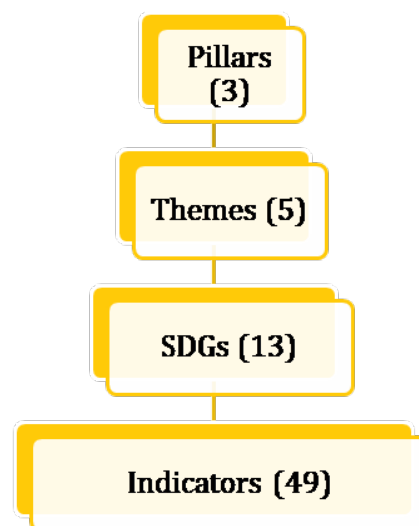


Figure 1 : Model of PAI 2019

top most layer. At the bottom most “Indicators Layer”, each indicator can be tied to a Pillar, Theme and the SDG that it maps to. The three pillars constitute Equity, Growth and Sustainability and the five themes constitute Voice and Accountability, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption. The 49 indicators cover thirteen SDGs.

Data Selection

PAI 2018 constituted 100 indicators categorised into 30 focus subjects and 10 themes. The objectives of the PAI 2019 model was to ensure that the final set of indicators was:

- 1) Standalone (to eliminate strong association amongst indicators),
- 2) Represented the latent underlying phenomenon of the Pillars (namely Equity, Sustainability and Growth) and
- 3) Constituted a good mixture of governance indicators spanning the 5 Themes

The 49 indicators were selected from a mix of sources spanning the National Indicator Framework drafted by the Ministry of Statistics and Programme Implementation (MoSPI) and the NITI Aayog SDG Index 2018. The indicators were further refined to ensure that the data collection was topical and suited to the PAI 2019 framework. Missing data was imputed using average values to ensure that there was no missing data for each of the 49 indicators across the 30 states.

Data Preparation

The raw data for the various indicators were first converted to scaled scores (using normalised Z scores) that appropriately aligned with the direction of the indicator. For all indicators, a high score suggests better performance and vice versa. Normalised Z scores $[(\text{Indicator Value} - \text{Mean}) / \text{Standard Deviation}]$ was preferred over the Min-Max scaling method $[(\text{Indicator Value} - \text{Min}) / (\text{Max} - \text{Min})]$ to ensure that the variance characteristics in the data were not lost.

Calculating PAI 2019

A composite index was calculated at each level of the data structure (Refer to figure 2) using the indicators that group into the respective SDGs, Themes and Pillars.

PAI 2019 uses a variation of “Manhattan Distance” where each principal component is divided by the proportion of variance explained

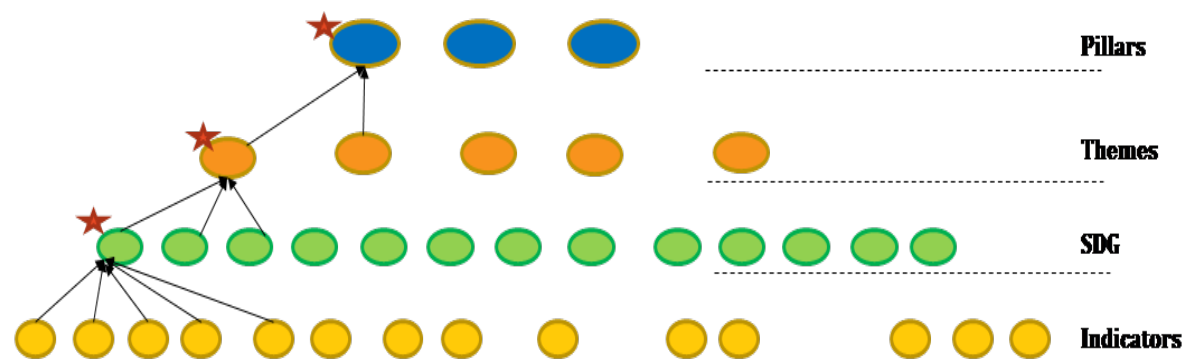
by it. This method reduces the bias in the calculation of the composite index introduced by the spread of the data or large variance in data. Large variance in data tends to space out the scores with higher values tending to skew the composite index towards a high rank. This situation presents a bias to states which score very high in a few indicators compared to a large set of low performing indicators when compared with another state whose scores are well above average

on most of the indicators. In other words, this variation in aggregation ensures that states performing above average in most of the indicators are ranked higher than states that perform very well in one single indicator.

This process was repeated at each level to arrive at the composite index for each of the pillars namely – Equity, Growth and Sustainability. The Pillar scores were averaged (simple average) to arrive at the overall composite index, i.e. PAI 2019.

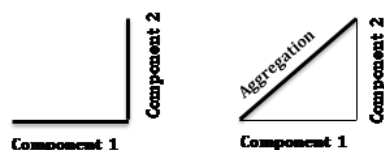
Thus, the PAI 2019 composite index calculation and ranking methodology follows a systematic and scientific procedure to arrive at the composite index from the base indicators. Composite indices are measured on its robustness and sensitivity. The PAI 2019 methodology is both robust and sensitive since it –

- 1) Eliminates subjectivity of weights
- 2) Self-selects components using a universal and widely used technique (PCA)
- 3) Reduces bias in index calculation owing to skewed data distribution and spread of data
- 4) Provides a mechanism to decompose the index at each level – pillars, themes and respective SDGs.



★ Composite Score for the respective SDG or Theme or Pillar at each level

Figure 2 : Arriving at the composite index



Manhattan Distance: Aggregation = Component 1 + Component 2

Euclidean Distance: Aggregation is the diagonal distance

Euclidean Distance tends to subdue small differences in values whereas Manhattan Distance highlights small differences in scores. Hence a variation of Manhattan Distance used for Aggregation of the Principal Components

Figure 3 : Explanation of Manhattan Distance and Euclidean Distance



CHAPTER IV - THE EQUITY IMPERATIVE



Voice and Accountability



Proportion of population covered by social protection



Prevalence of malnutrition amongst children below 5 years



Participation rate in organised learning (one year before the official primary entry age)



Average Annual Drop-out rate at secondary level



Proportion of seats held by women in (a) state legislatures and (b) local governments



Palma Ratio of Household Expenditure in Urban India

Palma Ratio of Household Expenditure in Rural India

Proportion of urban population living in slums



Government Effectiveness



Infant Mortality Rate (IMR)



Gender Parity Index (Elementary)



Rural Indebtedness

Farmers/ Cultivators suicide per HHs

Expenditure in social sector



Rule of Law



Number of victims of intentional homicide per 100,000 population

Unsentenced detainees as a proportion of overall prison population

Incidence of Crimes against SC and ST

Child Sex ratio

Crimes against children

Dowry deaths per 10 lakh population

Rapes per 10 lakh population

Cases Pending in District Courts



Regulatory Quality



Worker Population Ratio (Female) (WPR)



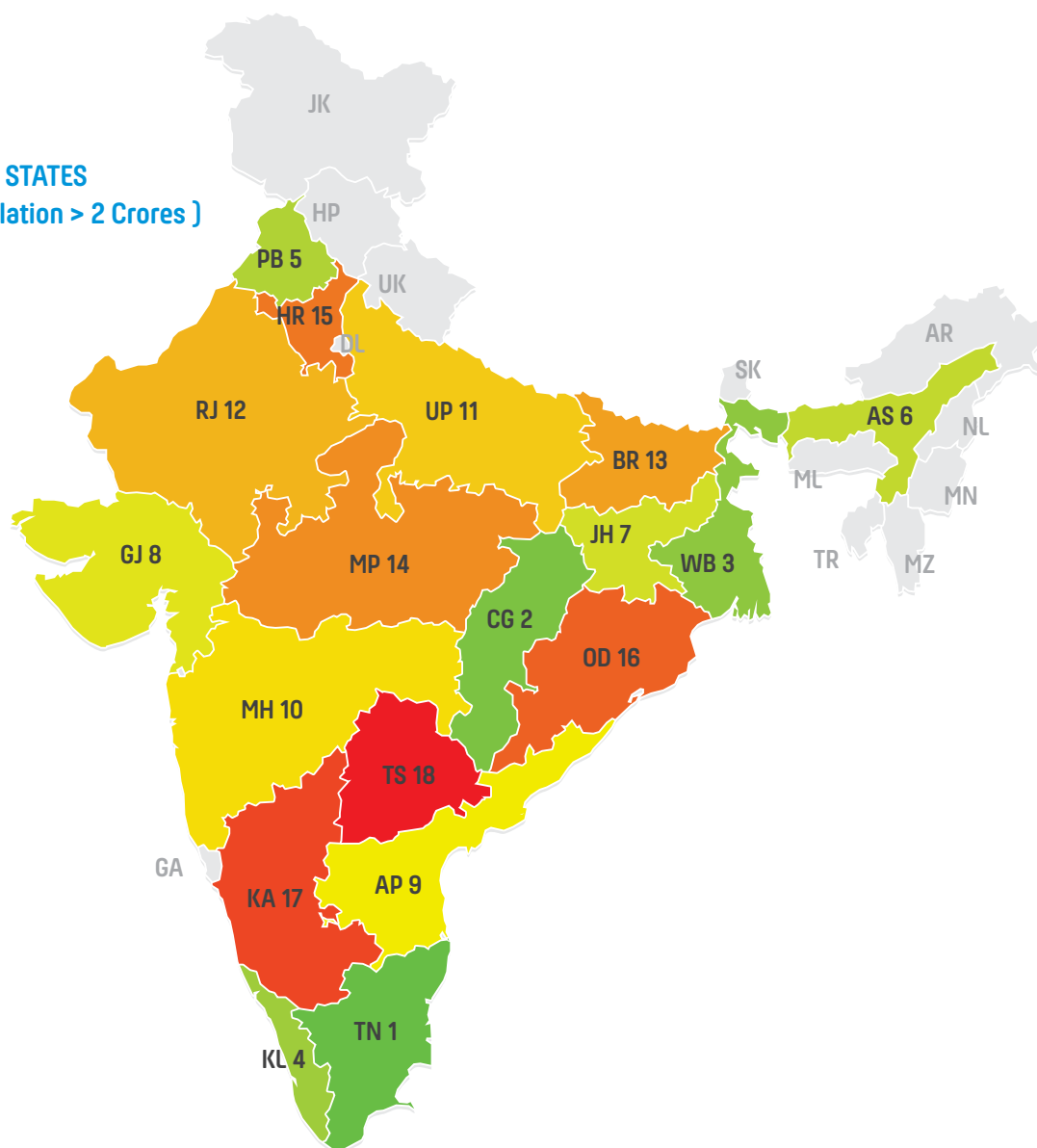
Control of Corruption



No. of ACB (Anti-Corruption Bureau) cases disposed as a % of total cases registered



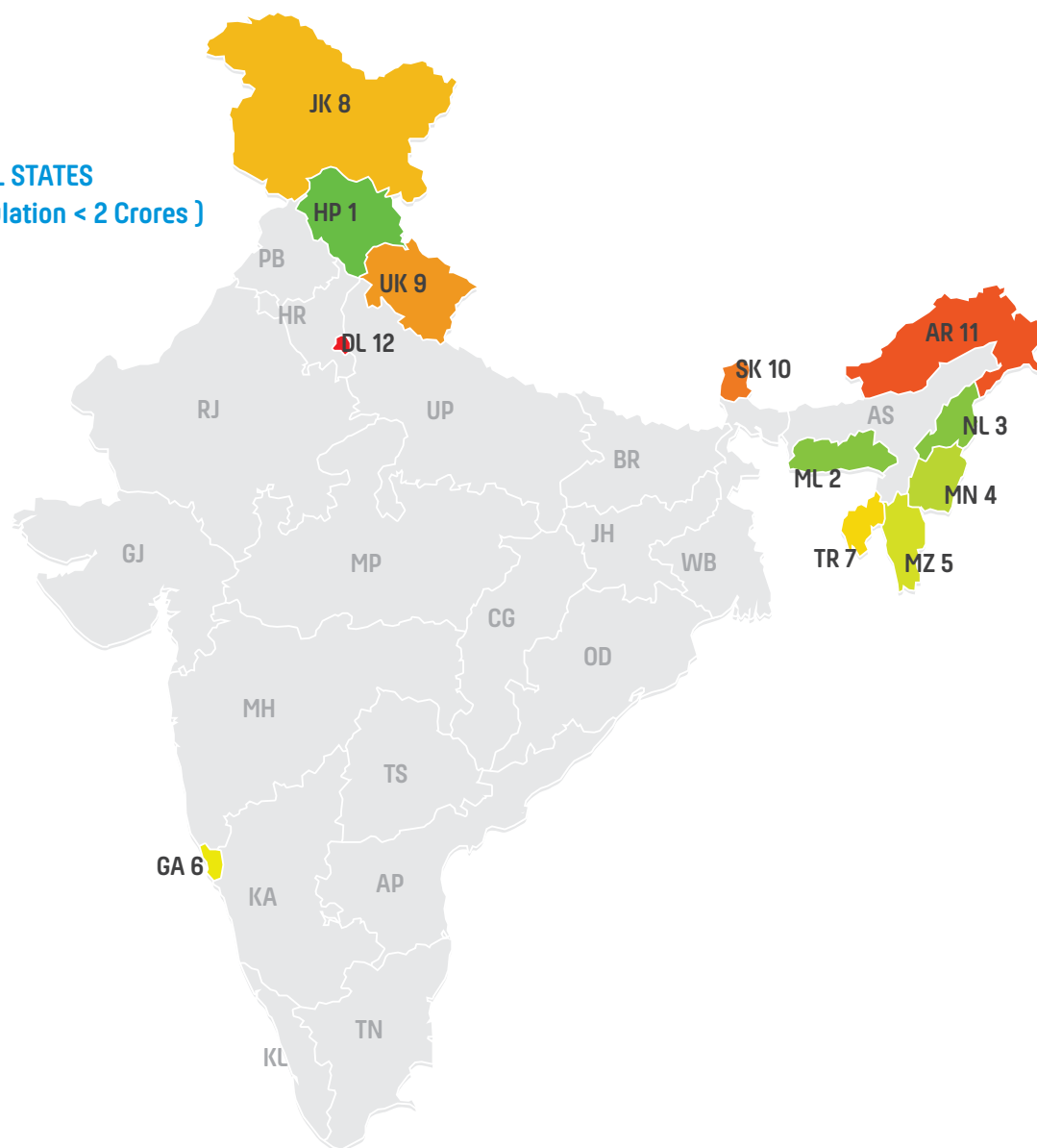
LARGE STATES
(Population > 2 Crores)



Rank	Large States	Index
1	TN Tamil Nadu	0.782
2	CG Chhattisgarh	0.514
3	WB West Bengal	0.378
4	KL Kerala	0.358
5	PB Punjab	0.216
6	AS Assam	0.133
7	JH Jharkhand	-0.063
8	GJ Gujarat	-0.248
9	AP Andhra Pradesh	-0.353
10	MH Maharashtra	-0.379
11	UP Uttar Pradesh	-0.388
12	RJ Rajasthan	-0.445
13	BR Bihar	-0.492
14	MP Madhya Pradesh	-1.084
15	HR Haryana	-1.134
16	OD Odisha	-1.227
17	KA Karnataka	-1.371
18	TS Telangana	-1.732

Highest Index value Lowest Index value

SMALL STATES (Population < 2 Crores)



Rank	Small States	Index
1	HP Himachal Pradesh	1.889
2	ML Meghalaya	1.788
3	NL Nagaland	1.374
4	MN Manipur	1.216
5	MZ Mizoram	1.087
6	GA Goa	0.771
7	TR Tripura	0.762
8	JK Jammu and Kashmir	0.46
9	UK Uttarakhand	-0.045
10	SK Sikkim	-0.229
11	AR Arunachal Pradesh	-0.255
12	DL Delhi	-2.285

Highest Index value  Lowest Index value



“When the rate of return on capital exceeds the rate of growth of output and income ... capitalism automatically generates arbitrary and unsustainable inequalities that radically undermine the ... values on which democratic societies are based”

-Thomas Piketty

KEY FINDINGS

- There exist varying degrees of equity between the states of India
- The overall performance of the large states is not influenced by their performance in the equity parameters. On the other hand, the performance of the small states in the equity index significantly affects the overall PAI 2019 index
- If states focus on the parameters that relate to education, women, children, SCs, STs and under trial prisoners, then the probability of attaining equity in the state would increase
- The prevalence of stunting has reduced in all the states from 2005-06 to 2015-16. In the following states – Arunachal Pradesh, Tripura, Himachal Pradesh, Punjab and Mizoram, the rate of decline in stunting has been the highest over the years
- Delhi is the only state where the number of children who are underweight, has increased from 26.1% to 27% between the periods of 2005-06 to 2015-16
- Crimes against women have increased throughout the country. In twenty-five of the states, crimes against women have increased more than hundred percent. Between 2006 and 2016, this has increased from 28% to 160.4% in Delhi
- In the following states – Punjab, Goa and Maharashtra, the percentage of children who were wasted has increased by over fifty per cent between 2005-06 and 2015-16
- The Worker Population Ratio (WPR) among females has declined in twenty-one states in India.



The Practical Bases of Equity

Equality represents a fundamental and inalienable principle, and together with liberty forms the basis for individual progress and a just and humane society. To address equity concerns in developing societies like India in serious and substantive ways, development praxis must undergo a shift. It must move from epistemic rhetoric - of presenting knowledge on the patterns of exclusion as observers; to epistemic humility, of understanding inequality and its manifestations with subject-openness, as experienced by the disadvantaged and the vulnerable.

The necessity for equity in human development arises from the twin imperatives of moral philosophy and social justice. In practice, this translates into two principles for public policy action: enabling equal access to opportunities for all and creating conditions for the equitable distribution of wealth. The latter often entails redistribution and is politically contentious. In India's context, and from an equity perspective, a legitimate question to ask is why a quarter century of neo-liberal development has produced results so different - mixed results on growth, but clear consequences of inequality - from what was its proclaimed goal.

Equity is central to development, and its absence raises fundamental questions on national income as a measure of progress; and empirically more important, on the conditions of its production and distribution among the people. Simply stated, inequality of opportunity in the real world operates both as an outcome and process. It hinders human development outcomes; with the initial inequality of wealth growing into a

cumulative barrier. Therefore, the rising tide does not automatically, or necessarily, lift all boats. There has been much empirical work, but little evidence to support the Simon Kuznets hypothesis of an inverted-U defining the systematic relationship between development measured as per capita GDP, and income inequality measured by the Gini coefficient. The varying patterns of inequality - manifesting as health poverty, education poverty, and wage poverty - across the states in India is a case in point. It is clear that equity will have to be pursued as both means and ends in themselves. The states being proximate to the challenge of inclusive development must play the role of the protagonist in this theatre of development.

Seen from the bottom-up perspective of the community, unequal social relations or the absence of democratic equality should constitute a greater concern than material benefits. This matters because the socio-economic fabric circumscribes everyday life, constraining both liberty and freedom - especially for the scheduled castes and tribes, or the minorities. This is often made worse by the inability of the community to determine the kind of equality it wants and compounded by the problem of persistent poverty in some populations and the growing regional disparities. Transforming the lives of the people in such regions, presupposes two necessary conditions:

1. The first is an understanding of the enormity of the challenge this poses to many states. As the findings of PAI 2019 demonstrate, the burden of the aspirational districts - a euphemism for underdevelopment that is endemic, endogenous and chronic - is concentrated in

specific parts of the country. The response therefore has to be context-specific, resource-sensitive, and multi-stakeholder driven. The aspirational districts represent the direct consequence of structural fragility, as a result of which, time has stood still for the people of the region and improvements in human development indicators less than commensurate with the humungous amounts of money spent for decades

2. The second condition is that state governments must break from the past and demonstrate the political resolve to make a bold departure from the conventional development praxis. This parlous state of affairs is not for paucity of funds or for lack of effort. To be fair, successive governments have tried but with mixed results. The time is now to call out the intrinsic failing in the development strategy of the past that was excessively supply driven, contractor led, and brick and mortar based. In sharp contrast, social mobilisation to build incentives for collective community action, capacity building and training to enhance capabilities, and strengthening community-based institutions to help improve the quality and adequacy of public services have received much less policy attention and even lesser programme design detailing. The singular failure has been to recognise that the community is important, more than the contractors, in the development process (Gollerkeri, 2019)¹.

1 Gollerkeri, G. (2019). People Centric Solution is a must: Ushering in Kalyana Karnataka, Deccan Herald. Retrieved from: <https://www.deccanherald.com/opinion/main-article/people-centric-solution-must-764294.html>



The Political Economy of Perpetuation

The classic politician-contractor-bureaucrat nexus continues to define political economy, especially in the most backward regions of the underdeveloped states, thus highlighting the importance of enforcing the Rule of Law. In real world terms, what does this mean, and what might be done? Combating inequality needs more than political resolve and good intentions. In essence, it requires the application of data science to understand how different kinds of inequality relate; identify those that matter most; and understand the underlying forces of structure and agency that coalesce, to create them. Concerns are growing on the governance ability and preparedness of the subnational administrative apparatus to cope with the myriad inequalities emerging at the intersection of migration, climate change and urbanisation. In varying degrees and patterns, the poor are being left behind by the rich; the old replaced by the young; villages are being deserted for the cities that are already overcrowded and the unskilled are being pushed to the corners of the informal market while the highly skilled constitute but a small segment of the modern sector.

In sum, inequality is more than asymmetry in material possessions. Inherently, it is about the quality of life and autonomy of choice and opportunity. It is as much about the processes towards equity – the shift from distributive equality to relational equality – as the basis for exercise of freedom. This paradigm shift in social processes is intrinsically linked to hope and aspiration, therefore directing development praxis towards restoring the locus of control to those

most in need of help. Government Effectiveness, in this context simply translates into the state apparatus and the agents of governance standing up for and behind the disadvantaged and the vulnerable populations.

Among the more difficult problems in dealing with inequality is that of distinguishing those drivers that might be described as structural from those that are agency related. Structural drivers are those whose influence is inexorable and requires adaptation and mitigation responses. These include - technological change, the effects of globalisation, and labour market dynamics. On the other hand, agency related drivers include elite capture, rent-seeking and crony capitalism that require concerted social mobilisation and zero tolerance responses. Typically, this takes the form of predatory capture of common property resources to the detriment of the poor and contractual arrangements under which public funds result as private transfers of resources. The brunt of the effect of such government failures is borne by the poor. How these are exacerbated or mitigated by policy choices and the negotiation of the man-made hierarchies by individuals and communities, is a function of the Regulatory Quality of, and the Prevention of Corruption, by the state governments. PAI 2019 provide some insights into these aspects.

Measuring Equity in the States

Equity is a broad and non-linear concept. To understand the deep-rooted features of equity, PAI 2019 considers 23 indicators across three dimensions – Economic, Social and Gender. One way to measure equity is to calculate the income

gap between the rich and the poor. This takes care of the economic aspect of equity. However, to achieve equity, the social dimension cannot be neglected. PAI 2019 takes into account the role of the state in providing social protection to the aged, widowed and disabled population, eliminating malnutrition and reducing the dropout rates and infant mortality rates. Additionally, the steps taken by the states to overcome rural indebtedness and budgetary allocation towards human capital – Health and Education has been included. Equity remains incomplete if it does not consider gender. Hence, measures taken to overcome discrimination faced by women and increasing participation in workforce, politics and society has been included.

The pillar of equity has been measured by five themes, namely, Voice and Accountability, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption. To achieve equity, it is crucial to ensure that the voice of the community is heard, service providers are accountable for the services delivered by them and the manifestation of corruption is controlled. In addition, the role of the state in effective policy formulation for equitable distribution of resources and the maintenance of law and order is encompassed in this pillar.

Findings

1. Overall Rankings

In this pillar, Tamil Nadu tops the rankings with an index value of 0.782. This is followed by Chhattisgarh (0.514), West Bengal (0.378),

Kerala (0.358) and Punjab (0.216). While Kerala ranks fourth in equity, it ranks first in the overall PAI 2019 index.

On the other hand, Madhya Pradesh (-1.084), Haryana (-1.134), Odisha (-1.227), Karnataka (-1.371) and Telangana (-1.732) find their place in the bottom of the rankings. Karnataka stands second last in this pillar, however, it stands fourth in the overall PAI 2019 index.

In case of the small states, Himachal Pradesh ranks first with a score of 1.889, followed by Meghalaya (1.788), Nagaland (1.374), Manipur (1.216) and Mizoram (1.087). It is interesting to note that four of the North-Eastern states are at the top of the rankings. Himachal Pradesh performs well in this pillar as well as in the overall PAI 2019 index.

At the bottom, lie the states of Jammu and Kashmir (0.460), Uttarakhand (-0.045), Sikkim (-0.229), Arunachal Pradesh (-0.255) and Delhi (-2.285). Delhi not only ranks last in the small states' category, but also amongst all states put together. Moreover, the state performs poorly in the PAI 2019 index as well.

The difference between the scores of Tamil Nadu and Punjab (large states) as well as Jammu and Kashmir and Uttarakhand (small states), unfolds an interesting insight. The sharp decline from 0.782 (Tamil Nadu) to 0.216 (Punjab) and from 0.460 (Jammu and Kashmir) to -0.045 (Uttarakhand), asserts that there exist varying degrees of equity between the states of India.

2. Correlation Analysis

The correlation coefficient between the equity index and PAI 2019 stands at 0.57, indicating a positive correlation between the pillar of equity and the overall PAI scores. Further, it signals that if states enhance their performance in equity, then the overall performance in terms of Governance will also increase and vice versa.

Figure 1 portrays the scatter plot between the equity index and the PAI 2019 index. The x-axis measures the equity index, whereas the y-axis measures the overall index. In case of Himachal Pradesh, both the equity and PAI indices are higher and hence it is at the extreme right side of the first quadrant. Similarly, Delhi finds its place in the extreme left corner of the third quadrant since both the equity and PAI indices are lower.

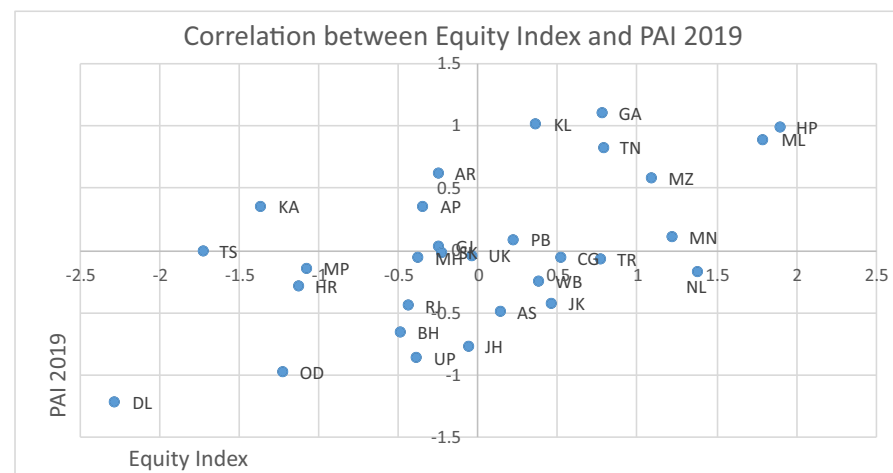


Figure 1: Scatter Plot of Equity Index and PAI 2019

In the case of large states, the correlation coefficient is 0.3, which means that the correlation between the equity pillar and PAI index is weak (Refer to Figure 2). This analysis highlights that in the case of large states, a good/poor performance in the equity parameters does not significantly affect the overall performance of the state. For instance, in Karnataka, while the performance in equity is low (-1.371), it is fourth in the overall PAI 2019 index (0.353).

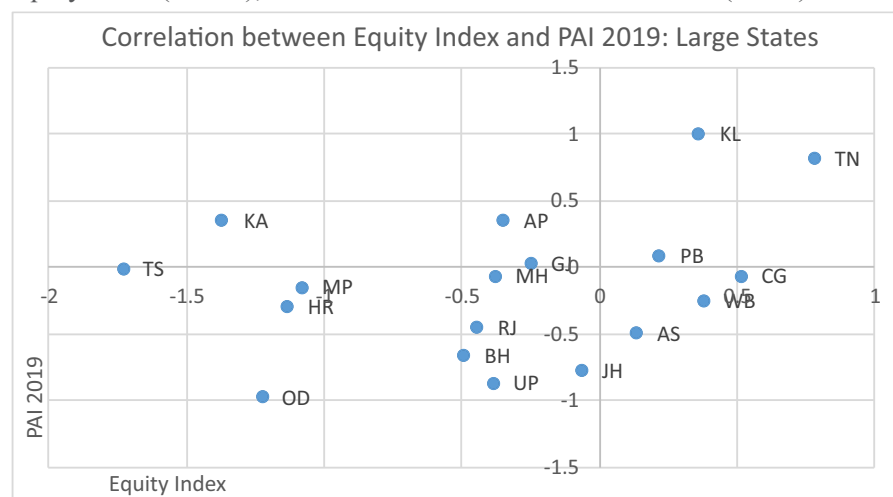


Figure 2 : Scatter Plot of Equity Index and PAI 2019 (Large states)



Among small states, the correlation coefficient is 0.7 (Refer to Figure 3). This clearly points to the existence of a strong positive correlation between equity and overall PAI 2019. In addition, it means that in the case of the small states, any increase/decrease in the equity pillar will significantly influence the overall performance of the state.

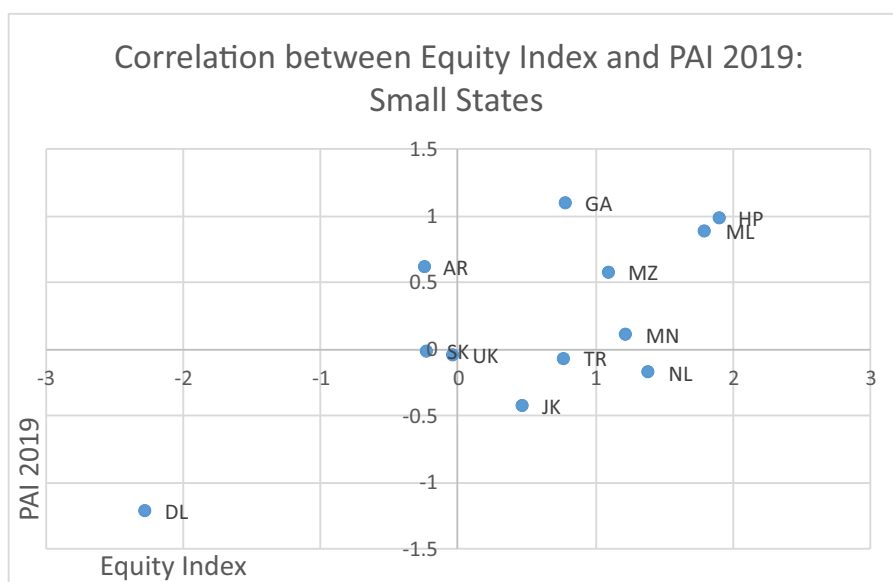


Figure 3 : Scatter Plot of Equity Index and PAI 2019 (Small states)

3. Regression Analysis²

It is not enough to analyse only the correlations since they reflect solely on the direction between two variables. In order to attribute causation, a regression analysis is indispensable. In this regard, a regression analysis was carried out between the Equity Index (Dependent Variable) and all the 23 indicators under the Equity Pillar (Independent Variable). This analysis is crucial to understand the magnitude to which a particular indicator of equity affects the overall equity index.

Table 1 gives the findings of the regression analysis. The coefficients (β) of the indicators imply that a unit increase/decrease in that specific indicator will lead to an increase/decrease in the overall equity index by β times. For example, in the case of the first indicator, i.e. proportion of population covered by social protection, the coefficient (β) is 0.183. This means that a unit improvement/deterioration of the performance of the state in this indicator will lead to an increase/decrease of the overall performance in equity by 0.183 times. **Table 1** can be regarded as insightful information for the states and **will help them in deciding where immediate attention is required to ensure equity** in their own state.

It is interesting to note that the coefficients of the indicators relating to **women, children and education** are high. In addition, the coefficients that relate to the injustice faced by **SCs, STs and the under trial prisoners** are high. This means that if states focus on these parameters, the probability of attaining equity in the state would increase.

² All coefficients are significant with p-value less than 2e-16.

Table 1 : Regression Results of Equity Index

Equity Indicators	Coefficients
Proportion of population covered by social protection	0.183
Prevalence of malnutrition amongst children below 6 years	0.072
Participation rate in organized learning (one year before the official primary entry age)	0.228
Average Annual Drop -out rate at secondary level	0.228
Proportion of seats held by women in (a) state legislatures and (b) local governments	0.321
Palma Ratio of Household Expenditure in Urban India	0.164
Palma Ratio of Household Expenditure in Rural India	0.164
Proportion of urban population living in slums	0.263
Infant Mortality Rate (IMR)	0.117
Gender Parity Index (Elementary)	0.130
Rural Indebtedness	0.065
Farmer's/ Cultivators suicide per HHs	0.067
Expenditure in social sector	0.087
Number of victims of intentional homicide per 100,000population	0.060
Unsentenced detainees as a proportion of overall prison population	0.370
Incidence of Crimes against SC and ST	0.270
Child Sex ratio	0.282
Crimes against children	0.234
Dowry deaths per 10 lakh population	0.229
Rapes per 10 lakh population	0.045
Cases Pending in District Courts	0.036
Worker Population Ratio (Female) (WPR)	0.339
No. of ACB (Anti-Corruption Bureau) cases disposed as a % of total cases registered	0.105



4. Delta Analysis³

To analyse how the states have performed over a period of time, PAI 2019 includes a delta analysis. Under this section, only those indicators that belong to the categories of health, education, nutrition and women have been considered (subject to availability of data for a period of ten years). To estimate the delta, the growth rate over a period of ten years has been analysed.

Health

4a. Infant Mortality Rate (IMR)

It is crucial to analyse the progress made by the states in terms of Infant Mortality Rate (IMR), since IMR is one of the crucial indicators of health outcomes. It is interesting to note that in all the states the IMR has declined, except in Mizoram where the rate has increased from 34 to 40 between 2005-06 and 2015-16.

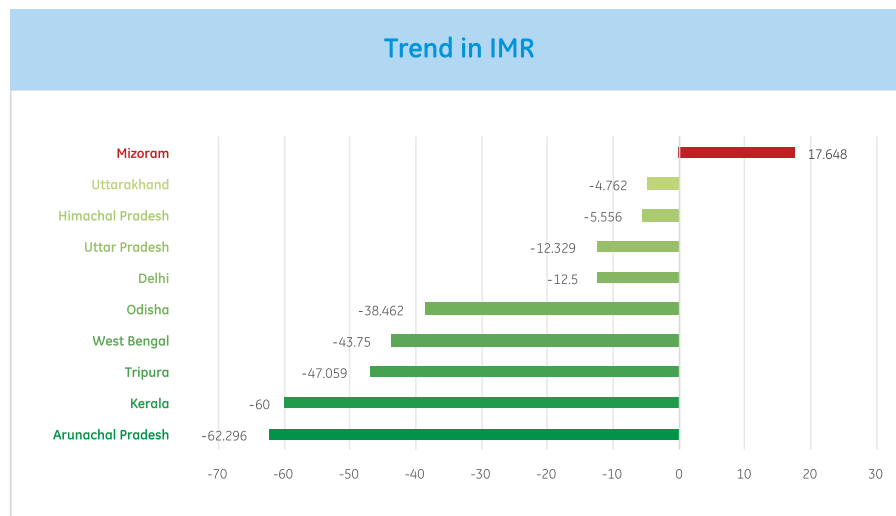


Figure 4: Trend - IMR
Source: National Family Health Survey (NFHS) (2005-06 and 2015-16)

³ The delta analysis does not include the states of Andhra Pradesh and Telangana due to the bifurcation of the state of Andhra Pradesh post 2014.

Education

4b. Annual Dropout rate (Elementary)

It is essential to analyse how many students are dropping out from the education system. This throws light on the barriers and challenges faced by the students dropping out. Over the years, the dropout rates have decreased in all the states except for Mizoram, Karnataka and Assam. It is important to note that the dropout rates in Mizoram has increased from 3.16 (2005-06) to 8.39 (2015-16).

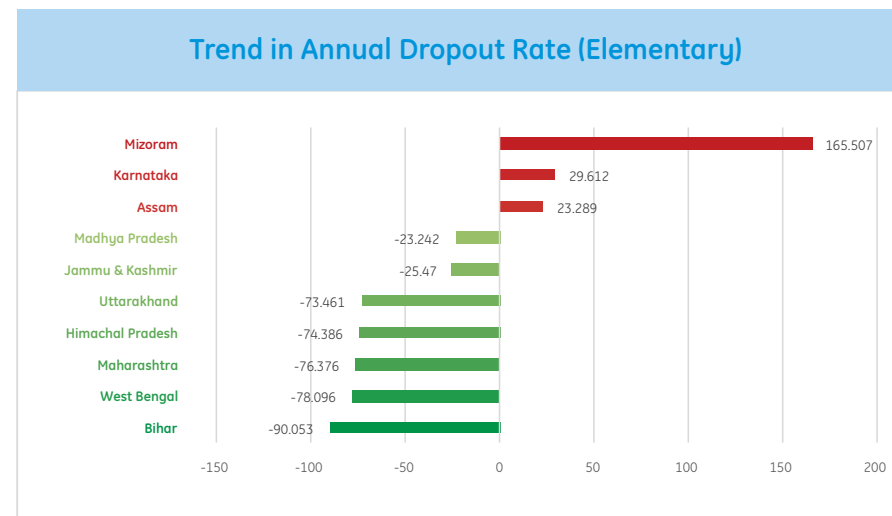


Figure 5: Trend - Annual Dropout Rate (Elementary)
Source: District Information System for Education (DISE) (2004-05 and 2014-15)

Child Nutrition

4c. Children under 5 years who are severely wasted (weight-for-height) (%)

Existence of malnutrition reflects poorly on the development of a state. It is dismal to note that even after seventy-two years of Independence, in eighteen of the states, the percentage of children who are severely wasted has increased. In Punjab, this percentage has increased from 2.1% to 5.6% resulting in 166% increase in severely wasted children. Similarly, in Maharashtra, Haryana, Sikkim and Karnataka, the percentage of severely wasted children has increased by over 75%. On the other hand, the rate of reduction in severely wasted children has been the highest in the states of Meghalaya, Mizoram, Himachal Pradesh, Delhi and Madhya Pradesh.

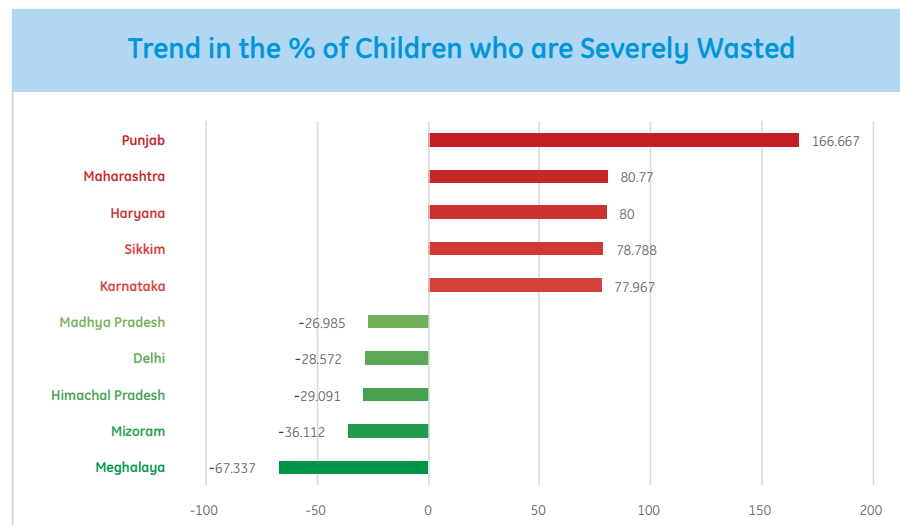


Figure 6 : Trend - Percentage of Children Severely Wasted

Source: National Family Health Survey (NFHS) (2005-06 and 2015-16)

Women

4d. Worker Population Ratio (Female)

A study by Mckinsey estimates that achieving gender equality in India could add \$700 billion of additional GDP in 2025, upping the country's annual GDP growth by 1.4 percentage points⁴. In only few states, the Worker Population Ratio (Female) (WPR (F)) has increased. In the states of Meghalaya, Chhattisgarh, Madhya Pradesh, Himachal Pradesh and Goa, the rate of increase in WPR (F) has been the highest. It is important to note that the WPR (F) has declined in twenty-one of the states. The rate of decline in WPR (F) has been the highest in Nagaland, followed by Arunachal Pradesh, Bihar, Tripura and Uttarakhand.

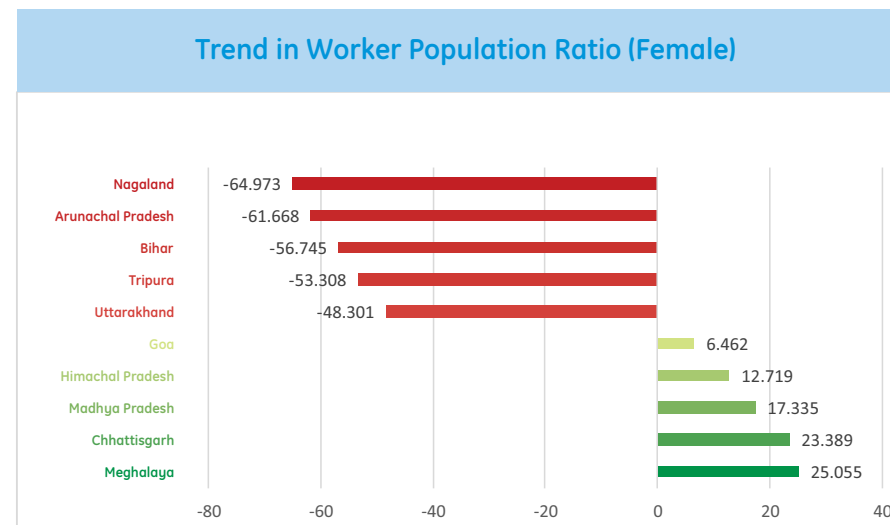


Figure 7 : Trend - Worker Population Ratio (Female)

Source: National Sample Survey Office (NSSO) (2011-12 and 2017-18)

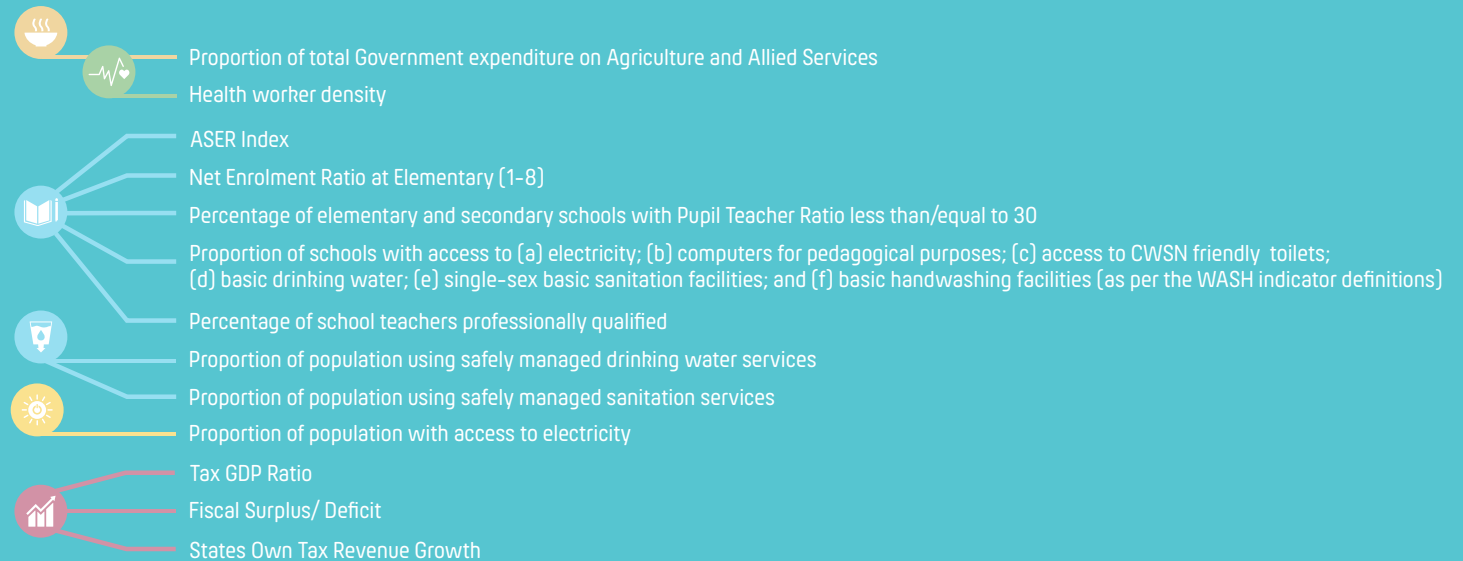
4 McKinsey Global Institute. (2015). *The Power of Parity: Advancing Women's Equality in India*, McKinsey & Company. Retrieved from: <https://www.mckinsey.com/featured-insights/employment-and-growth/the-power-of-parity-advancing-womens-equality-in-india>



CHAPTER V - THE CONUNDRUM OF GROWTH



Government Effectiveness

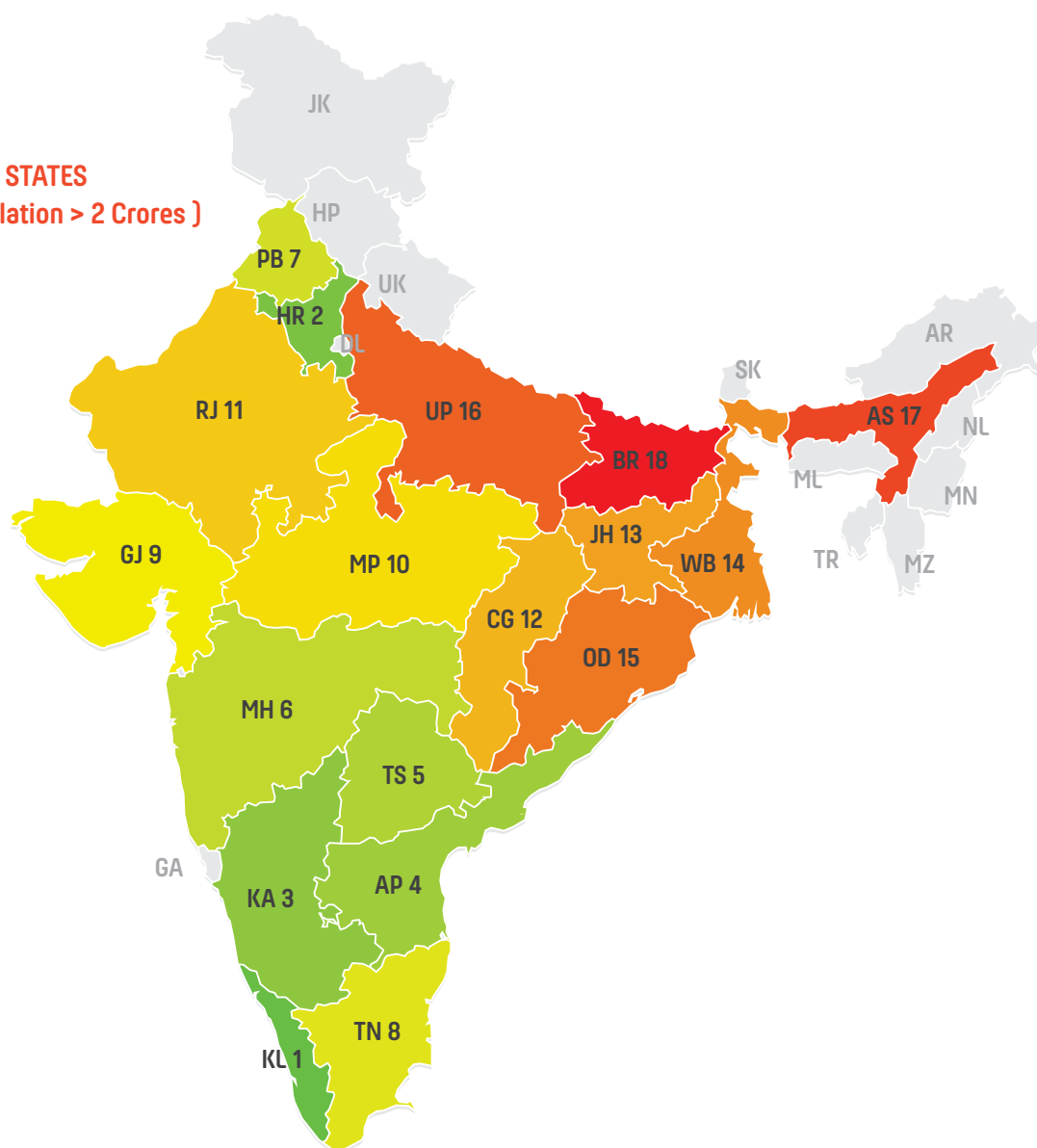


Regulatory Quality





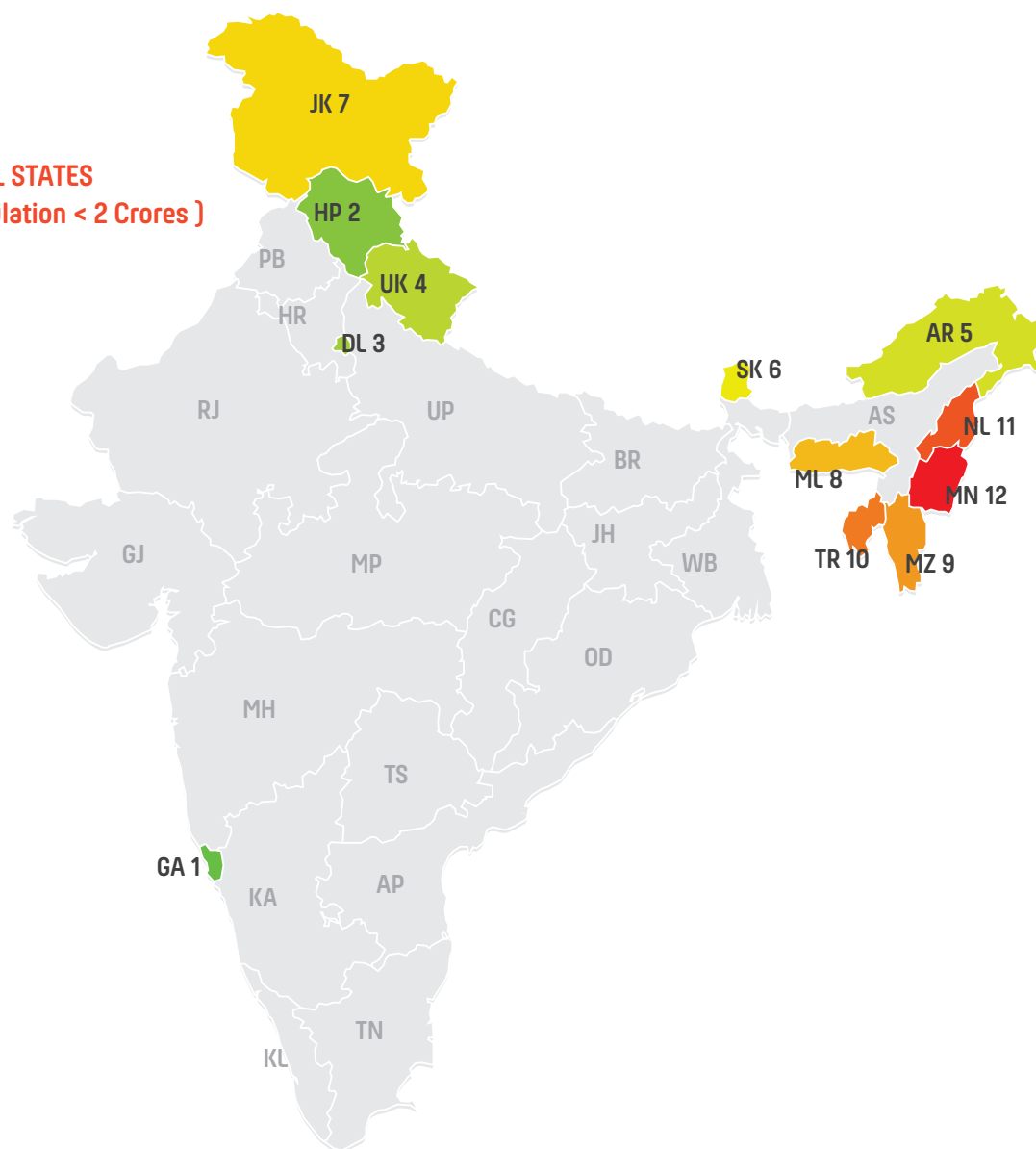
LARGE STATES
(Population > 2 Crores)



Rank	Large States	Index
1	KL Kerala	1.308
2	HR Haryana	1.11
3	KA Karnataka	0.979
4	AP Andhra Pradesh	0.94
5	TS Telangana	0.753
6	MH Maharashtra	0.753
7	PB Punjab	0.678
8	TN Tamil Nadu	0.65
9	GJ Gujarat	0.624
10	MP Madhya Pradesh	0.338
11	RJ Rajasthan	-0.01
12	CG Chhattisgarh	-0.149
13	JH Jharkhand	-0.424
14	WB West Bengal	-0.46
15	OD Odisha	-0.852
16	UP Uttar Pradesh	-1.165
17	AS Assam	-1.531
18	BR Bihar	-1.595

Highest Index value Lowest Index value

SMALL STATES (Population < 2 Crores)



Rank	Small States	Index
1	GA Goa	2.154
2	HP Himachal Pradesh	0.867
3	DL Delhi	0.341
4	UK Uttarakhand	0.289
5	AR Arunachal Pradesh	0.207
6	SK Sikkim	-0.024
7	JK Jammu and Kashmir	-0.197
8	ML Meghalaya	-0.46
9	MZ Mizoram	-0.596
10	TR Tripura	-0.684
11	NL Nagaland	-1.581
12	MN Manipur	-2.263

Highest Index value  Lowest Index value



“When a measure becomes a target, it ceases to be a good measure”.

- Goodhart's Law

KEY FINDINGS

- In the large states, the performance in growth contributes significantly towards the performance in the overall index. However, in the case of the small states, performance in growth does not influence the overall index
- Indicators such as the number of buses, population with access to electricity and banking facilities, measures taken to promote business ventures and state spending on agriculture are more likely to improve growth prospects of the states
- Over the period between 2011-12 and 2017-18, Tripura is the only state which has observed a decline in unemployment rates by 43.75%. In all other states, there has been an increase, but at varying proportions. What is striking is the high rate of growth of unemployment in the state of Gujarat.
- The provision of infrastructural capacities by the states show greater co-relationship with growth than with overall economic performance
- Bihar and Odisha, which fare poorly in the overall index, show remarkable progress in Net Enrolment Ratio (Upper Primary) with the decadal performance increasing by 186.46% and 143.092% respectively.



India's Growth Challenge

Growth rates do matter, especially in the long term, primarily because of the power of compounding. The caveat advisedly, is that higher per capita income does not in itself guarantee equitable development. Jobless growth does appear as a characteristic of high labour productivity in modern sectors. While the economist, Charles Goodhart's original formulation that 'any observed statistical regularity will tend to collapse once pressure is placed upon it for control purposes', was made in the context of monetary policy, it is as applicable in the macroeconomic context of measuring growth. When a feature of the economy, say economic growth, is picked as an indicator of the economy, it inexorably ceases to function as an indicator. This is because, those responsible try to anticipate the effect of a policy and then take actions that alter its outcome. In sum, they achieve their own goals to the detriment of the original goals envisaged.

The recent declaration of India as Open Defecation Free (ODF) serves as a case in point. The number of individual and community toilets constructed in record time is commendable by any standards and must be lauded. Arguably, it has also raised the need for and the importance of good sanitation practices in the national consciousness. An ODF India, however, is a nonlinear goal, a function of a complex set of social attitudes and economic conditions. Therefore, whether in fact, the goal of ODF has been achieved, is a different question altogether. The view from the ground provides a different picture, especially in states that remain well below the national average on development and in those

districts listed as aspirational, where much more sustained community engagement will be necessary.

Much the same set of circumstances circumscribes economic growth as a measure in India's quest for sustainable and equitable development. On human development parameters, if our objective is to 'Leave No One Behind', many states in India are best described as work in progress. This chapter presents the different dimensions of growth at the subnational level, based on the findings from the data from each state.

It is axiomatic that the effects of growth on poverty, employment and human development can be vastly different, determined by the objective conditions of the geography and its people. Simply put, it is a function of the degree to which the disadvantaged and the vulnerable populations participate in the growth process and share in its benefits. While the positive relationship between growth and poverty reduction is uncontested, less clear in India's recent development trajectory and context, is the effect of the distribution of income in this relationship. In particular, what remains unclear is whether and to what degree do the initial conditions of high inequality reduce the poverty reduction impact of growth and enhance the human development aspects of the quality of life.

India has seen ever-widening inequality despite rapid growth since the 1990s. What is empirically clear though, is that asset inequality - the stock of wealth - of land, capital and education, in particular, is crucial in the complex two-way

relationship between growth and equity. This determines the pace and the direction of human development outcomes in both its substantive and secular trajectories. The other caveat to bear in mind is the limits to growth. While there is cause to be positive about India's future growth prospects, to place growth as the primary driver in our endeavour towards sustainable development and an equitable society is overoptimistic and misplaced. In an illuminating study titled 'Asiaphoria Meets Regression to the Mean', Lant Pritchett and Lawrence Summers (2013)¹ examined growth from 1950 in all countries for which data was available. Their findings point to the fact that 'rapid growth is rarely persistent, even though economic forecasts invariably extrapolate recent growth. Indeed, regression to the mean is the empirically most salient feature of economic growth, and India may grow much less rapidly than is currently anticipated'.

The View from the Top

In the past two decades, India has achieved impressive economic growth. From a GDP of \$480 billion at the turn of the century to a nearly \$3 trillion economy currently, India is the third largest economy in the world on the basis of Purchasing Power Parity. Along the way, an unprecedented number of people have been pulled out of absolute poverty. According to World Bank estimates, 44 Indians are currently escaping extreme poverty every minute. India has also seen an improvement in other human development indicators, with literacy rates increasing from about 65% in 2001 to nearly 80% in 2011. India's

¹ Pritchett, Lant & Summers, Lawrence H. (2013). *Asiaphoria meet regression to the mean*, *Proceedings, Federal Reserve Bank of San Francisco*, issue Nov, pages 1-35



long-term growth prospects remain high and with the introduction of the Goods and Services Tax, India as a common market is set to make substantial efficiency and productivity gains. Yet, chronic agrarian distress, widespread malnutrition, poor school education outcomes and growing inequality are indicators that the foundations of progress remain fragile. India remains a work in progress, her success limited, and her performance well below the capabilities of her people. The UNDP Human Development Report 2018² ranks India 130 out of 189 countries surveyed. On the Global Hunger Index 2018³, India ranks 103 out of 119 countries.

Three important facts that emerge, deserve attention:

- Poverty, hunger and inequality are disturbingly persistent for certain populations in certain geographies
- It is imperative to recognise and understand the patterns of exclusion in India's development strategy to reach out to those being left behind
- The coalescence of deep rooted patriarchy and gender inequality result in women bearing a disproportionate burden of its adverse impact. There is a need to understand better the gender

dimensions of development, if our ability to overcome poverty and inequality is not to be constrained.

The Balance between the State and the Market

The greater part of the responsibility to achieve the targeted SDG agenda vests in the states of India. This will be predicated significantly on the conditions that the states create for the efficient production and distribution of goods and services. Under the circumstances, it will be necessary for the state governments to contemplate a much wider range of outcomes than are typically considered in development strategies. Additionally, states must also arrive at the right balance between what the state must do and what might be better left to the market. The state must limit to providing 'pure public goods', such as provisioning for social protection, enforcing the rule of law, or maintaining law and order. All these are necessary conditions for sustaining growth but the market cannot provide at all. There are other important public goods and public services – education, health, transport, communications and other physical infrastructure - that impact not just growth but the welfare of a large number of citizens. In much of rural India, these public goods and services are under-provided by the market and hence are produced and delivered by the states. This is non sequitur. A good example would be to recognise that even if 'food security' is thought of as a public good and hence the costs be borne by the state, enabling the poor to buy food from the market at economic prices, might be a preferred option than to operate a humungous public distribution system that results severe market distortions and leakages creating conditions that

run counter to sustainable and inclusive growth.

Another important responsibility of the state, from the perspective of equity and sustainability, is the prudent and economic regulation of common property resources. This includes regulating ground water exploitation, maintaining common grazing grounds and protecting surface water bodies that only the state governments can prevent from turning into the 'tragedy of the commons'.

Finally, states also need to deal with the double jeopardy of the economy-wide employment problem. All states need to find ways to address the dichotomy between low productivity employment in the enormous unorganised sector and the underemployment problem, better described as the low demand for labour, in the predictably miniscule organised sector. Expanding labour intensive production of goods and services is the crux of the growth problem and will substantially determine whether India will reap a demographic dividend or will need to cope with a demographic disaster. In essence, the states in India need to create conditions in which structural transformation can take place. How the states have performed on some of these aspects of governance is what PAI 2019 explores.

The States and the Indicators of Growth

With a current estimated GDP growth of 5.2%, the economy will need more than a 'business as usual' scenario, to reach the aspirational target of becoming a \$5 trillion economy over the next 5 years. Much will depend on the extent and pace of the structural transformation in the economy in

2 United Nations Development Programme. (2018). *Human Development Indices and Indicators, 2018 Statistical Update*. Retrieved from: http://hdr.undp.org/sites/default/files/2018_human_development_statistical_update.pdf

3 Concern Worldwide & Welthungerhilfe. (2018). *Global Hunger Index 2018*. Retrieved from: <https://www.globalhungerindex.org/about/>

the ensuing years. The transformation, thus far, has been at less than optimal pace, evident from the slow change in the composition of the GDP. Between 2012-13 and 2018-19, the share of agriculture in the GDP declined from 17.83% to 14.37% while the share of the service sector rose from 59.45% to 62.49% (RBI, 2019). This need for catalysing the structural shift calls for action as much from the states as the Centre, and will require a wide range of actions.

While growth is often discussed from the perspective of the economic progress of a country, it is most certainly not limited to just that. Measuring growth merely from the perspective of economic indicators paints a misleading picture about the performance of the states. While economic growth is important, other parameters such as capacity building and spending on education, healthcare and infrastructure along with initiatives to boost industry too, are measures of growth. With this in mind, the pillar of growth considers two themes, namely Government Effectiveness and Regulatory Quality to measure the performance of states. Government Effectiveness considers the initiatives taken by the states towards providing access to resources for improved growth outcomes. Regulatory Quality encompasses the policies and measures undertaken by the states towards the promotion of quality growth.

The 21 indicators chosen under the pillar of Growth in PAI 2019 reflect this definition of growth. The indicators cover the range of areas that drive growth including educational outcomes, human resources in healthcare,

budgetary spending on agriculture and infrastructure, access to essential services and economic performance.

Findings

1. Overall Rankings

At the overall pillar level, the performance of the states on the aspects of growth provide an insightful picture. Amongst the large states, Kerala tops the rankings with a score of 1.308 indicating a performance above the average. This is closely followed by Haryana with a score of 1.11. The other top performing states include Karnataka (0.979), Andhra Pradesh (0.940) and Telangana (0.753). Interestingly, 4 out of the top 5 states belong to Southern India with Tamil Nadu being the only South Indian state not in the top 5. While Tamil Nadu ranks second in the overall PAI 2019 Index, its performance in the pillar of Growth has a score of 0.650. At the bottom of the rankings are the states of West Bengal (-0.460), Odisha (-0.852), Uttar Pradesh (-1.165), Assam (-1.531) and Bihar (-1.595) whose performance is well below the average. These states incidentally also feature at the bottom of the overall PAI 2019 index.

In the small states category, Goa leads the way with a score of 2.154, significantly higher than the average. The state outperforms even the top performers in the large states category by a huge margin. Following Goa, is Himachal Pradesh with a score of 0.867. The other top performers in this pillar are Delhi (0.341), Uttarakhand (0.289) and Arunachal Pradesh (0.207). However, apart from

Goa and Himachal Pradesh, the remaining small states all fare poorly in this pillar with the third ranking state of Delhi having a score of 0.341. Interestingly, the North-Eastern states such as Meghalaya (-0.460), Mizoram (-0.596), Tripura (-0.684), Nagaland (-1.581) and Manipur (-2.263) constitute the laggards in this category with scores significantly below the average.

2. Correlation Analysis

A correlation analysis between the growth index and the PAI 2019 index resulted in a correlation coefficient of 0.489. This indicates a positive correlation meaning that a better performance in the pillar of growth would influence the performance in the overall index and vice versa.

Figure 1 is the scatter plot of the correlation between the growth index and the PAI 2019 index. The x-axis measures the growth index while the y-axis captures the PAI 2019 index. The scatter plot indicates that in the case of some states like Goa, Kerala, Andhra Pradesh and Tamil Nadu (top right quadrant), better growth influences the performance in the overall index while in the case of states like Uttar Pradesh, Odisha, Assam and Bihar (bottom left quadrant), a poor performance in growth affects the performance in the index.

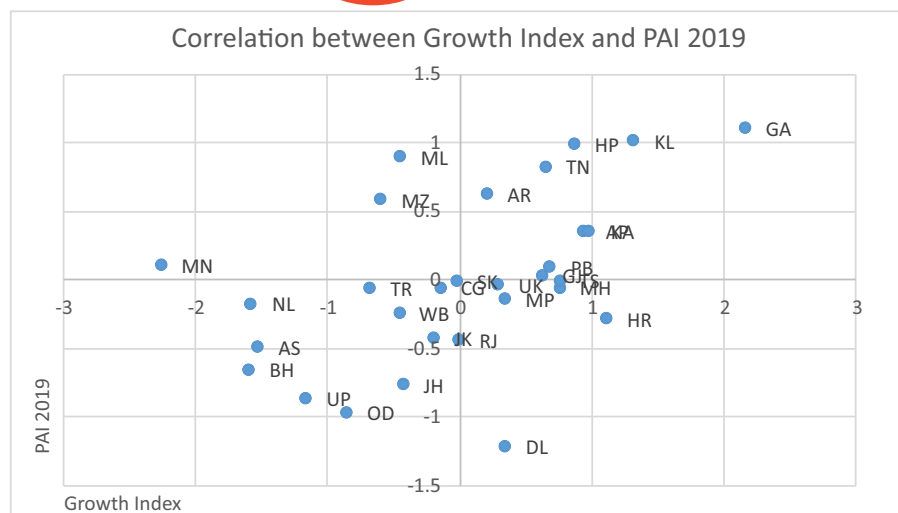


Figure 1 : Scatter Plot of Growth Index and PAI 2019

However, this correlation is different in the case of large and small states. In the case of large states, the correlation coefficient is 0.77 indicating a strong positive correlation (Refer Figure 2). This means that in the case of the large states, the score in the growth index significantly influences the overall index and vice versa.

In the case of the small states, there exists a weak correlation (0.32) between the growth index and the PAI index, indicating that in the case of these states, the performance in the growth index does not impact the performance in the overall index. This is evident from the scatter plot (refer Figure 3) which shows that Delhi (bottom right quadrant), which ranks third in the growth index ranks last in the overall PAI 2019 index. Similarly, Manipur (top left quadrant), which ranks sixth in the overall index fares last in terms of the growth index.

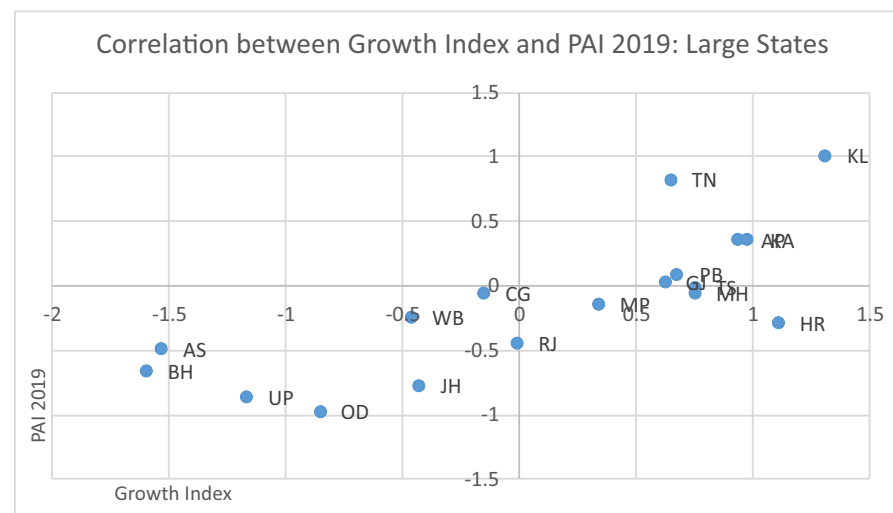


Figure 2 : Scatter Plot of Growth Index and PAI 2019 (Large States)

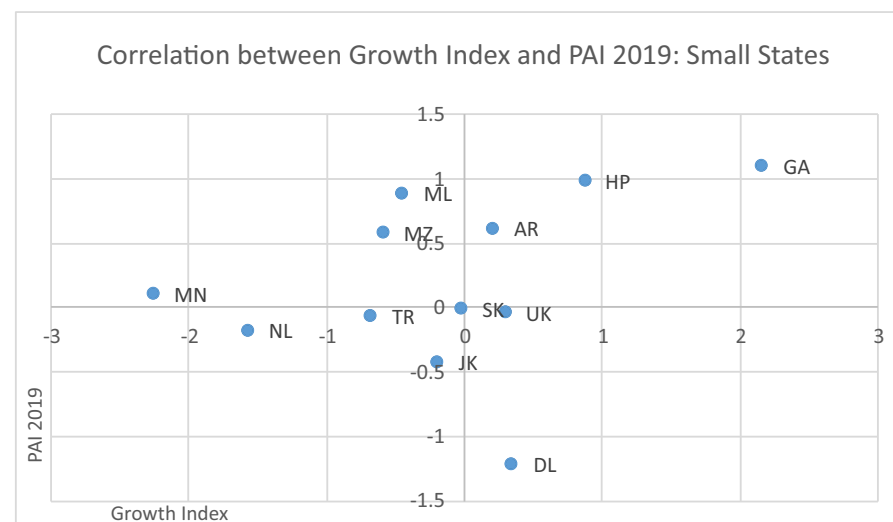


Figure 3 : Scatter Plot of Growth Index and PAI 2019 (Small States)

3. Regression Analysis⁴

While the correlation analysis provides insights into the direction of the performance of the pillar compared to the overall index, the contribution of each indicator towards the performance of growth can be understood only through a regression analysis. The regression analysis considers the growth index as the dependent variable and the 21 growth indicators as the independent variables. The analysis enables pinpointing of those indicators which have a greater influence on the performance of growth in the states. The regression coefficients of each indicator indicate the magnitude of increase/decrease of growth due to a unit increase/decrease of the particular indicator.

A glance at the regression coefficients indicate that the provision of infrastructure capacities by the states make a greater contribution to growth rather than fiscal performance. Indicators such as the number of buses, population with access to electricity and banking facilities, measures taken to promote business ventures and state spending on agriculture are more likely to improve growth prospects of the states. This is followed by indicators of fiscal performance such as own tax collection, the tax GDP ratio and the growth rate of the GSDP. **The results of the regression analysis clearly indicate that states must shift their focus towards building capacities for the population rather than focussing solely on fiscal metrics of performance.**

Table 1 : Regression results of Growth Index

Growth Indicators	Coefficients
Proportion of total Government expenditure on Agriculture and Allied Services	0.217
Health worker density	0.115
ASER Index	0.017
Net Enrolment Ratio at Elementary (1-8)	0.073
Percentage of elementary and secondary schools with Pupil Teacher Ratio less than/equal to 30	0.036
Proportion of schools with access to (a) electricity; (b) computers for pedagogical purposes; (c) access to CWSN friendly toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic handwashing facilities (as per the WASH indicator definitions)	0.017
Percentage of school teachers professionally qualified	0.024
Proportion of population using safely managed drinking water services	0.138
Proportion of population using safely managed sanitation services	0.138
Proportion of population with access to electricity	0.264
Tax GDP Ratio	0.188
Fiscal Surplus/Deficit	0.003
States Own Tax Revenue Growth	0.193
Annual growth rate of real GSDP per capita	0.166
Unemployment Rate	0.136
Implementation of Business Reform Action Plan (BRAP)	0.224
Number of commercial bank branches per 100,000 adults	0.152
Proportion of households with an account at a bank	0.228
Manufacturing value added as a proportion of GDP and per capita	0.127
Proportion of total government expenditure on infrastructure	0.104
Number of Buses per 10 lakh population	0.322

⁴ All coefficients are significant with p-value less than 2e-16.



4. Delta Analysis⁵

Merely assessing the performance of the states based on current data tends to leave out those states whose performance has improved/declined considerably over time. Measuring this change over a period of time helps to identify those states which may still be laggards but whose catch-up effect has been significant. This not only provides a balanced picture of the performance in areas of growth but also helps to provide states with more nuanced details for intervention. To this end, PAI 2019 has considered three indicators from the perspective of growth to measure the performance of the states over the defined time period.

4a. Unemployment Rate

A look at the trends in the unemployment rate points to a rather interesting fact. Over the period between 2011-12 and 2017-18, Tripura is the only state which has observed a decline by 43.75%. In all other states, there has been an increase in the unemployment rate but at varying proportions. Incidentally, of the states that have seen the largest growth in unemployment rate, Himachal Pradesh (from 1.3% to 6.2%) is the only small state while all other states belong to the large state category. These include Rajasthan (from 1.2% to 5.4%), Madhya Pradesh (from 1% to 4.6%), Uttar Pradesh (from 1.5% to 6.9%) and Gujarat (from 0.5% to 5.1%).

⁵ The Delta Analysis does not include the states of Andhra Pradesh and Telangana due to the bifurcation of the state of Andhra Pradesh post 2014

Trend in Unemployment Rate (%)

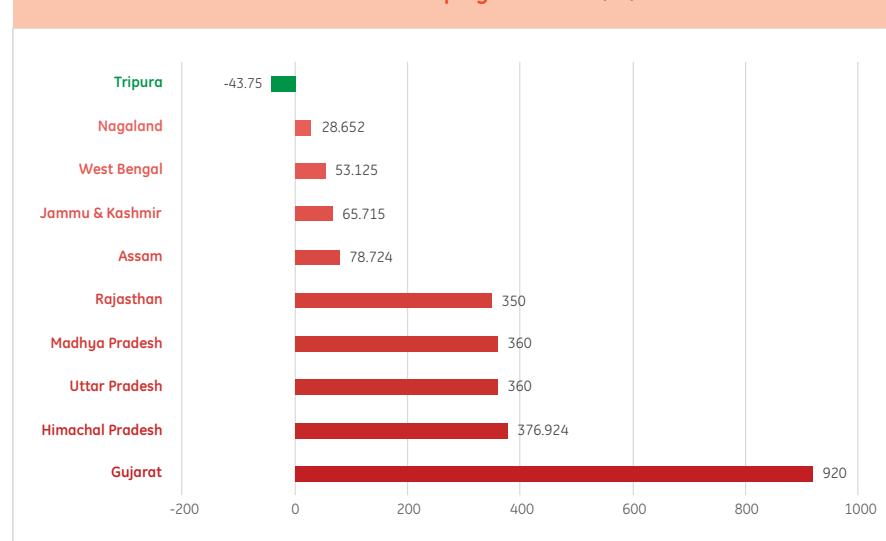


Figure 4 : Trend- Unemployment Rate (%)
Source: National Sample Survey Office (2011-12 and 2017-18)

A Case of Jobless Growth in India

A quick glance at the trends of both unemployment rate and NSDP per capita hint at the possibility of jobless growth. Jobless growth refers to the simultaneous increase in both NSDP as well as unemployment rates. This is observed in states like Gujarat, Madhya Pradesh and Himachal Pradesh which have the highest growth in unemployment rates while simultaneously showing an increase in NSDP per capita.

4b. NSDP Per Capita

Over the period between 2011-12 and 2016-17, all states have seen an increase in the NSDP per capita with the exception of Meghalaya which has seen a decline of -1.978%. The growth in NSDP per capita is highest in Mizoram at 76.705% followed by Gujarat at 50.722% with all other states ranging between 37.603% and 16.874%.

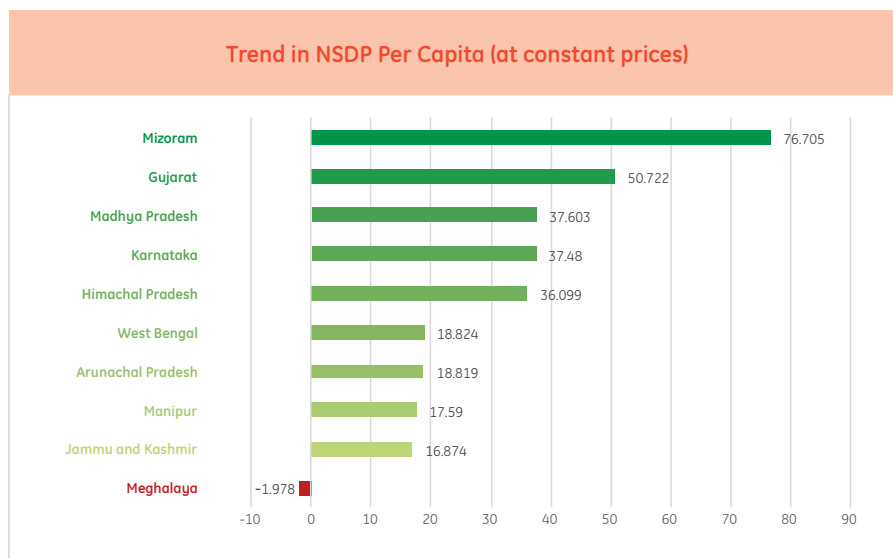


Figure 5 : Trend- NSDP Per Capita (at constant prices)
Source: Reserve Bank of India (2011-12 and 2016-17)

4c. Net Enrolment Ratio (Upper Primary)

While states like Bihar and Odisha fare poorly in the PAI 2019 index, a look at the delta in Net Enrolment Ratio show the improvement in their performance over the period of time. While the NER for Upper Primary in Bihar increased from 32.66% in 2006-07 to 93.56% in 2016-17, Odisha too shows a steep growth from 31.05% in 2006-07 to 75.48% in 2016-17. Meghalaya too has recorded a great increase of 111.97%. Among the bottom performers are the states of Nagaland, Tamil Nadu and Jammu and Kashmir which have each seen a decline in NER (Upper Primary) over the decade.

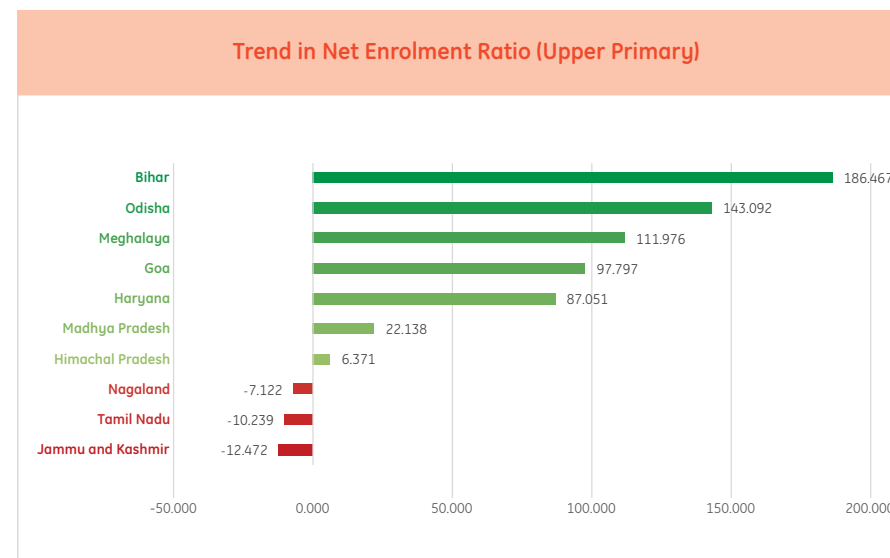


Figure 6 : Trend- Net Enrolment Ratio (Upper Primary)
Source: DISE Flash Statistics (2006-07 and 2016-17)



CHAPTER VI – THE ELUSIVE QUEST FOR SUSTAINABILITY



Government Effectiveness



Renewable energy share in the total final energy consumption

Forest area as a proportion of total land area

Proportion of land that is degraded over total land area



Regulatory Quality

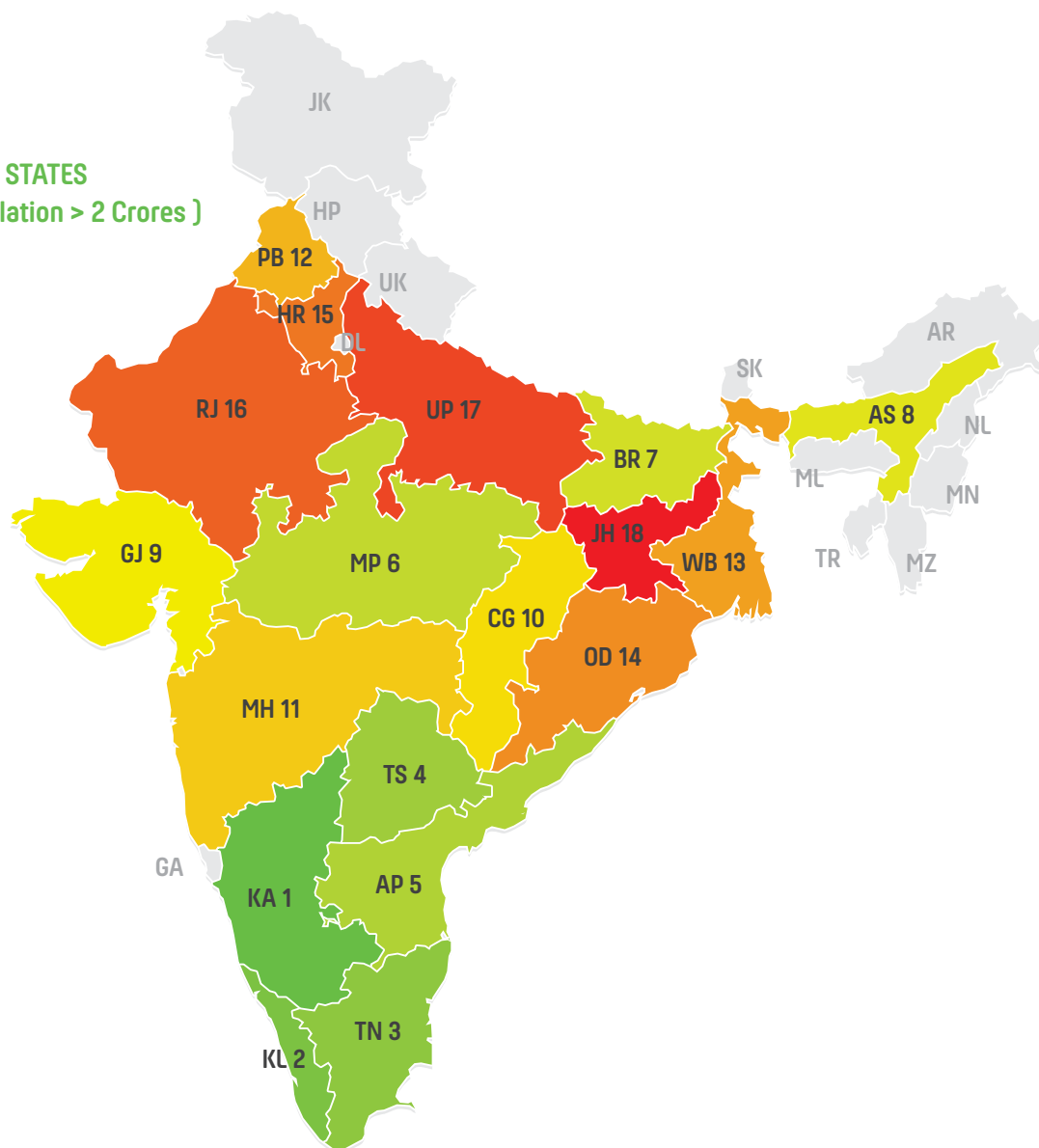


Solid waste generation and waste processing in the urban areas

Annual mean levels of fine particulate matter (PM10) in cities (population weighted)



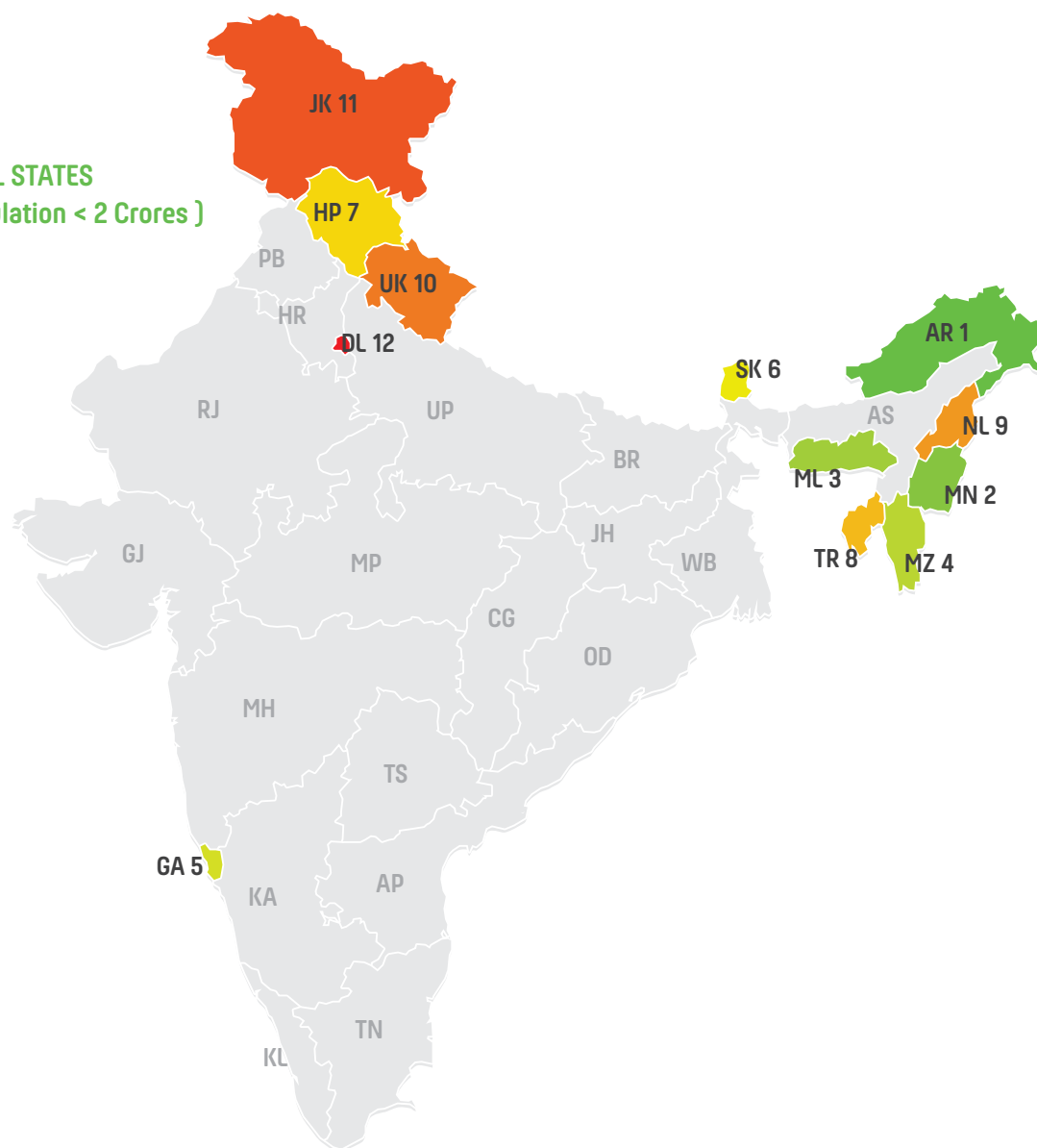
LARGE STATES
(Population > 2 Crores)



Rank	Large States	Index
1	KA Karnataka	1.45
2	KL Kerala	1.367
3	TN Tamil Nadu	1.036
4	TS Telangana	0.956
5	AP Andhra Pradesh	0.471
6	MP Madhya Pradesh	0.319
7	BR Bihar	0.113
8	AS Assam	-0.084
9	GJ Gujarat	-0.285
10	CG Chhattisgarh	-0.543
11	MH Maharashtra	-0.552
12	PB Punjab	-0.629
13	WB West Bengal	-0.655
14	OD Odisha	-0.837
15	HR Haryana	-0.844
16	RJ Rajasthan	-0.878
17	UP Uttar Pradesh	-1.04
18	JH Jharkhand	-1.821

Highest Index value Lowest Index value

SMALL STATES
(Population < 2 Crores)



Rank	Small States	Index
1	AR Arunachal Pradesh	1.904
2	MN Manipur	1.362
3	ML Meghalaya	1.343
4	MZ Mizoram	1.252
5	GA Goa	0.376
6	SK Sikkim	0.217
7	HP Himachal Pradesh	0.199
8	TR Tripura	-0.28
9	NL Nagaland	-0.313
10	UK Uttarakhand	-0.369
11	JK Jammu and Kashmir	-1.539
12	DL Delhi	-1.696

Highest Index value  Lowest Index value



“We are suffering just now from a bad attack of economic pessimism. It is common to hear people say that the epoch of enormous economic progress which characterised the nineteenth century is over; that the rapid improvement in the standard of life is now going to slow down... that a decline in prosperity is more likely than an improvement in the decade which lies ahead of us”

-John Maynard Keynes¹

¹ Keynes, J.M. (1930). *Economic Possibilities for our Grandchildren*, Essays in Persuasion, 358-73

KEY FINDINGS

- All the top five performing states of the sustainability pillar belong to Southern India. The rankings of the top five states under sustainability closely matches with the overall PAI 2019 index
- Among the small states, four of the top five performing states belong to the North-East of India
- The parameters on sustainability significantly influence the overall performance of the states
- While the use of renewable energy has increased in most states, seven states have witnessed a decline. What is more interesting is that five of the seven states are the North-Eastern states of Nagaland, Manipur, Meghalaya, Tripura and Sikkim
- West Bengal shows the highest increase in forest cover from 14.64% in 2007 to 18.89% in 2017.



The Spectre of the Anthropocene

As we ponder the world we now live in, the serious questions that emerge on the sustainability of the current patterns of development, the extent of natural resource exploitation, and the enormity of ecological degradation, the reflections of Keynes at the time of the Great Depression, serve as a warning but in an entirely different context, of climate change and its far reaching and irreversible consequences; and for a different time, with a dark cloud looming over life and progress as we have known them. If anything, the same sense of foreboding speaks to us with a nuance, yet with a greater sense of urgency. Human progress, especially in the last hundred years, has been characterised by what might be described as the Malthusian-Darwinian dynamic. Two inexorable forces interacting: the Malthusian dynamic of the exponential growth of human population, till the limits to the resources available are reached; and the Darwinian dynamic of innovation and adaptation, to overcome resource constraints. The fragile balance between these two forces in the post-industrial world provides the context for what is widely acknowledged to be the most important choice that humankind needs to make - of establishing a sustainable relationship with finite Earth. At the turn of the century, the Nobel Laureate Paul Crutzen with remarkable prescience described the Holocene as the 'Anthropocene', to signify the stress that humankind had exerted on the earth. It appeared clear that the Anthropocene - the new age of man - had wrought changes that had resulted in the mass extinction of several species of flora and fauna; polluted the oceans, seas, rivers, and lakes; over-exploited groundwater and other geological resources; and caused degradation of forests,

mountains, and natural resources. In short, humankind was destined to hurtle down the slippery slope.

From India's perspective and keeping sustainable development in the line of sight as an imperative, what does the future look like in this new geological age? To begin with, climate change appears to be a clear and present danger, bringing with it the spectre of all-round development decline, unless concerted climate action is initiated. The burden of this responsibility will fall on the state governments - with local action for mitigation and adaptation being the focus. What must concern the executive in the states is the pattern of the changes in 'average weather' manifesting in the growing intensity, recurrence, frequency and spread of extreme climate events, whether floods or droughts. Climate change is characterised by changes in the average weather including rising temperatures, changing precipitation patterns and rising sea levels. Evidence from different studies points to the average annual temperatures increasing, significantly but unevenly, across India. Between the period from 1950 to 2010, peninsular India experienced increase in temperature between 1 to 1.5 degrees Celsius. Changes in the precipitation patterns are more difficult to measure, but again, empirical data suggests that the temporal and spatial distribution of rainfall is changing in ways that are unprecedented, resulting in rapid onset climate events – floods, storms and droughts. The primary driver of climate change is Green House Gas emissions – a significant part of which is from human activities. It is clear that India is vulnerable to climate change and unless informed, directed and concerted action is taken by the governance

triumvirate – the state, the market and the community – there will be significant decline in living standards, the brunt of which will be borne by the poor.

Global climate models are the only tools to approximate the anticipated changes – the Climate Model Inter-comparison Project (CMIP) includes 18 of these models. A recent World Bank Study draws on this data and points to startling projections that have serious long term implications for South Asia in general and India in particular. The average prediction by these climate models is that the average temperature in South Asia will increase further, between 1.6 to 2.2 degrees Celsius; and that the average monsoon precipitation will increase between 3.9 to 6.4 percent, depending on whether we traverse a climate sensitive or a carbon intensive development path. Worse still, several 'climate hotspots' including large metropolises like Calcutta, Mumbai and Chennai are emerging in India. There is urgent need for governments to go beyond the narrow confines of natural disaster management to better understand the long term effects of changes in temperature and precipitation; how these changes will vary from region to region and manifest in differing extreme climate events; and how the local impact of a global process will significantly challenge the human development prospects and livelihoods of communities.

The Importance of an Institutional Response

Enabling evidence based and community led climate sensitive adaptation and mitigation strategies in a diverse, decentralised model to



inform development planning will be the key to building climate change resilience. Policy attention has focused on developing early warning systems; disaster-resilient infrastructure; and emergency response, and commendably so, to reduce the economic shocks from extreme weather events. Little effort has been made, though, to understand the multi-faceted effects of such events on livelihoods, health, and climate change induced migration. Even less understood are the long term implications of these changes on poor households and vulnerable communities. Going forward, devising appropriate adaptation and mitigation strategies at geography-specific and household levels to reduce the adverse economic impact of extreme climate events will require a portfolio of actions. The emphasis will have to be on developing action plans especially for the climate change hotspots in India and investing local institutions and communities with climate change action capacities and the agency to act. However, it must be recognised that climate action comes with considerable costs and hence must be based on data and evidence informing policy. For sustained and sustainable action, understanding the etiology of changes in average weather will be a necessary condition. Considerable primary research will be necessary to answer some important questions: what changes in average temperature and precipitation can be anticipated in the vulnerable regions? How will these changes impact the livelihood, health, and education prospects of the vulnerable communities? What interventions might help build community agency to adapt to climate change impact and build climate resilience over the long term?

The states have an important role to play in building institutional capacities and in empowering communities for action, as do civil society organisations. In doing this, the focus must be on rural households dependent on agriculture from the perspective of drought. It is clear that the households dependent on the agriculture for their livelihood will be the most affected by climate change. The hotspots that constitute large urban agglomerations, especially along the coast, will be exceptionally prone to floods, storms and tsunamis. These will need special attention. There also needs to be an economy wide policy to mainstream gender in climate action plans, for it is always the women that bear the brunt of the development deficit. Reviewing and revising the state climate action plans, such that they become an actionable strategy instead of remaining mere statements of intent, and striving towards the convergence of the participation of the government, the private sector, and the community in the implementation is a necessary first step. India must also demonstrate its commitment to the Paris Agreement and implement an outcome based, time sensitive and multi-stakeholder road map to achieve the Intended Nationally Determined Contribution. States have a central role to play in achieving the targets fixed for the environment related Sustainable Development Goals (SDGs): urgent priority must be given to SDG 6 - Clean Water and Sanitation, SDG 7 - Affordable and Clean Energy, SDG 12 - Responsible Consumption and Production, SDG 13 - Climate Action. States in India need to build a resource efficient path for progress, focussing on water efficiency, land-use efficiency, and energy

efficiency. Achieving this resource efficient effort will require better planned and more efficient urbanisation. The impending crisis of sustainability is occurring at the intersection of climate change, migration and urbanisation. Addressing this crisis will require the application of a resource-efficiency development model to enhance the efficiency in the use of water, soil, and energy in particular. Another important factor for sustainability will be to achieve better planned, orderly and efficient urbanisation.

To what degree are the states responding to this challenge is what PAI 2019 tried to assess.

How the States have Performed

Sustainability is defined as the requirement of our generation to manage the resource base such that the average quality of life that we ensure ourselves can be potentially shared to all future generations². In the Indian context, sustainability can be understood from the perspective of access and usage of resources that has an impact on the present and future generations. Sustainability refers to the frugality in the use of resources keeping in mind the environmental impact as well.

Out of the 17 SDGs, three of the goals, i.e. SDG 13 (Climate Action), SDG 14 (Life below Water) and SDG 15 (Life on Land) exclusively focus on the aspects of sustainability. This reinforces the fact

2 Asheim, G. (1994). *Sustainability: Ethical Foundations and Economic Properties*. World Bank Working Paper Series. Available at: <http://documents.worldbank.org/curated/en/605011468739497097/pdf/multi0page.pdf>

that sustainability is a global concern and India, being one of the member countries must take initiatives to protect the planet. PAI 2019, thus, considers sustainability as one of the fundamental pillars to measure Governance. The 2018 Kerala floods that took a toll over the lives of people, cyclone Fani that battered Odisha in 2019, the recent droughts in few parts of Maharashtra and the flooding in Assam are all signs of extreme climate situations that have a catastrophic impact on the environment, economy and humankind. PAI 2019 has defined sustainability from two perspectives – Government Effectiveness and Regulatory Quality. Sustainability has been measured as the effectiveness of the government in undertaking measures that encourages the use of non-conventional sources of energy, conservation of forest and prevention of land from desertification. On the other hand, the policies implemented by the state government for waste management and combating pollution have been included. This pillar of sustainability is an amalgamation of five diverse indicators that measure the initiatives taken by the states to use renewable sources of energy in the form of solar, wind, hydro and thermal, increase forest cover, process solid waste in the urban areas and reduce air pollution (PM10) in the cities. Two vital questions emerge at the sub-national levels of governance: How can the states better prepare to manage climate change induced extreme climate events? How can states develop effective institutional responses to enable adaptation and mitigation strategies to manage climate change impact? Answers to these questions must go beyond climate change rhetoric or proving facts, to implementing change. The degree to which states have been able to do this is reflected in the overall rankings.

Findings

1. Overall Rankings

Karnataka tops the rankings under this pillar with an index score of 1.45, followed by Kerala (1.367), Tamil Nadu (1.036), Telangana (0.956) and Andhra Pradesh (0.471). All the top five performing states of this pillar belong to Southern India. The rankings of the top five states under sustainability closely match the overall PAI 2019 index. For instance, the states that are at the top four in the PAI 2019 index are Kerala, Tamil Nadu, Andhra Pradesh and Karnataka.

At the bottom lie the states of Odisha (-0.837), Haryana (-0.844), Rajasthan (-

0.878), Uttar Pradesh (-1.04) and Jharkhand (-1.821). Interestingly, three of these five states (Jharkhand, Uttar Pradesh and Odisha) feature at the bottom of PAI 2019.

In case of small states, Arunachal Pradesh ranks first with a score of 1.904, followed by Manipur (1.362), Meghalaya (1.343), Mizoram (1.252) and Goa (0.376). It is interesting to note that four out of the five states belong to the North-East of India.

Similarly, at the bottom lie the states of Tripura (-0.28), Nagaland (-0.313), Uttarakhand (-0.369), Jammu and Kashmir (-1.539) and Delhi (-1.696). It is to be noted that Delhi, which fares poorly in this pillar, performs poorly in equity as well as in the overall PAI 2019 index.

2. Correlation Analysis

A correlation analysis between the sustainability index and the PAI 2019 index resulted in a correlation coefficient of 0.761. This indicates a strong positive correlation meaning that a better performance in the pillar of sustainability influences the performance in the overall index.

Figure 1 is the scatter plot of the correlation between the sustainability index

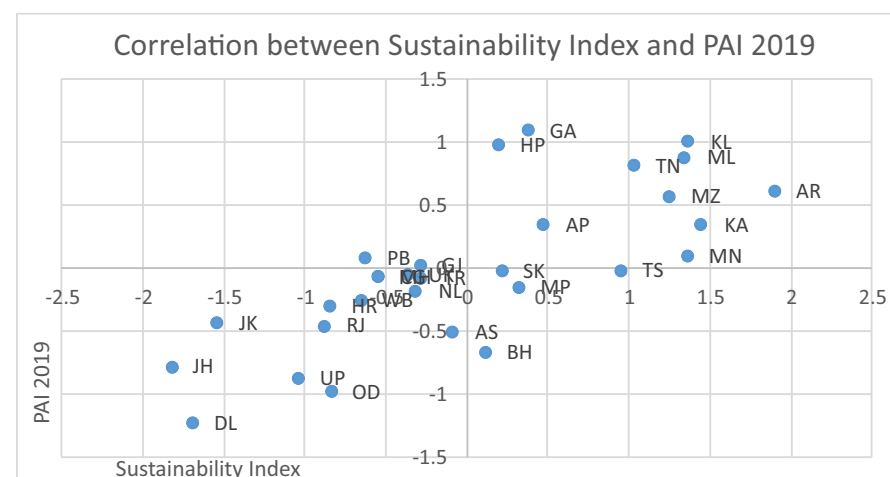


Figure 1 : Correlation between Sustainability Index and PAI 2019

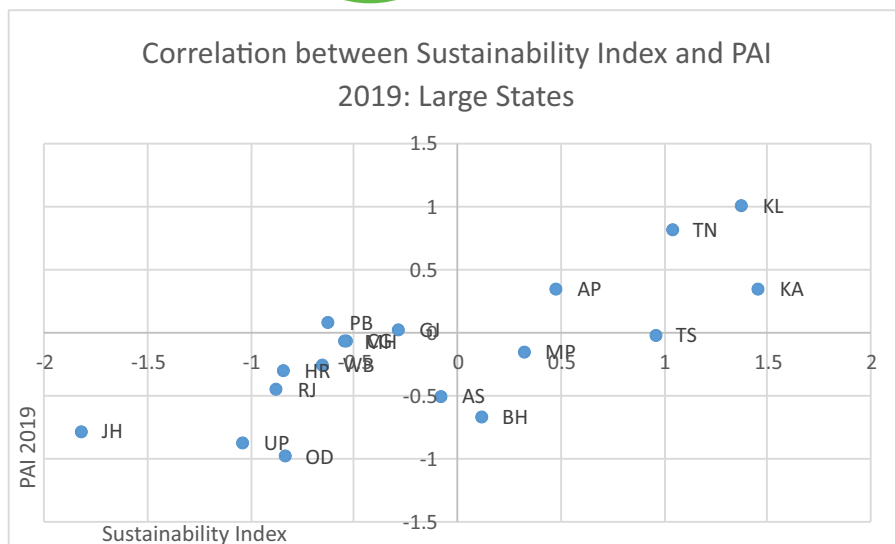


Figure 2 : Correlation between Sustainability Index and PAI 2019 (Large States)

and the PAI 2019 index. The x-axis measures the sustainability index while the y-axis captures the PAI 2019 index. The scatter plot indicates that in the case of states like Goa, Kerala, Andhra Pradesh, Mizoram, Manipur, Karnataka and Tamil Nadu (top right quadrant), both the sustainability index and the overall index are at a higher level, while in the case of states like Uttar Pradesh, Odisha, Jharkhand and Delhi (bottom left quadrant), both sustainability and the overall performance is poor.

This positive relationship between sustainability and the overall performance in governance is also reflected when large and small states are considered separately. In the case of large states, the correlation coefficient is 0.767 indicating a strong positive correlation (Refer Figure 2). This means that in the case of the large states, a good score in the sustainability index influences the overall index and vice versa.

In the small states too, there exists strong correlation between sustainability and the overall index, though the coefficient is lesser than the large states at 0.74. This indicates that among small states, the performance in the indicators

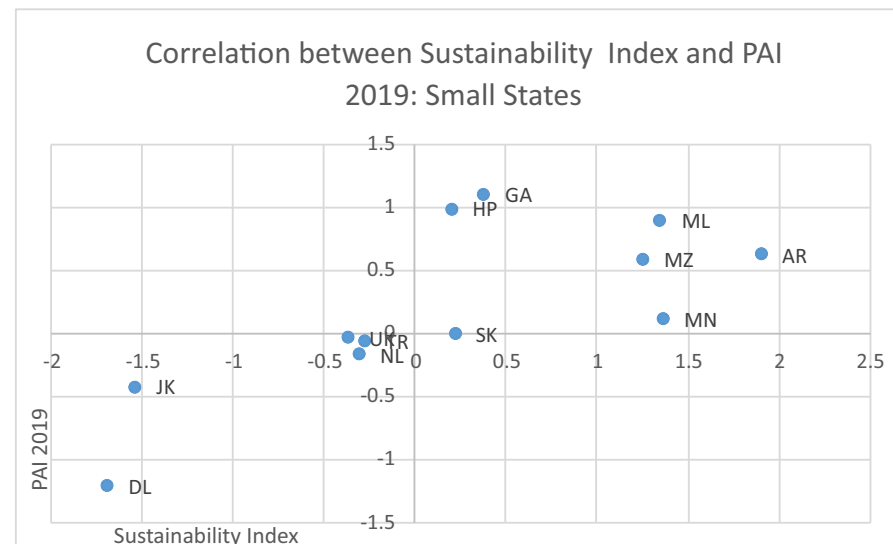


Figure 3 : Correlation between Sustainability Index and PAI 2019 (Small States)

of sustainability have a significant impact on their overall scores. This is evident from the case of Delhi (bottom left quadrant) which performs poorly both in the sustainability index and in the overall rankings.

3. Regression Analysis³

A regression analysis was carried out between the sustainability index (dependent variable) and all the five indicators of sustainability (independent variable). This analysis helped in understanding the magnitude to which each of the indicators affects the performance of the states from the perspective of sustainability

It is interesting to note that each of the coefficients of the indicators under sustainability is high. This indicates that a unit improvement in each of the indicators will have a significant impact on the sustainability index. Thus, PAI 2019 recommends that the state government should focus on each of the parameters to ensure sustainability in the state.

³ All coefficients are significant with p -value less than $2e-16$.

Table 1: Regression results of Sustainability Index

Sustainability Indicators	Coefficients
Renewable energy share in the total final energy consumption	0.435
Forest area as a proportion of total land area	0.300
Proportion of land that is degraded over total land area	0.300
Solid waste generation and waste processing in the urban areas	0.419
Annual mean levels of fine particulate matter (PM10) in cities (population weighted)	0.419

4. Delta Analysis⁴

Sustainability has become an extremely important consideration, particularly in the recent years, with organisations around the world stressing its importance. Keeping in mind this current discourse, it becomes important to analyse the results of the initiatives of state governments in ensuring sustainable development.

To measure the effect of the states' actions, PAI 2019 considers two indicators, namely the share of renewable energy in the total energy consumption and the change in forest cover area in the state.

a. Renewable energy share in total final energy consumption⁵

With fossil fuels being an inelastic resource having adverse impact on the environment, the shift towards renewable sources of energy has been widely advocated. Renewable sources of energy include energy derived from elastic sources such as solar, wind, hydro and thermal energy among others. Due to the heavy investment involved in power generation through renewable sources, states have a greater role in ensuring this switch to renewable energy.

An analysis of the data on the share of renewable energy consumption between 2009 and 2018 indicates that while consumption of renewable energy has

increased in most states, seven states have witnessed a decline. What is more interesting is that five of the seven states are the North-Eastern states of Nagaland, Manipur, Meghalaya, Tripura and Sikkim. However, the largest decline is observed in Goa (8.412% to 0.175%) and Chhattisgarh (4.829% to 0.04%).

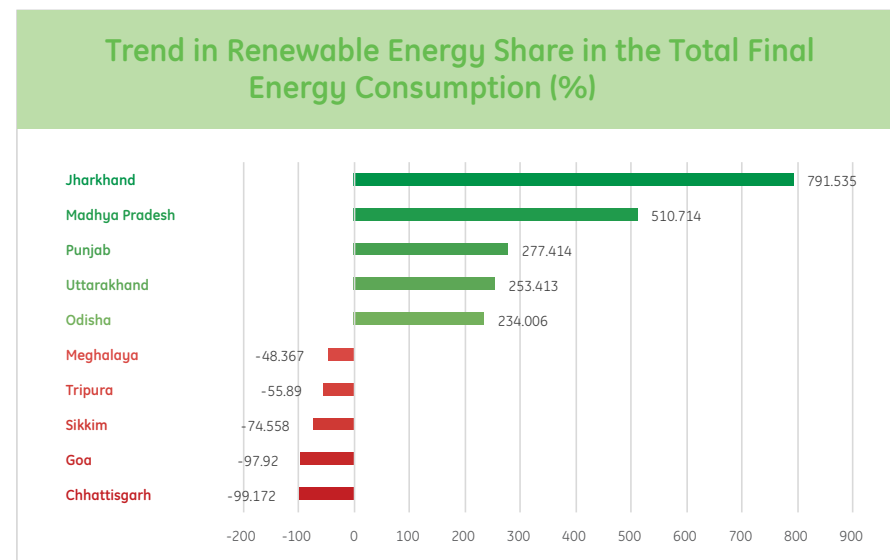


Figure 4 : Trend- Renewable Energy Share in total final energy consumption (%)
Source: Central Electricity Authority (2009 and 2018)

⁴ The delta analysis does not include the states of Andhra Pradesh and Telangana due to the bifurcation of the state of Andhra Pradesh post 2014.

⁵ Delhi has not been included due to the non-availability of data for 2009.



a. Forest Area as a Proportion of Total Land Area

Rapid urbanisation must not occur at the cost of decline in forest cover. Forest cover is not only essential from the perspective of maintaining and increasing biodiversity but also as a source of income and livelihood for the indigenous communities that inhabit it. With the growing climate challenges plaguing the world, the preservation of forests is essential.

Decadal data on the forest coverage in the states presents some interesting insights. West Bengal shows the highest increase from 14.64% in 2007 to 18.89% in 2017. The states where there has been a decline are the North-Eastern states though this too is minimal. However, it needs to be kept in mind that these states already have a large forest area and still fare better than all other states if only current data is taken into account.

Trend in Forest Area as a Proportion of Total Land Area

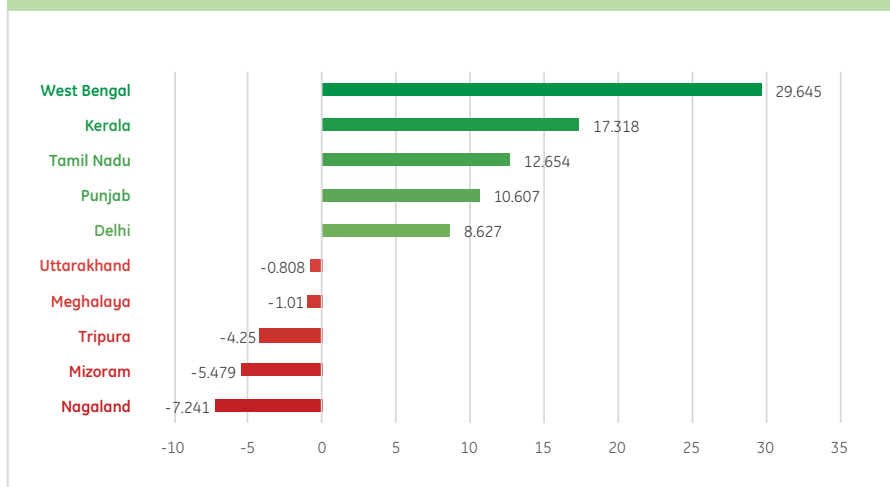


Figure 5 : Trend- Forest Area as a Proportion of Total Land Area
Source: Forest Survey of India (2007 and 2017)



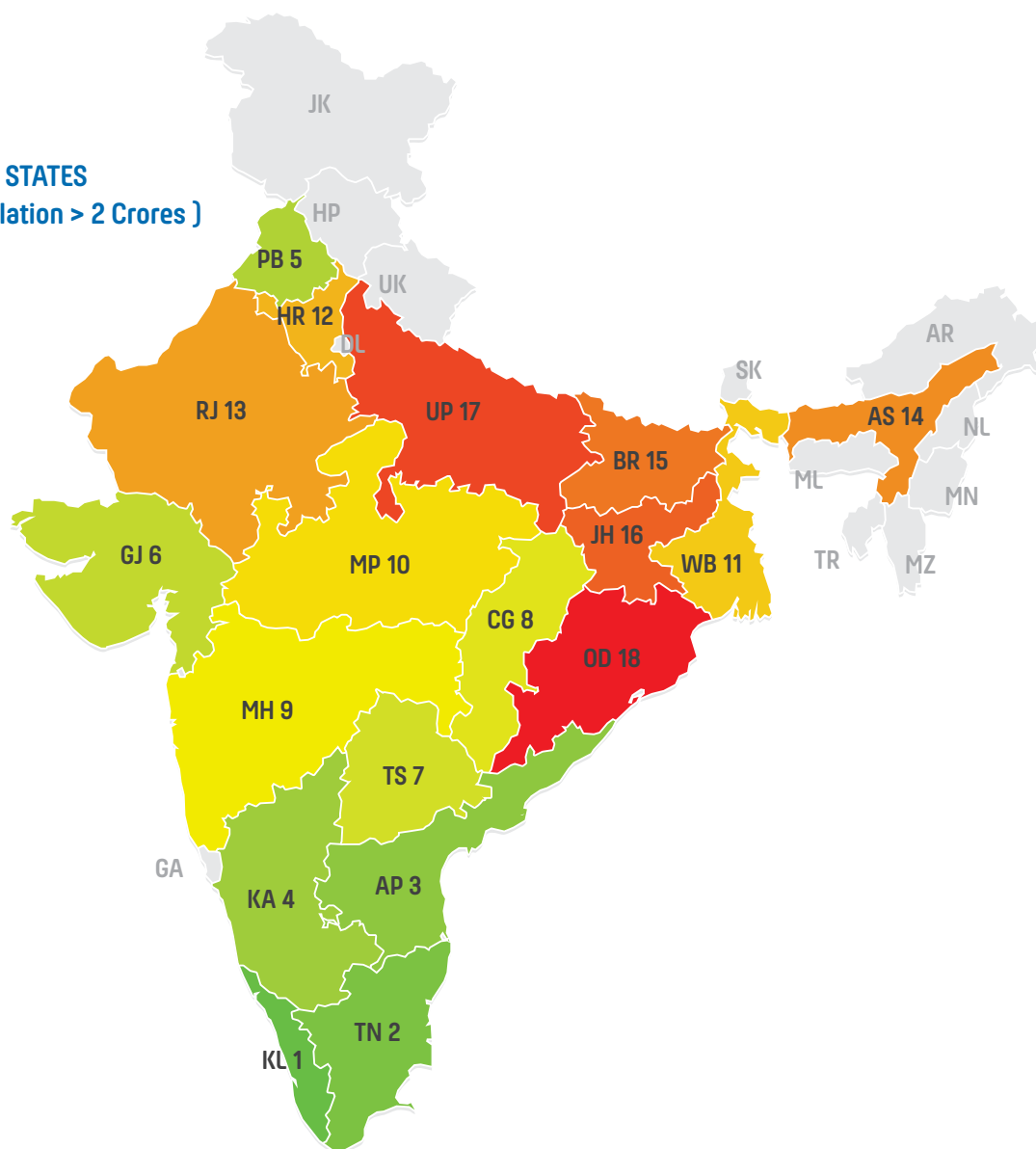


CHAPTER VII – PAI 2019: CONCLUSION AND FINDINGS

INDIA: MORE THAN THE SUM OF ITS PARTS



LARGE STATES
(Population > 2 Crores)

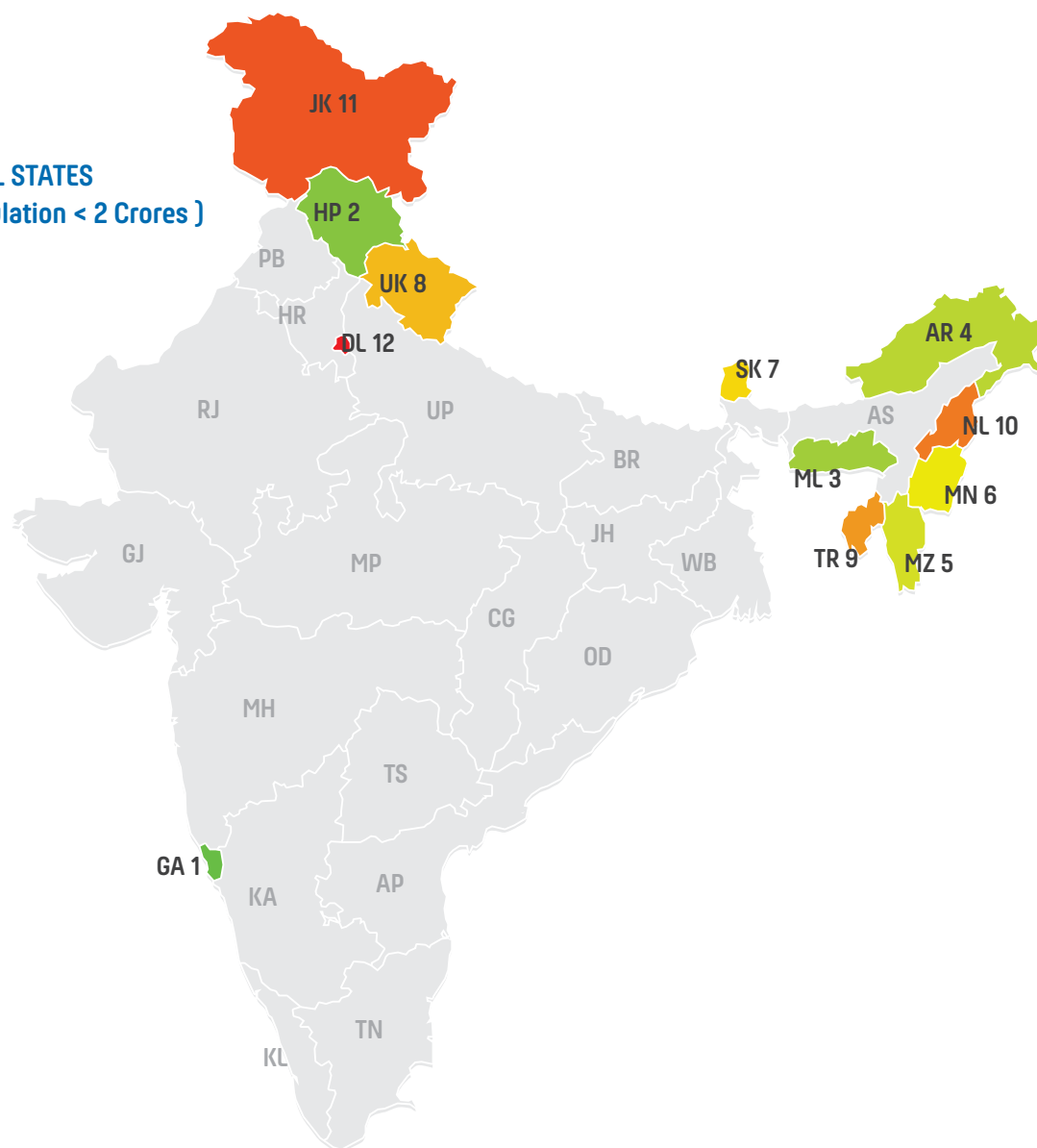


Rank	Large States	Index
1	KL Kerala	1.011
2	TN Tamil Nadu	0.823
3	AP Andhra Pradesh	0.353
4	KA Karnataka	0.353
5	PB Punjab	0.089
6	GJ Gujarat	0.031
7	TS Telangana	-0.008
8	CG Chhattisgarh	-0.059
9	MH Maharashtra	-0.06
10	MP Madhya Pradesh	-0.143
11	WB West Bengal	-0.246
12	HR Haryana	-0.29
13	RJ Rajasthan	-0.444
14	AS Assam	-0.494
15	BR Bihar	-0.658
16	JH Jharkhand	-0.769
17	UP Uttar Pradesh	-0.864
18	OD Odisha	-0.972

Highest Index value  Lowest Index value

INDIA: MORE THAN THE SUM OF ITS PARTS

SMALL STATES
(Population < 2 Crores)



Rank	Small States	Index
1	GA Goa	1.1
2	HP Himachal Pradesh	0.985
3	ML Meghalaya	0.891
4	AR Arunachal Pradesh	0.619
5	MZ Mizoram	0.581
6	MN Manipur	0.105
7	SK Sikkim	-0.012
8	UK Uttarakhand	-0.042
9	TR Tripura	-0.068
10	NL Nagaland	-0.174
11	JK Jammu and Kashmir	-0.426
12	DL Delhi	-1.214

Highest Index value Lowest Index value

“Over the past millennium, world population rose 22-fold. Per capita income increased 13-fold, world GDP nearly 300-fold...the growth process was uneven in space as well as time...this gap is still widening. Divergence is dominant but not inexorable. In the past half a century, resurgent Asian countries have demonstrated that an important degree of catch-up is feasible”

- A.Maddison¹

The Macroeconomic Transition

The Sustainable Development Goals (SDGs) mark an important milestone in the global efforts at sustainability. Attempts to reconcile environment sustainability with economic growth gained momentum and were formalised at the UN Conference of Human-Environment in Stockholm in 1972 which established the concept of “environmentally sound development” or “eco-development”. Translating this objective into practical steps however proved to be a daunting task. Attempts at reconciling social sustainability with economic growth were largely rejected by governments until the 1980s when the twin environmental and social critiques merged into the narrative of economic development and leading to the concept of sustainable development. The Brundtland Report called for a “new era of economic growth – growth that is forceful and at the same time socially and environmentally sustainable”. Over time this objective came to be translated into eight specific Millennium Development Goals that were to be achieved by 2015. In September 2015, there was a broad recognition that the larger objective remained a considerable distance away, leading to the formulation of the UN 2030 Agenda for Sustainable Development. This expanded agenda listed 17 SDGs and 169 targets that are to be met over a fifteen-year period. The SDG framework enables an analysis of the diverse spatial and temporal barriers and enablers to economic growth that characterise the current state of development in the states of India. In assessing the governance performance of the states undertaken in PAI 2019, the effort has been to understand why

several of the states face the entwined crises of gross economic inequality and chronic environmental degradation, together coalescing to pose the double jeopardy for their future development.

A macroeconomic transition is unfolding in India at the intersection of agriculture, climate change, and urbanisation, and is manifesting in large swathes of people - especially in certain geographies, and in certain states - migrating out of agriculture. This needs to be recognised as an impending crisis because it represents livelihood adaptation measures rather than a structural transformation with most of those migrating to the non-farm sector facing double jeopardy - of declining farm incomes at the place of origin and underemployment in low wage jobs at the place of destination. The growing informality and temporariness of work that characterises the labour market has exacerbated the problem. Taken together, the goal of providing growth along with full employment is made more challenging in the country notwithstanding the National Rural Employment Programme. Large parts of India are arid or semi-arid; and agro-climatically are drought-prone with large numbers of marginal and small farmers and dominated by rain-fed agriculture and poor irrigation. Excessive and unregulated ground water exploitation combined with inappropriate cropping patterns has resulted in widespread soil stress and severe water scarcity in many parts of the country. Agricultural distress is acute in India's semi-arid regions, and farmer suicides have been recurring. In sum, farmers and agricultural labourers need non-farm livelihood opportunities.

¹ Maddison, A. (2001). *The World Economy: A Millennial Perspective*, Development Centre Studies, OECD.

INDIA: MORE THAN THE SUM OF ITS PARTS

The pressure of declining share of agriculture in the GDP is being felt by individual farmers. Their ability to absorb these pressures has hurt other long-term trends. Extensive use of chemical fertilizers has hurt the quality of their land and the patterns of inter-generational transfers of land have not helped. Since the land is invariably divided when it passes from a father to his children, the size of the farms diminishes with some of them becoming unviable. The immediate effect of this change has been a movement away from the traditional agrarian system in most states dominated by cultivators, to one with greater numbers of agricultural labour. The changing composition of workers in agriculture is easily captured by the ratio of cultivators to agricultural labour, or the CL/AL ratio. This ratio in turn can provide insights into the nature of agriculture in a region. A region where the CL/AL ratio is high would suggest a preponderance of small cultivators and the possibility of small peasant agriculture. Conversely, a region where the CL/AL ratio is very low would suggest an agriculture where a few cultivators hire a large number of agricultural labourers to operate in a market dominated by large farmer agriculture. There would of course be a variety of combinations between these two extremes, but they could be grouped in terms of whether they are closer to one form of agriculture or the other. If we take a ratio of 1 as the threshold, districts with a CL/AL ratio greater than 1 would be characterised by a large number of small peasant cultivators, while those with a CL/AL ratio less than 1 would be one dominated by farmers using hired labour.

The Demographics of Development

Yet, on the positive side, India is on the cusp of transformation over the next decade, with two historical processes unfolding in tandem - demographic transition and migration transition. It will witness a social transformation of a scale that will change social relationships so profoundly that it will affect all states simultaneously. It will shape the manner in which economic relations are organised and will dramatically alter the vertical and horizontal engagement of the states and their performance; resulting in India as a whole becoming more than the sum of its parts. This paradigm shift will also challenge hitherto held notions of growth and welfare; of citizenship and community and the basis for access to economic and social opportunity. The prime drivers of this 'step change' will be the twin dynamics of economic growth led by a young population and the growth of India as a common market characterised by the mobility of people and the portability of skills. A discerning economic historian would not miss the interplay between the demographic transition of a country and its economic progress. Demographic transition is the movement from a pattern of high mortality and high fertility rates to low mortality and low fertility. All the South East Asian economies that demonstrated rapid growth made that transition when the share of their working age population was the highest. India will in less than a decade, be on that very threshold and have a demographic structure that will come but once in its history. However, the states will have to invest in considerable measure, in social and human capital, innovation and institutional infrastructure. Else, the much hyped

'demographic dividend' can dramatically turn into a 'demographic disaster'. This, as the findings of this report show, is particularly true for the states that are endemically underdeveloped. India's young population has often been described as the aspirational generation. For the vast mass of young people in the states north of the Vindhyas that constitute the heart of the Hindi heartland, aspiration should transform to mean more than just two square meals. In the absence of sustainable livelihoods in rural India, migration for work is an important livelihood strategy. This has now been exacerbated by the chronicity of droughts, triggering rural distress and mass migration out of agriculture in search of jobs in the non-farm sector in the nearest town or city. Migration to a big city even if to work only as a daily wager, a security guard or a lift operator is aspirational for young people in India's vast and restless rural population.

The Phenomena of Migration

The scale of rural-urban migration in India covers a significant population and a vast geography. The Economic Survey 2017 had estimated the magnitude of inter-state migration in India at close to 9 million annually between 2011 and 2016. The Census 2011 estimated internal migrants at a staggering 139 million. Uttar Pradesh and Bihar are the biggest states of origin, followed closely by Madhya Pradesh, and Rajasthan; and the major destination states are Delhi, Maharashtra, Gujarat, and Kerala. These humungous flows include permanent and semi-permanent migration. This presents a formidable governance challenge. The absence of precise data on the migration flows and a systematic understanding of the experiences of

migrants are major gaps in knowledge. This is compounded by the varying patterns of inequality across states and agrarian distress driving people out of agriculture. Much of this migration is from places of origin that are endemically backward and facing environmental degradation, to large cities in search of livelihood. Typically, the migrants are poor, uneducated and unskilled. They are compelled to live and work in peri-urban areas of large urban agglomerations already stressed by the weight of numbers, and facing resource constraints. The migration process is mediated by an elaborate chain of intermediaries that performs the function of sourcing and aggregating poor migrants from the villages, and connecting them with city contractors as cheap labour. Evidence suggests that most migrant workers work in the informal economy – as construction workers, labourers in brick kilns, drivers, cooks or security guards – rendering them vulnerable to exploitative practices such as manipulation in wage rates, non-payment or withholding of wages, long work hours, abysmal work conditions, verbal and physical abuse, and in the case of women migrant workers, sexual exploitation. This is placing at risk the quality of life of millions of people at origin and destination alike.

There are few studies that examine the long - term consequences of this pattern of migration and how it impacts the economic and social prospects of the poor and socially disadvantaged households. An important policy question is whether migration, as a livelihood strategy, causes double jeopardy resulting in a decline in the quality of life for the individual and the household at both ends of the

migration corridor. Is migration as a pathway to livelihood security unsustainable and constrain our ability to achieve SDG 1 – End poverty in all forms everywhere; SDG 10 – Reduce Inequality within countries; and SDG 11– Make cities and human settlements inclusive, safe, resilient and sustainable; over the medium to long term? Between 2001 and 2011, rural migrants in search of work added over 22 percent to urban population growth - a staggering 18 million migrants. The hinterland of the large urban agglomerations in India comprises farming-rural communities driven to migration as the inevitable livelihood coping strategy, often due to extreme climate events. Semi-permanent migration where the wage earner goes to the city while the family stays back is a country-wide phenomenon. At both ends of the migration corridor inadequate state capacity, imperfect markets, structural inequities, and the exclusion of the poorest and the marginalised communities from the governance process bind the migrant and the household to patterns of inter-generational poverty cycles. This frame is common to large parts of India and hence needs policy, programme and regulatory attention across the states in India.

Overall Performance of States

In India, the NITI Aayog is mandated to coordinate the implementation of the SDGs and is working to build synergies – horizontal and vertical – in SDG action of the relevant Ministries of the Government of India as well as partnering with the states. The Ministry of Statistics and Programme Implementation has drafted the National Indicator Framework to measure the progress in achieving the SDG targets.

Recognising the importance accorded by the Government of India to achieving SDGs, NITI Aayog has more recently developed a composite index that helps measure the progress on implementing the SDGs and would serve as an advocacy tool and trigger action at the State level. NITI Aayog has constructed the SDG India Index spanning 13 of the 17 SDGs. However, the Index has its limitations. It tracks the progress of all the States and UTs on a set of 62 Priority Indicators, measuring the progress on the outcomes only of the interventions and schemes of the Government of India. The states in whose domain the vast majority of the SDG fall under the constitutional scheme will therefore need a clear vision, operational strategy, and an action plan that will help them achieve the SDG targets. Alluding to the need for development that results in economic progress while being inclusive and ecologically secure, PAI 2019 places equal importance on the 3 pillars of equity, growth and sustainability. The overall PAI 2019 rankings of the large and small states provide some interesting insights. Taking into account the various facets of governance, these rankings aim to hold up a mirror on the progress made by the states while providing direction on the potential areas of intervention.

Among the large states, Kerala emerges first with an index score of 1.011. The rankings provide some interesting findings. The first is the significant gap between the scores of Tamil Nadu that features second at 0.823 and that of Andhra Pradesh, ranked third, whose score is 0.353. Interestingly, apart from the top 6 states, all the other states also record scores that are below average. This indicates a significant variation in sub-national governance across the states.

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Another fact is the presence of 4 of the 5 Southern states among the top 5 states (Kerala, Tamil Nadu, Andhra Pradesh, Karnataka and Punjab), with the exception of Telangana which finds itself at the 7th position. At the bottom of the ranking are the states of Assam (-0.494), Bihar (-0.658), Jharkhand (-0.769), Uttar Pradesh (-0.864) and Odisha (-0.972).

In the small states category, Goa leads the ranking with a score of 1.1 followed closely by Himachal Pradesh (0.985), Meghalaya (0.891), Arunachal Pradesh (0.619) and Mizoram (0.581). There are no large variations in the index scores among the small states unlike in the case of the large states. The states featuring amongst the bottom include, Uttarakhand (-0.042), Tripura (-0.068), Nagaland (-0.174), Jammu and Kashmir (-0.426) and Delhi (-1.214). An interesting thing to note is that both the top and bottom performing state with all states taken together belong to the small states category, namely Goa and Delhi respectively.

Cluster Analysis

To analyse how the country as a whole is performing in terms of governance and identify patterns amongst the states, PAC conducted a 'Cluster Analysis'².

² The "Cluster Analysis" is a statistical technique based on Unsupervised Learning. Unsupervised Learning explores 'unlabelled' or 'unclassified' data to find hidden patterns. This technique analyses patterns in data and groups the subjects into logical clusters depicting similar behaviour. Agglomerative Hierarchical Clustering technique was applied on the 49 PAI indicators to classify the natural clusters among states.

The analysis resulted in 3 distinct clusters:

Cluster 1 – Includes the states of Kerala, Goa, Himachal Pradesh, Delhi, Maharashtra, Andhra Pradesh, Telangana, Gujarat, Rajasthan, Karnataka, Tamil Nadu, Punjab, Haryana and Uttarakhand (Refer to Fig 1). The cluster appears to be growth driven since 20 out of 21 indicators belonging to **growth pillar** are performing above average. Further, all the states under this cluster, perform moderately in the pillar of sustainability and below average in the equity pillar. Additionally, the top 5 large states as per the PAI rankings fall under this cluster.

Cluster 2 – Includes small states like Sikkim, Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Mizoram and Jammu & Kashmir (Refer to Fig 1). All the states in cluster 2 perform above average in 4 out of the 5 indicators belonging to **sustainability pillar**. While the performance of the states in the equity pillar was moderate, their performance was below average in the growth pillar.

Cluster 3 – Includes the states of Uttar Pradesh, Bihar, Jharkhand, Chhattisgarh, Madhya Pradesh, Odisha, Assam, West Bengal and Tripura. The cluster is characterised by moderate performance in the equity pillar but below average performance in both the pillars of growth and sustainability. The bottom 5 large states as per the PAI rankings fall under this cluster. It is interesting to note that **96 of the 100 aspirational districts as identified by the NITI Aayog**, too, fall under this cluster (Refer to the red patches in Fig 1).

The results from the cluster analysis mirror the findings of the correlation analysis. Cluster 1 mainly includes all the large states. Coincidentally, the top five large states as per PAI 2019 ranking falls under this cluster. In this cluster, all the states perform well in the growth parameters as compared to the parameters of sustainability and equity. This exact finding is revealed in the correlation analysis of the large states as well. The correlation coefficient between the growth index and the PAI 2019 index was 0.77, whereas the coefficient between the equity index and the PAI 2019 index was 0.3 and the coefficient between the sustainability index and the PAI 2019 index was 0.76. This confirms that the overall performance of a large state is heavily influenced by its performance in the growth parameters. The ranking of the large states is

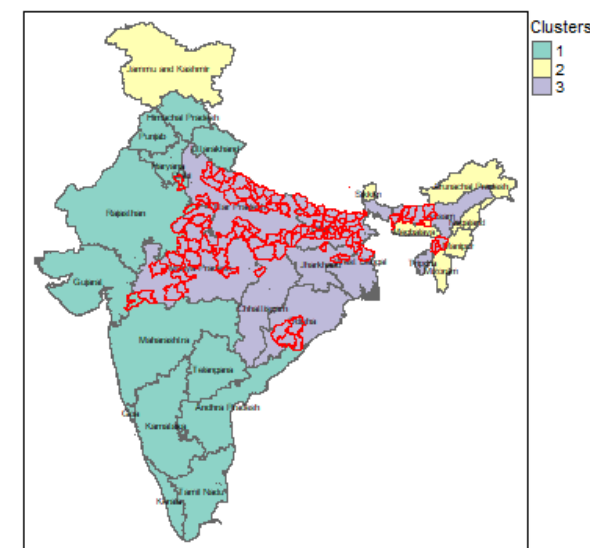


Figure 1 : Cluster Analysis

moderately affected by the sustainability parameters, however, it is weakly influenced by the equity parameters.

On the other hand, Cluster 2 includes all the small states. The states in this cluster perform remarkably well in the sustainability parameters as compared to those of equity and growth. The correlation coefficient between the sustainability index and the PAI 2019 index was 0.74, whereas the coefficient between the equity index and the PAI 2019 index was 0.7 and the coefficient between the growth index and the PAI 2019 index was 0.32. Yet again, this confirms that the performance of a small state is largely influenced by the sustainability parameters, moderately by equity and weakly by growth.

The Growth - Equity - Sustainability Paradox

The rationale behind including all the three pillars was to make sure that the development paradigm of a state focuses not only on the growth of the economy, but also on the socio-economic development and on the preservation and conservation of the environment and natural resources.

PAI 2019 sets out a standard for an ideal state - where all the three pillars are at balance, are interconnected to each other and each one equally contributes to the overall governance of the state. However, the above cluster analysis uncovers a newer side of the Indian economy. It is dismal to know that there is not a single state that has achieved a balance between equity, growth and sustainability. The top performing large states are

doing remarkably well in growth. However, these states are experiencing economic growth at the cost of equity and sustainability. In contrary, the small states are performing well in terms of sustainability parameters. This means that though the states are doing well in conservation of natural resources, consumption of renewable resources and reduction of pollution levels, the efforts are not shaping into economic growth and equitable development. On the other hand, there exists an entire cluster of states that are caught in a vicious cycle of poor equity, growth and sustainability.

The Sen-Bhagwati debate on equity versus growth is well known. PAI 2019 advances, on the basis of empirical evidence, the argument that it is not just the equity-growth binary that matters. Indeed, sustainability is a crucial driver of the performance of the states, and hence of the country.





STATE FACT SHEETS

Each state is economically, socially, politically and culturally different from one another. Thus, policies and reforms need to be context and region specific so that it benefits the marginalised section of the population, thus **'leaving no one behind'**. The state fact sheets provide an insightful analysis on the progress made by the states towards the three dimensions of sustainable development – **Equity, Growth and Sustainability**.

The fact sheets provide the rankings and scores for each state while giving a brief description on the performance of the state at the Pillar level. In addition, the fact sheets highlight those specific indicators where the **state's ranking is among the Top 3 and Bottom 3**. Each fact sheet also calls attention to the indicators where the state is an **outlier** in the hope that policy reform is directed towards that specific sector.

Given the pace of growth and the development paradigm of the country, it is believed that focus must be given primarily to the pillars of **Human Development – Education, Health & Livelihoods**. Hence, the state fact sheets include **actionable policy recommendations** in the ambit of Human Development.

STATE FACT SHEETS

AP ANDHRA PRADESH



PAI 2019
Index

Rank

3

Score

0.353



Equity
Index

9

-0.353



Growth
Index

4

0.94



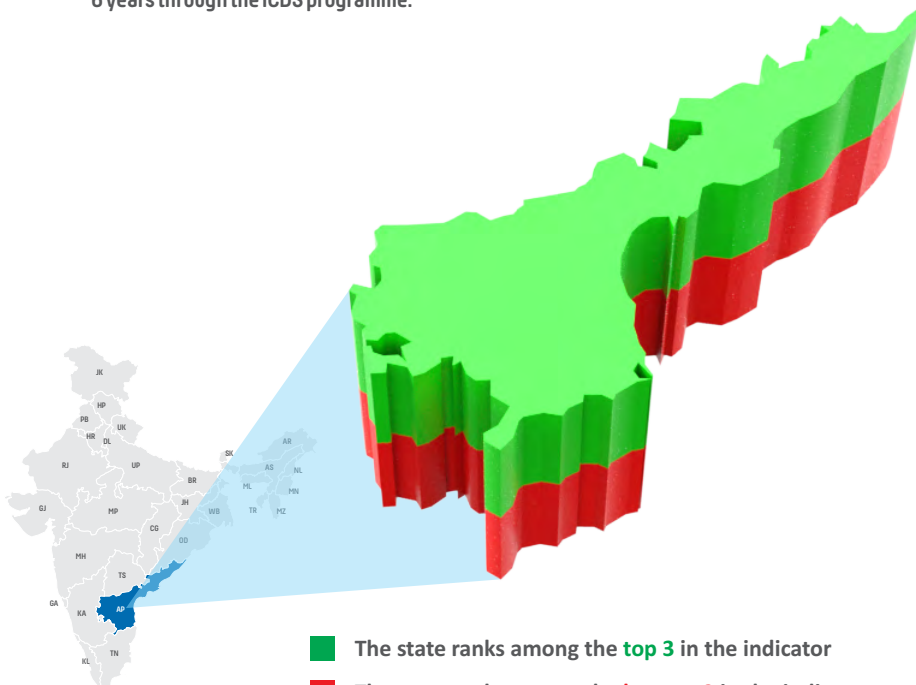
Sustainability
Index

5

0.471

Andhra Pradesh ranks 3rd in PAI 2019. The indicators where the state features among the top 3 comprise majorly of those belonging to the Growth Pillar. This includes indicators such as expenditure in the social sector, worker population ratio (female) and indicators on capacity building for growth. The state's performance is at the bottom 3 in 5 indicators including those on ICDS, rural indebtedness and the contribution of the manufacturing sector.

PAI 2019 recommends the state to focus on education for the children in the age group of 3-6 years through the ICDS programme.



Pillar I (Equity)

Expenditure in social sector

Number of victims of intentional homicide per 100,000 population

Crimes against children

Worker Population Ratio (Female) (WPR)

Participation rate in organised learning (one year before the official primary entry age)

Proportion of urban population living in slums

Rural Indebtedness



Pillar II (Growth)

Health worker density

Percentage of elementary and secondary schools with Pupil Teacher

Ratio less than/equal to 30

Percentage of school teachers professionally qualified

Proportion of population with access to electricity

Annual growth rate of real GSDP per capita

Unemployment Rate

Implementation of Business Reform Action Plan (BRAP)

Proportion of households with an account at a bank

Proportion of total government expenditure on infrastructure

Proportion of population using safely managed drinking water services

Manufacturing value added as a proportion of GDP and per capita



Pillar III (Sustainability)

Annual mean levels of fine particulate matter (PM10) in cities (population weighted)

LARGE STATES

AS ASSAM



PAI 2019
Index



Equity
Index



Growth
Index

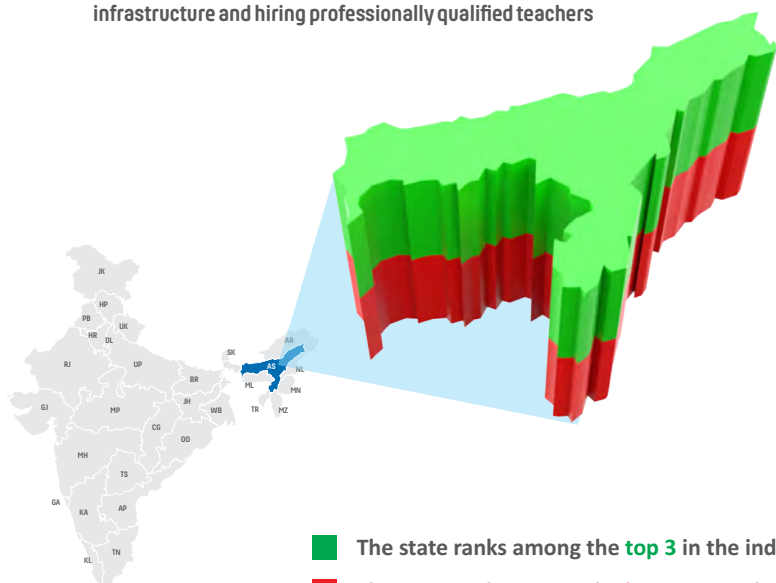


Sustainability
Index

Rank	14	6	17	8
Score	-0.494	0.133	-1.531	-0.084

Assam ranks 14th in PAI 2019. The indicators where the state features among the top 3 comprise majority of those belonging to the Equity Pillar. This includes indicators such as reduced rural indebtedness, increasing net enrolment ratio and reduced crimes against SC and ST. The state's performance is at the bottom 3 in 12 indicators comprising majority of those from the Growth Pillar. These include indicators such as worker population ratio (female) and those on school education including annual drop-out rate, schools with access to infrastructure and professionally qualified teachers. The state's performance is exceptionally poor on certain indicators of economic performance such as fiscal surplus/deficit and tax GDP ratio

PAI 2019 recommends the state to focus on education, particularly in the aspects of retaining children at the secondary level, maintaining and providing access to infrastructure and hiring professionally qualified teachers



- The state ranks among the **top 3** in the indicator
- The state ranks among the **bottom 3** in the indicator



Pillar I (Equity)

- Participation rate in organised learning (one year before the official primary entry age)
- Proportion of urban population living in slums
- Rural Indebtedness
- Expenditure in social sector
- Incidence of Crimes against SC and ST
- Cases Pending in District Courts
- Average Annual Drop-out rate at secondary level
- Worker Population Ratio (Female) (WPR)
- No. of ACB (Anti-Corruption Bureau) cases disposed as a % of total cases registered



Pillar II (Growth)

- Net Enrolment Ratio at Elementary (1-8)
- Proportion of schools with access to (a) electricity; (b) computers for pedagogical purposes; (c) access to CWSN friendly toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic handwashing facilities (as per the WASH indicator definitions)
- Percentage of school teachers professionally qualified
- Tax GDP Ratio - **Outlier**
- Fiscal Surplus/ Deficit - **Outlier**
- States Own Tax Revenue Growth
- Unemployment Rate
- Number of commercial bank branches per 100,000 adults
- Proportion of households with an account at a bank - **Outlier**
- Proportion of total government expenditure on infrastructure



Pillar III (Sustainability)

- Forest area as a proportion of total land area

STATE FACT SHEETS

BR BIHAR



PAI 2019
Index



Equity
Index



Growth
Index

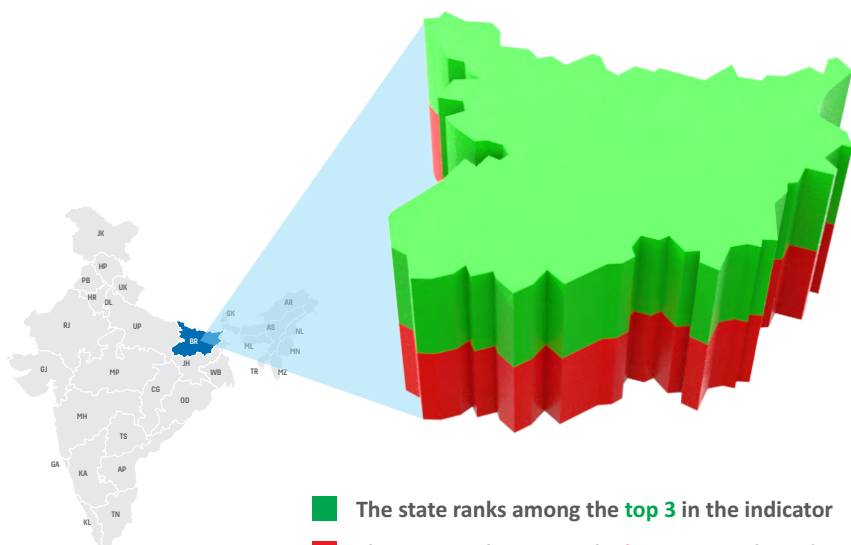


Sustainability
Index

Rank	15	13	18	7
Score	-0.658	-0.492	-1.595	0.113

Bihar ranks 15th in PAI 2019. The state features among the top 3 in 11 indicators with majority of the indicators belonging to the Equity Pillar. The state performs well in diverse areas including lower income inequality, lower farmers suicides, higher net enrolment ratio at the elementary level and higher expenditure on social sector. Bihar's performance is amongst the bottom 3 in 14 indicators comprising majority of those in the Growth Pillar. These include indicators on under trials, worker population ratio (female), infrastructure for growth and the contribution of the manufacturing sector. The state's performance is exceptionally poor in populations with access to electricity and schools with pupil teacher ratio equal to 30

PAI 2019 recommends the state to focus on education, particularly in the aspects of ensuring that schools adhere to the standard pupil teacher ratio (≤ 30), creating and providing access to infrastructure and hiring professionally qualified teachers



- The state ranks among the **top 3** in the indicator
- The state ranks among the **bottom 3** in the indicator



Pillar I (Equity)

- Proportion of population covered by social protection
- Palma Ratio of Household Expenditure in Rural India
- Gender Parity Index (Elementary)
- Farmers/ Cultivators suicide per HHs
- Expenditure in social sector - **Outlier**
- Crimes against children
- Rapes per 10 lakh population
- Unsented detainees as a proportion of overall prison population
- Dowry deaths per 10 lakh population
- Cases Pending in District Courts
- Worker Population Ratio (Female) (WPR)



Pillar II (Growth)

- Net Enrolment Ratio at Elementary (1-8)
- Proportion of population using safely managed drinking water services
- Proportion of households with an account at a bank
- Health worker density
- Percentage of elementary and secondary schools with Pupil Teacher Ratio less than/equal to 30 - **Outlier**
- Proportion of schools with access to (a) electricity; (b) computers for pedagogical purposes; (c) access to CWSN friendly toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic handwashing facilities (as per the WASH indicator definitions)
- Percentage of school teachers professionally qualified
- Proportion of population using safely managed sanitation services
- Proportion of population with access to electricity - **Outlier**
- Implementation of Business Reform Action Plan (BRAP) - **Outlier**
- Number of commercial bank branches per 100,000 adults
- Manufacturing value added as a proportion of GDP and per capita
- Number of Buses per 10 lakh population



Pillar III (Sustainability)

- Solid waste generation and waste processing in the urban areas

LARGE STATES

CG CHHATTISGARH



PAI 2019
Index



Equity
Index



Growth
Index

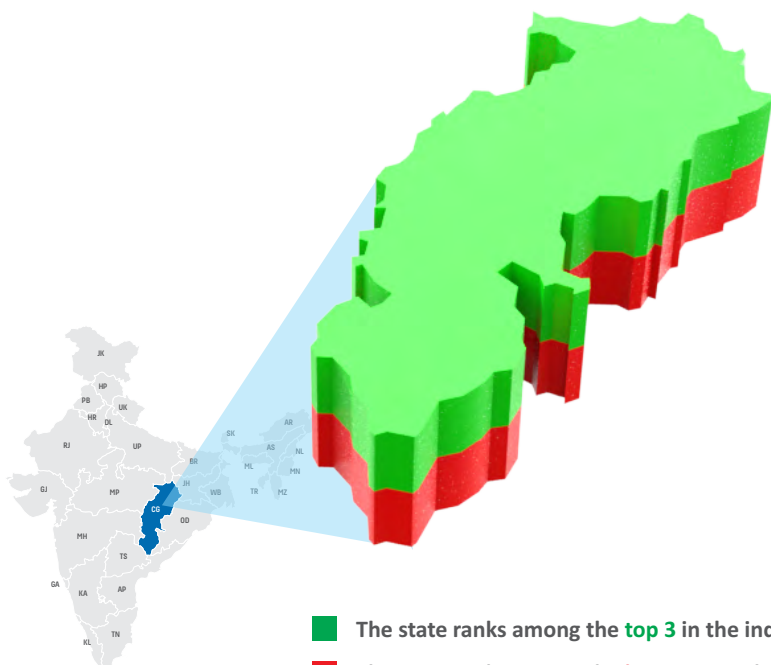


Sustainability
Index

Rank	8	2	12	10
Score	-0.059	0.514	-0.149	-0.543

Chhattisgarh ranks 8th in PAI 2019. The 5 indicators where the state features among the top 3 comprise majority of those belonging to the Equity Pillar. This includes indicators such as worker population ratio (female), rural indebtedness and unemployment rate. The state's performance is at the bottom 3 in 9 indicators comprising majority of Equity Pillar. This includes indicators on IMR and economic performance. The state performs exceptionally poorly in the indicator of farmers suicides

PAI 2019 recommends the state to focus on the well being of infants, especially children under one year of age



■ The state ranks among the **top 3** in the indicator
■ The state ranks among the **bottom 3** in the indicator



Pillar I (Equity)

Rural Indebtedness

Worker Population Ratio (Female) (WPR)

No. of ACB (Anti-Corruption Bureau) cases disposed as a % of total cases registered

Infant Mortality Rate (IMR)

Farmers/ Cultivators suicide per HHs - Outlier

Number of victims of intentional homicide per 100,000 population

Crimes against children

Rapes per 10 lakh population



Pillar II (Growth)

Unemployment Rate

States Own Tax Revenue Growth

Annual growth rate of real GSDP per capita



Pillar III (Sustainability)

Forest area as a proportion of total land area

Renewable energy share in the total final energy consumption

Solid waste generation and waste processing in the urban areas

STATE FACT SHEETS

GJ GUJARAT



PAI 2019
Index



Equity
Index



Growth
Index

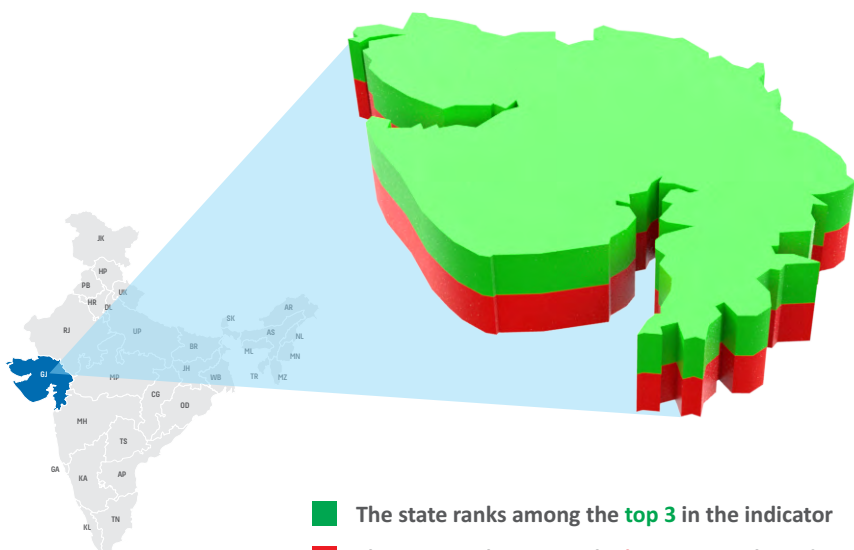


Sustainability
Index

Rank	6	8	9	9
Score	0.031	-0.248	0.624	-0.285

Gujarat ranks 6th in PAI 2019. The 7 indicators where the state features among the top 3 comprise majorly of those belonging to the Growth Pillar. It is interesting to note that the state performs remarkably well in the areas of fiscal management including fiscal surplus/deficit, GSDP growth and contribution of manufacturing. The state's performance is at the bottom 3 in 5 indicators comprising majorly of those from the Equity Pillar. These include indicators such as malnutrition, seats held by women in legislature and population covered by social protection

PAI 2019 recommends the state to focus on the ICDS programme, particularly the nutritional requirements of children, especially those below the age of 6



Pillar I (Equity)

Dowry deaths per 10 lakh population

Cases Pending in District Courts

Proportion of population covered by social protection

Prevalence of malnutrition amongst children below 5 years

Proportion of seats held by women in (a) state legislatures and (b) local governments



Pillar II (Growth)

Percentage of school teachers professionally qualified

Fiscal Surplus/ Deficit

Annual growth rate of real GSDP per capita

Proportion of households with an account at a bank

Manufacturing value added as a proportion of GDP and per capita

Tax GDP Ratio



Pillar III (Sustainability)

Proportion of land that is degraded over total land area

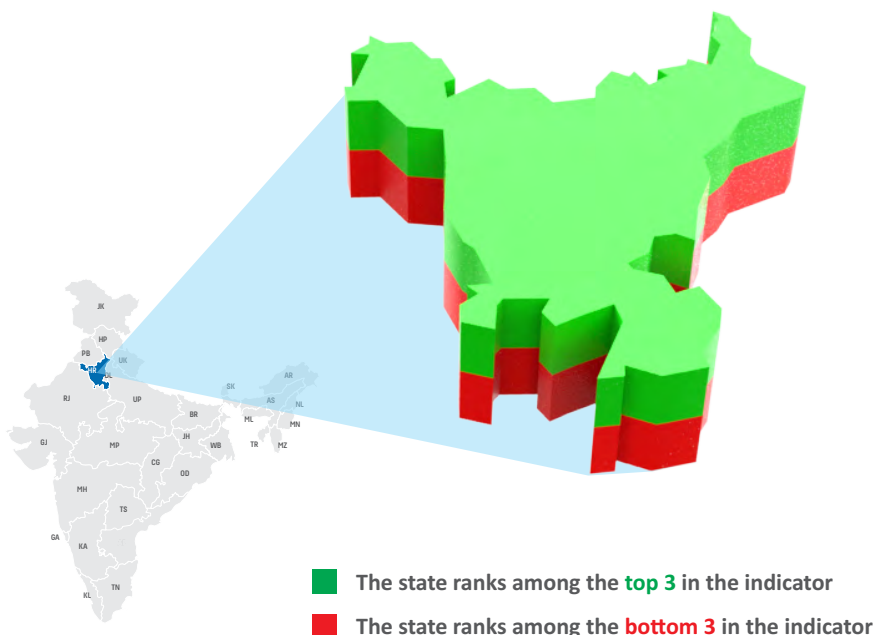
LARGE STATES

HR HARYANA

	 PAI SCORE	 EQUITY INDEX	 GROWTH INDEX	 SUSTAINABILITY INDEX
PAI 2019 Index				
Rank	12	15	2	15
Score	-0.29	-1.134	1.11	-0.844

Haryana ranks 12th in PAI 2019. The state performs below average in the pillars of Equity and Sustainability, however, it appears at the second position in the Growth Pillar. The 6 indicators where the state features among the top 3 comprise majority of those belonging to the Growth Pillar. This includes indicators such as the ASER Index and school infrastructure. The state's performance is amongst the bottom 3 in 6 indicators comprising majority of those in the Equity Pillar. These include indicators on worker population ratio (female) and crimes

PAI 2019 recommends the state to focus on creation and provision of employment to its citizens, particularly women



Pillar I (Equity)

No. of ACB (Anti-Corruption Bureau) cases disposed as a % of total cases registered

Number of victims of intentional homicide per 100,000 population

Dowry deaths per 10 lakh population

Worker Population Ratio (Female) (WPR)



Pillar II (Growth)

ASER Index

Proportion of schools with access to (a) electricity; (b) computers for pedagogical purposes; (c) access to CWSN friendly toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic handwashing facilities (as per the WASH indicator definitions)

Proportion of population using safely managed sanitation services

Number of commercial bank branches per 100,000 adults

Unemployment Rate



Pillar III (Sustainability)

Proportion of land that is degraded over total land area

Forest area as a proportion of total land area

Annual mean levels of fine particulate matter (PM10) in cities (population weighted)

STATE FACT SHEETS

JH JHARKHAND



PAI 2019
Index

Rank

16

Score

-0.769



Equity
Index

7

-0.063



Growth
Index

13

-0.424



Sustainability
Index

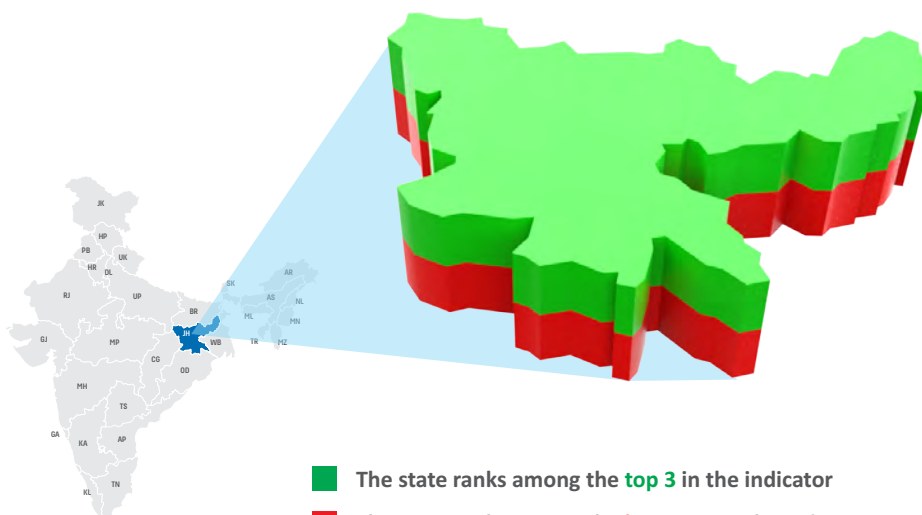
18

-1.821

Jharkhand ranks 16th in PAI 2019. It is dismal to note that the state performs way below the average in all the three pillars of PAI 2019. The 9 indicators where the state features among the top 3 comprise majority of those belonging to the Equity Pillar. This includes indicators such as rural indebtedness, farmers suicides, proportion of women in legislature and undertrials. The state's performance is at the bottom 3 in 16 indicators comprising majority of those from the Growth Pillar. These include indicators such as malnutrition, measures of economic performance and education. The state's performance is exceptionally poor in schools with pupil teacher ratio equal to 30

PAI 2019 recommends the state to focus on

1. Nutrition of children, particularly on reducing rates of malnutrition for children below the age of 5
2. Education, specifically improving educational outcomes through the provision of infrastructure and increasing enrolment



Pillar I (Equity)

- Proportion of seats held by women in (a) state legislatures and (b) local governments
- Proportion of urban population living in slums
- Rural Indebtedness
- Farmers/ Cultivators suicide per HHs
- Unsented detainees as a proportion of overall prison population
- Crimes against children
- Prevalence of malnutrition amongst children below 5 years
- Number of victims of intentional homicide per 100,000 population
- Cases Pending in District Courts



Pillar II (Growth)

- States Own Tax Revenue Growth
- Implementation of Business Reform Action Plan (BRAP)
- Proportion of total government expenditure on infrastructure
- Health worker density
- ASER Index
- Net Enrolment Ratio at Elementary (1-8)
- Percentage of elementary and secondary schools with Pupil Teacher Ratio less than/equal to 30 - **Outlier**
- Proportion of schools with access to (a) electricity; (b) computers for pedagogical purposes; (c) access to CWSN friendly toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic handwashing facilities (as per the WASH indicator definitions)
- Proportion of population using safely managed drinking water services
- Proportion of population using safely managed sanitation services
- Proportion of population with access to electricity
- Annual growth rate of real GSDP per capita
- Manufacturing value added as a proportion of GDP and per capita



Pillar III (Sustainability)

- Renewable energy share in the total final energy consumption
- Proportion of land that is degraded over total land area
- Annual mean levels of fine particulate matter (PM10) in cities (population weighted)

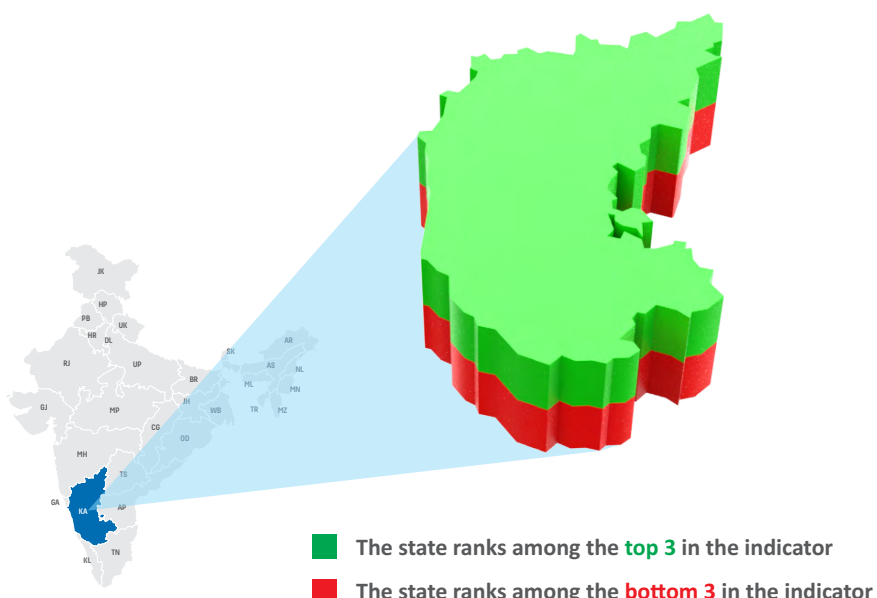
LARGE STATES

KA KARNATAKA

				
	PAI 2019 Index	Equity Index	Growth Index	Sustainability Index
Rank	4	17	3	1
Score	0.353	-1.371	0.979	1.45

Karnataka ranks 4th in PAI 2019. The state performs exceptionally well in the Sustainability Pillar with rank 1. It ranks among the top 3 even in the Growth Pillar. However, it performs below average in the Equity Pillar. The 3 indicators where the state features among the top 3 consist of 2 indicators in the Growth Pillar and 1 indicator in the Sustainability Pillar. This includes indicators such as renewable energy share in total energy consumption and buses per 10 lakh population. The state's performance is at the bottom 3 in 4 indicators consisting of 2 from the Equity Pillar and 2 from the Growth Pillar. These include indicators such as annual drop-out rate, proportion of women in legislature and spending on infrastructure

PAI 2019 recommends the state to focus on Education, specifically reducing drop-out rates at the secondary level



Pillar I (Equity)

Average Annual Drop-out rate at secondary level

Proportion of seats held by women in (a) state legislatures and (b) local governments



Pillar II (Growth)

Health worker density

Number of Buses per 10 lakh population

Proportion of households with an account at a bank

Proportion of total government expenditure on infrastructure



Pillar III (Sustainability)

Renewable energy share in the total final energy consumption

STATE FACT SHEETS

KL KERALA



PAI 2019
Index



Equity
Index



Growth
Index

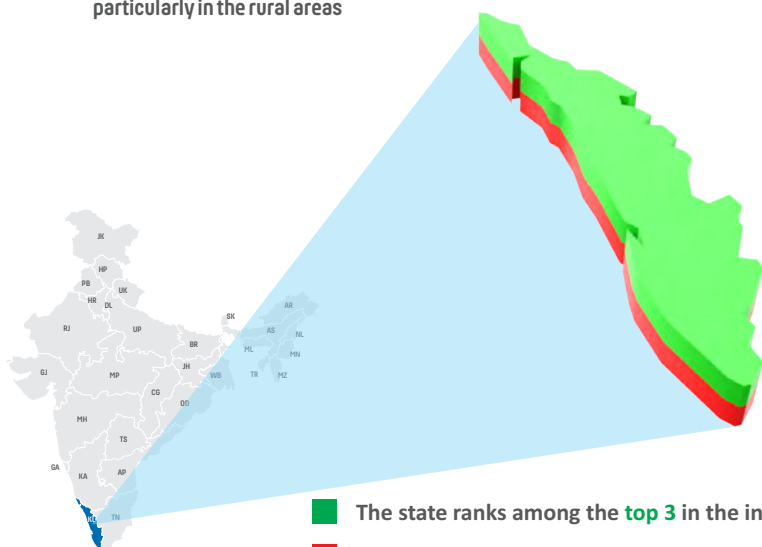


Sustainability
Index

Rank	1	4	1	2
Score	1.011	0.358	1.308	1.367

Kerala ranks 1st in PAI 2019. The state performs above average in all the 3 pillars of Growth, Equity and Sustainability. The 19 indicators where the state features among the top 3 comprise majority of those belonging to the Growth Pillar, closely followed by Equity. The state performs well in the areas of Health, Education and Fiscal Management. This includes indicators such as population covered by social protection, IMR, malnutrition, school education and capacities for economic growth. The state performs exceptionally well in the indicator of child sex ratio. Kerala's performance is at the bottom 3 in 6 indicators comprising majority of those from the Equity Pillar. These include indicators such as under trials, unemployment rate and expenditure in social sector. The state's performance is exceptionally poor in the indicators of palma ratio for rural India and the provisions for ease of business

PAI 2019 recommends the state to focus on reducing income inequalities within the state, particularly in the rural areas



Pillar I (Equity)

- Proportion of population covered by social protection
- Prevalence of malnutrition amongst children below 5 years
- Proportion of urban population living in slums
- Infant Mortality Rate (IMR)
- Number of victims of intentional homicide per 100,000 population - **Outlier**
- Child Sex ratio - **Outlier**
- Dowry deaths per 10 lakh population
- Expenditure in social sector
- Unsentenced detainees as a proportion of overall prison population
- Incidence of Crimes against SC and ST
- No. of ACB (Anti-Corruption Bureau) cases disposed as a % of total cases registered
- Palma Ratio (Rural) - **Outlier**



Pillar II (Growth)

- Health worker density
- ASER Index
- Percentage of elementary and secondary schools with Pupil Teacher Ratio less than/equal to 30
- Proportion of schools with access to (a) electricity; (b) computers for pedagogical purposes; (c) access to CWSN friendly toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic handwashing facilities (as per the WASH indicator definitions)
- Proportion of population using safely managed sanitation services
- Proportion of population with access to electricity
- Tax GDP Ratio
- Number of commercial bank branches per 100,000 adults
- Number of Buses per 10 lakh population
- Unemployment Rate
- Implementation of Business Reform Action Plan (BRAP) - **Outlier**



Pillar III (Sustainability)

- Forest area as a proportion of total land area
- Solid waste generation and waste processing in the urban areas
- Annual mean levels of fine particulate matter (PM10) in cities (population weighted)

LARGE STATES

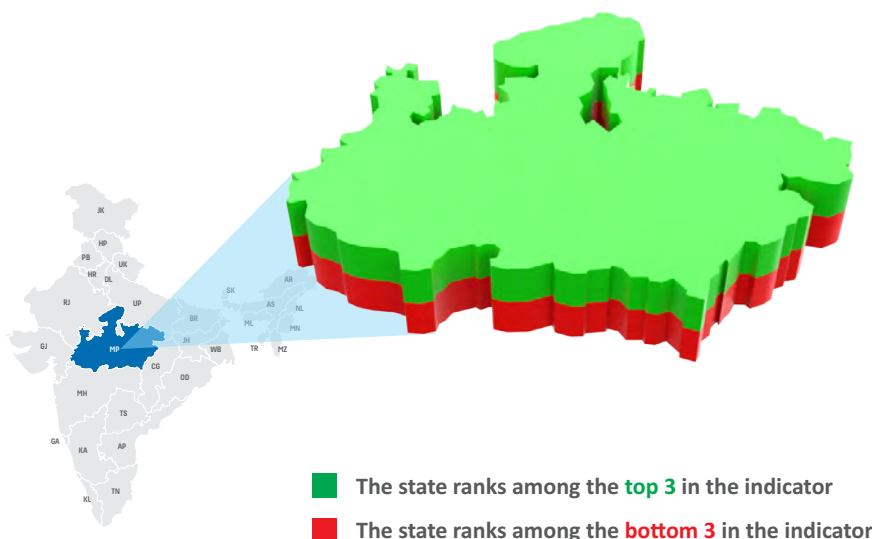
MP MADHYA PRADESH

				
	PAI 2019 Index	Equity Index	Growth Index	Sustainability Index
Rank	10	14	10	6
Score	-0.143	-1.084	0.338	0.319

Madhya Pradesh ranks 10th in PAI 2019. The state performs below average in the Equity Pillar and is ranked 14th. The 2 indicators where the state features among the top 3 belong to the Growth Pillar. This includes indicators such as government spending on agriculture, where the state performs exceptionally well, and unemployment rate. The state's performance is at the bottom 3 in 7 indicators comprising majority of those from the Equity Pillar. The state performs poorly in the areas of Education and in the case of the ICDS programme. These include indicators such as malnutrition, IMR, ASER Index and net enrolment ratio

PAI 2019 recommends the states to focus on:

1. Health of children, specifically children below the age of one year and ensuring nutritional requirements of children below 5 years of age
2. Education, especially in terms of improving quality and increasing enrolment at the elementary level



Pillar I (Equity)

Prevalence of malnutrition amongst children below 5 years

Infant Mortality Rate (IMR)

Incidence of Crimes against SC and ST

Crimes against children

Rapes per 10 lakh population



Pillar II (Growth)

Proportion of total Government expenditure on Agriculture and Allied Services - **Outlier**

Unemployment Rate

ASER Index

Net Enrolment Ratio at Elementary (1-8)

STATE FACT SHEETS

MH MAHARASHTRA



PAI 2019
Index

Rank

9

Score

-0.06



Equity
Index

10

-0.379



Growth
Index

6

0.753



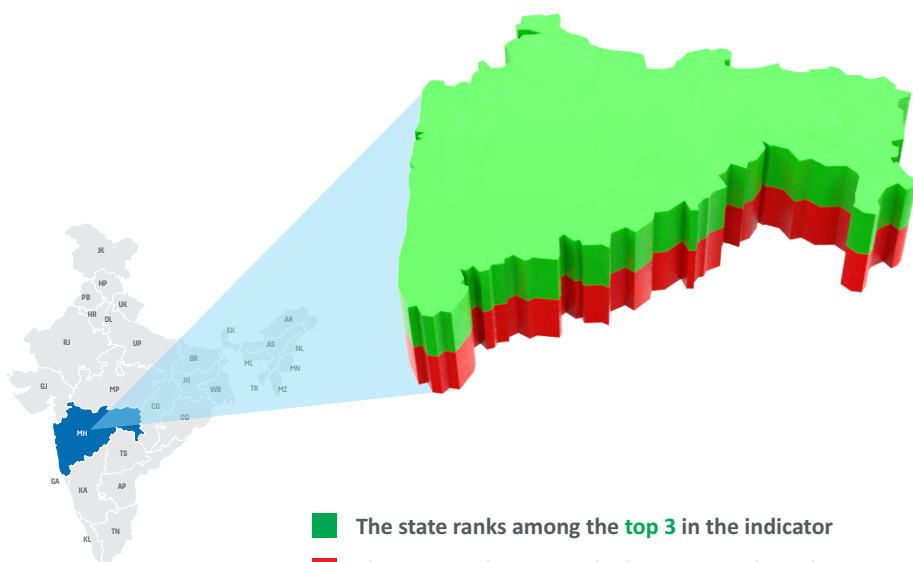
Sustainability
Index

11

-0.552

Maharashtra ranks 9th in PAI 2019. The state performs below average in the pillars of Equity and Sustainability. The 6 indicators where the state features among the top 3 comprise majority of those belonging to the Growth Pillar in the areas of Health and Government Spending. This includes indicators such as IMR, expenditure on agriculture and infrastructure and Fiscal surplus/ deficit. The state's performance is at the bottom 3 in 3 indicators all belonging to the Equity Pillar. These include indicators such as crimes against children and population living in slums. The state performs exceptionally poorly in the indicator of farmers suicides

PAI 2019 recommends the state to focus on the well being of children below 18 years of age, especially reducing the crimes against children



Pillar I (Equity)

Infant Mortality Rate (IMR)

Number of victims of intentional homicide per 100,000 population

Proportion of urban population living in slums

Farmers / Cultivators suicide per HHs - **Outlier**

Crimes against children



Pillar II (Growth)

Proportion of total Government expenditure on Agriculture and Allied Services

Percentage of school teachers professionally qualified

Fiscal Surplus/ Deficit

Proportion of total government expenditure on infrastructure - **Outlier**

LARGE STATES

OD ODISHA



PAI 2019
Index



Equity
Index



Growth
Index



Sustainability
Index

Rank	18	16	15	14
Score	-0.972	-1.227	-0.852	-0.837

Odisha ranks 18th in PAI 2019. The state shows a dismal performance in all three pillars of Growth, Equity and Sustainability with below average scores. The 1 indicator where the state features among the top 3 belongs to the Equity Pillar. This is the indicator relating to the ICDS programme. The state's performance is at the bottom 3 in 6 indicators, 2 belonging to the Growth Pillar, 2 to Sustainability and 2 to the Equity Pillar. These include indicators such as annual drop-out rates, renewable energy consumption and access to sanitation services. The state performs exceptionally poorly in the indicator of proportion of households with account at a bank

PAI 2019 recommends the state to focus on Education, particularly reducing the drop-out rates at the secondary level



Pillar I (Equity)

Participation rate in organised learning (one year before the official primary entry age)

Average Annual Drop-out rate at secondary level

Cases Pending in District Courts



Pillar II (Growth)

Proportion of population using safely managed sanitation services

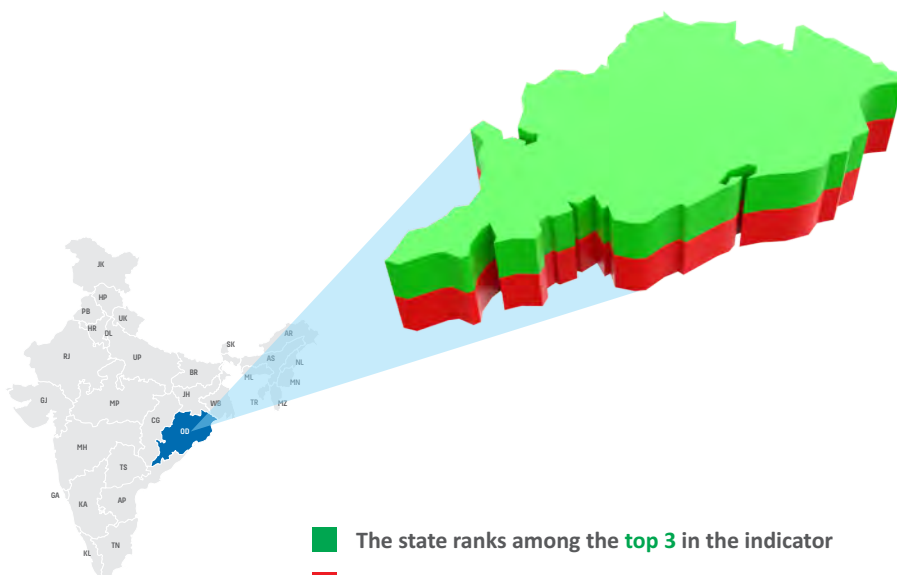
Proportion of households with an account at a bank - **Outlier**



Pillar III (Sustainability)

Renewable energy share in the total final energy consumption

Solid waste generation and waste processing in the urban areas



- The state ranks among the **top 3** in the indicator
- The state ranks among the **bottom 3** in the indicator

STATE FACT SHEETS

PB PUNJAB



PAI 2019
Index



Equity
Index



Growth
Index

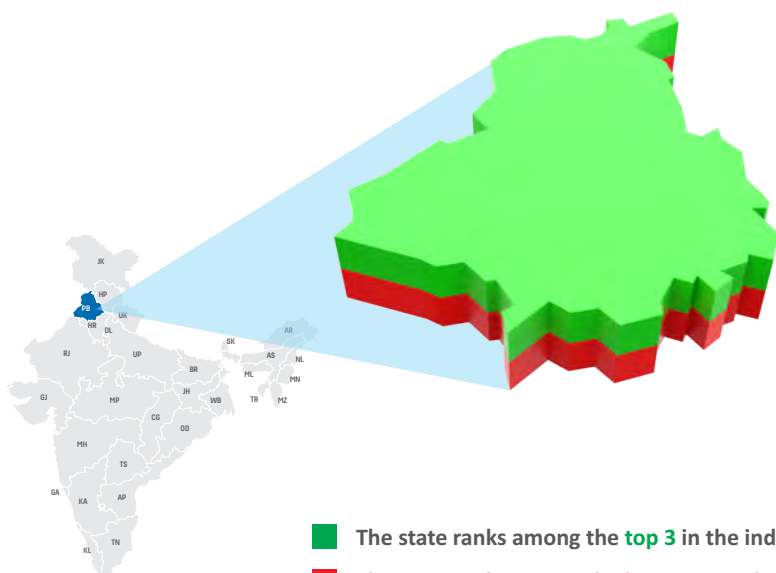


Sustainability
Index

Rank	5	5	7	12
Score	0.089	0.216	0.678	-0.629

Punjab ranks 5th in PAI 2019. The state performs below average in the Sustainability Pillar. The 15 indicators where the state features among the top 3 comprise majority of those belonging to the Growth Pillar. This includes indicators in the areas of Health, Education, water and sanitation. The state's performance is at the bottom 3 in 8 indicators comprising majority of those belonging to the Equity Pillar. The state shows poor performance in the areas of Government Spending and Fiscal Management. The state performs exceptionally poorly in the case of expenditure in the social sector and expenditure for agriculture.

PAI 2019 recommends the state to focus on increasing expenditure in the social sector and improve access to social protection schemes



- The state ranks among the **top 3** in the indicator
- The state ranks among the **bottom 3** in the indicator



Pillar I (Equity)

- Prevalence of malnutrition amongst children below 5 years
- Average Annual Drop-out rate at secondary level
- Unsented detainees as a proportion of overall prison population
- Incidence of Crimes against SC and ST
- Cases Pending in District Courts
- Proportion of population covered by social protection
- Expenditure in social sector - **Outlier**



Pillar II (Growth)

- ASER Index
- Percentage of elementary and secondary schools with Pupil Teacher Ratio less than/equal to 30
- Proportion of schools with access to (a) electricity; (b) computers for pedagogical purposes; (c) access to CWSN friendly toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic handwashing facilities (as per the WASH indicator definitions)
- Proportion of population using safely managed drinking water services
- Proportion of population using safely managed sanitation services
- Proportion of population with access to electricity
- Tax GDP Ratio
- States Own Tax Revenue Growth
- Number of commercial bank branches per 100,000 adults - **Outlier**
- Proportion of total Government expenditure on Agriculture and Allied Services - **Outlier**
- Fiscal Surplus/ Deficit
- Annual growth rate of real GSDP per capita
- Implementation of Business Reform Action Plan (BRAP) - **Outlier**
- Proportion of total government expenditure on infrastructure



Pillar III (Sustainability)

- Proportion of land that is degraded over total land area
- Forest area as a proportion of total land area

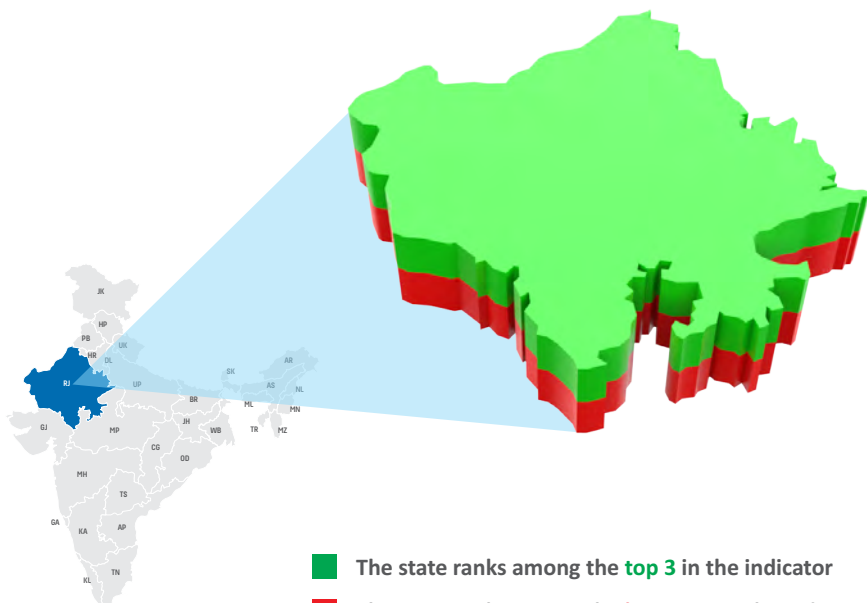
LARGE STATES

RJ RAJASTHAN

	 PAI 2019 Index	 Equity Index	 Growth Index	 Sustainability Index
Rank	13	12	11	16
Score	-0.444	-0.445	-0.01	-0.878

Rajasthan ranks 13th in PAI 2019. The state shows dismal performance in all the three pillars of Growth, Equity and Sustainability. The 2 indicators where the state features among the top 3 belongs to the Equity Pillar and the Sustainability Pillar. These are the indicators on the proportion of women elected in legislature and the renewable energy consumption by the state. The state's performance is at the bottom 3 in 6 indicators that include those on ICDS, under trials, crimes against SC and ST and environment

PAI 2019 recommends the state to focus on Education, particularly in improving quality and increasing participation of children between the age of 3 to 6 years in pre-school learning



Pillar I (Equity)

Proportion of seats held by women in (a) state legislatures and (b) local governments

Participation rate in organised learning (one year before the official primary entry age)

Unsentenced detainees as a proportion of overall prison population

Incidence of Crimes against SC and ST



Pillar II (Growth)

ASER Index



Pillar III (Sustainability)

Renewable energy share in the total final energy consumption

Forest area as a proportion of total land area

Proportion of land that is degraded over total land area

STATE FACT SHEETS

TN TAMIL NADU



PAI 2019
Index



Equity
Index



Growth
Index

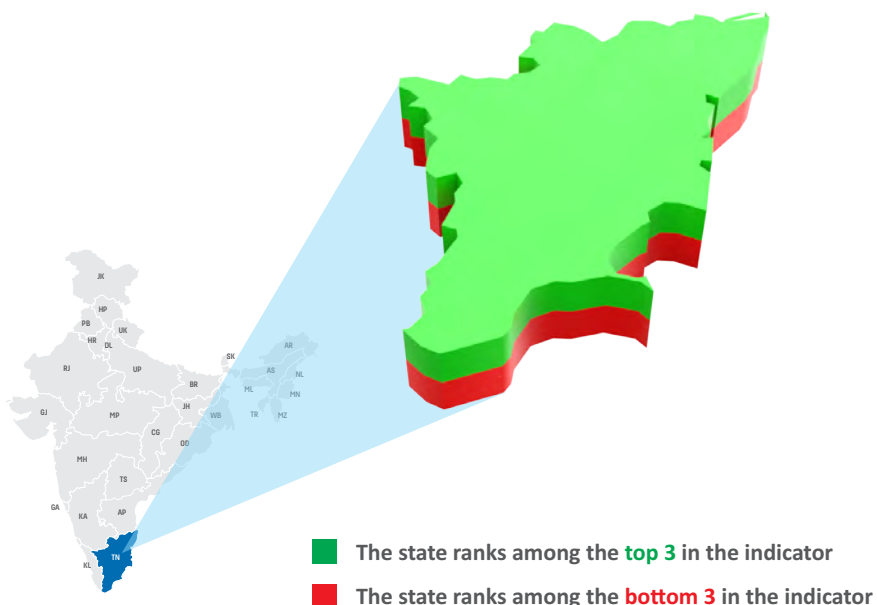


Sustainability
Index

Rank	2	1	8	3
Score	0.823	0.782	0.65	1.036

Tamil Nadu ranks 2nd in PAI 2019. The state performs well in the areas of Education, Health and Fiscal Management. The 12 indicators where the state features among the top 3 comprise majority of indicators belonging to the Equity Pillar. These include indicators such as IMR, under trials and worker population ratio (female). The state's performance is at the bottom 3 in 3 indicators with 2 indicators in the Equity Pillar and 1 in the Growth Pillar. This includes indicators on the proportion of women elected to legislature, rural indebtedness and state spending on agriculture

PAI 2019 recommends the state to focus on reducing vulnerabilities of indebted agricultural households



Pillar I (Equity)

- Average Annual Drop-out rate at secondary level
- Infant Mortality Rate (IMR)
- Unsented detainees as a proportion of overall prison population
- Dowry deaths per 10 lakh population
- Rapes per 10 lakh population
- Worker Population Ratio (Female) (WPR)
- No. of ACB (Anti-Corruption Bureau) cases disposed as a % of total cases registered
- Proportion of seats held by women in (a) state legislatures and (b) local governments
- Rural Indebtedness



Pillar II (Growth)

- Net Enrolment Ratio at Elementary (1-8)
- Manufacturing value added as a proportion of GDP and per capita
- Number of Buses per 10 lakh population
- Proportion of total Government expenditure on Agriculture and Allied Services



Pillar III (Sustainability)

- Renewable energy share in the total final energy consumption
- Annual mean levels of fine particulate matter (PM10) in cities (population weighted)

LARGE STATES

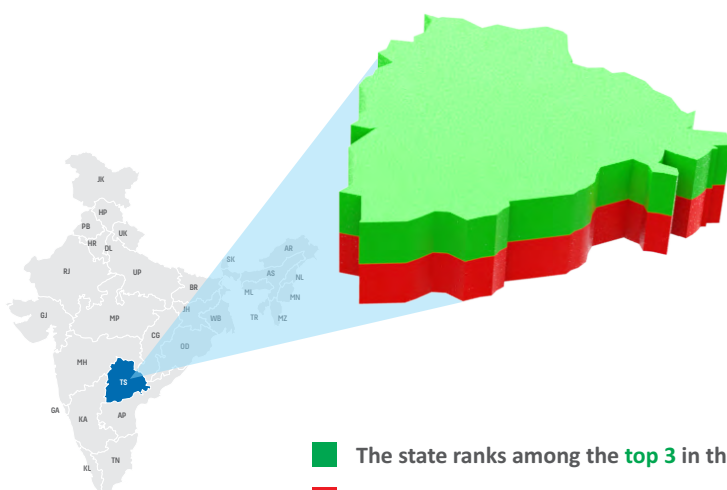
TS TELANGANA

				
	PAI 2019 Index	Equity Index	Growth Index	Sustainability Index
Rank	7	18	5	4
Score	-0.008	-1.732	0.753	0.956

Telangana ranks 7th in PAI 2019. While the state performs above average in the pillars of Growth and Sustainability, it performs poorly in the Equity Pillar. The 6 indicators where the state features among the top 3 comprise majority of indicators belonging to the Growth Pillar. These include indicators such as government spending on agriculture, revenue growth of the state and measures to ensure ease of doing business. The state performs exceptionally well in the indicator on tax GDP Ratio. Telangana's performance is at the bottom 3 in 9 indicators comprising majority of those in the Equity Pillar. This includes indicators on the proportion of population covered by social protection, rural indebtedness and farmers suicides. The state performs exceptionally poorly in the indicator of child sex ratio

PAI 2019 recommends the state to focus on:

1. Education, specifically pre-school learning for children in the age group of 3-6 years
2. Health, specially on health human resources - doctors, nurses, ANMs, RN & RM



- The state ranks among the **top 3** in the indicator
- The state ranks among the **bottom 3** in the indicator



Pillar I (Equity)

- Prevalence of malnutrition amongst children below 5 years
- Proportion of population covered by social protection
- Participation rate in organised learning (one year before the official primary entry age)
- Proportion of urban population living in slums
- Rural Indebtedness
- Farmers/ Cultivators suicide per HHs
- Rapes per 10 lakh population
- Child Sex Ratio - **Outlier**



Pillar II (Growth)

- Proportion of total Government expenditure on Agriculture and Allied Services
- Tax GDP Ratio - **Outlier**
- States Own Tax Revenue Growth
- Implementation of Business Reform Action Plan (BRAP)
- Health worker density
- Proportion of population using safely managed drinking water services
- Fiscal Surplus/ Deficit



Pillar III (Sustainability)

- Solid waste generation and waste processing in the urban areas

STATE FACT SHEETS

UP UTTAR PRADESH



PAI 2019
Index

Rank

17

Score

-0.864



Equity
Index

11

-0.388



Growth
Index

16

-1.165



Sustainability
Index

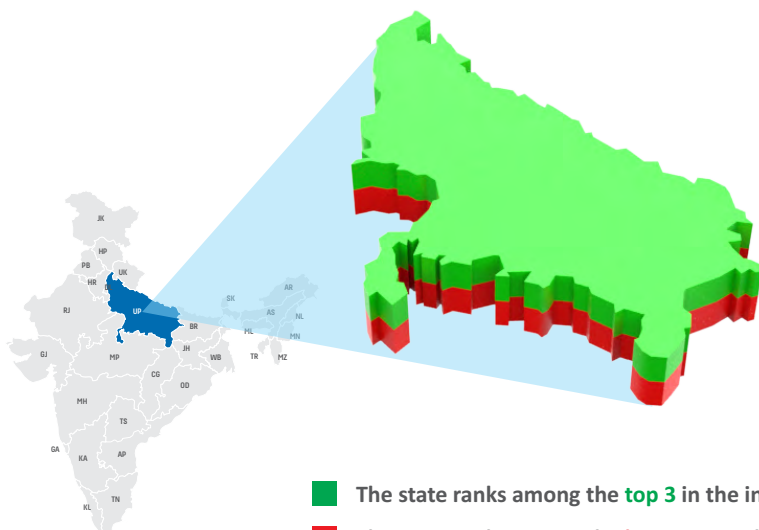
17

-1.04

Uttar Pradesh ranks 17th in PAI 2019. It is interesting to note that the state performs below average in all three pillars of Growth, Equity and Sustainability. The 5 indicators where the state features among the top 3 comprise majority of indicators belonging to the Equity Pillar. These include indicators on the proportion of population covered by social protection and educational outcomes. The state's performance is at the bottom 3 in 9 indicators comprising majority of those in the Growth Pillar. This includes indicators on IMR, expenditure in the social sector and government spending on agriculture

PAI 2019 recommends the state to focus on:

1. Health, particularly the well being of infants below one year of age
2. Education, especially increasing enrolment rates at the elementary level and adhering to the standard pupil teacher ratio (≤ 30)



- The state ranks among the **top 3** in the indicator
- The state ranks among the **bottom 3** in the indicator



Pillar I (Equity)

Proportion of population covered by social protection

Average Annual Drop-out rate at secondary level

Gender Parity Index (Elementary)

Infant Mortality Rate (IMR)

Expenditure in social sector

Dowry deaths per 10 lakh population



Pillar II (Growth)

Proportion of population using safely managed drinking water services

Proportion of total Government expenditure on Agriculture and Allied Services

Net Enrolment Ratio at Elementary (1-8)

Percentage of elementary and secondary schools with Pupil Teacher Ratio less than/equal to 30

Proportion of population with access to electricity

Number of Buses per 10 lakh population



Pillar III (Sustainability)

Proportion of land that is degraded over total land area

Annual mean levels of fine particulate matter (PM10) in cities (population weighted)

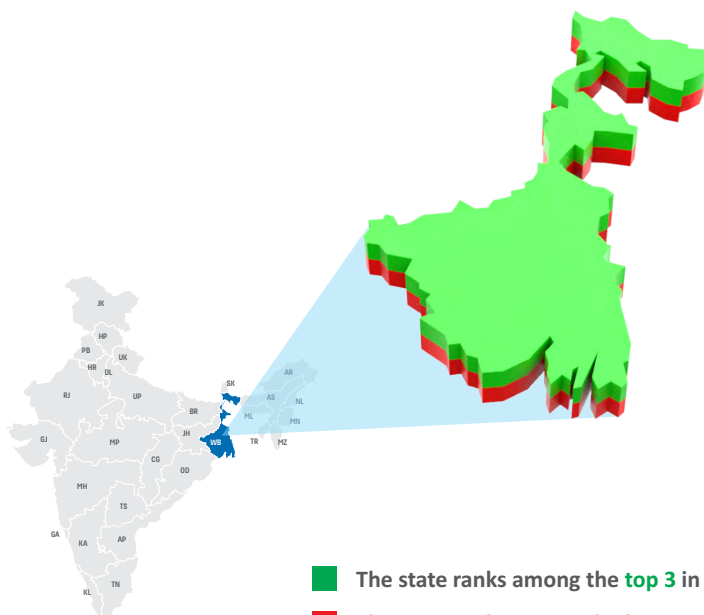
LARGE STATES

WB WEST BENGAL

	 PAI 2019 Index	 Equity Index	 Growth Index	 Sustainability Index
Rank	11	3	14	13
Score	-0.246	0.378	-0.46	-0.655

West Bengal ranks 11th in PAI 2019. The state's performance is below average in the Growth and Sustainability Pillars. The 8 indicators where the state features among the top 3 comprise majority of indicators belonging to the Equity Pillar. These include indicators on seats held by women in legislature, ICDS and farmers suicides. The state's performance is at the bottom 3 in 7 indicators comprising majority of those in the Growth Pillar. This includes indicators on education and infrastructure for economic growth. The state performs exceptionally poorly in the indicator of tax GDP ratio

PAI 2019 recommends the state to focus on Education, particularly on hiring professionally qualified teachers



- The state ranks among the **top 3** in the indicator
- The state ranks among the **bottom 3** in the indicator



Pillar I (Equity)

- Participation rate in organised learning (one year before the official primary entry age)
- Proportion of seats held by women in (a) state legislatures and (b) local governments
- Farmers/ Cultivators suicide per HHs
- Incidence of Crimes against SC and ST
- Rapes per 10 lakh population
- No. of ACB (Anti-Corruption Bureau) cases disposed as a % of total cases registered



Pillar II (Growth)

- Fiscal Surplus/ Deficit
- Annual growth rate of real GSDP per capita
- Manufacturing value added as a proportion of GDP and per capita
- Percentage of school teachers professionally qualified
- Tax GDP Ratio - **Outlier**
- States Own Tax Revenue Growth
- Number of commercial bank branches per 100,000 adults
- Number of Buses per 10 lakh population



Pillar III (Sustainability)

- Solid waste generation and waste processing in the urban areas

STATE FACT SHEETS

AR ARUNACHAL PRADESH



PAI 2019
Index



Equity
Index



Growth
Index

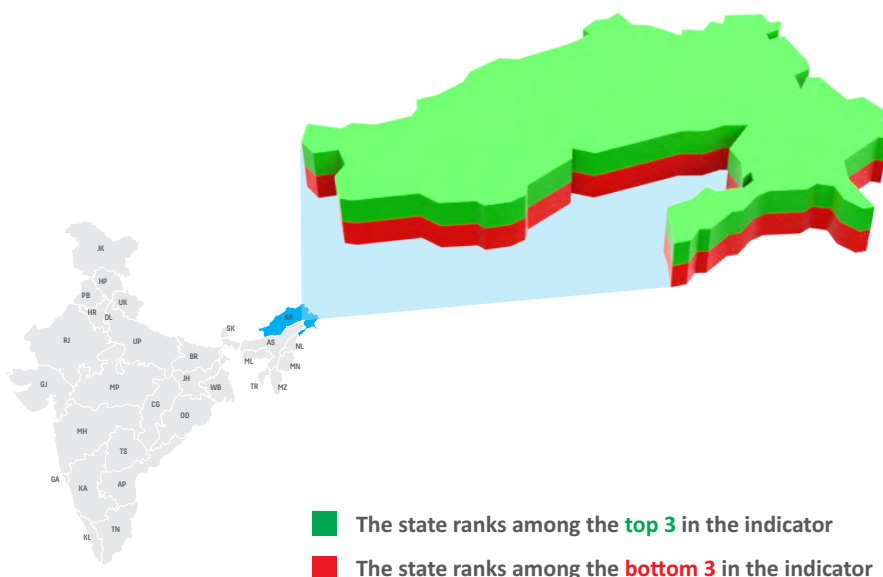


Sustainability
Index

Rank	4	11	5	1
Score	0.619	-0.255	0.207	1.904

Arunachal Pradesh ranks 4th in PAI 2019. The state appears among the top 3 in 12 indicators, which includes diverse sectors of Health, Education, Fiscal Management and Environment. The state's performance is at the bottom 3 in 17 indicators with majority of the indicators belonging to the Equity Pillar. Arunachal Pradesh is an outlier state in case of the indicator of Palma Ratio (urban), indicating the existence of income inequality within the state.

PAI 2019 recommends the state to focus on Education, specifically to improve quality, infrastructural facilities and maintain a parity among boys and girls in elementary education.



Pillar I (Equity)

Participation rate in organised learning (one year before the official primary entry age)
Proportion of urban population living in slums
Infant Mortality Rate (IMR)
Unsented detainees as a proportion of overall prison population
Proportion of population covered by social protection
Proportion of seats held by women in (a) state legislatures and (b) local governments
Palma Ratio of Household Expenditure in Urban India - **Outlier**
Palma Ratio of Household Expenditure in Rural India
Gender Parity Index (Elementary)
Farmers/ Cultivators suicide per HHs
Expenditure in social sector
Cases Pending in District Courts
Worker Population Ratio (Female) (WPR)



Pillar II (Growth)

Fiscal Surplus/ Deficit
States Own Tax Revenue Growth
Annual growth rate of real GSDP per capita
Proportion of households with an account at a bank
Number of Buses per 10 lakh population - **Outlier**
Proportion of total Government expenditure on Agriculture and Allied Services
ASER Index
Proportion of schools with access to (a) electricity; (b) computers for pedagogical purposes; (c) access to CWSN friendly toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic handwashing facilities (as per the WASH indicator definitions)
Proportion of population with access to electricity
Implementation of Business Reform Action Plan (BRAP)
Number of commercial bank branches per 100,000 adults
Manufacturing value added as a proportion of GDP and per capita
Proportion of total government expenditure on infrastructure - **Outlier**



Pillar III (Sustainability)

Renewable energy share in the total final energy consumption
Forest area as a proportion of total land area
Proportion of land that is degraded over total land area

SMALL STATES

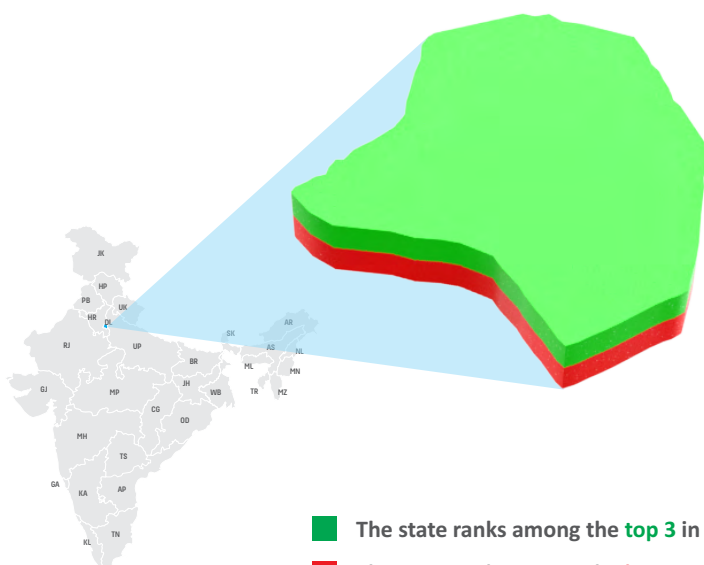
DL DELHI

				
	PAI 2019 Index	Equity Index	Growth Index	Sustainability Index
Rank	12	12	3	12
Score	-1.214	-2.285	0.341	-1.696

Delhi, the national capital, ranks last in the overall PAI 2019 index under the category of small states. The state performs poorly in both the pillars of Equity as well as Sustainability. The state appears among the top 3 in 14 indicators, with majority of the indicators belonging to the Growth Pillar. On the other hand, the state's performance is at the bottom 3 in 17 indicators with 11 indicators belonging to the Equity Pillar. Delhi appears to be an outlier state in terms of higher proportion of urban population living in slums and incidence of crimes against children.

PAI 2019 recommends the state to focus on:

1. Education, specifically to adhere to the standard pupil-teacher ratio (≤ 30)
2. Health, specifically to focus on the wellbeing of the infants in the age group of 0 to 1 years.



- The state ranks among the **top 3** in the indicator
- The state ranks among the **bottom 3** in the indicator



Pillar I (Equity)

Proportion of seats held by women in (a) state legislatures and (b) local governments
 Palma Ratio of Household Expenditure in Rural India
 Gender Parity Index (Elementary) - **Outlier**
 Farmers/ Cultivators suicide per HHs
 Expenditure in social sector
 Palma Ratio of Household Expenditure in Urban India
 Proportion of urban population living in slums - **Outlier**
 Infant Mortality Rate (IMR)
 Rural Indebtedness
 Unsented detainees as a proportion of overall prison population
 Child Sex ratio
 Crimes against children - **Outlier**
 Dowry deaths per 10 lakh population
 Rapes per 10 lakh population
 Cases Pending in District Courts
 No. of ACB (Anti-Corruption Bureau) cases disposed as a % of total cases registered



Pillar II (Growth)

Health worker density
 Net Enrolment Ratio at Elementary (1-8)
 Proportion of schools with access to (a) electricity; (b) computers for pedagogical purposes; (c) access to CWSN friendly toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic handwashing facilities (as per the WASH indicator definitions)
 Percentage of school teachers professionally qualified
 Proportion of population with access to electricity
 Fiscal Surplus/ Deficit
 Proportion of households with an account at a bank
 Proportion of total government expenditure on infrastructure
 Proportion of total Government expenditure on Agriculture and Allied Services
 Percentage of elementary and secondary schools with Pupil Teacher Ratio less than/equal to 30 - **Outlier**



Pillar III (Sustainability)

Solid waste generation and waste processing in the urban areas
 Renewable energy share in the total final energy consumption
 Forest area as a proportion of total land area
 Proportion of land that is degraded over total land area
 Annual mean levels of fine particulate matter (PM10) in cities (population weighted)

STATE FACT SHEETS

GA GOA



PAI 2019
Index



Equity
Index



Growth
Index

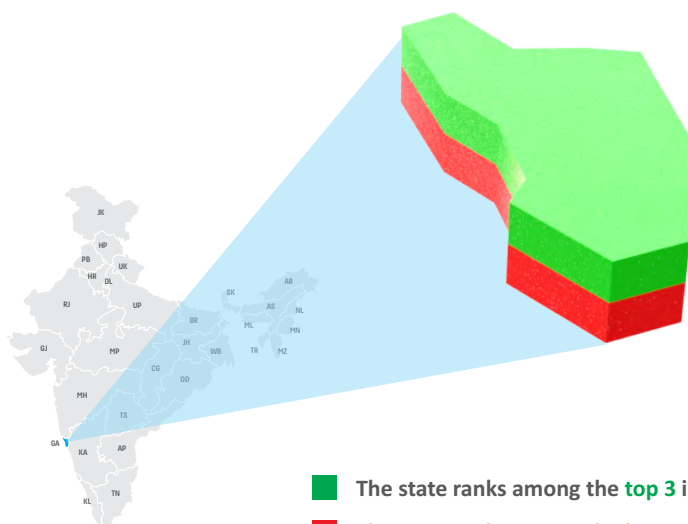


Sustainability
Index

Rank	1	6	1	5
Score	1.1	0.771	2.154	0.376

Goa ranks 1st in the overall PAI 2019 index. The state's performance in all the pillars has been above average. It is interesting to note that the state appears among the top 3 in 21 indicators, with majority of the indicators belonging to the Growth Pillar. The state performs well in diverse sectors – lower drop-out rates, lesser slums, reduction in infants deaths, lower incidence of crimes against women, increase in growth rate of GSDP per capita, better solid waste management etc. The state is at the bottom 3 in 12 indicators with majority of the indicators belonging to the Equity Pillar.

PAI 2019 recommends the state to focus on the functioning of the ICDS programme, especially to improve health, education and nutritional outcomes for the children.



- The state ranks among the **top 3** in the indicator
- The state ranks among the **bottom 3** in the indicator



Pillar I (Equity)

Average Annual Drop-out rate at secondary level
Proportion of urban population living in slums
Infant Mortality Rate (IMR)
Farmers/ Cultivators suicide per HHs
Number of victims of intentional homicide per 100,000 population
Unsented detainees as a proportion of overall prison population
Child Sex ratio
Rapes per 10 lakh population
Proportion of population covered by social protection
Prevalence of malnutrition amongst children below 5 years
Participation rate in organised learning (one year before the official primary entry age)
Proportion of seats held by women in (a) state legislatures and (b) local governments
Palma Ratio of Household Expenditure in Rural India
Rural Indebtedness
Incidence of Crimes against SC and ST - **Outlier**



Pillar II (Growth)

Proportion of schools with access to (a) electricity; (b) computers for pedagogical purposes; (c) access to CWSN friendly toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic handwashing facilities (as per the WASH indicator definitions)
Percentage of school teachers professionally qualified
Proportion of population using safely managed drinking water services
Proportion of population using safely managed sanitation services
Proportion of population with access to electricity
Tax GDP Ratio
Annual growth rate of real GSDP per capita
Implementation of Business Reform Action Plan (BRAP)
Number of commercial bank branches per 100,000 adults - **Outlier**
Proportion of households with an account at a bank
Manufacturing value added as a proportion of GDP and per capita
Number of Buses per 10 lakh population
Health worker density
Fiscal Surplus/ Deficit
Unemployment Rate



Pillar III (Sustainability)

Solid waste generation and waste processing in the urban areas
Renewable energy share in the total final energy consumption
Proportion of land that is degraded over total land area

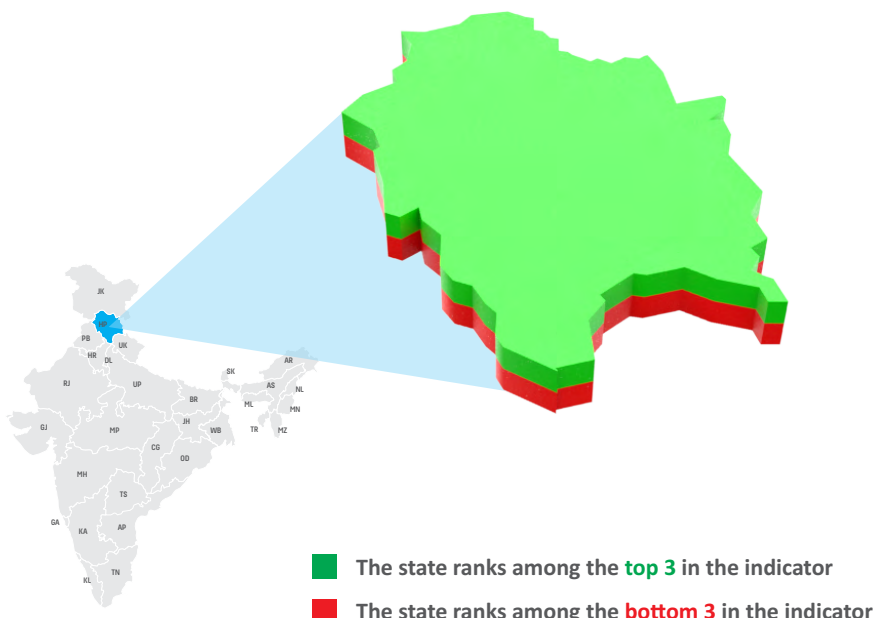
SMALL STATES

HP HIMACHAL PRADESH

				
	PAI 2019 Index	Equity Index	Growth Index	Sustainability Index
Rank	2	1	2	7
Score	0.985	1.889	0.867	0.199

Himachal Pradesh ranks second in the overall PAI 2019 index. While the state performs remarkably well in the pillars of equity and growth, it ranks 7th in the sustainability index. The state appears among the top 3 in 17 indicators, with majority of the indicators (10) belonging to the Growth Pillar, followed by 6 equity indicators and one indicator from sustainability. The state is at the bottom 3 in only 8 indicators with 4 indicators belonging to the Growth Pillar. It is interesting to note that Himachal Pradesh is an outlier state in case of state expenditure on key sectors of Infrastructure and Agriculture & Allied Services.

PAI 2019 recommends the state to pay particular attention to income inequality within the state; especially in the rural areas.



Pillar I (Equity)

Average Annual Drop-out rate at secondary level
Proportion of urban population living in slums
Farmers/ Cultivators suicide per HHs
Number of victims of intentional homicide per 100,000 population
Child Sex ratio
Worker Population Ratio (Female) (WPR)
Proportion of population covered by social protection
Palma Ratio of Household Expenditure in Rural India
Incidence of Crimes against SC and ST



Pillar II (Growth)

Health worker density
ASER Index
Percentage of elementary and secondary schools with Pupil Teacher Ratio less than/equal to 30
Proportion of schools with access to (a) electricity; (b) computers for pedagogical purposes; (c) access to CWSN friendly toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic handwashing facilities (as per the WASH indicator definitions)
Percentage of school teachers professionally qualified
Proportion of population using safely managed drinking water services
Tax GDP Ratio
Implementation of Business Reform Action Plan (BRAP)
Number of commercial bank branches per 100,000 adults
Number of Buses per 10 lakh population
Proportion of total Government expenditure on Agriculture and Allied Services - **Outlier**
Fiscal Surplus/ Deficit
States Own Tax Revenue Growth
Proportion of total government expenditure on infrastructure - **Outlier**



Pillar III (Sustainability)

Renewable energy share in the total final energy consumption
Forest area as a proportion of total land area

STATE FACT SHEETS

JK JAMMU & KASHMIR



PAI 2019
Index

Rank

11

Score

-0.426



Equity
Index

8

0.46



Growth
Index

7

-0.197



Sustainability
Index

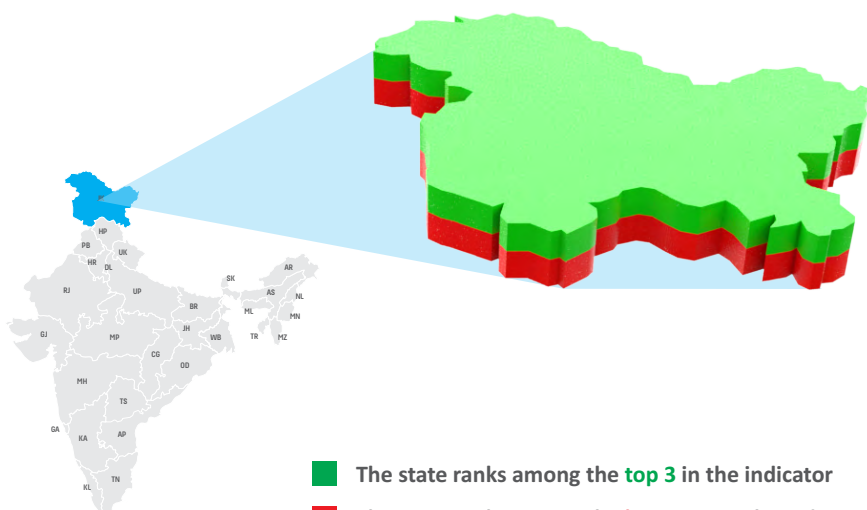
11

-1.539

Jammu and Kashmir stood second last in the overall PAI 2019 index. The state performs below average in the pillars of growth and sustainability. The state appears among the top 3 in 6 indicators, with majority of the indicators (5) belonging to the Growth Pillar and covers a wide range of indicators including pupil teacher ratio, tax GDP ratio and unemployment rate. The state is at the bottom 3 in 10 indicators with 5 indicators belonging to the Growth Pillar.

PAI 2019 recommends the state to focus on:

1. Education, specifically on its quality, pre-school learning for children in the age group of 3-6 years and enrolment of children in elementary education
2. Health, specially on health human resources - doctors, nurses, ANMs, RN & RM.



Pillar I (Equity)

Crimes against children

Participation rate in organised learning (one year before the official primary entry age)

Proportion of seats held by women in (a) state legislatures and (b) local governments

Proportion of urban population living in slums



Pillar II (Growth)

Percentage of elementary and secondary schools with Pupil Teacher Ratio less than/equal to 30

Tax GDP Ratio

States Own Tax Revenue Growth

Annual growth rate of real GSDP per capita

Unemployment Rate

Health worker density

ASER Index

Net Enrolment Ratio at Elementary (1-8)

Proportion of population using safely managed sanitation services

Proportion of households with an account at a bank - Outlier



Pillar III (Sustainability)

Forest area as a proportion of total land area

Annual mean levels of fine particulate matter (PM10) in cities (population weighted)

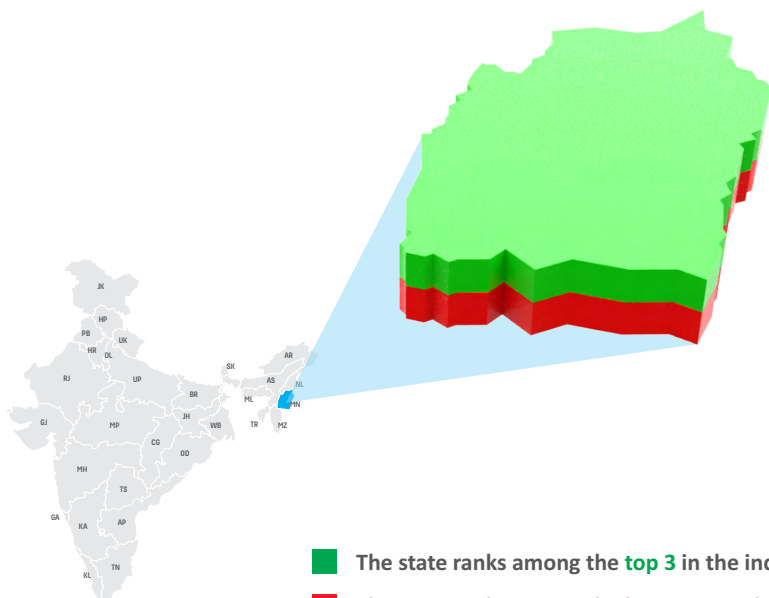
SMALL STATES

MN MANIPUR

				
	PAI 2019 Index	Equity Index	Growth Index	Sustainability Index
Rank	6	4	12	2
Score	0.105	1.216	-2.263	1.362

Manipur stood 6th in the overall PAI 2019 index. The state performs below average and ranks last in the Sustainability Pillar. The state appears among the top 3 in 12 indicators, with majority of the indicators (8) belonging to the Equity Pillar. The state is at the bottom 3 in 10 indicators with 7 indicators belonging to the Growth Pillar. Manipur is an outlier state in terms of having lesser proportion of households with a bank account and lower access to safe drinking water.

PAI 2019 recommends the state to focus on accessibility and management of clean water and sanitation for all



- The state ranks among the **top 3** in the indicator
- The state ranks among the **bottom 3** in the indicator



Pillar I (Equity)

- Prevalence of malnutrition amongst children below 5 years
- Participation rate in organised learning (one year before the official primary entry age)
- Palma Ratio of Household Expenditure in Urban India
- Infant Mortality Rate (IMR)
- Expenditure in social sector
- Crimes against children
- Dowry deaths per 10 lakh population
- Cases Pending in District Courts
- Unsented detainees as a proportion of overall prison population
- No. of ACB (Anti-Corruption Bureau) cases disposed as a % of total cases registered



Pillar II (Growth)

- ASER Index
- Net Enrolment Ratio at Elementary (1-8)
- Proportion of population using safely managed drinking water services - **Outlier**
- Proportion of population using safely managed sanitation services
- Tax GDP Ratio
- Annual growth rate of real GSDP per capita
- Unemployment Rate
- Number of commercial bank branches per 100,000 adults
- Proportion of households with an account at a bank - **Outlier**



Pillar III (Sustainability)

- Forest area as a proportion of total land area
- Annual mean levels of fine particulate matter (PM10) in cities (population weighted)
- Renewable energy share in the total final energy consumption

STATE FACT SHEETS

ML MEGHALAYA



PAI 2019
Index

Rank

3

Score

0.891



Equity
Index

2

1.788



Growth
Index

8

-0.46



Sustainability
Index

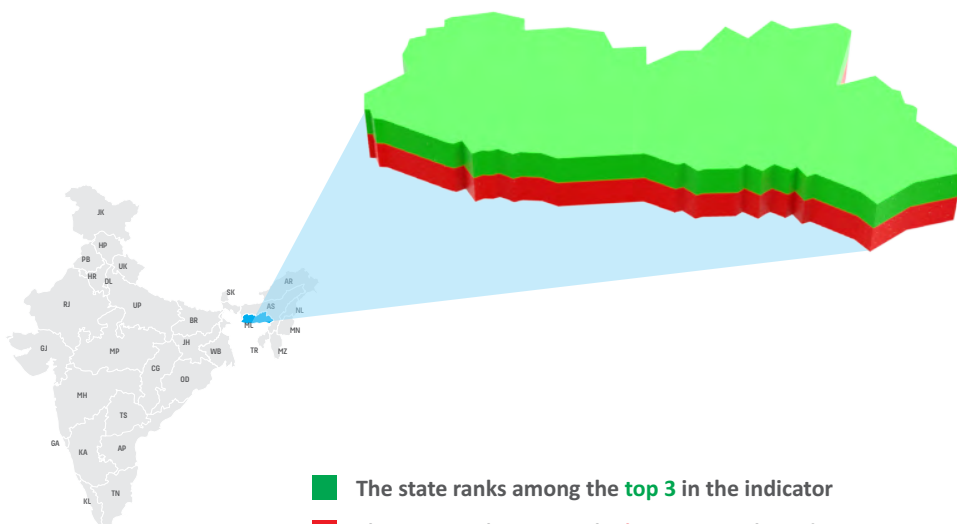
3

1.343

Meghalaya stood 3rd in the overall PAI 2019 index. The state performs above average in the pillars of Equity and Sustainability Pillar. The state appears among the top 3 in 12 indicators, with majority of the indicators (7) belonging to the Equity Pillar. The state performs remarkably well in terms of income inequality in both rural and urban areas. The state is at the bottom 3 in 16 indicators with 10 indicators belonging to the Growth Pillar.

PAI 2019 recommends the state to focus on:

1. Education, specifically on reducing drop-out rates, access to essential infrastructure, hiring professionally qualified teachers and adhering to the standard pupil-teacher ratio (≤ 30)
2. Improving nutritional outcomes for the children in the age group of 0-5 years.



Pillar I (Equity)

Palma Ratio of Household Expenditure in Urban India

Palma Ratio of Household Expenditure in Rural India

Gender Parity Index (Elementary)

Rural Indebtedness

Incidence of Crimes against SC and ST

Child Sex ratio

Worker Population Ratio (Female) (WPR)

Prevalence of malnutrition amongst children below 5 years

Average Annual Drop-out rate at secondary level

Farmers/ Cultivators suicide per HHs

Number of victims of intentional homicide per 100,000 population

Unsented detainees as a proportion of overall prison population

Rapes per 10 lakh population



Pillar II (Growth)

Proportion of total Government expenditure on Agriculture and Allied Services

Net Enrolment Ratio at Elementary (1-8)

States Own Tax Revenue Growth

Unemployment Rate

Percentage of elementary and secondary schools with Pupil Teacher Ratio less than/equal to 30

Proportion of schools with access to (a) electricity; (b) computers for pedagogical purposes; (c) access to CWSN friendly toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic handwashing facilities (as per the WASH indicator definitions)

Percentage of school teachers professionally qualified

Proportion of population using safely managed drinking water services

Proportion of population using safely managed sanitation services

Proportion of population with access to electricity

Annual growth rate of real GSDP per capita

Implementation of Business Reform Action Plan (BRAP)

Manufacturing value added as a proportion of GDP and per capita

Proportion of total government expenditure on infrastructure



Pillar III (Sustainability)

Solid waste generation and waste processing in the urban areas

SMALL STATES

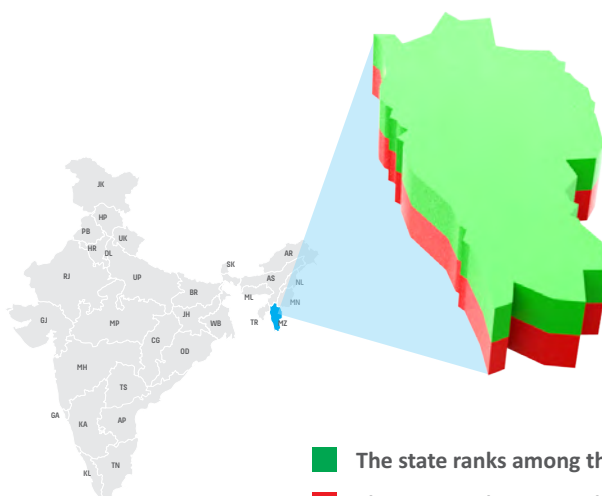
MZ MIZORAM

				
	PAI 2019 Index	Equity Index	Growth Index	Sustainability Index
Rank	5	5	9	4
Score	0.581	1.087	-0.596	1.252

Mizoram stood 5th in the overall PAI 2019 index. The state appears among the top 3 in 18 indicators, with majority of the indicators (10) belonging to the Equity Pillar. The state performs well in multiple areas including nutrition, access to access to sanitation, infrastructure and forest cover. The state is at the bottom 3 in 8 indicators with 6 indicators belonging to the Equity Pillar.

PAI 2019 recommends the state to focus on:

1. Education, specifically to reduce drop-out rates and maintain a parity among boys and girls in elementary education
2. Health, specifically to focus on the wellbeing of the infants in the age group of 0 to 1 years.



- The state ranks among the **top 3** in the indicator
- The state ranks among the **bottom 3** in the indicator



Pillar I (Equity)

- Proportion of population covered by social protection
- Prevalence of malnutrition amongst children below 5 years
- Participation rate in organised learning (one year before the official primary entry age)
- Palma Ratio of Household Expenditure in Urban India
- Rural Indebtedness
- Incidence of Crimes against SC and ST
- Dowry deaths per 10 lakh population
- Rapes per 10 lakh population
- Cases Pending in District Courts
- No. of ACB (Anti-Corruption Bureau) cases disposed as a % of total cases registered
- Average Annual Drop-out rate at secondary level
- Proportion of urban population living in slums
- Infant Mortality Rate (IMR)
- Gender Parity Index (Elementary)
- Expenditure in social sector
- Crimes against children



Pillar II (Growth)

- Proportion of total Government expenditure on Agriculture and Allied Services
- Health worker density
- ASER Index
- Proportion of population using safely managed sanitation services
- Proportion of total government expenditure on infrastructure
- Tax GDP Ratio
- States Own Tax Revenue Growth



Pillar III (Sustainability)

- Forest area as a proportion of total land area
- Proportion of land that is degraded over total land area
- Annual mean levels of fine particulate matter (PM10) in cities (population weighted)

STATE FACT SHEETS

NL NAGALAND



PAI 2019
Index

Rank

10

Score

-0.174



Equity
Index

3



Growth
Index

11



Sustainability
Index

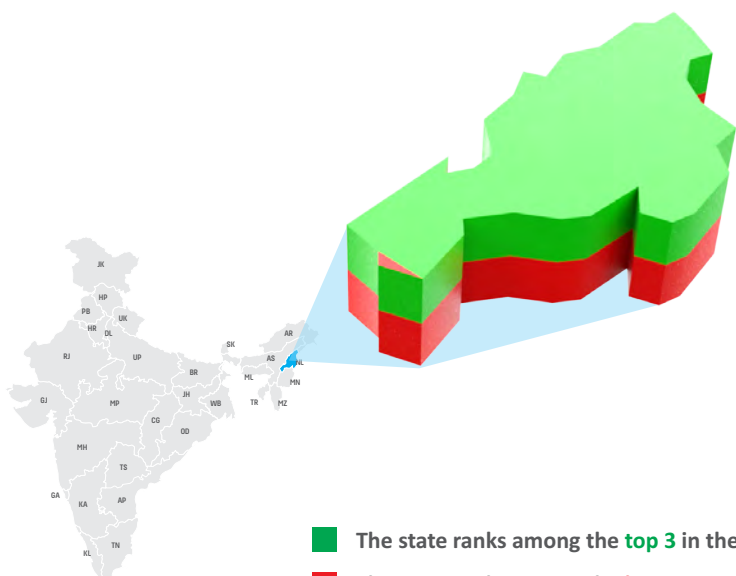
9

-1.581

-0.313

Nagaland stood 10th in the overall PAI 2019 index. The state is among the top three states in terms of Equity, however, it appears in the last quartile in the pillars of Growth and Sustainability. The state appears among the top 3 in 12 indicators, with 10 indicators belonging to the Equity Pillar. The state is at the bottom 3 in 12 indicators with majority of the indicators belonging to the Growth Pillar. Nagaland is the outlier state in terms of unemployment rate indicating a higher proportion of population in the age group of 15-59 years not in the workforce (unemployed).

PAI 2019 recommends the state to focus on Education, specifically to increase enrolment of children in elementary education and hiring professionally qualified teachers



Pillar I (Equity)

- Proportion of population covered by social protection
- Prevalence of malnutrition amongst children below 5 years
- Gender Parity Index (Elementary)
- Rural Indebtedness
- Number of victims of intentional homicide per 100,000 population
- Incidence of Crimes against SC and ST
- Crimes against children
- Dowry deaths per 10 lakh population
- Rapes per 10 lakh population
- No. of ACB (Anti-Corruption Bureau) cases disposed as a % of total cases registered
- Cases Pending in District Courts
- Worker Population Ratio (Female) (WPR)



Pillar II (Growth)

- Proportion of total Government expenditure on Agriculture and Allied Services
- Net Enrolment Ratio at Elementary (1-8)
- Percentage of school teachers professionally qualified
- Proportion of population using safely managed drinking water services
- Tax GDP Ratio
- Annual growth rate of real GSDP per capita
- Unemployment Rate - **Outlier**
- Number of commercial bank branches per 100,000 adults
- Proportion of households with an account at a bank



Pillar III (Sustainability)

- Renewable energy share in the total final energy consumption
- Proportion of land that is degraded over total land area
- Solid waste generation and waste processing in the urban areas

SMALL STATES

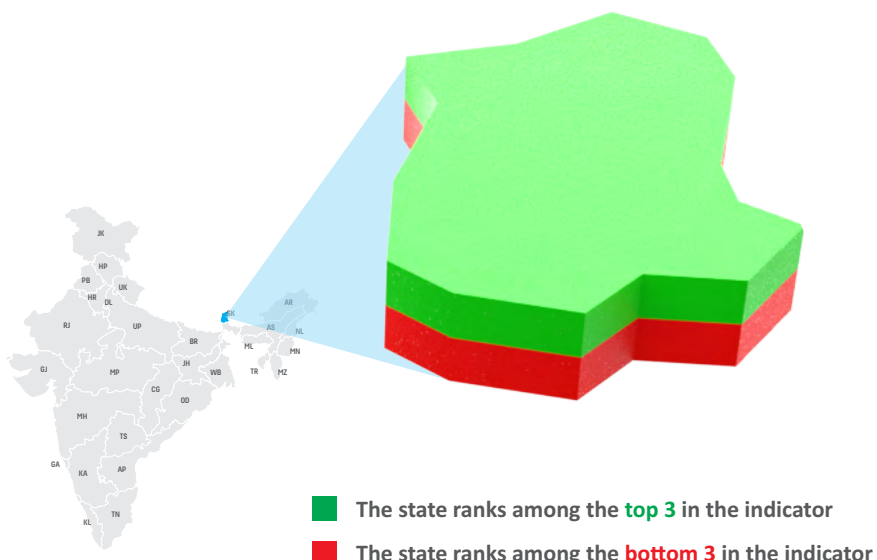
SK SIKKIM

				
	PAI 2019 Index	Equity Index	Growth Index	Sustainability Index
Rank	7	10	6	6
Score	-0.012	-0.229	-0.024	0.217

Sikkim stood 7th in the overall PAI 2019 index. The state's performance is below average in the pillars of Equity and Growth, while, its performance is above average in the Sustainability Pillar. The state appears among the top 3 in 13 indicators, with majority of the indicators belonging to the Growth Pillar. The state is at the bottom 3 in 14 indicators with majority of the indicators belonging to the Equity Pillar. Sikkim is an outlier state in terms of higher farmers suicides, lower child sex ratio and higher fiscal deficit.

PAI 2019 recommends the state to focus on:

1. Education, specifically on elementary education- to increase enrolment and maintain a parity among boys and girls
2. Health, specially on health human resources - doctors, nurses, ANMs, RN & RM.



Pillar I (Equity)

- Proportion of seats held by women in (a) state legislatures and (b) local governments
- Palma Ratio of Household Expenditure in Rural India
- Worker Population Ratio (Female) (WPR)
- Gender Parity Index (Elementary)
- Farmers/ Cultivators suicide per HHs - **Outlier**
- Expenditure in social sector
- Number of victims of intentional homicide per 100,000 population
- Child Sex ratio - **Outlier**
- Crimes against children
- Rapes per 10 lakh population
- No. of ACB (Anti-Corruption Bureau) cases disposed as a % of total cases registered



Pillar II (Growth)

- Percentage of elementary and secondary schools with Pupil Teacher Ratio less than/equal to 30
- Proportion of population using safely managed drinking water services
- Proportion of population using safely managed sanitation services
- Proportion of population with access to electricity
- Unemployment Rate
- Number of commercial bank branches per 100,000 adults
- Manufacturing value added as a proportion of GDP and per capita
- Proportion of total government expenditure on infrastructure
- Health worker density
- Net Enrolment Ratio at Elementary (1-8)
- Fiscal Surplus/ Deficit - **Outlier**
- Implementation of Business Reform Action Plan (BRAP)
- Number of Buses per 10 lakh population



Pillar III (Sustainability)

- Proportion of land that is degraded over total land area
- Annual mean levels of fine particulate matter (PM10) in cities (population weighted)
- Solid waste generation and waste processing in the urban areas

STATE FACT SHEETS

TR TRIPURA



PAI 2019
Index

Rank

9

Score

-0.068



Equity
Index

7

0.762



Growth
Index

10

-0.684



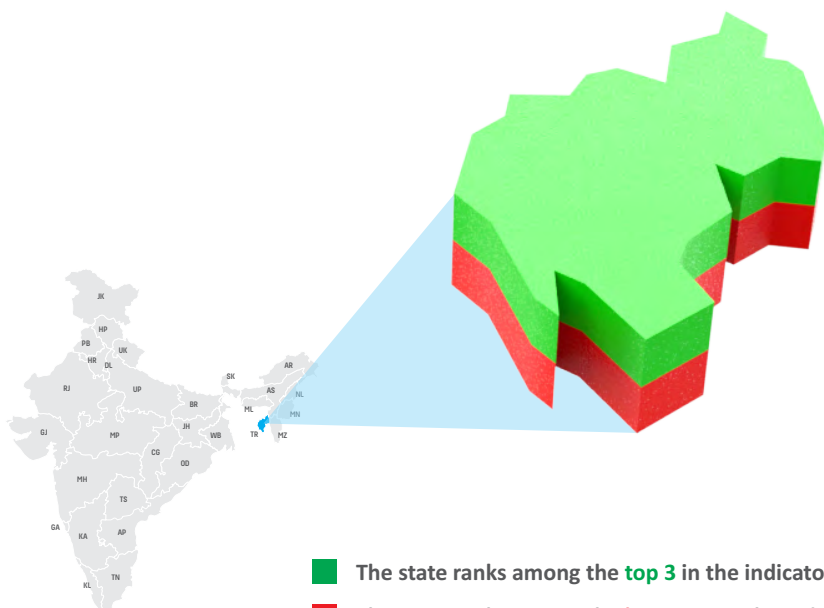
Sustainability
Index

8

-0.28

Tripura stood 9th in the overall PAI 2019 index. The state's performance is below average in the pillars of Growth and Sustainability, while, its performance is above average in the Equity Pillar. The state appears among the top 3 in 4 indicators and incidentally all the 4 indicators belong to the Equity pillar and includes diverse areas like social protection in the form of pensions, expenditure in social sector, under trial prisoners and delivery of justice. The state is at the bottom 3 in 12 indicators with majority of the indicators belonging to the Growth Pillar.

PAI 2019 recommends the state to focus on Education, specifically on its quality, reducing drop-out rates, access to essential infrastructure and hiring professionally qualified teachers.



Pillar I (Equity)

Proportion of population covered by social protection

Expenditure in social sector

Unsented detainees as a proportion of overall prison population

Cases Pending in District Courts

Average Annual Drop-out rate at secondary level

Number of victims of intentional homicide per 100,000 population

Dowry deaths per 10 lakh population

Worker Population Ratio (Female) (WPR)



Pillar II (Growth)

ASER Index

Proportion of schools with access to (a) electricity; (b) computers for pedagogical purposes; (c) access to CWSN friendly toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic handwashing facilities (as per the WASH indicator definitions)

Percentage of school teachers professionally qualified

Proportion of population with access to electricity

States Own Tax Revenue Growth

Manufacturing value added as a proportion of GDP and per capita

Number of Buses per 10 lakh population



Pillar III (Sustainability)

Solid waste generation and waste processing in the urban areas

SMALL STATES

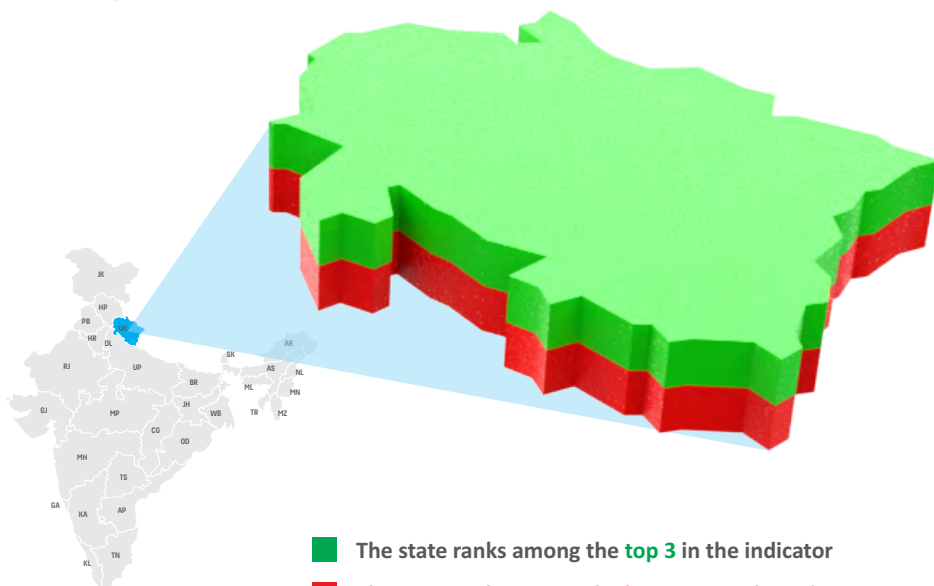
UK UTTARAKHAND

				
	PAI 2019 Index	Equity Index	Growth Index	Sustainability Index
Rank	8	9	4	10
Score	-0.042	-0.045	0.289	-0.369

Uttarakhand stood 8th in the overall PAI 2019 index. The state's performance is below average in the pillars of Equity and Sustainability, while, its performance is above average in the Growth Pillar. The state appears among the top 3 in 6 indicators with 3 indicators belonging to the Equity Pillar and 3 indicators in the Growth Pillar. The state is at the bottom 3 in 11 indicators with majority of the indicators belonging to the Equity Pillar.

PAI 2019 recommends the state to focus on:

1. Functioning of the ICDS programme, especially to improve health, education and nutritional outcomes for the children
2. Education, specifically to adhere to the standard pupil-teacher ratio (≤ 30)
3. Health, specifically to focus on the wellbeing of the infants in the age group of 0 to 1 years.



- The state ranks among the **top 3** in the indicator
- The state ranks among the **bottom 3** in the indicator



Pillar I (Equity)

Average Annual Drop-out rate at secondary level

Proportion of seats held by women in (a) state legislatures and (b) local governments

No. of ACB (Anti-Corruption Bureau) cases disposed as a % of total cases registered

Prevalence of malnutrition amongst children below 5 years

Participation rate in organised learning (one year before the official primary entry age)

Palma Ratio of Household Expenditure in Urban India

Infant Mortality Rate (IMR)

Rural Indebtedness

Incidence of Crimes against SC and ST

Child Sex ratio

Dowry deaths per 10 lakh population



Pillar II (Growth)

Fiscal Surplus/ Deficit

Implementation of Business Reform Action Plan (BRAP)

Manufacturing value added as a proportion of GDP and per capita

Percentage of elementary and secondary schools with Pupil Teacher Ratio less than/equal to 30

Number of Buses per 10 lakh population



Pillar III (Sustainability)

Annual mean levels of fine particulate matter (PM10) in cities (population weighted)



ANNEXURE

- PAI 2019 - TECHNICAL NOTE ON METHODOLOGY
- PAI 2019 - PILLAR WISE STATE RANK
- PAI 2019 - THEME WISE STATE RANK
- PAI 2019 - LIST OF PILLARS, THEMES, SDGs & INDICATORS
- PAI 2019 - NOTES / ADJUSTMENTS
- PAI 2018 - MEDIA COVERAGE
- PUBLICATIONS

PAI 2019 – TECHNICAL NOTE ON METHODOLOGY

ABSTRACT

This technical note provides a detailed explanation and the justification of the model used for computing the Public Affairs Index (PAI) 2019. While most composite indices use the weighted average method for measuring overall governance from a variety of individual indicators, PAI 2019 model uses a variation of the Principal Components Analysis (PCA) technique to arrive at the composite index. This technique effectively pronounces small variations amongst states and eliminates bias owing to outliers. The 49 indicators used in PAI 2019 are grouped at various levels namely Sustainable Development Goals (SDG), Themes and Pillars. PAI 2019 uses the principal components effectively to systematically compute the index scores at each level without the use of subjective or uniform weights.

KEYWORDS

Principal Component Analysis, Variance, Index, Factors

INTRODUCTION

Composite indicators provide a common ground to compare multiple entities measured on a wide range of individual indicators, each representing a unique dimension of the entity. PAI 2019 uses a total of 49 indicators covering diverse domains of Growth, Sustainability and Equity spread across the themes of Voice and Accountability, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption. Further the 49 indicators covers 13 Sustainable Development Goals (SDGs). The entities here are the 30 states of India grouped into large and small states. A pictorial representation of the PAI 2019

model constituting the three levels namely - Pillars, Themes and SDGs is presented below:

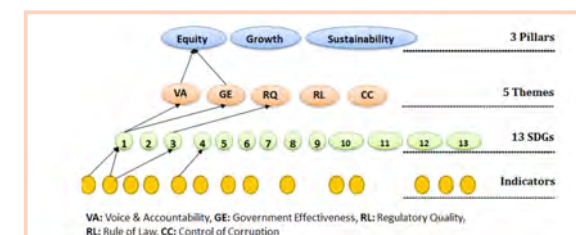


Figure 1: PAI 2019 Model illustrating the three levels- Pillars, Themes and SDGs

A common technique for calculating the composite index for each of the 30 states is to compute the weighted average of the indicators rolling up at each level using uniform or subjective weights. Subjective weights are allocated using domain knowledge and careful analysis using appropriate justifications. These justifications, however sound are subject to debate. [1], [2] discuss various methods of computing composite indices and a critical assessment of each technique. In the PAI 2019 model, the 49 indicators at the bottom most layer are mapped to the respective SDG in a manner such that each indicator maps to exactly one SDG. Each of the SDG maps to one of the Themes and likewise each of the Themes map to the respective Pillars in the top most layer. Each indicator can be tied to a Pillar, Theme and the SDG that it maps to. An index score is computed at every node in each of the levels namely Pillars, Themes and SDG using a variation of the Principal Components Analysis technique. Finally the index scores at the top most level constituting the pillars namely Equity, Growth and Sustainability are averaged to arrive at the composite score for each state. The rest of the sections in this note explains the

PUBLIC AFFAIRS INDEX

detailed process of generating the index scores at the various levels and the composite index for each state. The note is concluded with a summary section and references to related literature.

COMPUTING PAI 2019

Let $x_{q,s}$ denote the raw value of the individual indicator q for state s where $q = 1...49$ and $s = 1...30$. The raw scores were converted into normalised Z scores to ensure appropriate scaling of data. The direction of the scores were reversed appropriately during the process of scaling to ensure a standard alignment of values for each indicator wherein a high value indicates better performance and vice versa. Let $i_{q,s}$ denote the normalised values of the individual indicator q for states.

$$i_{q,s} = \frac{x_{q,s} - \mu_q}{\sigma_q} \text{ ----- Equation 1.}$$

The above was preferred over scaling using the Min-Max method namely:

$$m_{q,s} = \frac{x_{q,s} - \min_q(x_s)}{\max_q(x_s) - \min_q(x_s)} \text{ ----- Equation 2.}$$

Scaling using Z score (Equation 1) maintains the dispersion in the data when compared to scaling using the Min-Max method (Equation 2).

PRINCIPAL COMPONENTS ANALYSIS AS THE AGGREGATION TECHNIQUE

Composite index can be calculated at each node using the weighted average method wherein, suitable weights (subjective or uniform) are applied to the individual indicators aggregating into a node at each level. In Figure 1, the blue, pink and green circles depict nodes at each level namely the Pillars, Themes and SDGs. PAI 2019 uses the Principal Components Analysis (PCA) technique to compute the index scores at each

node. PCA explains the variance in the observed data using a few linear combinations of the original data. These few linear combinations reduce the original data to a smaller set of variables called the principal components (PCs) in a manner that the PCs hold a high amount of the cumulative variance in the original data. These PCs are orthogonal to each other or "uncorrelated". The PCs are calculated using the respective factor loadings α_{iq} such that:

$$PC_{iq} = \sum \alpha_{iq} \cdot i_{q,s} \text{ where } \sum \alpha_{iq}^2 = 1 \text{ ---Equation 3.}$$

The cutoff for the PCs is taken at 0.8. In other words, the the model selects as many PCs that explain a cumulative variance of 80% in the original data. Once the principal components are calculated at each node, the component scores have to be aggregated to arrive at an index score at that node. Many aggregation methods exist -

- 1) Selection of the first principal component as the aggregated score,
- 2) Euclidean Distance of the PCs - $\sqrt{\sum PC_j^2}$
- 3) Manhattan Distance of the PCs - $\sum PC_j$,
- 4) Weighted average of the PCs, using the variance explained by the PCs as the respective weights - $\sum w_j \cdot PC_j$.

PAI 2019 uses the following technique to aggregate the PCs into an index score at the respective node. $I_n = \sum \frac{PC_j}{V_j}$ -----Equation 4. where V_j is the variance explained by the Principal Component PC_j .

This aggregation technique ensures that states performing exceedingly well on one off indicators and hence accounting for large dispersion in the

PC scores do not bias the index scores at a node when compared to states that perform well on most of the indicators and hence account for smaller dispersion in the PC scores. Further, the use of a variation of *Manhattan Distance* over *Euclidean Distance* ensures that small differences in PC scores across states are pronounced during aggregation.

The above process of calculating the index scores is repeated at each level until the index scores at the top most level are calculated namely the scores for the pillars (Equity, Growth and Sustainability). The three index scores for the pillars are then averaged to calculate the composite index for each state.

SUMMARY

PAI 2019 uses the variance in the data to derive the index scores at each level using a variation of the PCA technique. This eliminates the use of subjective weights to calculate the composite index. Further, the model ensures any bias introduced owing to outliers is eliminated while computing the composite index for each state. Finally the composite index can be decomposed to individual index scores at the Pillar, Themes and SDG level for granular analysis of each state from various perspectives.

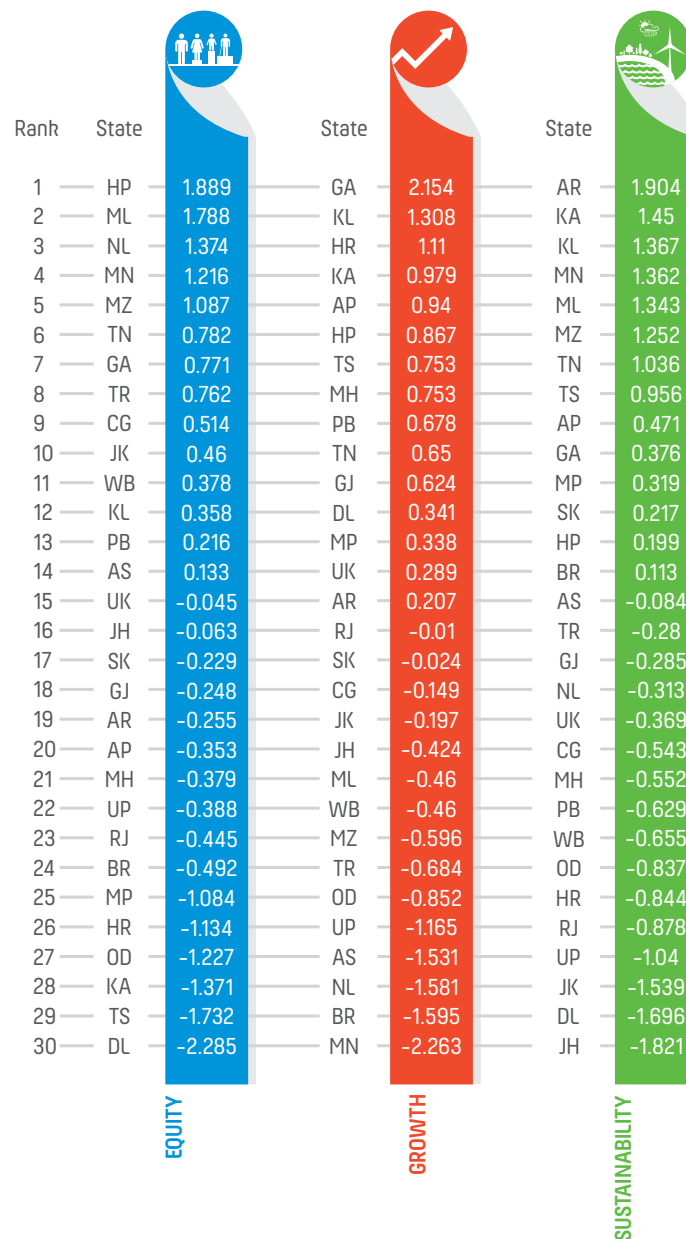
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PAI 2019 - PILLAR WISE STATE RANK

Category	Code	State Name
Large	AP	Andhra Pradesh
Small	AR	Arunachal Pradesh
Large	AS	Assam
Large	BR	Bihar
Large	CG	Chhattisgarh
Small	DL	Delhi
Small	GA	Goa
Large	GJ	Gujarat
Large	HR	Haryana
Small	HP	Himachal Pradesh
Small	JK	Jammu and Kashmir
Large	JH	Jharkhand
Large	KA	Karnataka
Large	KL	Kerala
Large	MP	Madhya Pradesh
Large	MH	Maharashtra
Small	MN	Manipur
Small	ML	Meghalaya
Small	MZ	Mizoram
Small	NL	Nagaland
Large	OD	Odisha
Large	PB	Punjab
Large	RJ	Rajasthan
Small	SK	Sikkim
Large	TN	Tamil Nadu
Small	TR	Tripura
Large	UP	Uttar Pradesh
Small	UK	Uttarakhand
Large	WB	West Bengal
Large	TS	Telangana

*Small States (less than 2 crores population)



PAI 2019 - THEME WISE STATE RANK

EQUITY														
GROWTH														
SUSTAINABILITY														
Rank	State	State	State	State	State	State	State	State	State	State	State	State	State	State
1	MN	2.073	DL	2.045	TR	1.368	ML	2.013	HR	1.37	KL	2.045	GA	2.77
2	ML	1.475	BR	1.585	JK	1.273	CG	1.997	TN	1.171	PB	1.564	AR	1.269
3	NL	1.328	GA	1.342	TN	1.199	HP	1.997	CG	1.106	HR	1.287	HP	1.066
4	JH	1.133	MN	1.109	NL	1.154	AP	1.561	UP	1.068	TS	1.03	KA	0.919
5	HP	1.078	NL	1.092	MZ	1.093	SK	1.499	MP	0.898	GA	0.869	AP	0.739
6	SK	1.075	ML	0.995	PB	1.046	TN	0.65	MZ	0.822	AP	0.849	GJ	0.633
7	RJ	0.992	WB	0.945	GA	0.975	TS	0.595	MH	0.614	MH	0.735	TN	0.619
8	BR	0.765	TR	0.813	AR	0.9	MP	0.587	KA	0.421	KA	0.734	HR	0.588
9	MZ	0.73	HR	0.807	HP	0.875	MH	0.509	BH	0.16	DL	0.58	MH	0.537
10	AS	0.728	KL	0.574	KL	0.511	JK	0.291	TS	0.147	TN	0.479	MP	0.441
11	UP	0.702	AS	0.524	GJ	0.343	RJ	0.182	UK	0.105	GJ	0.421	CG	0.365
12	UK	0.483	HP	0.335	MN	0.333	KA	0.174	AP	0.089	HP	0.399	UK	0.295
13	WB	0.215	GJ	0.16	WB	0.328	GA	0.143	NL	0.089	JK	0.304	TS	0.242
14	KL	0.033	UP	0.121	ML	0.298	MZ	0.112	PB	-0.016	UK	0.192	KL	0.164
15	TR	-0.032	TN	-0.042	CG	0.245	KL	-0.122	JK	-0.019	MP	0.131	WB	0.138
16	CG	-0.188	JK	-0.091	UK	0.181	WB	-0.317	OD	-0.04	SK	0.082	JH	0.117
17	OD	-0.374	JH	-0.109	AS	0.148	GJ	-0.356	GJ	-0.162	MZ	0.061	DL	-0.005
18	PB	-0.377	AR	-0.29	MH	-0.102	MN	-0.356	JH	-0.19	RJ	0.016	RJ	-0.031
19	GA	-0.425	PB	-0.408	AP	-0.207	OD	-0.418	RJ	-0.218	ML	-0.004	SK	-0.121
20	DL	-0.51	MH	-0.561	JH	-0.433	UP	-0.62	HP	-0.323	OD	-0.418	UP	-0.242
21	MP	-0.634	UK	-0.569	HR	-0.571	JH	-0.792	TR	-0.407	TR	-0.488	PB	-0.419
22	GJ	-0.794	KA	-0.739	KA	-0.594	PB	-0.815	AR	-0.408	NL	-0.565	AS	-0.471
23	MH	-0.859	OD	-0.91	BR	-0.899	HR	-0.878	ML	-0.515	CG	-0.615	JK	-0.637
24	TN	-0.868	RJ	-0.964	UP	-0.91	UK	-0.917	WB	-0.554	JH	-0.832	TR	-0.669
25	AR	-0.978	MZ	-0.964	OD	-0.97	DL	-0.94	GA	-0.56	WB	-0.914	ML	-0.773
26	AP	-1.031	TS	-0.98	RJ	-1.066	AR	-0.955	SK	-0.755	AR	-0.921	HR	-0.666
27	JK	-1.106	MP	-1.045	SK	-1.097	TR	-1.026	AS	-0.817	MN	-1.396	OD	-0.833
28	TS	-1.371	AP	-1.11	MP	-1.161	AS	-1.065	DL	-0.896	UP	-1.726	GA	-0.914
29	HR	-1.474	CG	-1.769	TS	-1.46	NL	-1.08	KL	-1.05	BH	-1.783	MZ	-1.068
30	KA	-1.789	SK	-1.897	DL	-2.799	BH	-1.657	MN	-1.602	AS	-2.115	NL	-2.106
													MN	-2.427
													DL	-1.929
													UP	-1.498
													KL	1.829
													ML	1.753
													GA	1.526
													TS	1.405
													KA	1.073
													BH	0.563
													HP	0.469
													MZ	0.347
													TN	0.29
													AR	0.228
													SK	0.197
													GJ	0.135
													MP	0.01
													AS	-0.003
													AP	-0.065
													TR	-0.204
													WB	-0.416
													MH	-0.442
													CG	-0.5
													OD	-0.532
													HR	-0.711
													PB	-0.775
													DL	-0.837
													RJ	-0.988
													NL	-1.11
													JH	-1.148
													UK	-1.301
													JK	-1.356
													UP	-1.498

PAI 2019 : LIST OF PILLARS, THEMES, SDGs & INDICATORS

SI1# Pillar	SI2# Theme	SI3# SDG	SI4# Indicators
I Equity	 A Voice and Accountability	a 1- No Poverty	1 Proportion of population covered by social protection
		b 2- Zero Hunger	2 Prevalence of malnutrition amongst children below 5 years
		c 4- Quality Education	3 Participation rate in organised learning (one year before the official primary entry age)
		e 5- Gender Equality	4 Average annual drop-out rate at secondary level
		f 10- Reduced Inequalities	5 Proportion of seats held by women in (a) state legislatures and (b) local governments
		g 11- Sustainable Cities and Communities	6 Palma ratio of household expenditure in urban India
		h 3- Good Health and Wellbeing	7 Palma ratio of household expenditure in rural India
		i 5- Gender Equality	8 Proportion of urban population living in slums
		j 10- Reduced Inequalities	9 Infant Mortality Rate (IMR)
			10 Gender Parity Index (Elementary)
	 B Government Effectiveness		11 Rural Indebtedness
			12 Farmers/ Cultivators suicide per HHs
			13 Expenditure in social sector
			14 Number of victims of intentional homicide per 100,000 population
			15 Unsensitized detainees as a proportion of overall prison population
	 C Rule of Law	h 16- Peace, Justice and Strong Insititutions	16 Incidence of Crimes against SC and ST
			17 Child Sex ratio
			18 Crimes against children
			19 Dowry deaths per 10 lakh population
			20 Rapes per 10 lakh population
	 D Regulatory Quality	l 10- Reduced Inequalities	21 Cases pending in district courts
	 E Control of Corruption	w 16- Peace, Justice and Strong Insititutions	22 Worker Population Ratio (Female) (WPR)
			23 No. of ACB (Anti-Corruption Bureau) cases disposed as a % of total cases registered

PUBLIC AFFAIRS INDEX



Methodology used	Data source	Years
Latest Data Point	National Social Assistance Programme (NSAP)	2019
Latest Data Point	NFHS-4, National Family Health Survey, India	2015-16
Latest Data Point	ICDS, Ministry of Women and Child Development- Gol	2014-15
Latest Data Point	U-DISE, Flash Statistics 2016-17	2015-16
Latest Data Point	Ministry of Statistics and Programme Implementation (MoSPI)	2016
Latest Data Point	Ministry of Statistics and Programme Implementation (MoSPI) & Ministry of Urban Affairs	2011
Latest Data Point	Ministry of Statistics and Programme Implementation (MoSPI) & Ministry of Urban Affairs	2011
Latest Data Point	Ministry of Home Affairs (Census 2011)	2011
Latest Data Point	NFHS-4, National Family Health Survey, India	2015-16
Latest Data Point	U-DISE, Flash Statistics 2016-17	2016-17
Latest Data Point	Agricultural Pocket Book 2018, Ministry of Agriculture and Farmers Welfare	2013
Latest Data Point	National Crime Records Bureau (NCRB)(Accidental Deaths and Suicides in India, 2015)	2015
Latest Data Point, Growth Rate	Reserve Bank of India	2016-17, 2017-18, 2018-19
Average, CAGR	National Crime Records Bureau (NCRB)	2014, 2015, 2016
Latest Data Point, CAGR	National Crime Records Bureau (NCRB)	2014, 2015, 2016
Latest Data Point	National Crime Records Bureau (NCRB)	2016
Average, Growth Rate	Census 2001, NFHS 4- National Family Health Survey India	2001, 2015-16
Latest Data Point	National Crime Records Bureau (NCRB)	2016
Average	National Crime Records Bureau (NCRB)	2014, 2015, 2016
Average, CAGR	National Crime Records Bureau (NCRB)	2014, 2015, 2016
CAGR, Latest Data Point	Court News, Supreme Court of India	2015, 2016, 2017
Latest Data Point	National Sample Survey Office (NSSO)	2017-18
CAGR, Latest Data Point	National Crime Records Bureau (NCRB)	2014, 2015, 2016



PAI 2019 : LIST OF PILLARS, THEMES, SDGs & INDICATORS

SI1#					
II Growth	 A Government Effectiveness	a	2- Zero Hunger	24	Proportion of total Government expenditure on Agriculture and Allied Services
		b	3- Good Health and Wellbeing	25	Health worker density
				26	ASER Index
				27	Net Enrolment Ratio at Elementary (1-8)
				28	Percentage of elementary and secondary schools with Pupil Teacher Ratio less than/equal to 30
		c	4- Quality Education		Proportion of schools with access to (a) electricity; (b) computers for pedagogical purposes; (c) access to CWSN friendly toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic handwashing facilities (as per the WASH indicator definitions)
				29	Percentage of school teachers professionally qualified
		d	6- Clean Water and Sanitation	31	Proportion of population using safely managed drinking water services
				32	Proportion of population using safely managed sanitation services
		e	7- Affordable and Clean Energy	33	Proportion of population with access to electricity
				34	Tax GDP Ratio
		f	8- Decent Work and Economic Growth	35	Fiscal Surplus/ Deficit
				36	States Own Tax Revenue Growth
				37	Annual growth rate of real GSDP per capita
III Sustainability	 B Regulatory Quality			38	Unemployment Rate
		g	8- Decent Work and Economic Growth	39	Implementation of Business Reform Action Plan (BRAP)
				40	Number of commercial bank branches per 100,000 adults
				41	Proportion of households with an account at a bank
				42	Manufacturing value added as a proportion of GDP per capita
		h	9- Industry, Innovation and Infrastructure	43	Proportion of total government expenditure on infrastructure
		i	11- Sustainable Cities and Communities	44	Number of Buses per 10 lakh population
		a	7- Affordable and Clean Energy	45	Renewable energy share in the total final energy consumption
		b	15- Life on Land	46	Forest area as a proportion of total land area
				47	Proportion of land that is degraded over total land area
				48	Solid waste generation and waste processing in the urban areas
		c	11- Sustainable Cities and Communities	49	Annual mean levels of fine particulate matter (PM10) in cities (population weighted)

PUBLIC AFFAIRS INDEX



Latest Data Point, Growth Rate	Respective State Government Budget	2016-17, 2017-18, 2018-19
Latest Data Point	Ministry of Health and Family Welfare	2015
Average	ASER Report	2018
Latest Data Point, Growth Rate	U-DISE, Flash Statistics 2016-17	2014-15, 2015-16, 2016-17
Latest Data Point	U-DISE	2016-17
Latest Data Point	U-DISE, Flash Statistics 2016-17	2016-17
Latest Data Point	U-DISE	2016-17
Latest Data Point	NFHS-4, National Family Health Survey, India	2015-16
Latest Data Point	NFHS-4, National Family Health Survey, India	2015-16
Latest Data Point	NFHS-4, National Family Health Survey, India	2015-16
Latest Data Point	NFHS-4, National Family Health Survey, India	2015-16
Latest Data Point	A Study of Budgets- Reserve Bank of India	2017-18
Average, Growth Rate	A Study of Budgets- Reserve Bank of India	2016-17, 2017-18, 2017-18
Latest Data Point, Growth Rate	A Study of Budgets- Reserve Bank of India	2016-17, 2017-18
Latest Data Point	Ministry of Statistics and Programme Implementation (MoSPI)	2017-18
Latest Data Point	National Sample Survey Office (NSSO)	2017-18
Latest Data Point	Department of Industrial Policy and Promotion Report on Ease of Doing Business	2018-19
Latest Data Point	Reserve Bank of India	2018
Latest Data Point	Ministry of Finance (Progress Report on Pradhan Mantri Jan Dhan Yojana)	2018
Latest Data Point, CAGR	Reserve Bank of India	2014-15, 2015-16, 2016-17
Latest Data Point, CAGR	Respective State Government Budget	2016-17, 2017-18, 2018-19
Latest Data Point	Ministry of Road Transport	2015-16
Latest Data Point	Central Electricity Authority	2018
Latest Data Point	India State of Forest Report- Forest Survey of India	2017
Latest Data Point	Desertification and Land Degradation Atlas of India, ISRO, Gol	2011-13
Latest Data Point	Lok Sabha Unstarred Question No. 4481_ To be answered on 14.12.2016	2016
Latest Data Point	Central Pollution Control Board (CPCB)	2017



PAI 2019 : NOTES / ADJUSTMENTS

Indicators	Adjustments Done
Proportion of population covered by social protection	To calculate proportion of population covered by social protection, we have considered Indira Gandhi National Old Age Pension Scheme, Indira Gandhi National Widow Pension Scheme and Indira Gandhi National Disability Pension Scheme and have given equal weightage to compute the overall proportion of population covered by social protection
Prevalence of malnutrition amongst children below 6 years	To calculate prevalence of malnutrition amongst children below 6 years, we have considered % of children who are stunted, wasted, severely wasted and underweight and have given equal weightage to compute the overall level of malnourishment
Participation rate in organized learning (one year before the official primary entry age)	1. To calculate participation in organised learning, we have considered children in the age group of 3-6 years 2. As per the official data available on ICDS, the number of beneficiaries in Mizoram were more than the actual number of children in the state. Hence, a percentage of 100 was allotted to Mizoram 3. For Andhra Pradesh and Telengana, the age group of 0-6 years was considered
Proportion of seats held by women in (a) state legislatures and (b) local governments	1. To calculate the proportion of women in (a) state legislature and (b) local governments, we have given equal weightage to the seats won by women in elections to state assembly and Panchayati Raj institutions 2. The time period for seats won by women in state assembly is different across states 3. For the states of Delhi, Meghalaya, Mizoram and Nagaland, data is not available for the proportion of seats held by women in Panchayati Raj institutions. Hence no value was assigned to them for that segment
Rural Indebtedness	Data for Goa and Delhi was not available. Hence, an average of all the states has been allotted to it
Incidence of Crimes against SC and ST	To calculate the incidence of crimes against SC and ST, we have given equal weightage to crimes against SC and crimes against ST
Child Sex ratio	Data for Telangana has been taken from District Booklet of Adilabad, 2016
Worker Population Ratio (Female) (WPR)	To calculate Worker Population Ratio (Female), we have considered Usual Status (ps+ss) for the 15-59 age group
Health worker density	Data is not available for Jammu and Kashmir, Sikkim and Telangana
ASER Index	Data for Delhi and Goa was not available. Thus, the country's average was assigned to them
Proportion of schools with access to (a) electricity; (b) computers for pedagogical purposes; (c) access to CWSN friendly toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic handwashing facilities (as per the WASH indicator definitions)	To calculate proportion of schools with access to (a) electricity (b) computers for pedagogical purposes; (c) access to CWSN friendly toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic handwashing facilities (as per the WASH indicator definitions), each component was given equal weightage
Proportion of population using safely managed sanitation services	Data was not available for Manipur. Hence the average of all the North-Eastern states was allotted to Manipur
Fiscal Surplus/ Deficit	The RBI data is a mix of surpluses (-) and deficits (+). Therefore, in order to convert the data in a common platform, we have used the following formula for the purpose of scoring the states: $(\text{Value} - \text{Maximum}) / (\text{Minimum} - \text{Maximum})$
Annual growth rate of real GSDP per capita	1. We have considered GSDP at Constant Price with base year as 2011-12 2. In the case of West Bengal, the GSDP data has been sourced from the state portal
Unemployment Rate	To calculate unemployment rate, we have considered Usual Status (ps+ss) for the 15-59 age group
Manufacturing value added as a proportion of GDP and per capita	Data for Tripura has been sourced from the Directorate of Economics and Statistics, Government of Tripura
Annual mean levels of fine particulate matter (PM10) in cities (population weighted)	To calculate Annual mean levels of fine particulate matter (PM10) in cities (population weighted), data at the city level was averaged to arrive at state estimates

*Note: 13th June 2019 was the last date of data collection

PAI 2018 : MEDIA COVERAGE



INDIA

Kerala tops in governance, Tamil Nadu second, says report

Released annually since 2016, the index examines governance performance in the states through a data-based framework, ranking them on social and economic development they are able to provide.



Home / Specials / Ranking of govts: 3 southern states top

Ranking of govts: 3 southern states top

Jishnu EN, DHNS, Bengaluru, JUL 22 2018, 20:12PM IST | UPDATED: OCT 27 2018, 13:41PM IST



GOOD GOVERNANCE

Kerala is the best governed state in the country, Bihar is worst, says study

Tamil Nadu, Telangana, Karnataka and Gujarat are the other states delivering good governance according to the Public Affairs Index 2018.



Former ISRO chairman K Kasturirangan (centre) and others during the release of the 2018 Public Affairs Index on Saturday | pafindia/Twitter

PUBLICATIONS



Founder of PAC, Dr. Samuel Paul tells his life story and distills the lessons of experience learnt from a wide range of institutions, both national and international with which he was associated in his long and illustrious career.



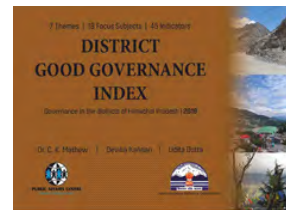
This book calls on numerous eminent scholars to examine the phenomenon of corruption from multiple perspectives and proposes an agenda of reform that has the potential to achieve corruption control.



Focussed on remembering the life and times of its founder Dr Samuel Paul, the special edition has 28 contributors



PAI 2018 report is similar to the earlier PAI reports; however, the 2018 edition comprised of 10 broad themes, 30 focus subjects and a gamut of 100 indicators. In addition, the report includes a special chapter on the Children of India that describes in detail the various issues concerning our most vulnerable citizens- the children of India.



The Himachal Pradesh District Good Governance Index (HP DGGI) is one of the pioneering initiatives undertaken by the Government of Himachal Pradesh. The HP DGGI seeks to measure the quality of governance among the twelve districts of Himachal Pradesh. It is a data-driven index that ranks the districts over a gamut of 45 governance indicators.



As part of the Southern Voice State of the SDGs Initiative, the Public Affairs Centre explored the barriers to and enablers for the participation of women in India's workforce. The study is an India case study, examining the causes for the declining female labour force participation rate (FLFPR) in the country and its policy implications.



Public Affairs Index (PAI)

www.pai.pacindia.org

Measuring governance is a challenge. This issue becomes increasingly complex especially in a diverse country like India, where each state is socially, culturally, economically and politically different. PAC thus identified three broad pillars namely Growth, Equity and Sustainability that encapsulate governance. From a development perspective, it is axiomatic that there must be synergies between all the three pillars. It is impossible to believe that two of the three pillars are enough, growth and sustainability without equity; growth and equity without sustainability; equity and sustainability without growth. PAI 2019 is an amalgamation of 3 Pillars, 5 Themes, 13 SDGs and 49 indicators.

PAI 2019 is a conscious effort to present a scientifically sound, methodologically rigorous, and practically useful data-based framework to measure the quality of governance in the states of India, and rank them.



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