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Reversing the Gaze

Re-examining Estimates of India's Development Indicators by International Organisations

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Table of Contents

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List of Figures

List of Tables

Executive Summary

India's poor performance on certain development indicators has been a matter of hot debate in recent years. These debates often arise because some socio-economic indicators, as estimated by international agencies, seem to stagnate or even deteriorate despite a rise in per capita income in India. In this paper, we examine whether or not these estimates stand up to scrutiny.

The present paper investigated the matter by looking into three widely used data-driven development indicators i.e., ***Childhood Stunting*** (estimates released by India's National Family and Health Survey (NFHS) based on World Health Organisation (WHO) growth standards), ***Female Labour Force Participation Rate*** (FLFPR) by International Labour Organisation (ILO), and ***Life Expectancy at Birth*** by United Nations Population Division. The choice of these three representative indicators is driven by the fact they not only capture specific development areas like health or gender but also feed into broader global indices on socio-economic progress with a wider impact on narratives that is often outside the purview of specialists in the said areas.

First, we examined ***Childhood Stunting*** i.e., 'low height for age' which is a commonly used malnutrition indicator that finds its way into the Global Hunger Index and Sustainable Development Goals. It also determines the success of India's nutrition programs like Poshan Abhiyaan 2.0.

According to National Family and Health Survey (NFHS) 2019-21, the prevalence of stunting in India for children under five years was 35.5% (rural 37.3%; urban 30.1%) based on the WHO growth standards. In this paper, we looked at how these global standard were derived against which stunting was being measured.

We found that WHO set standards that prescribe *how children should grow* in all settings across geographies to reach their full growth potential. The benchmark anthropometric data, including height among children, was derived from the Multicentre Growth Reference Study (MGRS) from 1997-2003 that included a sample of 8500 infants and children from just six arbitrarily selected countries i.e., India (South Delhi), Oman (Muscat), Ghana (Accra), Brazil (Pelotas), Norway (Oslo) and U.S. (Davis). The India sample of 1490 was taken from affluent pockets of South Delhi on the grounds that relatively better access to nutrition and healthcare meant that these children could be assumed not to suffer from undernourishment.

Note that even in the benchmark study, the Indian and Omani children were consistently shorter than the rest of the countries. For instance, at 60-62 months the average Ghanian child was 112.55 cm, Brazilian 111.15 cm, and Norwegian was 110.64 cm while the average Indian and Omani child was 108.78 cm and 109 cm respectively. In other words, India's best-fed children were smaller on average than those of other countries.

This problem of one-size-fits-all is well-known in the medical field. Taking cognisance of the diversity of children's growth, Indonesia, U.K. and the U.S. have developed their own growth charts for reference by medical practitioners. Even Indian researchers have come up with indigenous growth charts. In one such study based on the observed growth trajectory of urban middle and upper-middle-class children from five geographical zones of India, using NFHS 2019-21 data, all-India stunting turned out to be significantly lower at 24% with drastic reduction across states. While this is still a high number, it is much lower than the estimate of 35.5% based on the WHO growth standards.

This demonstrates how a blind application by national agencies of a one-size-fits-all global standard presents a misleading picture of an important malnutrition indicator. Therefore, we need to revisit local anthropometric measurements and release data based on our own benchmarks derived from indigenous characteristics which are better suited to gauge malnutrition in India.

Next, we examined a much talked about labour market and gender equality indicator, i.e., ***Female Labour Force Participation Rate*** which finds its way into UNDP's Gender Inequality Index and World Economic Forum's Gender Gap Index. It is the percentage of employed and unemployed women out of the total working-age population (aged 15+). India performs one of the poorest in the world at 24% as per ILO's latest 2022 estimates. This marks a small increase from 23% in 2021 (revised up from an earlier estimate of 19.2%). This is far below not just developed countries like Britain (58.5%), and the U.S. (56.5%) but even emerging Asian and African economies like Vietnam (69.1%) and Tanzania (78.9%) respectively. Is this the true state of women's workforce participation in India?

We found that India's Periodic Labour Force Survey (PLFS) instrument does not capture economically productive work done by women like poultry farming, milking of cows, etc. as part of their domestic duties. This effectively pushes a significant proportion of women in the active labour force into the 'out of labour force' category. This is not only conceptually untenable but is ironically against the ILO standards followed internationally.

This issue was highlighted by the latest Economic Survey 2022-23 which estimated an augmented FLFPR of 46.2% correcting for this omission as compared to official PLFS estimate of 32.5% for 2020-21.

Interestingly, an ILO research paper identified the issue of a flawed questionnaire design and re-estimated FLFPR from 31.2% to 56.4% for 2012. It is then perplexing that ILO takes the trouble to model India's FLFPR and estimates it now in the 23-24% range, a level far below the official PLFS estimate that it knows is already an underestimate.

Unfortunately, such poor data and estimates become the basis for acrimonious debates on social issues in India. Note that the problem here is that the national data agency does not follow appropriate international standards thereby giving space for consistent underestimation of Indian FLFPR by ILO. We do not merely need to question international agencies for their estimates for India but must also demand reform of our own statistical apparatus to be able to deliver timely and quality data.

Lastly, we investigated the sharp decline in India's ***Life Expectancy at Birth*** estimate by UN Population Division. The indicator is important as it occupies a one-third weight in UNDP's widely quoted Human Development Index. It is defined as the average number of years that a new-born could expect to live if he or she were to pass through life subject to the age-specific mortality rates of a given period. The estimate of India's Life Expectancy at Birth by the United Nations Population Division was sharply cut by 3.67 years from 70.91 in 2019 to 67.24 in 2021. The UN agency claims that this cut reflects COVID-19 related mortality.

Firstly, these estimates are plagued by a serious conceptual problem. Since there has been overwhelming evidence that the COVID-19 virus kills only adults, by adjusting Life Expectancy at Birth, the UN agency assumes that the pandemic will still be around after two decades, and with the same virulence as at its peak in 2020-21, in order to impact today's infants.

Secondly, the sharp downward estimation of Life Expectancy at Birth was attributed to 4.7 million excess deaths estimated by WHO which is the highest in the world. This is in addition to ***routine adjustments*** done to data on the grounds of under-reporting of data by national agencies (this too is an outdated view). While India has repeatedly objected to WHO's excess death estimates on the grounds of the use of media reports, dubious methodology, and lack of robust modelling, the UN agency still factored it into its estimates for 2021.

Third, the decline in UN agency's estimate of Life Expectancy at Birth from 2019-21 for India was among the highest in the world i.e., -5.18% compared to countries like Brazil (-3.44%), U.S. (-2.45%) and Italy (-0.84%). But our calculations using WHO's own data reveal that when cumulative and excess deaths were calibrated per one lakh population (a better relative measure compared to absolute numbers for international comparisons), India's toll stood at 375.8 which is far below that of countries like Brazil (645.4), U.S. (606.7) and Italy (587.7). In other words, even WHO's biased data does not suggest that India should suffer such a sharp downward revision in Life Expectancy at Birth.

Thus, improper adjustments using modelling procedures end up skewing data for India. In this case, we recommend that the Registrar General of India should publish life expectancy estimates every year to reduce the space for external agencies to model their estimates. In order to be in time for a calendar year data cycle, this can be done based even on partial data, and can be updated when more detailed data is available as is done in the case of various other indices including GDP.

As discussed above, our examination of well-known development indicators suggest that international agencies systematically underestimate socio-economic progress. This then feeds into wider global indices, but also clouds feedback on policy interventions. The growing use of Environmental Social and Governance (ESG) norms in investment and trade decision increases the need for accurate data in these areas.

On one hand, the paper has identified systematic flaws in estimates by international agencies ranging from conceptual mistakes and inappropriate benchmarks to shoddy methodology. On the other hand, our domestic statistical apparatus needs to pay greater attention to the appropriateness of global standards, but also to publish their own estimates proactively. This will reduce the space for international agencies to publish misleading estimates.

Meanwhile, both academics and activists should actively question standards and estimates from international agencies, especially those involving international comparisons, before using them in public debates and policy recommendations. At the same time, the Indian authorities must demand greater transparency and accountability from international agencies. As a member of many of these organizations, India has the right to demand accurate, unbiased estimates. The growing use of ESG norms in real-world decision-making makes this urgent.

Introduction

India's performance on various development indicators is often a subject matter of heated debates. This is due to a paradox of rising per capita income and poor performance on certain development indicators. While empirical research has established the correlation of high per capita income with better scores on development indicators in the area of health, gender, etc., is India an exception to the rule?

In a previous working paper,[1] we examined some opinion-based indices like V-Dem's Democracy Index, Freedom in the World Index, and Economist Intelligence Unit (EIU) Democracy Index and found a systematic downward bias for India that does not merely drive media narrative but also finds its way into concrete factors such as sovereign ratings.

Under the same thematic lens, we investigate three data-driven socio-economic indicators: Childhood Stunting, Female Labour Force Participation Rate (FLFPR), and Life Expectancy at Birth which carry significant weight in various global indices and core discourse on development for cross-country comparisons and rankings.

For instance, Childhood Stunting is a significant malnutrition indicator that finds its way into Sustainable Development Goals and Global Hunger Index. FLFPR is a strong indicator of equal economic opportunities for women and feeds into UNDP's Gender Inequality Index and World Economic Forum's Gender Gap Index. Similarly, Life Expectancy at Birth carries one-third weight in UNDP's Human Development Index. In the future, these will also filter into various Environmental, Social and Governance norms.

While various estimates and projections by international agencies are at the heart of these indicators, granular details on how these estimates are arrived at are generally ignored or pushed under the carpet. Therefore, given their significance, the paper sets out to explore various facets in terms of concepts, benchmarks, methodology, and modelling employed to estimate these indicators.

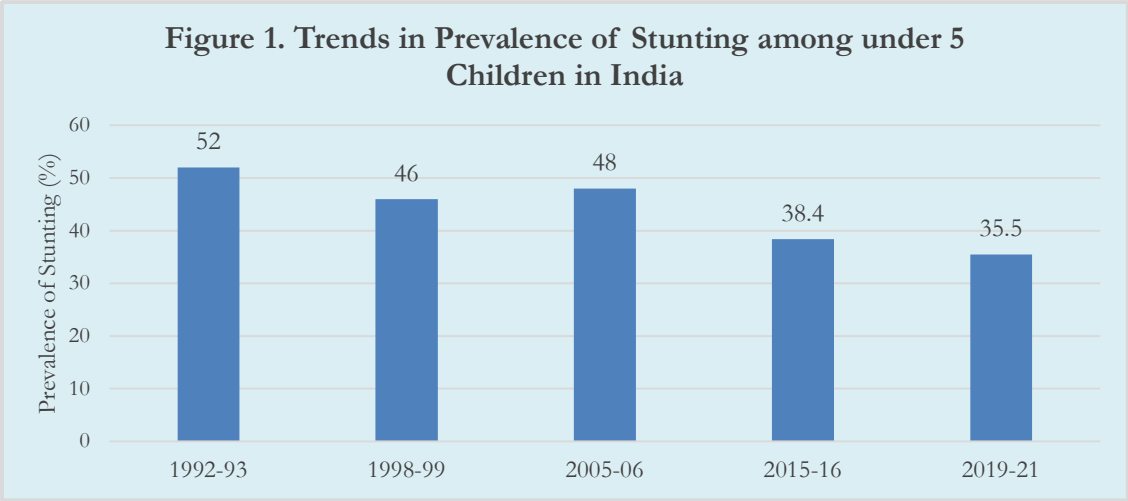
[1] https://eacpm.gov.in/wp-content/uploads/2022/11/Global-perception-indices_Final_22_Nov.pdf

I. Malnourished Metrics: WHO Vs local Standards for Measurement of Childhood Stunting

Unless there are clear metrics to measure social progress, how can we strive to achieve meaningful improvement? However, the blanket application of inappropriate global standards in India does not always present a true picture. Here, we investigate childhood stunting as a metric that gauges child malnutrition.

According to the National Family Health Survey (NFHS) 2019-21, the prevalence of stunting in the 0-5 years of age bracket is 35.5% (rural 37.3%; urban 30.1%). This is down from 38.4% in 2015-16 and sharply lower than 48% in 2005-06 (as shown in figure 1).

Figure 1. Trends in Prevalence of Stunting among under 5 Children in India



(Source: National Health Family Surveys)

While it is heartening to see progress, the indicator still suggests that over one-third of Indian children suffer from Stunting. Is this the true reflection of the ground situation?

Stunting is defined as '*low height for age*' and is associated with chronic undernutrition. Statistically, children whose height-for-age Z (HAZ) score[2] is found to be below -2 standard deviation from the median *reference population* are considered short for their age or stunted. This global benchmark based on the reference population that is used by NFHS for the estimation of stunting in India is derived from the World Health Organisation (WHO). But how did WHO arrive at the benchmark?

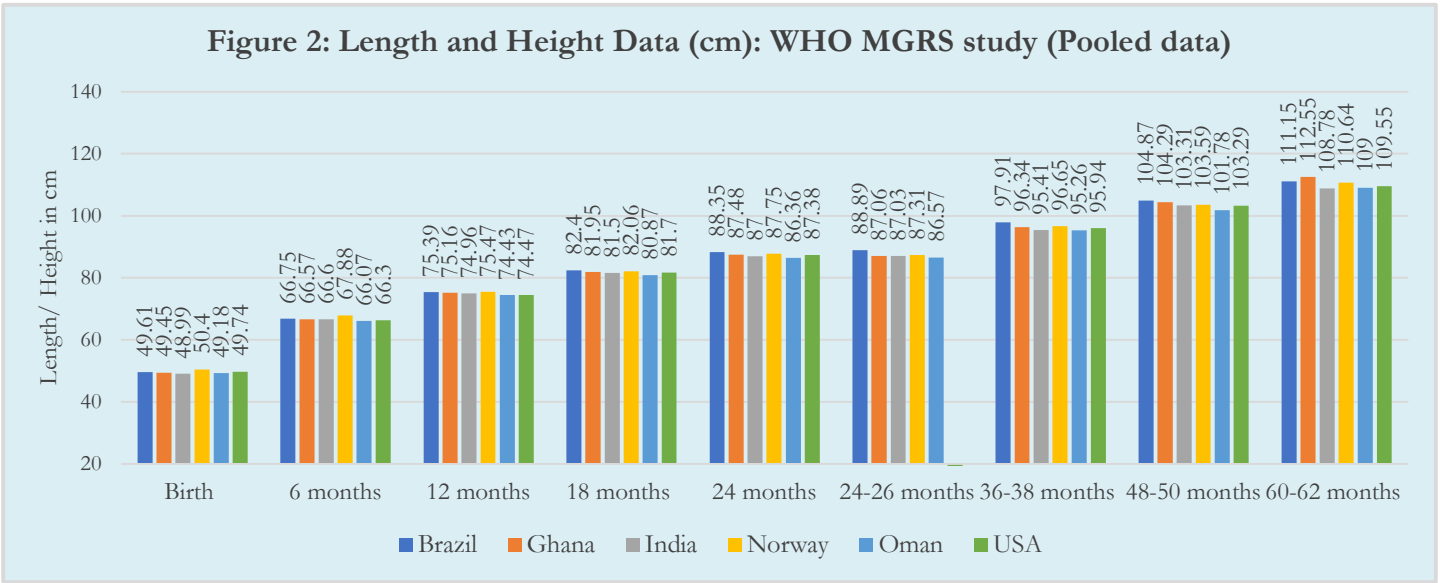
[2] HAZ is calculated by subtracting an age- and sex-appropriate median value from a reference population (WHO MGRS study) and dividing by the Standard deviation of the reference population.

It turns out that it is based on the Multicentre Growth Reference Study (MGRS) done between 1997-2003 (Onis et al., 2004) which prescribed normative standards of *'how children should grow'* in all settings across geographies. This study was a combination of a longitudinal sample of 1,743 infants aged 0-24 months and a cross-sectional sample of 6,697 children aged 18-71 months. The sample was drawn from six countries: India (South Delhi), Oman (Muscat), Ghana (Accra), Brazil (Pelotas), Norway (Oslo), and U.S. (Davis). WHO then pooled the data to create a global benchmark range for childhood growth.

The Indian sub-study used a sample of 1,490 infants and children, taken from affluent pockets of South Delhi on the grounds that children from this relatively affluent neighbourhood have access to adequate nutrition and healthcare, thereby reaching their full potential.

Interestingly, even in the original MGRS study, the baseline sample characteristics varied across the countries where Indians and Omanis were consistently shorter than the others as shown in figure 2. For instance, at 60-62 months, the average Ghanian child was 112.55 cm, Brazilian was 111.15 cm and Norwegian was 110.64 cm, compared to 108.78 cm for the Indian child and 109 for the Omani child (WHO MGRS 2006). Thus, the best-fed Indian child was shorter than the average even in the benchmark study. This was despite the application of stringent filtering criteria for the choice of participants in the study like better socio-economic status, adequate healthcare access, low altitude, child feeding recommendations, etc.

Figure 2: Length and Height Data (cm): WHO MGRS study (Pooled data)



(Source: Assessment of differences in linear growth among populations in the WHO Multicentre Growth Reference Study, WHO Multicentre Growth Reference Study Group)

MGRS uses a paltry sample taken arbitrarily from just six countries to create a global one-size-fits-all standard. There is no reason for the selection of these six countries that leaves out large populations of East and Southeast Asia which are generally shorter[3].

Further, the WHO MGRS study showed considerable differences in maternal height among the sample (both longitudinal and cross-sectional) across countries where again, the Indian sample of mothers was consistently and substantially shorter than their counterpart (except Oman) as shown in table 1. Empirical evidence has established that child height is positively related to maternal stature (Ozaltin et al., 2010). Therefore, when maternal height was factored into the prevalence of stunting among 67 countries, Karlsson et al. (2021) showed that India's stunting prevalence was revised drastically downwards from 38% to 25% using Demographic and Health Survey data 2019-21.

Table 1: Mean Maternal Stature (cm) in WHO-MGRS Study

	All sites	Brazil	Ghana	India	Norway	Oman	USA
Longitudinal Sample	161.6	161.1	161.9	157.6	168.7	156.6	164.5
Cross-sectional sample	161	160	161.9	157.6	167.7	156.6	164.3

(Source: Assessment of differences in linear growth among populations in the WHO Multicentre Growth Reference Study, WHO Multicentre Growth Reference Study Group)

Indeed, other research studies across regions have found discrepancies in stunting measurement when using nationally representative data and the WHO growth standards[4][5][6]. Therefore, countries like Indonesia[7], United Kingdom[8] , and United States[9] have devised their own growth charts.

Even in India, the medical profession has taken cognizance of the fact that WHO growth standards are not suitable for the country and thus, has come up with alternative growth charts (Khadilkar et al., 2007). When one such indigenous benchmark was applied in a 2021 study on NFHS 2015-16 data, the prevalence of stunting turned out to be much lower i.e., from 38.4% to 27% (Khadilkar et al., 2021).

[3] https://ncdrisc.org/data-downloads-height.html
[4] Are universal standards for optimal infant growth appropriate? Evidence from a Hong Kong Chinese birth cohort | Archives of Disease in Childhood (bmj.com)
[5] https://pubmed.ncbi.nlm.nih.gov/27280591/
[6] https://jkms.org/pdf/10.3346/jkms.2021.36.e315
[7] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7711636/
[8] https://adc.bmj.com/content/86/1/11
[9] https://www.cdc.gov/growthcharts/index.htm

A more recent paper by Subramanian et al. (2023) uses the latest NFHS 2019-21 data and gauges stunting using the same indigenous benchmark based on the growth trajectory of urban middle and upper-middle-class (IUMC) children spread across five geographical zones i.e., North, South, East, West and Central of India. Such granular data allows state-wise measurement of stunting based on more localised benchmarks. The study found that all India prevalence of stunting turned out to be much lower at 24% using the indigenous benchmarks as opposed to the WHO growth standards. The differences were larger when individual states level data were analysed. For example, Stunting in Bihar went from 40% based on the WHO benchmark to 30% using the upper-middle-class benchmark, Maharashtra from 33% to 23%, and Uttar Pradesh from 37% to 27% (refer table 2).

Interestingly, similar discrepancies surface between local and WHO standards when tested for another anthropometric indicator of malnutrition i.e., wasting – 'low weight to height'. The prevalence of wasting in 2019-20 was 19% using the WHO standard but is revised significantly downwards to 9% for the same period when the indigenous upper middle-class benchmark is applied (refer table 2).

Table 2: Weighted Prevalence (%) of Stunting and Wasting among children under five across Indian States and Union Territories based on WHO-MGRS and Indian Upper Middle Class (IUMC) in NFHS 2019-21.

	Stunting		***Wasting***	
	WHO MGRS	**IUMC**	**WHO MGRS**	**IUMC**
All India	**33**	**24**	**19**	**9**
States				
Andhra Pradesh	28	19	17	6
Arunachal Pradesh	26	19	13	8
Assam	33	24	22	11
Bihar	40	30	23	10
Chhattisgarh	32	23	19	8
Goa	23	13	20	9
Gujarat	36	28	25	12
Haryana	25	17	12	5
Himachal Pradesh	28	20	18	8
Jharkhand	37	27	23	10
Karnataka	33	24	19	11
Kerala	20	12	16	7
Madhya Pradesh	33	23	19	7
Maharashtra	33	23	25	12
Manipur	20	13	10	4

Meghalaya	44	34	12	5
Mizoram	26	19	10	5
Nagaland	30	23	19	8
Odisha	28	19	18	7
Punjab	22	15	10	4
Rajasthan	29	20	17	9
Sikkim	18	15	13	8
Tamil Nadu	22	14	15	6
Telangana	30	22	22	10
Tripura	30	23	17	10
Uttar Pradesh	37	27	17	8
Uttarakhand	25	17	14	5
West Bengal	31	23	21	9
Union Territories				
Andaman & Nicobar Islands	20	16	15	6
Chandigarh	21	13	10	4
Dadra & Nagar Haveli & Daman & Diu	35	25	21	7
Jammu & Kashmir	25	18	18	12
Ladakh	29	24	17	9
Lakshadweep	27	15	16	10
NCT of Delhi	28	20	11	5
Puducherry	19	13	12	5

(Source: Subramanian et al., 2023)

As can be seen, the blanket use of global benchmark overstates India's child malnutrition problem. This is not to suggest that malnutrition is not a serious issue and the prevalence is still high even when gauging it through the local benchmarks. But any effective policymaking and targeted intervention would require accurate measurement of the problem.

This issue of one-size-fits-all approach ingrained in the WHO standards was highlighted over a decade ago by Dr. Arvind Panagariya (Panagariya, 2013) where he challenged the narrative of worse malnutrition outcomes in India than in Sub-Saharan African nations.

While other countries like Indonesia, the U.S., and European nations like Britain have developed their local growth charts, unfortunately, India's own data agencies inexplicably continue to use the WHO standards. What is equally puzzling is the insistence of economists on using inappropriate global standards when the medical profession has identified the problems and devised alternatives.

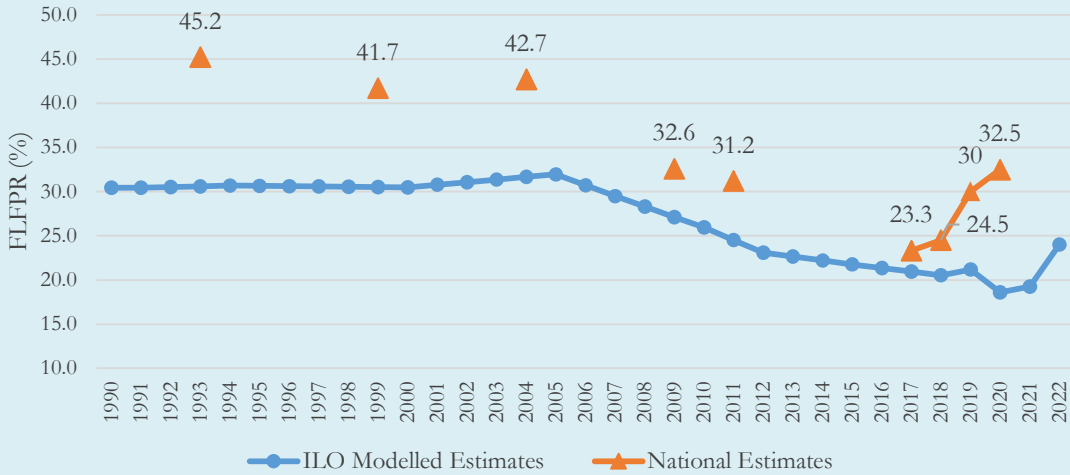
Therefore, we need to revisit data on local anthropometric measurements and simultaneously release data based on our own benchmarks derived from indigenous characteristics which are better suited to gauge malnutrition in India.

II. Flaws in Female Labour Force Participation Estimation: ILO's Unworkable Maths

In this part of the paper, we point out problems with the estimation of Female Labour Force Participation Rate (FLFPR) by International Labour Organisation (ILO). Also, while the previous section of the paper highlighted that the blanket application of an inappropriate global standard has a distortionary effect on the measurement of indicators like Stunting, this section finds quite the different that how not following an appropriate internationally accepted standard leads to serious underestimation of a relevant labour market and gender equality statistic i.e., the Female Labour Force Participation Rate for India.

The issue of low FLFPR in India has been a matter of debate for some years now. There has been a gradual decline in national as well as ILO's estimates of FLFPR over the years as shown in figure 3. But it is important to note that ILO's estimate of FLFPR is consistently lower than the national estimate over the years.

Figure 3: India's Female Labour Force Participation Rate 1990-2022



(Source: National estimate – National Sample Survey (NSS) Employment and Unemployment Surveys (1990-91 to 2011-12), PLFS (2017-18 to 2020-21); ILO Modelled estimates – World Bank, ILOSTAT)

The latest estimate published by ILO for India is 24% for 2022[10]. This marks a small increase from 23% in 2021 (revised up from an earlier estimate of 19.2%) but is still among the lowest in the world. Is this a fair reflection of female labour force participation in the country?

FLFPR is defined as the number of women in the labour force, both employed and unemployed, as a percentage of the working-age female population (above 15 years of age). According to the ILO's 2022 estimates, India's FLFPR is much lower than the readings for developed countries: 58.5% in United Kingdom, 56.5% in the United States, and 53.9% in Japan. However, India's rate is also low compared to emerging economies like Vietnam (69.1%), and Indonesia (52.7%). Indeed, some of the highest FLFPR readings come from emerging countries in Africa such as Tanzania (78.9%) and Kenya (72.7%) (details annexed figure A). The high FLFPR in many emerging economies reflects the participation of women in farming and traditional family occupations. Given that this is common in India, why does this not drive up the number for the country?

India's own Periodic Labour Force Survey (PLFS) conducted by the Ministry of Statistics and Programme Implementation (MOSPI) estimates the country's FLFPR at 32.5% for 2020-21[11]. However, various studies have highlighted that this is a gross underestimate[12][13]. The latest Economic Survey 2022-23 points out several measurement issues.

The most glaring flaw is that the PLFS questionnaire categorises women performing both domestic duties and economically productive work such as the free collection of goods (vegetables, roots, firewood, cattle feed, etc.) in the capacity of contributing family worker to be 'out of labour force' under the ambit of activity code 93. This is not only conceptually untenable, it is also against the internationally used 13th International Conference of Labour Statisticians (ICLS) standard defined by ILO that includes productive work by a contributing family worker generally done by women as employment. This effectively pushes a significant proportion of women in the active labour force to the 'out-of-labour-force' category, thereby lowering FLFPR estimate in India. The Economic Survey estimated that if the PLFS data is corrected for this, the "*augmented FLFPR*" rises significantly to 46.2% from 32.5% for 2020-21 as shown in figure 4.

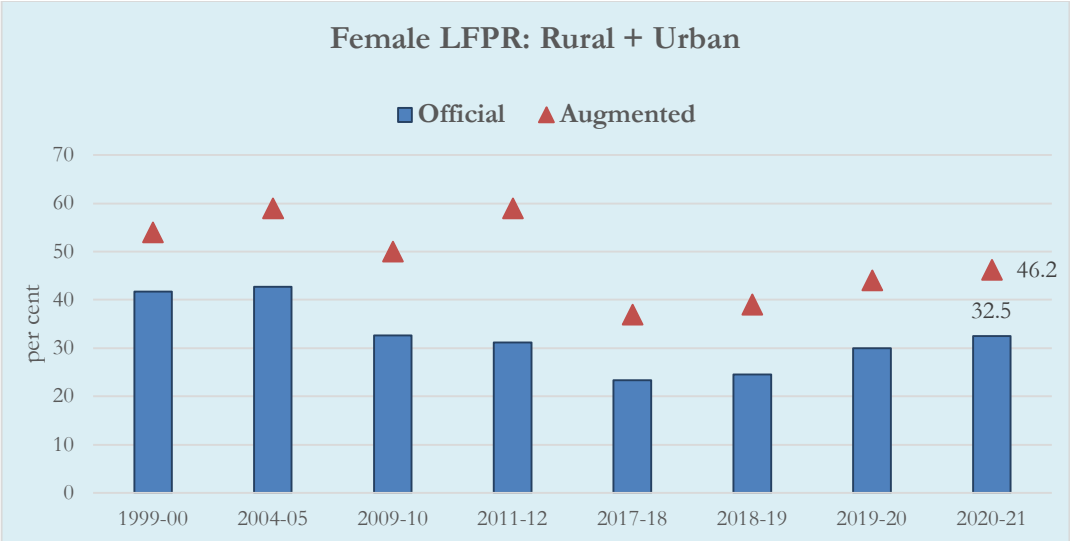
[10]https://www.ilo.org/shinyapps/bulkexplorer39/?lang=en&segment=indicator&id=EAP_2WAP_SEX_AGE_RT_A

[11] https://dge.gov.in/dge/sites/default/files/2022-07/Annual_Report_PLFS_2020-21_0_0.pdf

[12] https://www.epw.in/journal/2012/37/special-articles/missing-labour-force.html?0=ip_login_no_cache%3Db803d13ddd68f8aacdc449c4b8aa5883

[13] https://www.epw.in/journal/2011/37/special-articles/employment-trends-india-re-examination.html

Figure 4: Official and Augmented Female Labour Force Participation Rates by Economic Survey 2022-23



(Source: Economic Survey 2022-23; Data from 1999-00 to 2011-12 pertains to NSS Employment Unemployment Survey and for 2011-12 to 2020-21 to PLFS)

Interestingly, ILO is fully aware of this issue and flagged it in a research paper by Steven Kapsos et al (2014). It recognised that labour force participation rates would have suffered a downward bias due to the misclassification of individuals (particularly women) in the inactive category despite their engagement in market work. Therefore, an augmented labour force participation rate was calculated correcting for the wrong classification using National Sample Survey (NSS) data where the FLFPR (rural + urban) turned out to be exponentially higher than the national estimate across the years, for instance for 2012 it turned out to be 56.4%, a significant revision from official estimate of 31.2% as shown in table 3 below.

Table 3: Labour Force Participation Rates (%) UPSS and augmented definition (by sex and area) calculated by International Labour Organisation

	UPSS definition					Augmented definition				
	1994	**2000**	**2005**	**2010**	**2012**	**1994**	**2000**	**2005**	**2010**	**2012**
Women										
Rural	49.0	45.4	49.4	37.8	35.8	80.8	77.0	76.3	70.1	66.8
Urban	23.8	20.8	24.4	19.4	20.5	45.2	38.5	39.1	35.9	32.1
All areas	**42.7**	**38.9**	**42.7**	**32.6**	**31.2**	**71.8**	**66.8**	**66.4**	**60.3**	**56.4**
Men										
Rural	87.6	85.3	85.9	82.5	81.3	87.9	85.3	86.2	82.8	81.6
Urban	80.1	78.7	79.2	76.2	76.4	80.2	78.7	79.3	76.3	76.4
All areas	**85.6**	**83.4**	**84.0**	**80.6**	**79.8**	**85.9**	**83.4**	**84.3**	**80.9**	**80.0**

(Source: Steven Kapsos et al. 2014; UPSS- Usual principal and Subsidiary status definition used by NSS)

It defies common sense that ILO then takes the trouble to model India's FLFPR and then estimates it in the 23-24% range, a level far below the official PLFS estimate that it knows is an underestimate!

When we contacted ILO for an explanation, the reply acknowledged that the estimate for India was inaccurate, and added that the estimates come with a warning that *"imputed observations are not based on national data, are subject to high uncertainty and should not be used for country comparisons or rankings"*. This is a particularly odd response when the very first paragraph of their 2023 methodology note[14] claims that *"the resulting country-level data, combining both reported and imputed observations, constitute a unique, internationally comparable data set of labour market indicators."*

The perpetuation of this incorrect estimate by ILO does not remain limited to this space but makes its way into other global indices and ends up corrupting them. For example, ILO's pre-revision FLFPR estimate of 19.2% for 2021 captured by the World Economic Forum's Global Gender Gap Report 2022 ranked India at 135th among 146 countries (143rd in the sub-index for economic participation and opportunity between men and women). Similarly, UNDP's Gender Inequality Index 2021 (as part of the Human Development Report) positioned India at 122nd out of 170 countries.

So far, we have highlighted deficiencies in ILO's FLFPR estimation procedure but equally important is to reform our own statistical system which does not conform to the widely accepted practices for the measurement of FLFPR and provides leverage for international agencies to publish their own estimates. One of the key issues identified in the measurement of women's participation in the labour force is poor labour force survey instrument in the following areas: -

a) It does not distinguish various work activities and classifies them under one umbrella category.

b) It ignores the status of employment in case of simultaneity of activities, for instance, an individual could have attended educational institution and taken up some work, but the identification of employment status with the current categories is not feasible.

c) It heavily relies on a single question to determine employment status.

d) The survey needs to be more gender mainstreamed and needs to capture the latest 19th ICLS that includes other forms of work like unpaid work (household, trainee, volunteer, etc.). Time use surveys could further complement this exercise.

[14] https://www.ilo.org/ilostat-files/Documents/TEM.pdf

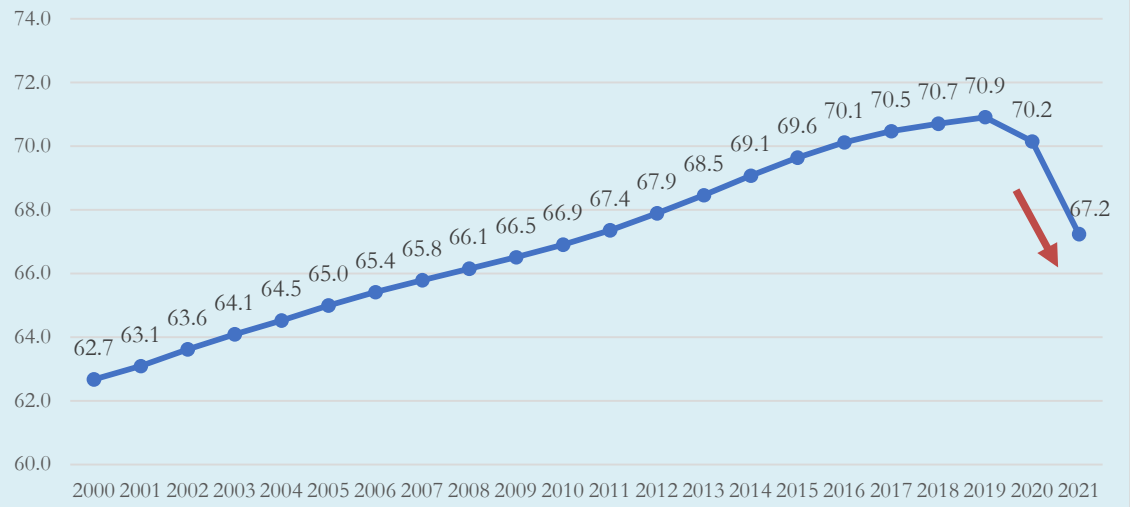
Thus, India's data gathering agencies need to provide timely and quality data, as in this case if our own data agencies had come up with properly surveyed and well-considered estimates, it would leave less space for international agencies to revise our estimates downwards. Indeed, our interactions with ILO gave us the impression that if the PLFS survey was upgraded to international standards, the institution would simply use the national agency's estimate. In other words, we need to question international agencies but we also need to get our own house in order.

III. Decline in Life Expectancy at Birth: An Untenable Narrative

Life Expectancy at Birth is an important human development indicator as it occupies one-third of weight in UNDP's Human Development Index[15]. It is defined as the average number of years that a newborn could expect to live if he or she were to pass through life subject to the age-specific mortality rates of a given period.

Life Expectancy at Birth is estimated by United Nations Department of Economic and Social Affairs under the Population division. The estimate for India was 70.91 years in 2019 which was sharply cut by 3.67 years to 67.2 years in 2021 as shown in figure 5.

Figure 5: Life Expectancy at Birth in India 2000-21



(Source: UN World Population Prospects 2022)

The UN agency claimed that Life Expectancy at Birth was estimated sharply downwards from 2019-21 due to excess mortality which was estimated by WHO. WHO defined excess deaths for the period 1st January 2020 to 31 December 2021 as the *mortality above what would be expected based on the non-crisis mortality rate in the population of interest*[16]. WHO blamed the lack of centralised

[15] https://hdr.undp.org/sites/default/files/2021-22_HDR/hdr2021-22_technical_notes.pdf
[16] https://arxiv.org/pdf/2205.09081.pdf

systematic mortality surveillance and poor quality data across nations for the estimation of excess deaths.

WHO in May 2022 estimated 4.7 million unreported excess deaths in India which comprise of almost one-third of the global excess deaths (14.91 million) making it the highest in the world[17]. This was despite the Government of India's objections to the excess death estimates on account of the use of media reports, questionable validity, and poor robustness of methodology and modelling[18]. For instance, the choice of variables like temperature is not empirically substantiated with COVID-19 mortality but was still included in the model.

WHO's model includes economic measures in terms of income support as one of the variables, then how has it not factored into the world's largest food support program run in India during the pandemic? Further, it has completely ignored the world's largest vaccination drive by India.

We identify some other prominent issues with respect to downward revision in India's life expectancy estimate. Firstly, the drop in life expectancy is plagued with a serious ***conceptual problem***. Since there has been overwhelming evidence of the COVID-19 virus killing adults, by adjusting for life expectancy at birth, the UN agency makes an assumption that the pandemic will still be around after two decades and with the same virulence and impact as in 2020-21 for infants born today.

Secondly, ***routine adjustments*** to data are done on the grounds of the under-reporting of data by national agencies. This is when the latest civil registration in India registered 99.9% of the deaths in the country in 2020[19]. Interestingly, such under-reporting was done for India, Vietnam, Philippines, Bangladesh, etc. but not for Australia, U.S., U.K., Japan, and Italy where registered deaths and international estimates up to 2021 were used[20]. Moreover, over and above these adjustments, to account for the excess mortality related to COVID-19, WHO's estimates of excess deaths were added to the baseline mortality rates estimated for 2020 and 2021 that were forecasted using the Lee-Carter model[21]

Lastly, ***even if WHO's latest numbers are considered, a significant discrepancy was still observed***. Figure 6 shows the cumulative death toll reported to WHO by national agencies

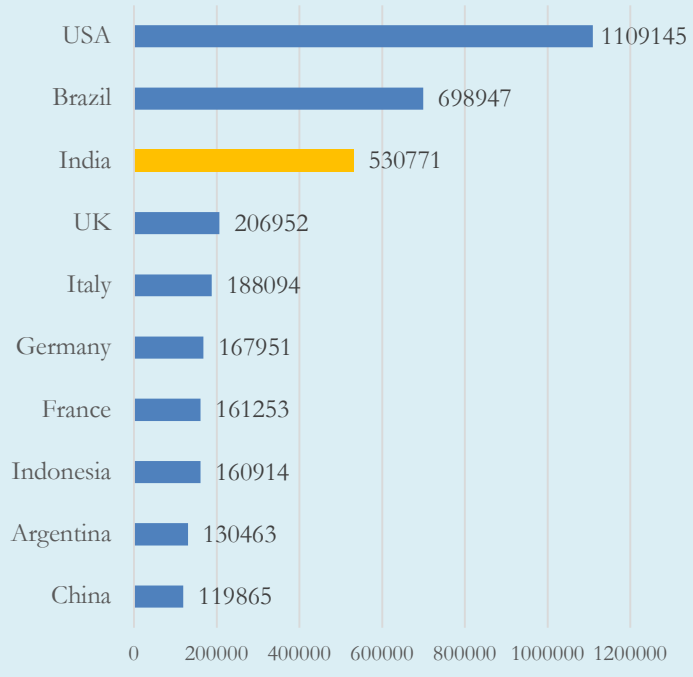
[17] https://www.who.int/data/stories/global-excess-deaths-associated-with-covid-19-january-2020-december-2021
[18] https://pib.gov.in/PressReleasePage.aspx?PRID=1823012
[19] https://pib.gov.in/PressReleasePage.aspx?PRID=1823012
[20] https://population.un.org/wpp/DataSources/356
[21] WHO methods for excess mortality

since January 2020 by countries in which the U.S. tops the count with 11,09,145 deaths followed by Brazil (6,98,947) and India (5,30,771).

In addition, WHO estimated the highest number of excess deaths for India at 47,40,894 which is five times higher than the U.S. (9,32,458) and seven times the estimate for Brazil (6,81,267) as shown in figure 7. Even if we agree with WHO's disputed number, this steep decline in life expectancy seems unjustified.

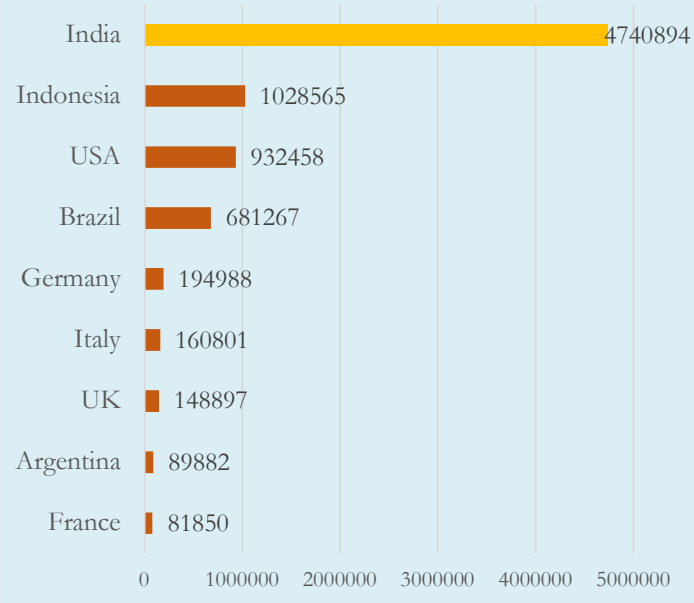
Our calculations show that when the total deaths (cumulative + excess) were compared across countries per 100000 population (a better measure for cross-country comparisons than absolute numbers), India's toll stood at 375.8 which is far below that of countries like Brazil (645.4), U.S. (606.7), Italy (587.7), U.K. (529.8), Germany (435.23), etc. as shown in figure 8. Despite this, WHO's estimated cut in Life Expectancy at Birth for India was among the highest globally i.e., -5.18% compared to countries like Brazil (-3.44%), U.S. (-2.45%), U.K. (-1.20%), Germany (-1.14%), Italy (-0.84%), and so on as shown in table 4.

Figure 6: Country-wise Total Cumulative deaths reported to WHO



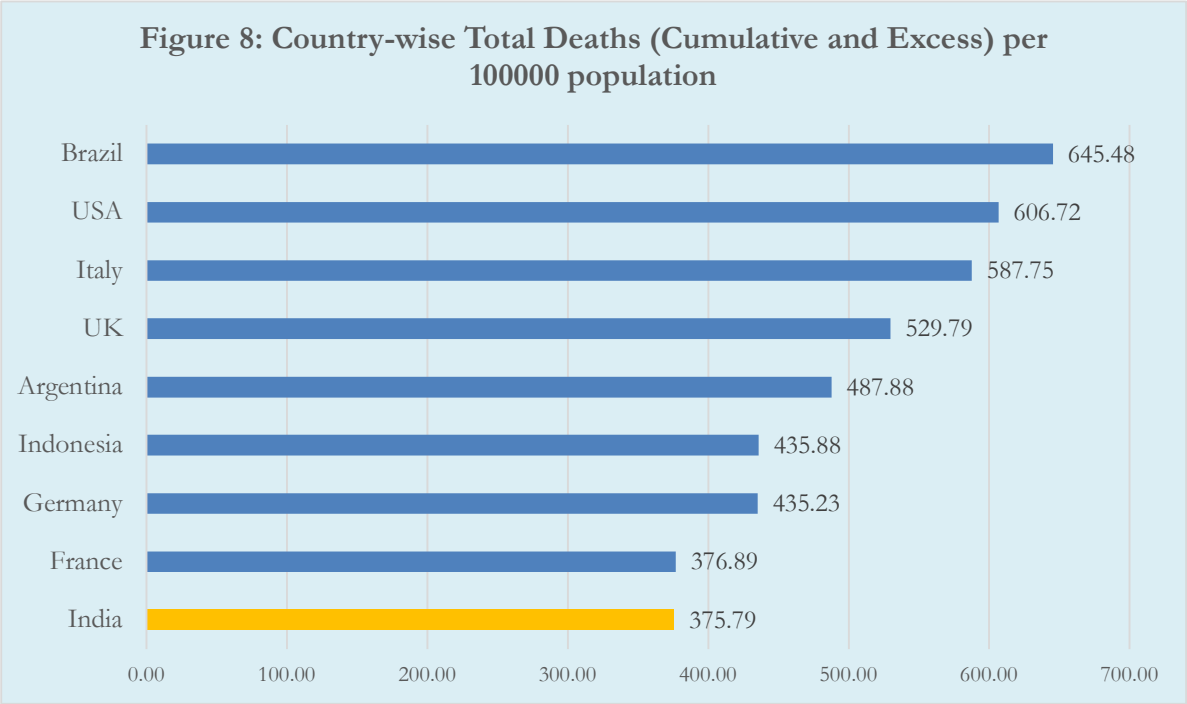
Source: WHO Coronavirus (COVID-19) Dashboard as on February 2023[22]

Figure 7: Country-wise Cumulative Excess Deaths Associated with COVID-19 Pandemic estimated by WHO



Source: Global excess deaths associated with COVID-19 (modelled estimates) by WHO[23]

[22] https://covid19.who.int/data
[23] https://www.who.int/data/sets/global-excess-deaths-associated-with-covid-19-modelled-estimates



(Source: Authors' calculations based on WHO data)

Table 4: Changes in Life Expectancy across Select countries by UN Population Division

Countries	2019	2020	2021	Change in Life Expectancy 2019 to 2021 (in years)	% Change (2019-21)
India	**70.91**	**70.15**	**67.24**	**-3.67**	**-5.18%**
Indonesia	70.52	68.81	67.57	-2.95	-4.18%
Philippines	71.86	72.12	69.27	-2.60	-3.62%
Brazil	75.34	74.01	72.75	-2.59	-3.44%
USA	79.14	77.41	77.20	-1.94	-2.45%
UK	81.73	80.43	80.74	-0.98	-1.20%
Germany	81.56	81.15	80.63	-0.93	-1.14%
Italy	83.55	82.40	82.85	-0.70	-0.84%
Vietnam	74.09	75.38	73.62	-0.47	-0.64%
Bangladesh	72.81	71.97	72.38	-0.42	-0.58%
China	77.97	78.08	78.21	0.24	0.31%

(Source: UN World Population Prospects 2022)

Thus, one can see that there is a downward bias in estimation for India and a series of adjustments end up skewing the Indian data. Such layers of one-sided adjustments and circular references are routinely done to India-related data by international agencies.

One of the reasons which facilitate such faulty estimates is the lack of availability of local data. In this case, since our official estimates of life expectancy come with a huge lag (*estimates for 2019 were released in July 2022 by Registrar General of India*). That gives scope for WHO to extrapolate using a Lee-Carter model based on previous 30-year data and other agencies like the Economist[24] to publish alternative excess death estimates for India.

Thus, we recommend that the Registrar General of India should timely publish life expectancy estimates every year to reduce the space for external agencies to put out their own estimates. This can be done based on partial data as well and can be updated when more detailed data is available as is done in the case of various other indices, even GDP.

[24] https://www.economist.com/graphic-detail/coronavirus-excess-deaths-tracker

Conclusion

Our examination of the above three development indicators has demonstrated that there are systematic biases in estimates of socio-development indicators for India by international organisations. These are just an illustration of a more widespread problem of consistent downward estimation of various indicators despite growing per capita income. These lead to an unduly negative narrative that underestimates the progress achieved so far and gives misleading feedback that hinders effective policy-making and targeted intervention. Moreover, the growing use of Environment Social and Governance (ESG) norms in investment and trade decisions will mean that real-world decision-making will be increasingly impacted by biased data.

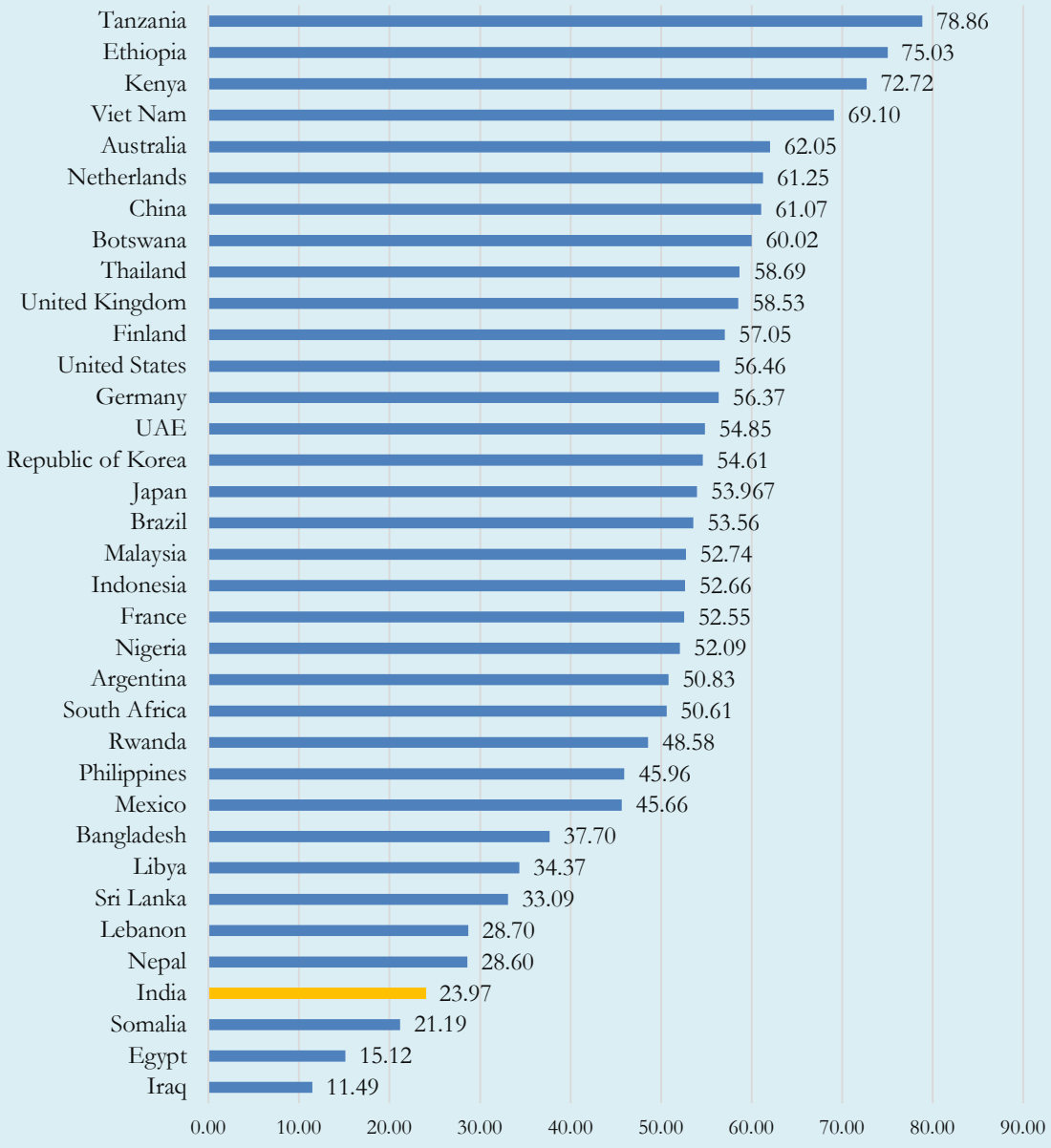
On one hand, flawed estimation by international agencies derives from their own conceptual ambiguity, flawed benchmarks, and shoddy methodology. On the other hand, poor survey design, inappropriate choice of benchmarks, and delayed data publication by domestic statistical agencies have not just failed to capture the ground reality of India's development but have also provided space or justification for the estimates of international agencies. For instance, we saw how blanket application of an inappropriate global standard for childhood growth resulted in a significant overestimation of malnutrition in India. In contrast, not following the ILO standards for women's economic contribution underestimated female labour force participation rate in India. Both cases are a reflection of the same problem – inadequate application of mind on the appropriateness of global benchmarks and definitions.

In other words, our domestic data agencies and statistical apparatus need to be overhauled in order to provide better feedback for policy-making as well as narrow the space for skewed estimation by international agencies. If the Registrar General of India, for instance, were to publish Life Expectancy at Birth estimate annually, it would make it difficult for UN Population Division to publish its misleading estimates without detailed justification.

Additionally, both academics and activists should more actively question standards and estimates from international agencies, especially those involving international comparisons such as UNDP's Gender Inequality Index. At the international level, India must demand greater transparency and accountability from global agencies on these development indicators, particularly by virtue of being a member of agencies like ILO and WHO among others. This data issue needs to be urgently resolved in the context of the growing use of ESG norms in real-world decision-making.

Annexure

Figure A: Female Labour Force Participation Rate (%) - ILO Modelled Estimates 2022



(Source: ILOSTAT)

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