

## A Critical Discussion on Gender-Based Indices in Understanding and Measuring Gender-Gaps in Context of Backward Economies

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#### Abstract

This paper is based on a critical survey of the literature on existing indices of measuring Gender-Based Inequalities and Empowerment. The main contribution of this paper is to conceptualize a broader and lay the foundation for a more native (locally sensitive) measure of genderbased inequalities and empowerments, in the backdrop of changing roles of women among rural, semi market-based economies and notso-industrialized districts in India. The idea that a global index fails to capture the essence of gender-based empowerment among backward economies is raised out of two major concerns - that the ranking of the counties in the global south on the basis of such inequality indices has been persistently low, and that village, semi-industrialized economies with higher distance from urban markets may exhibit a distinct pattern of gender-based empowerment as per the ambit and present definition of 'Empowerment'. And that the global indices fail to account for. Hence, the paper attempts to construct a background study to support the above mentioned proposition and lay down the basis for the construction of a

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more locally specific measure of index that will augment more specific choice of policies based on the same to address local gender-biases in paid work, livelihoods and labor markets.

**Keywords:** Gender, Inequalities, Women Empowerment, Backward Economies, Local Specificities, Labor Markets.

### 1. Background

The term 'empowerment' can be defined as a transformative process that enables individuals to exert influence and take charge of the factors that impact their lives. Theoretically, empowerment encompasses the augmentation of assets and capabilities among individuals and groups from diverse backgrounds, enabling them to engage, exert influence, and hold institutions accountable for their impact (see Roy (2016)). In recent years, empowerment has been perceived as an accumulation and transfer of "capabilities". Especially, the spill-over effects of individual expansions in capabilities over a group deprived of the same, have been highlighted as the basis of empowerment. This is absolutely relevant in context of under-developed or developing economies (see Jayachandran (2015), (Grant, 2010) Olivetti (2016)). Further, the role of "empowerment" in enhancing social capital is highly emphasized (see Janssens (2010))<sup>1</sup>.

Empowerment as an expansion of capabilities as postulated by Amartya Sen elaborates the need for agency to women and gender-parities based on institutional changes. This perspective has been focused on and presented elaborately in the writings of Martha Nussbaum and the new school of feminism and gender studies. In regards to women empowerment, there are four dimensions of measurable capabilities that the literature focuses on - economic empowerment, educational empowerment, political empowerment, and social empowerment Duflo (2011). However, the very fundamental basis of empowerment is the access to the basic components of expanding capabilities as proposed by Sen (1995). Economic empowerment refers to women's ability to access and control economic resources such as land, labour, capital

Empowerment is spoken about in the sense of enhancing the access to critical resources for expansion of women's capabilities in this paper as well as throughout the referred literature. Hence, by the very core definitions of Gender-Based Inequalities and Women's Empowerment, these concepts are synonymous and mirror images, though negatively correlated.

(credit) and entrepreneurship. Political empowerment refers to women's ability to participate in decision-making processes at all levels, from the local to the national level of governance – as voters and as electoral representatives. Social empowerment refers to women's ability to challenge gender norms and stereotypes through enhancement of their set of capabilities – through access to education, health and employment. Another key dimension of women empowerment in less developed countries has been reproductive and marital autonomy (Doepke, Tertilt & Voena (2012), Jayachandran (2015)).

In India, there has been a specially focused growth in policies initiated to make labor market changes in order to empower women and contribute in supporting their agencies. These policies focus on empowering women through economic autonomy and enhancing their labor market participations – especially, through technical, vocational, managerial training as well as access to financial resources towards entrepreneurship and self-employment (refer Singh et.al (2013)). This policy phenomenon is preceded by two decades of creation and popularization of Self Help Groups (SHGs) among rural and backward communities across India. The perspective among policy -makers today is to achieve a sustainable trajectory of women participation in labor force and women entrepreneurships, which will have significant spill-over in terms of development (for more see Vossenberg (2013), Naveed, et.al (2023)).

However, the NSSO data (1970-2018) indicates that an increase in house hold incomes have led to an apparent decline in the "need" for women to work (Nikore, 2019). Further, the lack of technical knowledge, access to internet, nature of jobs allotted to women from low-income households has led to a greater loss in women's employment due to COVID-19 (see Montenovo, et.al (2022)). All these suggest that targeted intervention in technical training (skill-development) and financial support towards institutional set up of women-led enterprises will have significant contribution towards women-empowerment in backward economies (see Pareja et. al (2023), Bandiera et al. (2020).). However, the impacts may be thwarted by cultural, epidemiological and local socio-economic factors.

This brings us to the major issue at hand: the eventual impact of looking at agencies of women in under developed or backward economies (economies with large populations and low per capita income, with vulnerable labor markets). The dominant developed economies do not face challenges as does the backward lesserdeveloped ones. Since women and their labor market participations are globally differentiated across types of economies, the global definitions fail to capture the quintessential understandings and measurements of gender-based 'empowerment' or 'inequalities' among lesser developed countries. According to the Gender Gap Report (2024) published by the World Economic Forum, India ranks 129th in a list of 146 countries. And it is not such a good indication that the second most growing economy, India, with a per capita GDP growth rate of 7.2 % (World Bank Data, 2023) is not exhibiting a balance in major socio-developmental indicators. This leads to an economic outcome more challenging to deal with: the market loses almost 50% of the labor force among the existing population. India's sex ratio stands at 943 females per 1000 males (as per Census 2011). Key findings of Periodic Labour Force Survey (2022-23) suggests LFPR for male in India increased from 75.8% in 2017-18 to 78.5% in 2022-23 and corresponding increase in LFPR for female was from 23.3% to 37.0%. And that projects a definitely large gap to fill.

#### 2. Motivation

In view of the above perspective, it is pertinent to discuss the role of understanding women empowerment as a local phenomenon rather than a global phenomenon. Significant evidences suggest that Gender Gap (Inequality), and henceforth, Gendered Empowerment, cannot be studied as a consequence of a generically set cluster of socio-economic-ethnic factors across different socio-economic well as ethnic structures. With changes in socio-ethnic structures, the livelihood choices as well as observable patterns of patriarchal dominance change. This creates subtle differences in observable patterns of Empowerments across socio-economic structures. This should also be substantially supported by local definitions of Empowerment, specially related to the capabilities and entitlements of women as observed across different economies.

In accounting for the same, this paper aims to develop the conceptual basis for developing a specific structure for measurement and analysis of women empowerment in India as a backward economy. Specifically, a few of the more popular Gender Empowerment and Inequality indices in practice are studied. Affirmation on how these fail to capture may be procured from alternative literature of backward economies and their localized measures of Gender-based Empowerment are used as analogous evidences. A major concern from the perspective of India, is the existence of Empowerment among women among the North-Eastern states of Assam, Tripura, Manipur, Nagaland, Arunachal Pradesh, Mizoram and Meghalaya. This concern prods us to look for deeper interpretations of Women Empowerment as may be relevant in backward economies.

The paper is aimed to generate a theoretical survey of the existing indices, global as well as local, for measurement of Gender Gap (Inequality) and Women Empowerment. This will help us, hereafter, to develop a critical study of the gender-based inequalities against the socio-economic landscape of the North-Eastern states in India. Since, the main aim of this work is to create a measure of gender-based inequalities and empowerment within backward localities, keeping in mind the local specificities in work, livelihood, socio-ethnic traditions in income earnings across genders, hence, it would be hugely insightful to borrow from the existing approaches as well as traditional approaches in doing so. The aim is to select one best measure of Gender-based Inequality or Empowerment Index, and improve upon it to fill up its drawbacks in perspective of the socio-economic-ethnic structure of the above mentioned regions.

This paper is organized in the following sections: Section 3 presents the literature on the existing indices for measurement of Gender Gap (Inequality) and Women Empowerment. The basic indicators as well as the formulae used for the relevant index are critically examined. This section ends by highlighting specific missing indicators that draw our attention. Further in Section 4 we attempt to examine the existing local indices of measuring Gender-Based Inequalities and Empowerment to help us understand how local indices may be optimally constructed to capture locally specific gender-based inequalities. In Section 5, I conclude this study.

# 3. Gender-Based Indices and their Dimensions: A Critical Assessment of the Literature on the Global Gender Indices

The literature provides evidence for the existence of two primary indicators of Gender-based inequalities introduced by UNDP: In 1995, the United Nations Development Program (UNDP) introduced two significant indices called the Gender Development Index (GDI) and the Gender Empowerment Measure (GEM) as part of their innovative approach. In sync with the UNDP's focus on interpreting developmental consequences across genders, they argued "without engendering human development is endangered." (for more see UNDP 1995). But soon after, there emerged a literature on critiques of these measures and how these fail to capture empowerment among women in backward economies. According to Hirway and Mahadevia (1996), "The initiative of the UNDP in introducing HDR in 1990 therefore is laudable, not only because human development is important, but also because the concern for human well-being was lost in the overzealous pursuit of the economic growth paradigm during the 1980s." However, there remain significant caveats.

The Gender Development Index (GDI) evaluates the disparities between genders in life expectancy, education, and income, essentially extending the Human Development Index (HDI) to include gender sensitivity (for more on this refer to Klassen (2006)). The HDI is a composite index of three basic components, namely,

- i. Longevity measured in life expectancy at birth
- ii Knowledge measured in literacy rate and mean years of schooling
- iii Access to resources measured in per capita income adjusted for the Purchasing Power Parity (PPP).

The GDI measures the achievements of women with respect to the same capabilities while taking note of inequality in the achievements between men and women. That is, GDI is simply HDI discounted or adjusted downwards for gender inequality (see HDR (1995)). The discounting is done with respect to aversion to gender inequality a society can have. Medium gender aversion is accepted by the HDR 1995 and is represented in the index by

the concept termed as epsilon, which takes the value of 2 in the calculation of the GDI.

The Gender Empowerment Measure (GEM) however examines the rate of participation of women actively in the economic and political life and in the decision-making vis-à-vis men in same societies or socio-economic set-ups. Four indicators are included –

- i Percentage of seats in parliament held by women
- ii Percentage of women as administrators and managers
- iii Percentage of women as professionals and technical workers
- iv The percentage of income shared by women

The construction of the two indices were synchronized to achieve both measurement of basic indicators essential for gender-based development as well as its observable impacts in trends and institutional practices as may be observed in a society. Essentially, it may be noticed: "while GDI is expected to focus on expansion of capabilities while GEM is concerned with the use of these capabilities to take advantage of the opportunities in life" (see Hirway and Mahadevia (1996) for more on this).

In the context of the GDI, the 1995 Human Development Report (HDR) acknowledges that "other dimensions of gender inequality such as community life and decision making, consumption of resources within the family, dignity and personal security, are important but not represented by the GDI" (see HDR (1995)). Also, GEM as a measure of empowerment does not include household and community level empowerment aspects, which are critical for gender equality. This lays the initial basis of the study at hand: grass-root level as well as localized measurements of 'empowerment' and 'inequalities' are to be studied in order to conceptualize more realistic measures of the same.

**Gender Empowerment Measure (GEM)** - The Gender Empowerment Measure (GEM) is the initial development of an index that aims to gender-based empowerment levels in different countries worldwide. It relies on estimating women's comparative earnings and their involvement in influential economic roles, as well as their access to professional and parliamentary positions.

Both these indices claimed to measure the level of gender equality and women's empowerment in a holistic perspective -

based on indicators related to political participation, economic participation, and social empowerment. These indices attempted to measure specifically the disparities in basic capabilities at the global level. Especially, the indices attempted to measure gender disparities as non-access to the basic indictors of development as outlined by Anand and Sen (1995).

However, these indices have been criticized for their technical deficiencies and also their methodological limitations by academicians (see Hirway and Mahadevia (1996), Dijkstra (2002), Blancas (2018)). As, in Branisa et. al. (2014), "Gender inequality is the result of human behavior, and institutions influence how people behave and interact. Thus to understand gender inequality beyond outcomes, one needs to study the institutional basis of gender inequality." To focus on another school of thought, Bericat (2012) elaborates on the much needed focus on the structural basis of gender-based inequalities and a measurement of the same.

The GDI and GEM have been criticized on the basis of several limitations, but a few too important to ignore. A list of such indictors that lost focus in the accountings of GDI and GEM is listed below:

Table 1: An Indicative List of Missing Indicators (Based on author's own study of existing literature)

| Missing Indicators  | Supporting Literature   |
|---|---|
| Health-based/Mortality indicators   | Dijkstra (2002), Tisdell (1999),  |
| Institutionalization of health-care for women or Inequalities caused by Gendered social institutions. | Blancas (2008), Blancas (2018),<br>Branisa et. al. (2014), Jütting (2006) |
| Equal pay for women   | Tisdell (1999), Plasman (2001),<br>Oelz et. al. (2013)                    |
| Access to same-skilled jobs   |   |
| Age of marriage and child-bearing   | Stimpfle (2016), Crandall et.al., (2016)                                  |
| Accounting for unpaid work in Labor market participation and other livelihood patterns                | Narayan (2017), Cukrowska (2015, 2017)                                    |
| Crime against women and Domestic violence   | Yodanis (2004), Heimer (2000)   |
| Ownership rights and legal property inheritance laws  | Cukrowska (2015)  |

There is a large body of work documenting the literature on the criticism against and limitations of the above indices introduced by UNDP, especially the GDI which is just a adaptation of indicators mainly used in Human Development Index calculations. Moreover, the third-world's view of the relevance of these indices in context of measuring gender-based inequalities in sociocultural and economic environments endemic to these countries have been ignored. Hirway and Mahadevia (1996), Dijkstra and Hanmer (2000), Schuler (2006), Bardhan and Klassen (1999) offer critical reviews of the deep lacunae inherent in these indices and there has been several changes incorporated in the calculations of GDI since then. To be conclusive, even the study of *inequalities* is thwarted by unequal motivations to capture socio-economic-demographic and cultural specificities across economies.

As a consequence, a series of subsequent other indices were introduced trying to capture essential dimensions in the measurements of gender-based parities, inequalities and women empowerment.

The World Economic Forum introduced the **Global Gender Gap Index (GGGI)** in 2005 with the objective of it serving as a tool to measure and monitor global gender-based inequalities across economic, political, educational, and health-related criteria. In essence, the GGI provides an alternative measure to the Gender Development Index (GDI) and the Gender Empowerment Measure (GEM), as it combines both indices into a single framework while offering additional insights into gender equality.

The GGGI takes into account four key dimensions of female empowerment for its calculation:

- i Economic participation and opportunities
- ii Educational attainment
- iii Political empowerment
- iv Health and survival

Since Income inequality continues to be a major challenge, with the top 1% of the global population holding over 35% of the world's wealth. The World Economic Forum has reported a significant gender-gap in the distribution of income and freedom to decision on consumption expenditures across economies. In response,

the GGGI incorporates indicators to capture the vulnerabilities of women to understand better the ways in which women are deterred from socio-economic and political participations. Gender-based "vulnerability" is defined as the heightened susceptibility of women to negative outcomes due to existing gender inequalities and societal structures, impacting various aspects of life. And it has been identified as a clear deterrent of access of women to work opportunities, livelihood patterns and socio-economic-political participation equal to that of her male counter-parts.

United Nations Development Program (UNDP) introduced the Gender Inequality Index (GII) in 2010 by combining indicators from the Gender Development Index (GDI) and the Gender Empowerment Measure (GEM). It included measures of health 'vulnerabilities' such as maternal mortality rate and adolescent fertility rate, as well as economic vulnerability through the representation of the labor force participation rate. Empowerment was assessed through indicators such as parliamentary participation and educational attainment at higher levels. These gender-sensitive indices were initially designed as macro-level indicators, and no assessment at the micro-level was conducted until 2012.

The Social Institutions and Gender Index (SIGI), developed by the OECD Development Centre, in 2009 evaluate gender discrimination against women in 179 countries by considering laws, social norms, and practices that limit their rights and opportunities. It provides policymakers, researchers, organizations, and the public with essential data to support decision-making and monitor progress towards Sustainable Development Goal Indicator 5.1.1, which focuses on promoting and enforcing gender equality and women's empowerment. The SIGI is an official data source along with UN Women and the World Bank Group's Women Business and the Law for tracking this indicator.

The list of Global indices and their respective dimensions and indicators are presented below for a comparative assessment of the readers.

Table 2: List of Indices and the respective uses of Indicators (Sub-Indicators) found across the literature

| Indices  | Dimensions                             | Indicators                                       |
|--|--|--|
| Gender<br>Development<br>Index (GDI)                     | Longevity                              | Life expectancy at birth                         |
|  | Educational<br>Attainment              | Adult literacy rate                              |
|  |  | Combined gross enrolment ratio                   |
| UNDP, 1995   | Standard of living                     | Estimated earned income                          |
|  | Political Participation                | Share in national parliament                     |
| Gender<br>Empowerment<br>Measure (GEM)<br>UNDP, 1995     | Economic Participation                 | Share in legislators, senior officials, managers |
|  |  | Share of professional and technical positions    |
|  | Standard of Living                     | Estimated earned income                          |
|  |  | Labour force participation                       |
|  |  | Wage equality for similar work                   |
|  | Economic Participation and Opportunity | Legislators, senior officials and managers       |
|  |  | Professional and technical workers               |
|  |  | Estimated earned income                          |
|  |  | Literacy rate                                    |
|  | Educational                            | Net primary level enrolment                      |
|  |  | Net secondary level enrolment                    |
| Global Gender  | Attainment                             | Net tertiary level education                     |
| Gap Index  |  | Healthy life expectancy                          |
| (GGGI), 2006   | Health and Survival                    | Sex ratio at birth                               |
|  |  | Women in parliament                              |
|  |  | Women in ministerial positions                   |
|  | Political<br>Empowerment               | Years with female/male head of state (last 50)   |
| Social   | Discrimination in the Family           | Child marriage                                   |
| Institutions and<br>Gender Index<br>(SIGI) OECD,<br>2009 |  | Household responsibilities                       |
|  |  | Divorce  |
|  |  | Inheritance                                      |
|  | Restricted Physical<br>Integrity       | Violence against women                           |
|  |  | Female genital mutilation                        |
|  |  | Missing women                                    |
|  |  | Reproductive autonomy                            |

|  |  | Secure access to land assets                      |
|--|--|---|
|  | Restricted Access                        | Secure access to non-land assets                  |
|  | to Productive and<br>Financial Resources | Secure access to formal financial                 |
|  |  | services  |
|  | Workplace rights                         |   |
|  |  | Citizenship rights                                |
|  | Restricted Civil<br>Liberties            | Political voice                                   |
|  |  | Freedom of movement                               |
|  |  | Access to justice                                 |
|  |  | Maternal mortality rate                           |
|  | Health                                   | Adolescent birth rate                             |
| Gender   |  | Share of seats in parliament                      |
| Inequality<br>Index(GII)<br>UNDP,2010              | Empowerment                              | Population with at least some secondary education |
| 01121,2010   | Labour Market                            | Labour force participation                        |
|  |  | Participation                                     |
|  | Work                                     | Segregation                                       |
|  |  | Quality of work*                                  |
|  |  | Financial resources                               |
|  | Money                                    | Economic situation                                |
| Gender Equality                                    |  | Educational attainment                            |
| Index (GEI)*                                       | Knowledge                                | Educational attainment                            |
| EIGE, 2013   |  | Lifelong learning*                                |
|  |  | Economic activities                               |
|  | Time                                     | Care activities                                   |
|  |  | Social activities*                                |
|  | Power                                    | Political power                                   |
|  |  | Social power*                                     |
|  |  | Economic power                                    |
|  | Health                                   | Status  |
|  |  | Behaviour*  |
|  |  | Access  |
|  | Long and Healthy Life                    | Life expectancy at birth                          |
| Gender<br>Development<br>Index (GDI)<br>UNDP, 2014 | Knowledge                                | Expected years of schooling                       |
|  |  | Mean years of schooling                           |
|  | Standard of Living                       | Estimated gross national income (GNI) per capita  |

Also, we have significant evidence of several other indices that focuses on missing factors of inequality of women such as unpaid work of women. Normative gender roles in different societies and allocation of low paying sectors to employable women population (see Merzel (2000)), gender-based preferences towards access to health, education and work choices (see Merzel (2000)), Islam (2016)) women being the practitioners of regionally specific/ traditional economic practices such as handlooms, handicrafts, bamboo work being, etc. that lack scale and industrial operational as well as marketing channels, other regional specificities and the impact of such factors on the labor market outcomes as well as political participatory outcomes for women. However, how these factors are studied - the perspective varies from country to country and especially between developed and developing or under-developed countries based on specific local socio-cultural conditionings and practices.

In essence, this study intends to highlight the fact that a single global index is incompetent to capture regional (socio-economic or ethnic) perspectives of women's inequalities and hence empowerments, especially, the way it may be viewed against the background of backward economies. The dominance of globally developed economy's definitions and ideas of Gender-based inequalities and henceforth, empowerment is only a limitation in measuring the same across socio-cultural diversities of the underdeveloped or developing economies.

So in the next section, I invite the reader's attention to the existence of the massive literature on the alternative "local" indices of measuring Gender disparities and women empowerment and a critical study of the alternative perspective.

# 4. Alternative Indices Used for Measuring Gender-Biases and Gender Empowerment: A Critical Review

Despite the wide use of the above listed indices, a growing concern is that different countries as well as distinct socio-economic environments perceive "vulnerability" of women differently. And as such there tends to be repeated reformulations of the existing indices and introduction of newer indices to address the gap in measuring inequality and empowerment of women across distinguishable socio-economic-cultural-legal set-ups.

The global indices have a global orientation which renders a common generic attempt at defining gender-based inequalities and empowerment. That is a major drawback in drafting accurate policies in different local economies in order to generate significant impact on the target group. As a result, several economists have introduced country specific re-modulations of the generic indices to accommodate for dimensions of gender-based vulnerabilities that characterizes specific socio-economic as well as livelihood set-ups. This is of some essence as it gives us an idea that locally generated indices will be more suited to representing gender empowerment as a measure of real empowerment of women. However, a serious drawback would be the lack of comparability among different countries or across socio-economic and cultural set ups.

In this regard, this paper also examines the available literature for approaches towards formulations of regional and local indices. A brief review draws attention to measures, dimensions and indicators that could offer insight into the basis of gender-based inequalities across developed and less developed countries. An alternative approach was proposed in Blancas et al. (2008) – in order to measure gender inequality from a fresh perspective; that between women across regions. Even the use of preference functions (a mathematical function that represents the intensity of preference of one region over the others for a given criterion) and. decision weighting (a numerical value that expresses the relative importance of each criterion while comparing alternatives or regions) have been interestingly instrumental in providing clearer indications of regional specificities in gender-based inequalities.

Kjeldstad and Kristiansen (2001) had discussed the importance of gender equality index accounting for variations across regions within even within the most developed country of Norway. The paper focuses on accounting for demographic, economic, social, and cultural factors. The use of state-level (regional) indicators of economic, political, and legal gender-based equality are essential for specific policy formulations (see Noia (2002), Frias (2008)). OECD (2019) offers an interesting perspective through inclusion of nature of social institutions in gender index (SIGI) for Asia and the Pacific region, by focusing on formal and informal institutions that shape gender roles and norms. Bella et al. (2021) proposes

a regional gender equality index (R-GEI) for Italy, based on the gender equality index (GEI) introduced by the European Institute for Gender Equality (EIGE).

Gender inequality in Indian context, is significantly influenced by various factors such as culture, religion, caste, class, ethnicity and geography as is found in the studies of Singh & Pattanaik (2020) and Mahanta & Nayak (2013). Various indicators to measure gender inequality in terms of education, health, employment, political participation, social status and violence has been employed to adverse effects on women's well-being, human development and economic growth. One exemplary work in this direction, may be cited in Cascella et al. (2021) which uses an Extended Regional Gender Gaps Index (eRGGI) for Italy, by extending the global gender gap index (GGGI) to include new indicators that can capture female empowerment in developed countries. They found that gender equality varies dramatically across Italian regions, and that using regional specific indices can reveal more nuanced patterns of inequality than using nationally aggregated data or global indices.

The need to look into the structure of this index may as well be helpful in our understanding of what may be anticipated to be a more compact measure of inequalities and empowerments across gender based on other dimensions not part of the existing major global indices.

# 1.1 Extended Regional Gender Gaps Index (eRGGI) - As an Alternative Locally Sensitive Index

| Sub -Dimensions                              | Indicators  |
|--|---|
| Economic<br>Participation and<br>Opportunity | Female Labor Force Participation over Male value                  |
|  | Wage Equality between women and men for similar work              |
|  | Female estimated earned income over male value                    |
|  | Female senior officials or in leadership position in private firm |
|  | Female professional and technical workers over male value         |

| Educational<br>Attainment        | Female Literacy rate over Male Value Female net primary enrolment rate over male value (regionally) Female net Secondary enrolment rate over male value Female tertiary enrolment ratio over male value   |  |
|----------------------------------|---|--|
| Health and Survival<br>Sub-Index | Sex ratio at birth (female/male ratios) Female healthy life expectancy over male value  |  |
| Political<br>Empowerment         | Female mayor or president of region over males Women in leadership position at public local administration Number of years with a female head of Municipality or Region (last 50 years) over male value   |  |
| Use of time                      | Time dedicated to job Time dedicated to personal care Time dedicated to study Time dedicated to home (e.g., cooking, cleaning, ironing) Time dedicated to social life Time dedicated to hobbies, mass media and sports Time dedicated to travel |  |

What is specifically of interest for the readers is: the use of indicators that differentiate individuals based on their time-use patterns and gender differences in access to and outcomes in higher education, besides the often used traditional indicators of participation in labor market and political leadership. The indicators are used as such: 0 indicates perfect gender inequality and 1 indicates perfect equality, whilst values between 0 and 1 indicate inequality in favor of men, and, values greater than 1 indicate inequality in favor of women. For the combination of ratios and calculation of the eRGGI, an average based on natural logarithms of the female-over-male ratios is used to avoid analytical inconsistency. The exponent of the arithmetic mean of the logarithms is then

calculated for each sub-dimension or for the overall index. The formula for calculation of eRGGI is given as follows:

$$eRGGI: (\exp\left(\frac{1}{n}\sum_{i=1}^{n}\ln R_i\right))$$

n = number of components at one level of the index structure. Ri = gender equality ratios of these components. ln = natural logarithm . = natural exponent.

### 5. Conclusion

This study is a prelude to the forthcoming analytical approach towards conceptualizing a broader and more native measure of gender-based gaps, inequalities and empowerments, in the backdrop of empowerment among rural, semi market-based economies and not-so-industrialized districts in India. The idea that a global index fails to capture the essence of gender-based empowerment among backward economies is raised out of two major observations:

- i That the ranking of the counties in the global south on the basis of such inequality indices has been traditionally very low
- ii That, local (sub-national) economies or semi market-based economies which are also not-so-industrialized economies, may practice gender-based empowerment differently than their counterparts. And that, the global indices do not account for these perspectives.

To be conclusive, the major global indices used for measurement of Gender Gaps and Inequalities, as well as Gender-Based Empowerments are non-inclusive in their conceptualization of the same in distinct economic and demographic environments. And as such, it may be concluded that the ranking of countries may be biased towards the more developed economies, as the scale of measurement is biased in favor of these economies. Though the importance of a globally comparable as well as standardized index cannot be ignored, yet policy formulations are local mechanisms and as such our ignorance of the local specificities in these indices is highly risky for us to ignore any further.

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### **Data Sources and Important Links:**

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