Scoring Methodology

Rural Quality Life Experience Index

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Development Intelligence Unit

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Literature Review

While differences in income and wealth across India are staggering, they are, by themselves, not sufficient to measure inequality. As a result, there has been a parallel discourse around alternate ways of measuring an individual's or a nation's well-being other than in pure monetary terms. The India poverty profile report developed by the World Bank highlights the need. The report identified 1 out of 5 individuals in the country to be poor and also coined the term of 'non-poor' to highlight the differences in household consumption, wealth, asset ownership and access to services etc. The report highlighted that the poor in India have fewer assets, have lower secondary school completion rates and have far lower access to basic amenities like latrines, electricity and tap water as compared to the non-poor. Apart from access to education, amenities and basic services, the poor also have poor health outcomes. A lancet study on health equities identified that the poor are more likely to be exposed to health risks and have lesser resistance to diseases. The study also highlighted that the poor have lower access to preventive and curative interventions and that public health subsidies often benefit the rich more than the poor[1]. The country's nutritional outcomes also have similar inequities. The latest round of the National Family Health Survey (NFHS-5) indicates that 46.1% of children belonging to the lowest wealth quintile were stunted as compared to only 22.9% of the children in the highest wealth quintiles. Similar disparities were also seen in receipt of other services. While 78.7% of children aged 12-23 months belonging the highest wealth quintile were reported to receive all the recommended vaccines, only 71% of the children from the lowest wealth quintiles received the complete immunization package. These disparities also existed among adults. Only 41.8% of women from the lowest wealth quintiles were found to have received antenatal care at least 4 times during their last pregnancy. The proportion sharply increased to 71.8% for women belonging to the highest wealth quintiles[2].

The above description of the poverty profile, though non-exclusive of the multiple dimensions of well-being, highlight the need for looking at progress in India much more in depth than an understanding of the need to narrow the income inequality gap. As such, measures such as disposable income or GDP are constantly being challenged as being inadequate or insufficient to measure human growth and efforts are being made to include social determinants of well-being in national measurements.

[1]Victora, C. G., Wagstaff, A., Schellenberg, J. A., Gwatkin, D., Claeson, M., & Habicht, J. P. (2003). Applying an equity lens to child health and mortality: more of the same is not enough. The Lancet, 362(9379), 233-241.
[2]http://rchiips.org/NFHS/pdf/NFHS4/India.pdf

There has been significant strides made towards exploring alternate ways of measuring human 'well-being'. Since 2007 the Legatum Institute has been publishing a global Prosperity Index, using a mix of economic and other indicators. In 2009, Joseph Stiglitz, Amartya Sen and Jean-Paul Fitoussi led a study to understand alternatives to GDP[3]. In 2011 the Organisation for Economic Co-operation and Development (OECD) came out with a "How's Life?" report on "well-being". Furthermore, there are also instances such as the Kingdom of Bhutan's Gross National Happiness (GNH) index as a measure of well-being which has also been extended and development as a World Happiness Index published yearly by the Sustainable Development Solutions Network and the Global Happiness Council[4]. Other two important national metrics to understand development beyond economic means include the Multidimensional Poverty Index developed by the Oxford Poverty and Human Development Initiative (OPHI) and the Social Progress Index development by the Social Progress Imperative. Given its recent adaptation to India's context, these two are be described in more detailed below.

The Multidimensional Poverty Index published for the first time in India in the 2010, complement monetary measures of poverty by considering overlapping deprivations suffered by individuals at the same time. The MPI uses 10 indicators to measure poverty in three dimensions: education, health and living standards. Based on these indicators, it shows the number of people who are multidimensionally poor in a country with the capacity of aggregating these by region, ethnicity, and other groupings. One important feature of the MPI is that the index reflects both the share of people in poverty and the degree to which they are deprived, identifying people who are multidimensionally deprived with a clear poverty cutoff. In 2017[5], 41.3% of the population in India was MPI poor versus 21.9% based on the National Poverty Line of 2011, and 21.2% based on the 1.90$ per day measure. MPI measurements have been created both at the country and state level.

The Social Progress Index (SPI) is an aggregate index of social and environmental indicators that capture three dimensions of social progress: Basic Human Needs, Foundations of Wellbeing, and Opportunity. In 2017, the Institute for Competitiveness India with insights from the National Institution for Transforming India – NITI Aayog – launched the first SPI which represents the first comprehensive measurement of quality of life for over 1.3 billion people across 28 states and one union territory. The SPI separates the measurement of progress from economic performance, helping to empirically unpack the relationship between the two concepts, and offering a better picture of the country's overall performance[6]. The SPI measures 54 indicators using data from publicly available sources and grouped in 3 dimensions: basic human needs, foundations of wellbeing, and opportunity. In 2018, the SPI published a SPI measure by districts for the first time.

[3]Stiglitz, J., Sen, A., & Fitoussi, J. P. (2009). The measurement of economic performance and social progress revisited. Reflections and overview. Commission on the Measurement of Economic Performance and Social Progress, Paris. Chicago
[4]Helliwell, J., Layard, R., & Sachs, J. (2018). World Happiness Report 2018, New York: Sustainable Development Solutions Network.
[5]Oxford Poverty and Human Development Initiative (2017). "India Country Briefing", Multidimensional Poverty Index Data Bank. OPHI, University of Oxford. Available at: www.ophi.org.uk/multidimensional-poverty-index/mpi-country-briefings/
[6]Kapoor, A. (2017). Social Progress Index: States of India. Eleven Years of Progress. Social Progress Index India. Retrieved from: https://issuu.com/arthsastra/docs/sp_2017_report-magzter

Lastly, the Government of India has proposed a multidimensional metric in terms living standards of as part of the Transformation of Aspirational Districts Programme launched by the National Institution for Transforming India (NITI Aayog) in January 2018. This initiative aims to uplift the most stranded districts of India in an innovative and accelerated way, focusing on the Districts Collectors and a "spirit of competitive & cooperative federalism" as the main agents for leading change[7]. As part of the program, the NITI Aayog incorporated a dashboard for monitoring real-time progress of districts. The government selected 49 Key Performance Indicators (KPIs), aggregated into five core areas of focus. Weights are defined across the 81 data points that compose the index. The thematic areas received the following weights:

Component	Weight	Data Points
Health & Nutrition	30%	31
Education	30%	14
Agriculture & Water Resources	20%	12
Financial Inclusion & Skill Development	10%	16
Basic Infrastructure	10%	10

Despite these advances globally and locally, there is still insufficient progress in India in developing clear alternate measures for well-being. This is especially the case for informing programs working on the ground and promoting change from a bottom-up perspective through community engagement.

The literature provides abundant evidence that human growth is multidimensional in nature and cannot be measured in monetary terms alone. Furthermore, it underscores the pressing need to develop bottom-up approaches that comprehensively measure well-being and that can be used to guide action at the village level. This Index is an attempt at creating necessary ecosystem conditions in terms of amenities, livelihood opportunities, and enhancing access and use of the services in this ecosystem towards improving the Quality Life Experience (QLE) in target geographies. Concurrent improvement in practices across the dimensions and favorable norms play an additive role in improving the QLE and its sustenance. The approach is schematically illustrated in the figure below:

Rural Quality Life Index

(Based on three pillars)

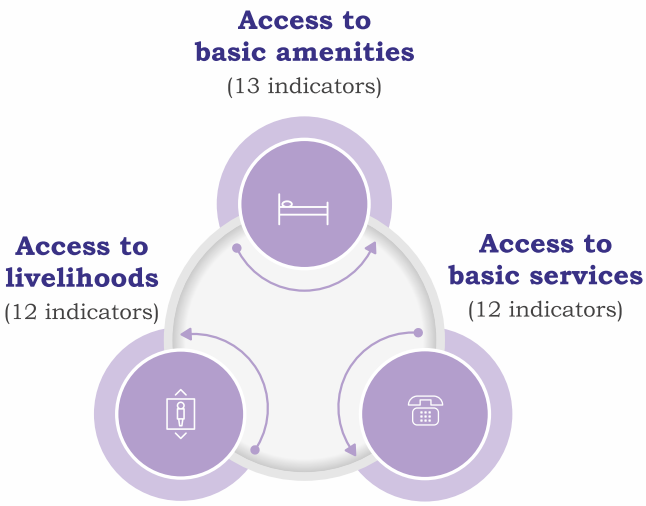


Image 1: Rural Quality of Life Experience Framework

[7]NITI Aayog (March 2018). Transformation of Aspirational Districts: Baseline ranking and real-time monitoring dashboard. http://niti.gov.in/writereaddata/files/AspirationalDistrictsBaselineRankingMarch2018.pdf

Indicators for Quality Life Experience

The Union Government faces a daunting task in helping such a huge and growing population achieve an acceptable quality of life. People need many things to live fulfilling lives. Having sustenance and food security, having access to health and maintaining a livelihood all contribute to the quality of human life. By focussing on quality life experience, the intention is to take a broad and holistic view of rural India's development. We believe gaining a quality of life perspective will help our leaders develop policies that reflect the aspirations of their constituents.

This composite index will serve as a non-partisan ranking exercise at the district and sub-district level as well as parliamentary and Assembly constituency level based on the quality life experience of rural citizens. The goal is to equip and enable policymakers with relevant and rapid objective

As described in the literature above, human growth is multi-dimensional in nature and there are several critical aspects that indicate a Rural Quality Life Experience. To develop the Quality Life Experience Index at the gram panchayat level, we propose to use key indicators across three themes of development, viz. Amenities, Livelihoods, and Services. The proposed indicators to measure QLE, all accessed from the publicly available Mission Antyodya Survey of 2020 are described below:

Amenities

1. Panchayats with Food Grain Storage warehouse
2. Proportion of household with kuccha wall and/or kuccha roof to total households
3. Panchayats with All-weather road (AWR)
4. Panchayats with internal pucca roads (cc/ brick road)
5. Panchayat with availability of drainage facilities
6. Panchayats with community biogas
7. Panchayats with recreational centre/Sports Playground
8. Panchayats with primary school
9. Panchayats with middle school
10. Panchayats with high school or senior secondary school
11. Panchayats with Anganwadi Centre
12. Panchayats with any government healthcare facility
13. Panchayats with Jan Aushadhi Kendra

Amenities

14. Availability of rain harvest system
15. Panchayat having Farmers Collective - FPO/PACS
16. Panchayat having access to Custom Hiring Centre (Agri-equipmens)
17. Panchayats with the availability of cottage and small-scale units (Fabrication/Construction material/Dairy based/Textile etc.)
18. Panchayats with any activities such as bee keeping, sericulture, handloom or handicrafts
19. Panchayat having any project/s supporting Poultry, Goatery, or Piggery development
20. Panchayats with the availability of fertilizer shop
21. Panchayats with Vocational Training Centre/Polytechnic/ITI/RSETI /DDU-GKY
22. Proportion of area irrigated to total cultivated area
23. Proportion of households mobilized into SHGs
24. Proportion of SHGs which accessed bank loans
25. Panchayats with availability of markets (Mandis, Regular market ,Weekly haat)

Services

26. Panchayats accessibility of a bank branch or business correspondent with internet connectivity
27. Availability of electricity for domestic use (hours of availability)
28. Panchayats with the availability of Public Transport (Bus/Van/Auto)
29. Panchayats with availability of Public Distribution System (Fair Price Shop)
30. Panchayats with Internet/Broadband Facility
31. Panchayats where of Common Service Centre (CSC) is available
32. Status of availability of Public Information Board under People's Plan Campaign in panchayats
33. panchayats with community waste disposal system

Thus, in addition to the overall Rural Quality of Life Experience Index, one can also construct three parallel indexes to be able to contrast the performance across panchayats and aim to capture how Amenities, Livelihoods, and Services interact with each other to drive development change.

Methodology for computing the Quality Life Experience Index

Scoring of indicators

We have adopted an Equal Weight Index by assigning all the variables an equal weight. Based on the indicator typology, against specific indicators related to infrastructure, a GP can score 2.0 points if it is available within the GP or 0 points if not available within the GP. On other hand, for higher order facilities, a GP can score 2.0 points if available within the village, and progressively lower marks of it is available at a distance, and 0 marks if the distance is, say, > 10 km.

For example:

Indicator	Scoring criteria and score			
Panchayat having Farmers Collective - FPO/PACS	Available within GP	2	Not available	0

Indicator	Scoring criteria and score							
Panchayats with any government healthcare facility	Within 1 km from GP	2	Within 1-2 km from GP	1.5	Within 2-5 km from GP	1	> 5 km from GP	0

To see the full scoring scheme for all 33 indicators, please refer to Annexture 1.

For the overall index value, the sum of scores across all 33 indicators was computed. Given that the maximum score possible per indicator is 2.0, the maximum RQLE index score for any GP works out to be 33 x 2 = 66. All GPs thus were scored between 66 and 0.

Similarly for each pillar, the maximum score that a GP could obtain works out to be as follows:

	Total indicators	Maximum score
Livelihood	12	12 x 2 = 24
Services	8	8 x 2 = 18
Amenities	13	13 x 2 = 26
RQLE	33	33 x 2 = 66

Scaling of Pillar and Final Scores

These scores have then been transformed to a 0 to 100 scale. The calculation was done using the following formula:

$$\frac{\text{(x-minimum score)}}{\text{(maximum score-minimum score)}} \times 100$$

Where X is the GP score in the respective pillar or the overall Index score. This the standardised GP scores ranged between 0 and 100.

Utility of the Index

The Index essentially calculates an overall RQLE score (aggregate for all 33 indicators) as well as individual pillar scores (for three pillars) at the gram panchayat level. The data visualisation is done after normalization of the scores (0 to 100) and then creating pentile categories for representation on a map. The dashboard for the RQLE allows for two viewing streams, viz.

A) Administrative environment

Relative position of all GPs within a block based on aggregate score of all 33 indicators and then normalized and segregated into pentiles

Relative position of all blocks within a district (based on aggregated GP scores for all GPs within each block and then normalizing the scores for all blocks segregated into pentiles)

Relative position of all districts within a state (based on aggregated GP scores for all GPs within each district and then normalizing the scores for all districts segregated into pentiles)

B) Authorising environment

Relative position of all GPs within a Legislative Assembly Constituency (LAC) based on aggregate score of all 33 indicators and then normalized and segregated into pentiles

Relative position of all LACs within a Parliamentary Constituency (PC) (based on aggregated GP scores for all GPs within each LAC and then normalizing the scores for all LACs segregated into pentiles)

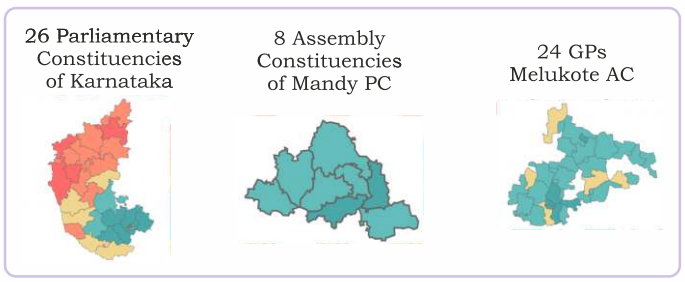
Relative position of all PCs within a state (based on aggregated GP scores for all GPs within each PC and then normalizing the scores for all PCs segregated into pentiles)

The choice of scales

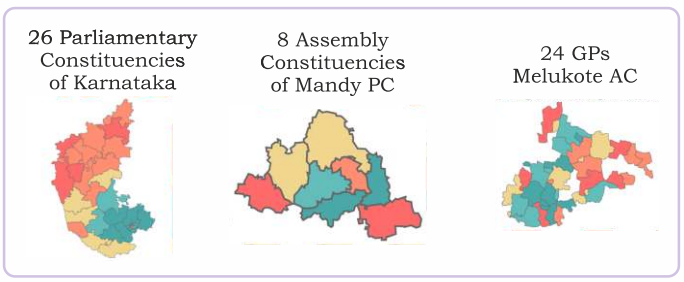
The dashboard also offers the user a choice of scales. the default option is that GP level scores are calculated for a state as a whole and then normalized. These normalized scores are then kept constant for all other levels, i.e. district, block, PC, and LAC.
The other option available is that GP scores are normalized separately for each level of representation, i.e. district, block, PC, and LAC.

An example is given below.

constant state scale



Varying scale



Annexure

RQLE INDICATOR SCORING SCHEME

LIVELIHOOD

Indicator	Scoring criteria and score									
Availability of community rainwater harvesting system	Available within GP	2	Not available	0						
Panchayat having Farmers Collective - FPO/PACS	Available within GP	2	Not available	0						
Panchayat having access to Custom Hiring Centre (Agri-equipment)	Within 5 km from GP	2	Within 5 - 10 km from GP	1	> 10 km from GP	0				
Panchayats with the availability of cottage and small-scale units	Available within GP	2	Not available	0						
Panchayats with any activities such as bee keeping, sericulture, handloom or handicrafts	Available within GP	2	Not available	0						
Panchayat having any project/s supporting Poultry, Goatery, or Piggery development	Available within GP	2	Not available	0						
Panchayats with the availability of fertilizer shop	Within GP or within 5 km of GP	2	Within 5-10 km of GP	1	Beyond 10 km of GP	0				
Panchayats with Vocational Training Centre/Polytechnic/ ITI/RSETI /DDU-GKY	Within 5 km from GP	2	Within 5-10 km from GP	1	> 10 km from GP	0				
Proportion of area irrigated to total cultivated area	>80%	2	60-80%	1.5	40-60%	1	<40%	0		
Proportion of households mobilized into SHGs	>50%	2	30-50%	1	<30%	0				
Proportion of SHGs which accessed bank loans	>90%	2	70-90%	1	50-70%	0.5	<50%	0		
Panchayats with availability of markets (Mandis, Regular market, Weekly haat)	Available within 1 km from GP	2	Available within 1-2 km from GP	1.5	Available within 2-5 km from GP	1	Available within 5-10 km from GP	0.5	Available >1 km from GP	0

SERVICES

Indicator	Scoring criteria and score									
Panchayats accessibility of a bank branch or business correspondent with internet connectivity	Access to bank branch or a BC with internet	2	Access to a bank branch within 5 km from GP but no access to BC	2	Access to a bank branch within 5 - 10 km from GP but no access to BC	1	Access to a bank branch > 10 km from GP but no access to BC	0		
Availability of electricity for domestic use (hours of availability)	>12 hours	2	8-12 hours	1.5	4-8 hours	1	<4 hours	0		
Panchayats with the availability of Public Transport (Bus/Van /Auto)	Within 1 km of GP	2	Within 1-2 km of GP	1.5	Withing 2-5 km of GP	1	>5 km of GP	0		
Panchayats with availability of Public Distribution System (Fair Price Shop)	Available within 1 km from GP	2	Available within 1-2 km from GP	1.5	Available within 2-5 km from GP	1	Available within 5-10 km from GP	0.5	Avail able > 10km from GP	0
Panchayats with Internet /Broadband Facility	Available in GP	2	Not available	0						
Panchayats where of Common Service Centre (CSC) is available	Available in GP	2	Not available	0						
Status of availability of Public Information Board under People's Plan Campaign in Panchayats	Available in GP and updated	2	Available in GP but not updated	1	Not available	0				
Panchayats with community waste disposal system	Available in GP	2	Not available	0						

AMENITIES

Indicator	Scoring criteria and score									
Panchayat with availability of drainage facilities	Closed drainage	2	Open pucca drainage covered with tiles slab	1.5	Open pucca drainage uncovered	1	Open kuccha drainage	0.5	No drainage	0
Panchayats with community biogas	Available in GP	2	Not available	0						
Panchayats with Recreational Centre/Sports Playground	Both indoor and outdoor	2	Either indoor or outdoor	1	None	0				
Panchayats with primary school	Within GP	2	< 1 km from GP	1.5	Within 1-2 km of GP	1	2-5 km from GP	0.5	> 5 km from GP	0
Panchayats with middle school	Within 2 km from GP	2	Within 2 -5 km from GP	1	> 5 km from GP	0				
Panchayats with high school or senior secondary school	Within 5 km from GP	2	Within 5-10 km from GP	1	> 10 km from GP	0				
Panchayats with Aanganwadi Centre	Within GP	2	Within 1 km of GP	1.5	Within 1-2 km of GP	1	> 2 km from GP	0		
Panchayats with any government healthcare facility	Within 1 km from GP	2	Within 1-2 km from GP	1.5	Within 2-5 km from GP	1	> 5 km from GP	0		
Panchayats with Jan Aushadhi Kendra	Available within GP	2	Not available	0						

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