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Measuring Brazilian Inequality Using the Gender Inequality Index

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Abstract

Gender inequality is a common feature shared by all countries, in different degrees. Its importance is evident in the United Nations 2030 Agenda. The Sustainable Development Goal (SDG) number 5 is mainly dedicated to it. However, for its multidimensional features, different SDGs include it among their targets, the third (health), fourth (education), and tenth (labor) goals in particular. A composite index better describes multiple disparities. In this paper, the Gender Inequality Index (GII), presented in the 2010 Human Development Report, is discussed and then calculated for the Brazilian Federation Units. Its dimensions, health, empowerment, and economic activity cover three crucial dimensions of gender inequality. The GII contributes to evaluate how inequality lowers human development among countries and within a country, as presented in this study. Even though its complex methodology, it is an important tool for policy guidance.

Keywords: Gender Gap; Inequality; Composite Index; Human Development; Sustainable Development Goals.

1. Introduction

The United Nations 2030 Agenda states the need to pursue sustainable development to "leave no one behind". "Among the most disadvantaged are women and girls who face the compounded effects of gender-based and other forms of discrimination" (UNWomen, 2019a, p. 4). The result is a combination of deprivation form access to health care and education to decent work and active participation in decision-making. Therefore the study of women inequality must be multidimensional.

"Over the past 25 years, progress has been made towards gender equality. Still, gaps remain" (UNWomen, 2019a, p. 11).

The "leave no one behind" strategy requires reliable data and clear indicators. Easily interpretable indexes are welcomed to inform the decision-making process.

Given that women suffer from multiple dimension gaps, a composite index can be appropriate tools.

There are many methods to measure gender disparities (Schüler, 2006; Soares, 2013). In this paper, the focus is on the contribution of the United Nations Development Program (UNDP) to this task. Following the successful experience with the Human Development Index (HDI), the UNDP presented in the 1995 Human Development Report two new composite indexes: the Gender-related Development Index (GDI)

and the Gender Empowerment Measure (GEM). They were thought to overcome some limitation of the HDI associated with gender inequality, that is the reduction in human development due to multiple inequalities between women and men. As written in the 1995 Report, "If development is meant to widen opportunities for all people, the continuing exclusion of women from many opportunities of life totally warps the process of development" (UNDP, 1995, p. iii).

The GDI shares the same set of variables with the HDI, which are longevity, educational attainment, and income, but it focuses on gender disparities. Differently, the GEM is based on three distinct variables: female participation in political decision-making, female access to professional opportunities, and female earning power.

Whereas the HDI "measures the average achievement of a country in basic human capabilities" (UNDP, 1995, p. 73), GDI estimates penalties resulting from gender disparities and GEM evaluates if each group can actively take part in economic and political life, as well as in the decision-making process. In other words, the former focuses on the extension of capabilities, and the latter concentrates on the use of such capabilities.

Despite the GDI e GEM having had a relevant impact on academic research, as the first composite indexes designed to reflects gender gaps (Schüler, 2006), fifteen years later, the UNDP proposed a new index: the Gender Inequality Index (GII) (UNDP, 2010). The new measure was welcomed since it was overcoming some problems presented by GEM and GDI. The GII characteristics and contributions to the gender inequality debate are the object of the next section. In the sequence, following the conventional methodology, the GII was calculated to describe the gender disparities among the Brazilian States. The paper ends with some considerations based on the experiment of applying the GII within a country.

2. Gender gaps and the Gender Inequality Index

Gender equality greatly benefits from a balanced participation of women and men in education, labor market, and decision-making positions. In Brazil, women educational progress has not yet resulted in better labor market participation and income for women (Oxfam, 2017; Alves, 2016; Arretche, 2015; Comin, 2015). This is probably the result of the social distribution of paid and unpaid work where the former was traditionally attributed to men and the second to women. Despite social changes, the gender gap persists due to the absence of accessible and quality care services for most people. This problem affects harder the poorest and the youngest. Early childbearing is, therefore, not only a health problem but has relevant economic and social impacts.

The multiple sources of disparities between women and men show the need for a multidimensional inequality index. According to Gaye et al. (2010), the GII aims to measure the impact of gender inequality on a country's human development potential. It is designed to measure gender disparities over three dimensions: reproductive health, empowerment, and economic activity. This choice reflects the relevance of education and economic independence on female opportunities. Therefore, human development is strongly influenced by education and economic autonomy. Reproductive health can also benefit from basic and advanced education.

The reproductive health dimension is based on two indicators: the maternal mortality ratio and the adolescent fertility rate. Health care and basic education are reliable instruments for preventing reproductive health problems, with impacts in both short and long time for reducing the gender gaps. Education is seen as a fundamental tool to enhance women position. It helps reproductive health by directly improving the capacity to use new information on health and nutrition, and indirectly promoting children learning.

Two indicators are used to measure the empowerment dimension: the secondary educational attainment and the share of parliamentary seats held by women and men. Again, better-educated people are more likely to actively participate in the decision-making process, in both public and private arenas since education contributes to knowledge and self-confidence.

Finally, the economic activity dimension is evaluated through the labor force participation rate, differently from the income variable extensively used in inequality indexes. Education is still a relevant tool for better working opportunities. Therefore, looking at the variables proposed to build the GII, promoting women's education is shared among the three dimensions and it seems to be the main instrument to promote equality.

To GII "captures the inequality between women and men and is sensitive to changes in the association between indicators (Gaye et al., 2010, p.14). As defined by Seth (2009), it is an association-sensitive welfare index. The association sensitivity feature means that the index is responsive to those changes that turn out rewarding one group over the other, in all dimensions at the same time. The GII is calculated as a general mean of general means of different orders. In other words, it is a harmonic mean, calculated across gender groups, of a geometrical mean, calculated across dimensions.

The GII ranges from 0, meaning there is no gender inequality across dimensions, to 1, total gender inequality across dimensions.

Given the multiple dimensions of gender inequality and the holistic approach to development that differentiates the 2030 Agenda, the GII can contribute to supervise four of the 17 Sustainable Development Goals (SDG) (UNDP, 2015). They are:

- SDG 3 "Ensure healthy lives and promote well-being for all at all ages", mostly target 1;
- SDG 4 "Ensure inclusive and equitable quality education and promote lifelong learning opportunities to all", primarily targets 1 and 2;
- SDG 5 "Achieve gender equality and empower all women and girls", mainly targets 5 and 6;
- SDG 10 "Reduce inequality within and among countries", especially the second target.

The GII is quite easily interpretable, attending the communication purpose. Nevertheless, it presents two main weaknesses. The first drawback is its more than usually complicated methodology, especially compared to the quite simple HDI aggregation process (geometrical mean) (Permanyer, 2013). The second is associated with an important feature a composite index must share, especially to guide policymaking: the decomposition property. The GII does not attend such a feature; that is, it does not identify the contribution of each dimension to the overall result.

3. An application of the Gender Inequality Index

This section presents the application of the GII to Brazilian data. After describing the methodology and

data selection, the results are examined.

3.1 Method

The quite complicated functional form is easily explained following the five steps suggested by the technical note of the 2019 Human Development Report (UNDP, 2019b).

First step: Defining the extreme values.

The use of a geometric mean requires that no indicator has a zero value. In the absence of parliamentary seats occupied by women, the minimum value is set to 0.1%. For the "Maternal mortality rate", maximum and minimum values were set to 1,000 and 10, respectively.

Second step: Aggregation across dimensions for each gender group, using the geometric mean.

(1) Female group: $G_F = \sqrt[3]{\left(\frac{10}{MMR} \cdot \frac{1}{AFR}\right)^{1/2} (PR_F \cdot SE_F)^{1/2} \cdot LFP_F}$

(2) Male group: $G_M = \sqrt[3]{1 \cdot (PR_M \cdot SE_M)^{1/2} \cdot LFP_M}$

where: MMR = Maternal Mortality Ratio

AFR = Adolescent Fertility Rate

PR = Parliamentary Representations, female and male

SE = Secondary Education, female and male

LFP = Labour Force Participation, female and male

Third step: Aggregation across groups, using the harmonic mean.

According to Gaye et al. (2010), the harmonic mean was chosen to build the equality distribution index since it accounts for eventual overlap across dimensions.

(3) $HARM(G_F, G_M) = \left[\frac{(G_F)^{-1}+(G_M)^{-1}}{2}\right]^{-1}$

Fourth step: Calculating the geometric mean of the arithmetic means for each dimension.

Consequently, each dimension in this aggregation gets the same weight.

a) The arithmetic means for each one of the three dimensions are:

(4) $\overline{HEALTH} = \left(\sqrt[2]{\frac{10}{MMR} \cdot \frac{1}{AFR}} + 1\right)/2$

(5) $\overline{EMPOWERMENT} = \left(\sqrt[2]{(PR_F \cdot SE_F)} + \sqrt[2]{(PR_F \cdot SE_F)}\right)/2$

(6) $\overline{LABOUR} = \frac{\mathrm{LFP_F}+\mathrm{LFP_M}}{2}$

b) The geometric mean of the three dimensions arithmetic means is calculated as

(7) $G_{\bar{F},\bar{M}} = \sqrt[3]{\overline{HEALTH} \cdot \overline{EMPOWERMENT} \cdot \overline{\mathrm{LABOUR}}}$

Fifth step: Calculating the Gender Inequality Index

(8) $$\mathbf{GII} = \mathbf{1} - \frac{\boldsymbol{HARM(G_F, G_M)}}{\boldsymbol{G_{\bar{F},\bar{M}}}}$$

As mentioned above, the GII ranges from a minimum of zero, meaning no gender inequality, to the maximum of one, meaning total gender inequality across dimensions.

3.2 Data selection

Table 1 recaps the variables employed in this study, along with their definitions and official sources. For the chosen geographical units, the preferential data source is the 2010 Demographic Census. An additional database is the National Health Care System (DataSUS) for indicators related to the Reproductive Health dimension. The Parliamentary Representation data refers to the 2012 federal election.

Table 1. Variables and Data source, Brazil.

Dimension	Variable	Definition	Source
Reproductive Health	Maternal Mortality Ratio (MMR)	Ratio of maternal deaths to the number of live births (x 100,000)	DATA SUS. **Taxa de Mortalidade Materna.** Rede Interagencial de Informações para a Saúde- Ministério da Saúde. Avaliable at:http://tabnet.datasus.gov.br/cgi/idb2000/fqc06.htm. OBSERVATÓRIO DA CRIANÇA E DO ADOLESCENTE. **Razão da Mortalidade Materna (para cada 100 mil nascidos vivos).** Available at: https://observatoriocrianca.org.br/cenario-infancia/temas/saude-materna-neonatal/586-razao-da-mortalidade-materna-para-100-mil-nascidos-vivos?filters=1,187
	Adolescent Fertility Rate (AFR)	The number of births to women ages 15–19 per 1,000 women in the same age group.	MS/SVS/DASIS. **Sistema de Informações sobre Nascidos Vivos-SINASC. Available at**: http://tabnet.datasus.gov.br/cgi/deftohtm.exe?sinasc/cnv/nvuf.def. PNUD; FUNDAÇÃO JOÃO PINHEIRO; IPEA. **Atlas do desenvolvimento humano desagregador por cor, sexo e domicílio, censos 2000 e 2010.** Available at: http://atlasbrasil.org.br/2013/pt/download/
Empowerment	Secondary Education, female and male (SE)	The ratio of population age 18 or more with high school diploma to people in the same age group.	PNUD; FUNDAÇÃO JOÃO PINHEIRO; IPEA. **Atlas do desenvolvimento humano desagregador por cor, sexo e domicílio, censos 2000 e 2010.** Available at: http://atlasbrasil.org.br/2013/pt/download/
	Parliamentary Representations, female and male (PR)	Proportion of Federal Deputies by sex.	TSE. **Estatísticas eleitorais 2014**. Available at: https://odsbrasil.gov.br/objetivo5/indicador551
Economic activity	Labour Force Participation, female and male (LFP)	The ratio of persons ages 15 or more in the labour force to people in the same age group. The labour force is the sum of persons employed and unemployed.	PNUD; FUNDAÇÃO JOÃO PINHEIRO; IPEA**. Atlas do desenvolvimento humano desagregador por cor, sexo e domicílio, censos 2000 e 2010.** Available at: http://atlasbrasil.org.br/2013/pt/download/

Source: The authors.

3.3 Results

Before calculating the GII, a close analysis of each variable is needed, given the multidimensional nature of the problem under investigation.

Differences in the Maternal Mortality Ratio observed within a country depend on the disparities in the provision and quality of maternal care. They are positively related to social and economic vulnerability (Pacagnella et al., 2018). The first target of SDG 3 aims to reduce, by 2030, "the global maternal mortality ratio to less than 70 per 100 000 live births" (UNDP, 2015). In Brazil, the MMR has decreased in the last decades, but it is still above or too close to the target in almost 1/3 of its Federal Units, mainly in the North and Northeast regions, the least developed area (Table 2).

The second indicator of reproductive health, Adolescent Fertility Rate, shows a similar regional pattern. Several studies suggest that the teenage fertility rate is negatively related to education (Wodon et al. 2018). On one side, the fertility rate among teenagers tends to decrease with more years of schooling. On the other, adolescent pregnancy often leads to school dropouts with severe negative impacts on female empowerment and labor opportunities.

Table 2. Variables and values for the GII, Brazilian States.

Brazilian States	Reproductive Health		Empowerment				Economic Activity	
	MMR	AFR	SE (female)	SE (male)	PR (female)	PR (male)	LFP (female)	LFP (male)
Rondônia	64.10	38.96	35.87	27.34	0.13	0.88	0.55	0.78
Acre	53.90	54.06	37.23	28.92	0.17	0.83	0.52	0.70
Amazonas	64.60	50.57	40.15	35.16	0.08	0.92	0.52	0.71
Roraima	37.70	50.02	47.69	37.80	0.08	0.92	0.56	0.71
Pará	68.20	48.18	32.97	25.30	0.17	0.83	0.47	0.72
Amapá	40.30	50.49	48.05	40.54	0.29	0.71	0.56	0.74
Tocantins	53.30	44.82	42.61	31.78	0.17	0.83	0.52	0.73
Maranhão	72.40	45.23	32.16	24.48	0.17	0.83	0.45	0.67
Piauí	100.10	36.80	31.09	22.32	0.23	0.77	0.46	0.68
Ceará	69.40	31.57	34.92	28.90	0.13	0.87	0.46	0.69
Rio Grande do Norte	66.00	33.57	37.11	30.11	0.13	0.88	0.46	0.70
Paraíba	47.60	33.81	32.49	25.71	0.17	0.83	0.45	0.70
Pernambuco	51.60	35.62	34.89	28.97	0.08	0.92	0.47	0.70
Alagoas	45.70	40.86	28.85	23.53	0.07	0.93	0.44	0.69
Sergipe	70.40	34.14	34.96	28.58	0.25	0.75	0.50	0.72
Bahia	70.00	34.44	35.15	27.21	0.17	0.83	0.52	0.72
Minas Gerais	33.80	25.52	37.91	32.00	0.05	0.95	0.55	0.75
Espírito Santo	64.40	30.37	41.05	36.17	0.13	0.87	0.57	0.77
Rio de Janeiro	80.80	30.03	45.98	45.06	0.19	0.81	0.52	0.73
São Paulo	36.80	27.20	45.59	44.07	0.11	0.89	0.57	0.76
Paraná	38.30	32.12	40.07	36.87	0.07	0.93	0.59	0.79
Santa Catarina	36.00	26.56	41.52	39.25	0.10	0.90	0.63	0.80
Rio Grande do Sul	66.20	25.50	39.63	35.66	0.15	0.85	0.59	0.77
Mato Grosso do Sul	68.60	40.67	39.86	34.12	0.08	0.92	0.57	0.79
Mato Grosso	58.50	38.93	40.07	31.29	0.08	0.92	0.56	0.79
Goiás	57.90	32.07	41.21	33.61	0.05	0.95	0.58	0.80
Federal District	43.70	27.10	57.71	54.78	0.17	0.83	0.64	0.79

Note: For each variable, the best result is emphasized in green, while red highlights the worst value.

Source: The authors.

In Brazil, women always rate better than men in educational attainment. However, the female group records an alarmingly low rate in political representation reaching, in the best case, less than 30% of the parliamentary seats. Results from the economic activity dimension are also quite negative for women: their

highest labor force participation rate is 64%, less than the worst rate for men (67%). It seems that the educational progress recorded over the last decades did not yet fully translated into equal economic and political opportunities for Brazilian women.

The coefficient of variation, a standardized measure of dispersion in a table of frequency, shows the highest variability for the female Parliamentary Representation indicator (Table 2). The more homogeneous indicator appears to be the male Labour Force Participation.

Following the methodological steps previously presented, the GII computed ranges from 0.312, recorded by the Federal District, where women scored better than men in education and labor force participation, to 0.432, for the Amazonas State. Figure 1 shows the GII values and their spatial distribution among the Brazilian states.

States	GII
Amazonas	0.432
Mato Grosso do Sul	0.421
Goiás	0.421
Alagoas	0.405
Mato Grosso	0.402
Pernambuco	0.395
Pará	0.393
Maranhão	0.392
Rondônia	0.385
Rio Grande do Norte	0.384
Piauí	0.381
Ceará	0.381
Roraima	0.380
Acre	0.378
Rio de Janeiro	0.370
Paraná	0.369
Espírito Santo	0.366
Tocantins	0.363
Minas Gerais	0.363
Bahia	0.362
Rio Grande do Sul	0.348
Sergipe	0.348
Paraíba	0.344
São Paulo	0.333
Santa Catarina	0.329
Amapá	0.321
Federal District	0.312

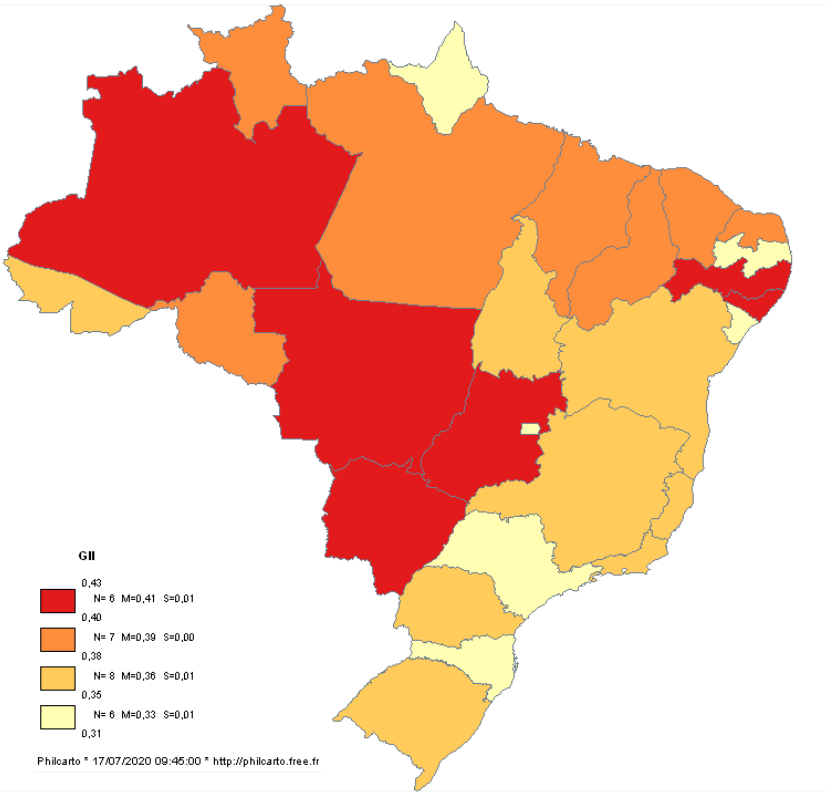

Figure 1. GII for the Brazilian States.

Source: The authors. Maps produced with *Philcarto*: http://philcarto.free.fr

Data were divided into four groups, which appear in Figure 1 with different colors, from light yellow to red, following the increasing values of the GII, that is more gender inequality. Three main clusters can be identified, while the States with the lower inequality (the light-yellow ones) are scattered all over the country.

Since GII measures the welfare loss due to gender inequality, the expected inverse relation between GII and HDI is confirmed by their correlation coefficient (-0.443) and depicted in Figure 2 by the green line. The scatter plot colors follow the same pattern of Figure 1.

In Figure 2, three Federal Units deserve special attention: the state of Amazonas and the Federal District for their GII values are the lowest and the highest, respectively, and the state of Alagoas. The Federal

District is the only geographical unit that holds the best results in both GII and HDI. Its peculiarity, being a federal district, can be the leading explanation of such a result. On the other extreme of the distribution, Alagoas, a Northeastern state with the lowest HDI among the Brazilian States, shows one of the worse GII values, confirming that gender inequality plays an essential role in reducing human development.

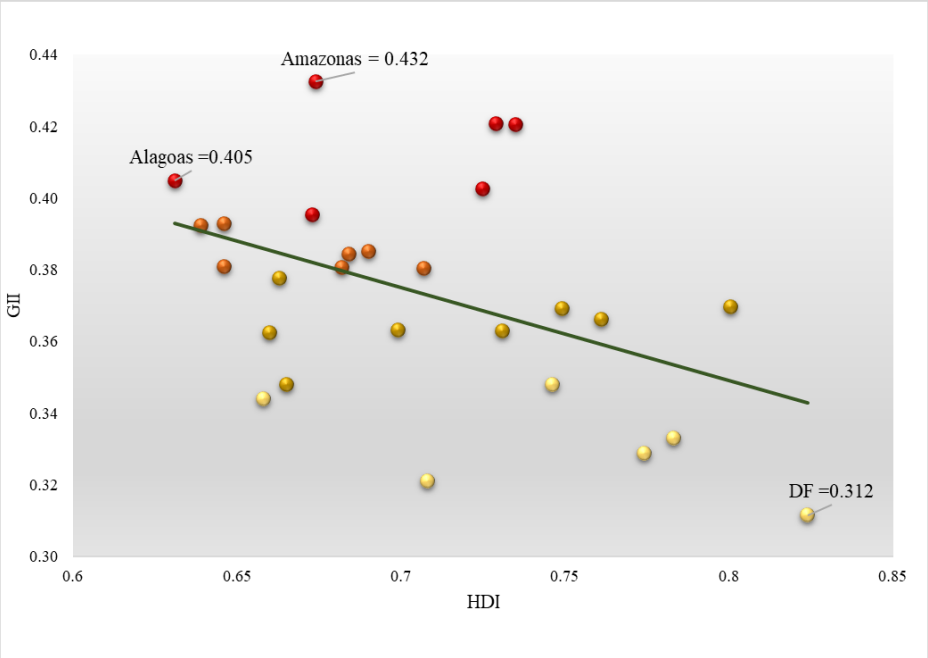

Figure 2. Scatter Plot for the GII and HDI, Brazilian States.
Source: The authors.

4. Conclusion

Multiple disparities define gender inequality. The GII, as a composite index, helps to better understanding how inequality contributes to lowering human development among countries and within a country, as presented in this study. Its dimensions, health, empowerment, and economic activity cover three crucial facets of gender inequality. The interaction among these three elements identifies education as a relevant instrument to lessen gender gaps. As seen in the Brazilian case, where women score better than men in educational attainment but far worse in the other dimensions, education is a precondition to reduce gender disparities. However, much more must be done. For example, policies that foster an equal division of unpaid work between men and women by providing care services accessible and for all, or that promote female participation in political elections effectively.

The GII as a composite index does an excellent job of summarizing gender inequality, but it does not facilitate the understanding of such a complex problem. Lacking the decomposable property, the GII potential to provide policy guidance diminishes. In this view, it is less efficient than the former Gender-related Development Index. On the other side, the GII includes variables to often forgotten in gender inequality indexes.

Finally, as shown in the GII results, gender inequality is a compound of many disparities. Moving toward an equal society is still a political goal which undoubtedly benefits from excellent and reliable indicators

and index.

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6. References

J. E.D. Alves, "Desafios da equidade de gênero no século XXI", Rev. Estud. Fem., vol. 24, n. 2, 2016, p. 629-638. Available at: http://dx.doi.org/10.1590/1805-9584-2016v24n2p629

M. Arretche, Trajetórias das desigualdades: Como o Brasil mudou nos últimos 50 anos. São Paulo: Editora Unesp, 2015.

A. Comin, "Desenvolvimento econômico e desigualdades no Brasil: 1960-2010". In M. Arretche, Trajetórias das desigualdades: Como o Brasil mudou nos últimos 50 anos. São Paulo: Editora Unesp, 2015, p. 367-394.

A. Gaye, J. Klugman, M. Kovacevic, S. Twigg, and E. Zambrano, "Measuring Key Disparities in Human Development: The Gender Inequality Index", Human Development Research Paper n. 46, 2010. Available at: http://hdr.undp.org/sites/default/files/hdrp_2010_46.pdf

OXFAM – Brasil. A distância que nos une: Um retrato das desigualdades brasileiras. São Paulo, 2017. Available at: <https://www.oxfam.org.br/um-retrato-das-desigualdades-brasileiras/a-distancia-que-nos-une/>.

R. C. Pacagnella, M. Nakamura-Pereira, F. Gomes-Sponholz, R.A.L.P. Aguiar, G.V.Q.L. Guerra, C.S.G. Diniz, B.B.N.S. Campos, E.M. Amaral, and O.B. Moraes Filho, "Maternal Mortality in Brazil: Proposals and Strategies for its Reduction", Revista Brasileira de Ginecologia e Obstetrícia, vol. 40, n. 9, 2018, p. 501-506.

I. Permanyer, "A Critical Assessment of the UNDP's Gender Inequality Index", Feminist Economics, vol.19, n. 2, 2013, p. 1-32.

D. Schüler, "The Uses and Misuses of the Gender‐related Development Index and Gender Empowerment Measure: A Review of the Literature", Journal of Human Development, vol. 7, n. 2, 2006, p. 161-181.

S. Seth, "Inequality, Interactions and Human Development", Journal of Human Development and Capabilities, vol. 10, n. 3, 2009, p. 375-396.

C. Soares, "O desenvolvimento social e o empoderamento econômico das mulheres no Brasil: uma análise a partir de índices sintéticos", Cadernos Adenauer, vol. XIV, n. 3, 2013, p. 51-70.

UN - United Nations, Transforming Our World: The 2030 Agenda for Sustainable Development. UN A/RES/701, 2015. Available at: https://sustainabledevelopment.un.org/post2015/transformingourworld/publication

UNDP – United Nations Development Program, "Beyond income, beyond averages, beyond today: Inequalities in human development in the 21st century", Human Development Report 2019, New York, 2019a. Available at: < http://hdr.undp.org/en/2019-report>.

UNDP – United Nations Development Program, "Technical notes", Human Development Report 2019,

New York, 2019b. Available at: http://hdr.undp.org/sites/default/files/hdr2019_technical_notes.pdf

UNDP – United Nations Development Program, "The Real Wealth of Nations: Pathways to Human Development", Human Development Report 2010, New York, 2010. Available at: http://hdr.undp.org/en/content/human-development-report-2010

UNDP – United Nations Development Program, "Gender and Human Development", Human Development Report 1995, New York, 1995. Available at: http://hdr.undp.org/en/content/human-development-report-1995

UN-Women, Progress on the Sustainable Development Goals: The Gender Snapshot 2019, New York, 2019. Available at: https://www.unwomen.org/en/digital-library/publications/2019/09/progress-on-the-sustainable-development-goals-the-gender-snapshot-2019

Q. T. Wodon, C. E. Montenegro, H. Nguyen, A.O. Onagoruwa, "Missed Opportunities: The High Cost of Not Educating Girls", The Cost of Not Educating Girls Series, Washington, D.C.: World Bank Group, 2018, p. 1-64.