

**Measuring the Inequality of Well-being:
The Myth of “Going beyond GDP”**

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Abstract

The last decades have seen a surge in the development of indices that aim to measure human well-being. Well-being indices (such as the Human Development Index, the Genuine Progress Indicator and the Happy Planet Index) aspire to go beyond the standard growth-based economic definitions of human development (“go beyond GDP”), however, this thesis demonstrates that this is not always the case. The thesis looks at the methods of measuring the distributional aspects of human well-being. Based on the literature five clusters of inequality are developed: economic inequality, educational inequality, health inequality, gender inequality and subjective inequality. These types of distribution have been recognized to receive the most attention in the scholarship of (in)equality measurement.

The thesis has discovered that a large number of well-being indices are not distribution-sensitive (do not account for inequality) and indices which are distribution-sensitive primarily account for economic inequality. Only a few indices, such as the Inequality-adjusted Human Development Index, the Gender Inequality Index, the Global Gender Gap and the Legatum Prosperity Index are sensitive to non-economic inequality. The most comprehensive among the distribution-sensitive well-being indices that go beyond GDP is the Inequality Adjusted Human Development Index which accounts for the inequality of educational and health outcomes.

A proposal for future well-being indices is proposed in the thesis. A common understanding is important for operational reasons because both national governments and international organizations are seeking comprehensive indices of human well-being that would be comparable across regions on a global scale.

Keywords: well-being, inequality, measurement, human development, beyond GDP

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List of Abbreviations

GDE	Gender-related Development Index
GDP	Gross Domestic Product
GEM	Gender Empowerment Measure
GGG	Global Gender Gap;
GNI	Gross National Income
GPI	Genuine Progress Indicator
HDI	Human Development Index
HPI	Happy Planet Index
IHDI	Inequality-Adjusted Human Development Index
IEW	Index of Economic Well-Being
ISEW	Index of Sustainable Economic Welfare
LPI	Legatum Prosperity Index
OECD	Organisation for Economic Co-operation and Development
SSI	Sustainable Society Index
UN	United Nations
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Program
WHI	World Happiness Index
WHO	World Health Organization

Introduction

The distribution of well-being in society has attracted the attention not only of the researchers, but also of national governments and global institutions such as the United Nations (UN). Inequality is noted to be an important obstacle to developing human well-being and has been recognized as such by Ban Ki-moon, Secretary-General of the UN, who expressed in the Foreword of the 2011 Millennium Development Goals Report as follows: “Progress tends to bypass those who are lowest on the economic ladder or are otherwise disadvantaged because of their sex, age, disability or ethnicity. Disparities between urban and rural areas are also pronounced and daunting. Achieving our goals will require equitable and inclusive economic growth —growth that reaches everyone and that will enable all people, especially the poor and marginalized, to benefit from economic opportunities.”¹

Inequality is a global issue that is not only restricted to Third World countries – it is a worrying problem in a number of Western countries such as for example the US which has an income inequality on the level as Uruguay, or Portugal which reports inequality on the same level as Benin and Iran.² The effects of inequality can be detrimental to the well-being of a society in the way how it supports societal injustice, segregation and inefficient use of human or physical capital. Moreover, high interpersonal inequality can also be a sign of the lack of economic opportunities for the poorest in society – hindering their access to higher levels of well-being.³

It is important to define what is meant by inequality in order to understand its influence on human well-being. Academic literature discusses several dimensions of inequality. Inequality can be understood in the most basic sense as “the quality of being unequal or uneven: a) lack of evenness; b) social disparity; c) disparity of distribution or opportunity [...]”.⁴ Most of the debates on inequality have been over the fact of which type of equality is the most important, whether in

¹ United Nations, *Millennium Development Goals Report 2011*, June 2011, p.3

² World Bank Gini Index Data. <http://data.worldbank.org/indicator/SI.POV.GINI/>. Accessed 14.05.2013

³ Yingqiang Zhang and Tor Eriksson, “Inequality of Opportunity and Income Inequality in Nine Chinese Provinces, 1989–2006,” *China Economic Review* (2010): 612, doi:10.1016/j.chieco.2010.06.008.

⁴ Merriam-Webster, *The Merriam-Webster Dictionary*, Revised (Merriam Webster Mass Market, 2004).

terms of outcomes or opportunities. This thesis has identified that the most commonly measured dimensions of inequality have been economic and non-economic (education and health) but also gender and social inequality. Equality is regarded as one of the values of human well-being but various concepts prevail and its common understanding is only developing. The measurement of inequality is different from poverty in the sense that while poverty determines the amount of people living under the level of deprivation, inequality shows the relationship between the high performers and the low performers (in terms of well-being). A common understanding is important for operational reasons because both national governments and international organizations are seeking common indices of human well-being that would be comparable across regions on a global scale.

Research Question and Aim of the Thesis

Despite an ample amount of literature on the measurement of well-being and inequality, studies have rarely discussed in detail the issue of well-being distribution- measuring the inequality of well-being. Moreover, it should be noted that the majority of well-being indices do not measure or control for inequality at all, which can only mean that their creators are content with an index that portrays the average well-being of a population. This thesis, however, assumes that inequality in various forms has to be included into the measurements of human well-being in order to accurately capture the equitable and inclusive development of states. Not only should well-being indices capture the economic distributions but also the distribution of health and education outcomes. The interpretation of the term “well-being” is not considered part of the aim of this thesis. The research will therefore cover indices that capture well-being in different ways.

This thesis focuses on the well-being indices that measure inequality (as not all well-being indices measure inequality). It will aim to answer the research question: “How do current well-being indices tackle the issue of within-country well-being inequality?”. We will look into the way

current well-being indices measure inequality and what type of interpersonal inequality they have included as part of their sub-indicator list. The term well-being index in this case refers to an aggregated quantitative measure that seeks to determine the level of (average) human well-being within a country. The indices that have been chosen for further examination entail a global character, as they aim to offer a tool for universal use. Such indices are able to measure well-being in a number of countries and regions, unlike for example Bhutan's Gross National Happiness which is not universal due to the fact that it includes specific sub-indicators strictly related to Bhutanese culture, cannot be used for other states (non-universal index).⁵ However, it is also important to note that while such universal indices measure worldwide human well-being, they do it on a within-country basis (as opposed to an average global well-being) and rank the countries according to their results. This is in contrast with indices whose principal aim is to capture economic growth (GDP *per capita*), the state of governance (Failed State Index) or the health of the environment (Environmental Vulnerability Index, Global Biocapacity Index).⁶

All the indices chosen for analysis in this thesis are either sensitive for inequality or have included it as a sub-indicator - clear signs that the authors of the indices have considered equality/inequality an integral element of a well-functioning society. These sub-indicators are divided into clusters of indicators which are based on the type of inequality that they aim to measure as part of human well-being.

The thesis aims at furthering the discussion on the disparities of human well-being, ie the actual state of objective human well-being in a country, in order to develop indices that go beyond the average measures such as the GDP *per capita* which do not incorporate inequality as part of the measurement.

⁵ Karma Ura et al., *An Extensive Analysis of GNH Index* (Centre for Bhutan Studies, May 2012).

⁶ Esty, Daniel C., M.A. Levy, C.H. Kim, A. de Sherbinin, T. Srebotnjak, and V. Mara. Environmental Performance Index. New Haven: Yale Center for Environmental Law and Policy 2008

Structure of the Thesis

The thesis comprises three chapters. Firstly, a theoretical framework is provided on the various clusters of inequality that well-being indices measure (in the chapter “Theoretical Framework”). The chapter addresses the concepts of interpersonal inequality, exploring the debate about the measurement of economic and non-economic inequality, to find out the optimal way to produce well-being indices that are better grounded in reality. Inequalities will be organized into clusters based on the type of inequality that they measure: economic (includes income and consumption related measures), health, education, gender and subjective inequality. Hence, it will become clear which types of inequality the well-being measurements have addressed and which types they have ignored.

The second chapter deals with the empirical part of the thesis, by providing a review of the indices that aim to measure human well-being but also take into account distributional issues. This will include well-being indices used by the UN and various NGO-s such as the Legatum Foundation, for example. Such indices are described and organized based on clusters of inequality that were developed in the previous theoretical framework chapter. The thesis deduces the form of inequality that the index is meant to capture and selected indices are divided into clusters based on that analysis, whether they are for example measuring economic, health, education or subjective (perceived) inequality. The type of inequality a certain well-being index uses also creates a completely original ranking of world states. If a country fares well in terms of education equality, this might not be the case in regards to health equality, although research shows that the two are strongly linked.⁷

In the third chapter, the thesis discusses the role and limitations of current inequality indicators in describing the human well-being. It will become apparent that the majority of well-being indices that measure inequality do not take into account the non-economic aspect of well-

⁷ Wilkinson, Richard , and Kate Pickett. “The problems of relative deprivation: why some societies do better than others.” *Social science & medicine*, 1 Nov. 2007

being and focus mainly on income inequality. The fourth chapter suggests how to move beyond the standard definition of economic inequality and towards the inclusion of health, education and gender inequality in an inequality-sensitive well-being index. Most of the well-being indices included in the study aim to replace the measurement of human development by *GDP per capita* and other mainly economic means (as stated in the reports of the index). This, however, falls short as the majority of these indices still measure income inequality. Studies have shown that the economy of a country does not accurately reflect human well-being: several well-being indices have captured the stagnation of human well-being despite an increase in *GDP per capita*.⁸ If future well-being indices aim to move beyond measures of purely economic success that in reality do not mirror actual levels of human well-being, then sub-indicators that are meant to capture interpersonal inequality should instead describe non-income inequalities in terms of health, education and job opportunity. The last part of the third chapter makes a proposal for future well-being indices while also considering possible critique and challenges.

⁸ Kakwani, N. "Performance in living standards." *Journal of Development Economics*, 1993

Chapter 1 – Theoretical Framework

Economists, politicians and philosophers alike have come to the conclusion that *per capita* measures of economic development (Gross Domestic Product) do not adequately reflect the distribution of well-being as they calculate the population average of all goods and services produced in a country: As long as we do not know the distribution of well-being, we are not aware who are actually benefitting from it. This is not surprising as even the creator of the Gross Domestic Product, Simon Kuznets, has admitted that GDP did not portray the actual distribution of well-being in a country: “Economic welfare cannot be adequately measured unless the personal distribution of income is known.” [...] “The welfare of a nation can scarcely be inferred from a measurement of national income”.⁹ It is important to explain, therefore, the broad theoretical literature behind inequality in terms of well-being outcome inequality or opportunities to well-being. The broad concept of “going beyond the GDP” has also been adopted by the majority of well-being indices which refers to going beyond purely economic growth based models and average means which do not show distribution.¹⁰ This chapter looks, first of all, into the debate on inequality, in terms of opportunities and outcomes, and secondly, which clusters can be deduced from the actual well-being indices.

Even though multiple definitions exist for the concepts “(in)equality of outcome” and “(in)equality of opportunity”, the former is generally used to refer to the equality of an individual’s achievements while the latter to an individual’s ability to reach those achievements.¹¹ Inequality of opportunity aims at reducing obstacles that restrict individuals’ opportunity for a better life. John Roemer, one of the most prominent authors on the equality of opportunity,

⁹ Simon Kuznets, United States Bureau of Foreign and Domestic Commerce, and John M. Blair, *National Income, 1929-32: Letter from the Acting Secretary of Commerce Transmitting in Response to Senate Resolution* (U.S. Government Printing Office, 1934), 7.

¹⁰ This has also been stated by speakers such as Pervenche Berès, the Chair of the European Parliament’s Economic Committee, at the “Beyond GDP” conference, organized by the European Commission, European Parliament, Club of Rome, OECD, and WWF: “GDP does not adequately deal with issues such as natural resources, the free-rider problem and distributional issues”. “Beyond GDP Conference Summary Notes” (presented at the Beyond GDP, Brussels: Beyond GDP, 2007).

¹¹ Anne Phillips, “Defending Equality of Outcome,” *Journal of Political Philosophy* 12, no. 1 (March 2004): 1.

notes that the most common interpretations of the concept of inequality of opportunity have been the “nondiscrimination principle” and the “level-the-playing-field principle”.¹² To this Stuart White, a noted scholar on the topic of equality, has correspondingly referred to as “weak meritocracy” (nondiscrimination) and the principle of “strong meritocracy” (level-the-playing-field).¹³ In the case of the “nondiscrimination principle”, social attitudes no longer influence the competition for positions as all persons are treated equally based on merit with the absence of discrimination based on race, gender, religion and creed.¹⁴ Roemer’s “level-the-playing-field principle” on the other hand includes this principle but goes beyond it, demanding the elimination of the so called environment related “starting point” disadvantages in terms of inherited wealth, education and family environment which can influence later disparities in well-being.¹⁵ Meritocracy, as defined by White, is an ideal where “the distribution of economic goods, such as jobs and incomes, should be governed by economic merit as reflected in the relative productive talents and efforts of individuals”.¹⁶

Apart from nondiscrimination and starting point inequalities, there have been attempts at defining what fair equality of opportunity should entail concerning the amount of effort spent by individuals. Roemer considers equality of opportunity fair when individuals are equally compensated with resources in relation to their differential abilities, but not for their differential efforts as long as a person’s abilities beyond his/her will are held constant.¹⁷ In his opinion people should be treated equal, as long as their contribution to society is equal in order to keep a society productive and ambitious while at the same time checking for a person’s “circumstances”-genes, class family background and culture.¹⁸ Others such as Arthur M. Okun have criticized this line of thinking, asserting that not only is a person’s productivity based on his or her effort but

¹² John E. Roemer, *Equality of Opportunity* (Harvard University Press, 2000), 1.

¹³ *Ibid.*; Stuart White, *Equality* (Polity, 2007), 56–59.

¹⁴ White, *Equality*, 61.

¹⁵ *Ibid.*

¹⁶ *Ibid.*, 53–54.

¹⁷ John E. Roemer, *Equality of Opportunity* (Cambridge, Mass: Harvard University Press, 1998), 6.

¹⁸ *Ibid.*

other exogenous factors beyond Roemer's "circumstances" such as the supply and demand of one's pre-market attributes in the labor market.¹⁹ As such, we cannot segregate people into two distinct categories of the laborious and the negligent. While one could theoretically make a distinction between interpersonal disparities that are either due to a lack of effort or due to an uneven playing field, the question nevertheless remains how one could distinguish disparities that are due to free will from disparities that are caused by a disability? Roemer himself admits: "I do not have a theory which would enable me to discover exactly what aspects of a person's environment are beyond his control and affect his relevant behavior in a way that relieves him or her of personal accountability for that behavior."²⁰ Nevertheless, the question how should one measure inequality while accounting for the fact that an individual's low socio-economic standing is either due to bad life choices or caused by the existence of, for instance, a genetic disorder from birth remains.

In order to make a difference between inequality that is due to bad life choices and inequality due to circumstances, Dworkin has proposed the concept of "luck egalitarianism" which makes a distinction between "brute luck" and "option luck".²¹ In the case of "brute luck", inequality is caused by pure chance that is beyond an individual's own power such as disability from birth, while "option luck" characterizes inequality that is due to an individual's own choice such as, for example, when someone chooses to gamble in a casino but loses (which would fall under the responsibility of the individual).²² The concept of "luck egalitarianism" asserts that equal distribution should take into account the fact whether individuals' were affected by "brute luck" or "option luck", letting individuals decide in a hypothetical insurance scheme which risks they prefer to undertake and how much effort they prefer to allocate for various activities.²³

¹⁹ Arthur M. Okun, *Equality and Efficiency: The Big Tradeoff* (Brookings Institution Press, 1975), 43.

²⁰ Roemer, *Equality of Opportunity*, 1998, 8.

²¹ Ronald Dworkin, *Sovereign Virtue: The Theory and Practice of Equality*, First Edition (Harvard University Press, 2002), 73.

²² *Ibid.*, 73.

²³ Ronald Dworkin, "What Is Equality? Part 2: Equality of Resources," *Philosophy & Public Affairs* no. 4 (1981): 288, doi:10.2307/2265047.

Dworkin's concept of "luck egalitarianism" is both ambition-sensitive and endowment-insensitive: individuals should remain responsible for their own preferences in the case of "option luck", but are supported by the state in case of "brute luck".²⁴

However, one should acknowledge the fact that a person's choices are to a considerable extent shaped by his environment, which can be considerably unequal. For instance, due to their upbringing, children from lower-class uneducated families will possibly make the same mistakes in their adulthood as their parents did. Similarly, Dworkin's "option luck" and "brute luck" are based on the idea that choices predict a person's preference. This can be, nevertheless, contested. Amartya Sen recognizes that in reality individuals' make decisions based on imperfect information, determining their options in life without being completely aware of what they actually entail and are frequently unaware of the long-term consequences of their choices.²⁵ As such, people should not be necessarily punished for their bad decisions. The line between "option luck" and "brute luck" can at times be extremely thin.

John Rawls' in his book "A Theory of Justice" focuses on the concept of "primary goods", of which the main ones are basic rights, liberties, opportunities, income and wealth, power of office and self-respect. According to Rawls, these are the things every person needs and are meant to be distributed equally.²⁶ Basic rights on the other hand consist of political liberty, freedom of speech and assembly, freedom of thought, freedom of the person, the right of personal property and the rule of law.²⁷ This idea is related to his two principles of justice, of which the first states that "each person is to have an equal right to the most extensive total system of equal basic liberties compatible with a similar system of liberty for all", and the second principle that "social and economic inequalities are to be arranged so that they are both: (a) to the greatest benefit of the least advantaged, consistent with the just savings principle, and (b)

²⁴ Ibid., 311.

²⁵ Amartya Sen, *Choice, Welfare and Measurement* (Harvard University Press, 1997), 61.

²⁶ John Rawls, *A Theory of Justice* (Harvard University Press, 1971), 58–59.

²⁷ Ibid., 53.

attached to offices and positions open to all under conditions of fair equality of opportunity”.²⁸ In this line of thinking, important rules in a society have to apply to everyone equally but social and economic inequalities have to benefit the most disadvantaged. This would mean that everyone’s well-being is based on equal cooperation and certain groups in society would not be deprived of well-being so others could prosper.²⁹ The “just savings principle” as part of principle two is based on the idea that the social minimum (minimum level of basic needs) is set at the point over which it is either not possible to make savings (increase taxes) or the prospects of the least advantages begin to fall.³⁰ Keeping the social minimum would be the duty of the contemporaries in order to ensure the just well-being of future generations.

However, Rawls’s concept of “primary goods” and Dworkin’s “luck egalitarianism” have not been considered objective enough due to their fixation on preferences by the proponents of Amartya Sen’s “capability approach”, which can be placed in the middle ground inside the (in)equality of outcomes and opportunities debate.³¹ Sen uses the terms “functionings” which can be defined as well-being achievements (such as being adequately fed and healthy, “the beings and the doings”) and “capabilities” which can be explained as a person’s ability to achieve his or her well-being achievements.³² He acknowledges that money is an important part of the story but in order to better understand inequality, one should go beyond income and recognize all types of diversity that can influence the life of a person.³³ Inequality can also come in terms of access to health, basic liberties and schooling which in turn can influence future inequality of wealth and income. Sen’s approach aims to increase each and every individual’s equal capability to function in areas such as education, health and inclusiveness.³⁴ The main issue with the “capability

²⁸ Ibid., 266.

²⁹ Ibid., 13.

³⁰ Ibid., 252.

³¹ Rhema Vaithianathan, *Equality: Outcomes or Opportunities? A Review of the Literature*, Occasional Paper (Wellington, New Zealand: New Zealand Department of Labour, August 1995), 10.

³² Amartya Sen, “Well-Being, Agency and Freedom: The Dewey Lectures 1984,” *The Journal of Philosophy* 82, no. 4 (April 1, 1985): 197–198, 200, doi:10.2307/2026184.

³³ Amartya Sen, *Inequality Reexamined* (Harvard University Press, 1995), 121–122.

³⁴ Sen, “Well-Being, Agency and Freedom,” 200–201.

approach” is the fact that it is difficult to determine which “functionings” are more important than others for well-being indices and should be adjusted for inequality.

The measurement of the (in)equality of opportunity has been considered insurmountable as compared to (in)equality of outcome.³⁵ Moreover, authors such as Milorad Kovacevic report that so far there have been no attempts to measure the inequality of human well-being.³⁶ It is considerably easier to measure inequality in terms of well-being achievements such as health and education, than in terms of opportunities or access. Only one index, the Legatum Prosperity Index, has been noted by this thesis to measure universal (in)equality of opportunity with the use of opinion polls (subjective inequality).³⁷ The Gender Inequality Index (GII) and the Global Gender Gap (GGG) take into account inequality of opportunity between genders in their “country reports” but not part of their actual methodology. Most well-being indices measure inequality in terms of concepts which are similar to well-being “outcomes” than concepts of opportunity. Nevertheless, in areas such as education considerable overlap can also exist as, for instance, primary education can be both an issue of opportunity and outcome as the proportion of people who have finished primary school can mirror the level of access to education in a country.

The clusters or groups of inequality measurement discussed in this thesis are established in the practical consideration how well-being indices currently account for inequality. Indices rarely state explicitly that they are aiming to measure either the inequality of opportunity or outcomes. However, to an extent they can be isolated into economic and non-economic clusters of inequality measurement. The majority of indices focus on the inequality of wealth, consumption or incomes (that has the most easily accessible type of data). Hence the first cluster of inequality measured by indices will be called “economic inequality”. The next set of clusters

³⁵ Okun, *Equality and Efficiency*, 76.

³⁶ Milorad Kovacevic, *Measurement of Inequality in Human Development - A Review*, Human Development Reports (UNDP, November 2010), 10.

³⁷ *A Unique Inquiry into Wealth and Wellbeing: The 2012 Legatum Prosperity Index* (Legatum Institute, 2012).

would belong to category of non-economic inequality measurement which consists of “health inequality” and “educational inequality”. The clusters “gender inequality” and “subjective inequality” can be considered the most diverse, containing various gender and opinion-related issues. There is, however, considerable overlap between the clusters in this thesis and some indicators can be understood in both ways, as “opportunities” or “outcomes”. While equality literature makes a strong distinction between the measurement of the “(in)equality of opportunity” and the “(in)equality of outcome”, the thesis is based on the premise that well-being indices focus primarily on the outcomes of inequality and only to a small extent on opportunities such as “access to healthcare”. This thesis finds the sectoral clusters more relevant for the actual well-being indices under research. The following sub-chapters will focus on the clusters of inequality.

1.1 Economic Inequality

Economic inequality can be measured through income (personal and household), consumption (of goods and services) and wealth (land and financial assets). According to Gabriel Palma there can be a considerable difference between the Gini coefficient of consumption and income, since consumption exhibits a smaller distribution variance than income Gini.³⁸ The main issues in relation to measuring economic inequality for the purpose of this thesis have been identified via two questions: 1) should economic inequality be measured universally or on a group-basis? 2) which indicators should be used in order to calculate economic inequality?

Before discussing the first issue, it is important to note how one can express the actual income distribution. One proposition has been to list the persons and their incomes with a finite dimensioned vector: $x = (x_1, x_2, \dots, x_n)$, where x_i denotes the income of person $i=1$ who are

³⁸ J. G. Palma, *Homogeneous Middles Vs. Heterogeneous Tails, and the End of the “Inverted-U”*: *The Share of the Rich Is What It’s All About*, Cambridge Working Papers in Economics (Faculty of Economics, University of Cambridge, 2011), 4, <http://ideas.repec.org/p/cam/camdae/1111.html>.

ordered in a list of n -persons.³⁹ The persons are lined up according to their corresponding incomes. However, this is not the only way of expressing the distribution of income: another is Pen's "parade approach"- the statistical concept of a probability distribution, where individual wealth is signified in the form of an "income profile" of a population.⁴⁰ In this approach, every member of a society is adjusted in a distribution graph in an ascending order of income "height" with the wealthier "taller" and the poorer "shorter" (See Figure 1).

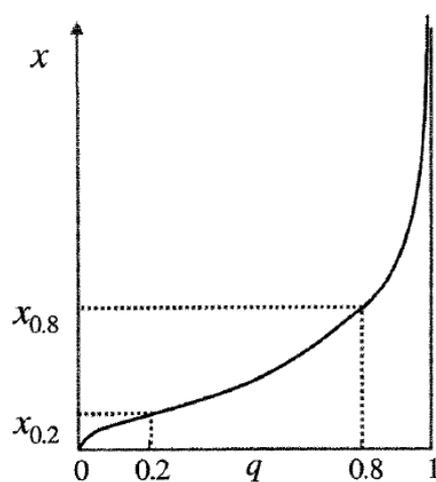


Figure 1. "Pen's Parade Approach"⁴¹

Nevertheless, the first question remains, whether economic inequality should be measured universally (meaning all members of a society have to be included) or, alternatively, focused on a distinct group of people based on their economic output or income. Should a well-being index try to measure inequality between all persons in a society, or rather measure the disparity between the wealthiest 10% in comparison to the poorest 10%? ⁴² Roemer's conceptualization of "equality of opportunity" includes the idea that resources should be redistributed to groups based on the type of income inequality they suffer, whether it is due to

³⁹ F.A. Cowell, "Chapter 2 Measurement of Inequality," in *Handbook of Income Distribution*, vol. 1 (Elsevier, 2000), 90.

⁴⁰ Ibid., 90–91.

⁴¹ Ibid., 91.

⁴² Ibid., 123.

discrimination, political backlash or low-talent.⁴³ According to this, policy makers could make decisions based on type-based groups as individual targeting would be deemed too costly.⁴⁴

Group-based economic inequality measures, however, focus on the extreme points of the inequality range. In order to measure extreme inequality, a well-being index can include a comparison of the top 1% and the bottom 1% (a percentile-ratio measure) which would give an account of the differences between the absolute wealthiest and the absolute poorest. Generally in more equal societies such as Sweden and Norway, the top 10% earn on average, a six times higher income than the bottom 10%, while in less equal countries like South Africa and Ecuador, the difference can be up to 32-35 times.⁴⁵ Focusing on the percentile-ratio is especially relevant as authors like Anthony Atkinson have demonstrated that within-country income inequality in the majority of countries has for the last thirty years largely been driven by top income shares.⁴⁶ If an index decides to include the 10%/10% ratio in their measurement, it is a sign that the developers chose to take into account extremes.

One of the most common measures of economic inequality is the Gini coefficient, a measure developed by Italian statistician Corrado Gini which measures inequality across the whole distribution as opposed to distinct extreme groups as the percentile-ratio measure does. The Gini index defines inequality as the area between the Lorenz curve of the proportion of the distribution and the line of perfect equality divided by the area below the perfect equality line. The Gini index has remained particularly popular in practical application due to the fact that it satisfies the terms set by the Pigou-Dalton Transfer Principle: the income transfer from a richer person to a poorer person should signify a fall in inequality while a transfer from a poor person

⁴³ Roemer, *Equality of Opportunity*, 2000, 29–30.

⁴⁴ *Ibid.*, 30.

⁴⁵ Ak Bagchi, “Human Development Report 2009. Overcoming Barriers: Human Mobility and Development,” *Development and Change* 42, no. 1 (January 2011): 195.

⁴⁶ Anthony B Atkinson, Thomas Piketty, and Emmanuel Saez, “Top Incomes in the Long Run of History,” *Journal of Economic Literature* 49, no. 1 (March 2011): 10, doi:10.1257/jel.49.1.3.

to a wealthier person should signify a rise in inequality.⁴⁷ The Gini index ranges from 0 to 1 where 0 indicates complete equality, and 1 complete inequality- for example, the income inequality of OECD countries generally ranges from 0,188 in Czech Republic to 0,399 in Turkey.⁴⁸

Secondly, one can measure inequality with the Atkinson measure (index), developed by the well-known British economist and politician Anthony Barnes Atkinson.⁴⁹ While the Gini index measures the overall income inequality in a country, the Atkinson measure works theoretically more effectively in the regard that it demonstrates whether it is the poorest or richest in a society that contribute the most to inequality.⁵⁰ The Atkinson Index as compared to the Gini index is more appropriate when one would like to put more weight to the lower end of the distribution while the Gini is sensitive to transfers at all levels.⁵¹ The Atkinson index is more sensitive to the extremes of distribution.

A third possibility to measure economic inequality in a country would be to use the Robin Hood index (also known as the Hoover index) which is measured as the share of total income that has to be taken from those above the mean income and transferred to those below the mean income to achieve equality in the distribution of incomes.⁵² This approach contrasts with the Gini index and the percentile-ratio measure by including a sense of fairness in its measurement- a notion that some well-being indices could include in their already value based measurements.

⁴⁷ Hugh Dalton, "The Measurement of the Inequality of Incomes," *The Economic Journal* 30 (1920): 351.

⁴⁸ "OECD Statextracts," accessed April 22, 2013, OECD Statextracts.
<http://stats.oecd.org/Index.aspx?QueryId=26067&Lang=en>.

⁴⁹ Anthony B Atkinson, "On the Measurement of Inequality," *Journal of Economic Theory* 2, no. 3 (September 1970): 244–263.

⁵⁰ Paul D. Allison, "Measures of Inequality," *American Sociological Review* 43, no. 6 (December 1, 1978): 873.

⁵¹ Atkinson, "On the Measurement of Inequality," 255–256.

⁵² Bruce P. Kennedy, Ichiro Kawachi, and Deborah Prothrow-Stith, "Income Distribution And Mortality: Cross Sectional Ecological Study Of The Robin Hood Index In The United States," *BMJ: British Medical Journal* 312, no. 7037 (April 20, 1996): 1004–1005.

This measure could be juxtaposed to Rawls' second principle of justice which states that the livelihood of the disadvantaged has to be improved the most.⁵³

The measurement of economic inequality assumes the notion that the income or wealth of a person can give an accurate view of his social status and well-being.⁵⁴ This could mean that the measurement of other inequalities such as health could be a better predictor of the distribution of well-being. This is one of the reasons why we should move beyond economic inequality and towards non-economic inequality in terms of education and health, as part of the next set of clusters.

1.2 Educational Inequality

One of the main issues for measuring educational inequality is the challenge of finding an indicator of education that would strike the right balance between objective representation and universal measurability. For example, Maas and Criel, in their 1982 study on the inequality of education in Eastern Africa used “distribution of primary school enrolments” as an indicator of educational inequality.⁵⁵ Primary school enrolment can be considered a measure of the inequality of both outcome and opportunity. According to Roemer, the equal distribution of educational resources to all is an issue of the equality of opportunity and the equal distribution of basic education, such as on the primary school level, could create a more level playing field.⁵⁶ On the other hand, inequality of educational attainment could already be a sign of the inequality of outcome.

Educational resources or educational attainment are not a uniformly understood term but that should not halt the development of indicators for its measurement. Common indicators in

⁵³ Rawls, *A Theory of Justice*, 69.

⁵⁴ Despite a study done in Scotland which demonstrated that while income inequality does have a positive correlation with ill health, other place-dependent factors (or policy choices) can also exert a considerable effect on health outcomes : Neil Craig, “Exploring the Generalisability of the Association Between Income Inequality and Self-assessed Health,” *Social Science & Medicine* 60, no. 11 (June 2005): 2486.

⁵⁵ Jacob van Lutsenburg Maas, Geert Criel, and Washington World Bank, *Distribution of Primary School Enrollments in Eastern Africa. World Bank Staff Working Papers Number 511*, July 1, 1982.

⁵⁶ Roemer, *Equality of Opportunity*, 1998, 54.

use have been “years of schooling”, “percentage of population with tertiary education”, “adult literacy” and “distribution of workforce by education level”.⁵⁷ One could claim that the results of these measures can vary greatly. For example a state could theoretically have a low level of adult literacy inequality but a high level of tertiary education inequality. The choice of indicator would depend completely on what the authors of the index consider the most important for education.

Another issue, besides the choice of an adequate indicator to measure educational inequality, has been the argument that the marginal product of education is higher at lower levels of education- according to this argument advancement for example in basic literacy would have a stronger marginal value than an increase in the ratio of people with college degrees.⁵⁸ Moreover, it might not just be the number of school years that a person attains which have the strongest influence on well-being but also issues such as the quality of education, safety in schools and funding.⁵⁹

Educational inequality has been generally determined with the help of standard deviations and Gini coefficients and “only four previous studies were found to have used Gini coefficients in measuring educational inequality”.⁶⁰ Thomas and Wang also report that none of the studies that used a Gini index of educational inequality measured it through educational attainment- the highest level of education a person achieves.⁶¹ This, however, changed in 2010 as later studies, such as a paper by Wail Benaabdelaali, Sa’id Hanchane and Abdelhak Kamal, have shown that

⁵⁷ Hisham H. Abdelbaki, “An Analysis of Income Inequality and Education Inequality in Bahrain,” *Modern Economy* 3, no. 5 (September 2012): 679, doi:10.4236/me.2012.35087;

Mark McGillivray, *Measuring Non-Economic Well-Being Achievement*, SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, June 10, 2005), 212.

⁵⁸ Mamta Murthi, Anne-Catherine Guio, and Jean Drèze, *Mortality, Fertility and Gender Bias in India: A District-level Analysis** (Oxford University Press, 1997).

⁵⁹ Sabina Alkire and James Foster, *Designing the Inequality-Adjusted Human Development Index (IHDI)*, Human Development Research Papers (2009 to present) (Human Development Report Office (HDRO), United Nations Development Programme (UNDP), 2010), 16.

⁶⁰ Vinod Thomas et al., *Measuring Education Inequality: Gini Coefficients of Education. Policy Research Working Paper*, January 1, 2001.

⁶¹ *Ibid.*, 3, 27.

modern datasets allow the production of a Gini coefficient of world educational attainment.⁶² Educational inequality should be measured with the Gini index as it has the best current data. As can be seen, the issues related to the measurement of educational inequality are not insurmountable and can be solved. In the next sub-chapter we will turn to the issues related to the measurement of health inequality.

1.3 Health Inequality

Health inequality does not yet, in fact, have a unified definition among academics. Despite this, it has inspired a number of theories about the relationship between inequality in health outcomes and overall lifelong well-being as for example the “Fetal-origins hypothesis” and the “Life course models”.⁶³ According to the “fetal-origins hypothesis” the socioeconomic background of a child has a lasting effect on its health in adulthood. A child from a poor family has a higher chance of suffering from poorer in-utero nutrition and as a consequence will have more health problems in middle age than a child from a better-off family. As an outcome, prevalence of early childhood poverty can cause a self-perpetuating cycle of continued inequality in a society, keeping the poor impoverished, which is a direct threat to meritocracy. Similarly, “Life courses models” emphasizes that children who suffer chronic illnesses also perform later worse in terms of education outcomes and income rates; thus, early health inequality can affect future labor market outcomes.⁶⁴ The other existing theories on health deprivation have been designated by Andrew Leigh, Christopher Jencks and Timothy M. Smeeding as “labor market effects” where poor health has a detrimental effect on job prospects, “educational effects” where health affects educational outcomes, and “the marriage market” theory which states that the

⁶² Wail Benaabdelaali, Saïd Hanchane, and Abdelhak Kamal, “Educational Inequality in the World, 1950-2010: Estimates from a New Dataset,” *Research on Economic Inequality* 20, no. 1 (January 2012): 337.

⁶³ Anne Case, Angela Fertig, and Christina Paxson, “The Lasting Impact of Childhood Health and Circumstance,” *Journal of Health Economics* 24, no. 2 (March 2005): 366.

⁶⁴ J Currie and B Madrian, “Health, Health Insurance and the Labor Market,” in *Handbook of Labor Economics: Volume 3C*, ed. Orley Ashenfelter and David Edward Card (North Holland, Amsterdam: Elsevier, 1999).

healthier members of a society are on average more likely to get married.⁶⁵ However, the theoretical underpinnings of health inequality have not received the same amount of attention by scholars as economic inequality. There are several reasons for that.

One of the main problems one encounters when measuring health inequality is the fundamental heterogeneity of a population: a person's health can be influenced by a multitude of factors, some of them unavoidable, such as age, genetic background and gender, but also by some avoidable determinants such as a person's wealth. This is exemplified by the fact that low-income adolescent males in the US report to be in a similar health condition as 60 year old high-income males.⁶⁶ In this case, not only age and genetics play a role but also a person's position on the economic inequality spectrum, which to a certain extent can translate into health inequality. While resource endowments such as income could already predict an individual's health, authors Costa-Font and Hernández-Quevedo note that economic inequality does not necessarily reflect the distribution of health in society.⁶⁷ For this reason health inequality should be measured separately from economic inequality.

Sudhir Anand, Finn Diderichsen, Timothy Evans, Vladimir M. Shkolnikov, and Meg Wirth identify two categories of health inequality indices: 1) Those which measure intergroup differences; 2) Those which measure differences between individuals.⁶⁸ For the purpose of measuring inequalities in health, authors have extensively used concentration indices which show intergroup differences. Wagstaff, Paci and Van Doorslaer report that concentration indices (similar to the methodology of the Gini index) can be considered the best indicators of health inequality since they take into consideration a whole population (as opposed to a limited sub-

⁶⁵ Andrew Leigh, Christopher Jencks, and Timothy M. Smeeding, "Health and Economic Inequality," in *The Oxford Handbook of Economic Inequality* / Edited by Wiemer Salverda, Brian Nolan and Timothy M. Smeeding, ed. Wiemer Salverda, Brian Nolan, and Timothy M. Smeeding (Oxford : Oxford University Press, 2009., n.d.), 11–12.

⁶⁶ Joan Costa-Font and Cristina Hernández-Quevedo, "Measuring Inequalities in Health: What Do We Know? What Do We Need to Know?," *Health Policy* 106, no. 2 (July 2012): 195.

⁶⁷ *Ibid.*, 203.

⁶⁸ Sudhir Anand et al., "Measuring Disparities in Health: Methods and Indicators," in *Challenging Inequities in Health : From Ethics to Action: From Ethics to Action*, ed. Timothy Evans et al. (Oxford University Press, 2001), 50.

group), control for the socioeconomic dimension of health (living standards through income) and are “sensitive to changes in the distribution of the population across socioeconomic groups”.⁶⁹ By controlling for “economic class” through income level, concentration indices are related to John Roemer’s theory on the equality of opportunity by taking to an extent into account a person’s “circumstances”- his or her income.⁷⁰ Hence, concentration indices and the related concentration curve can be considered the most effective. Not only do they portray inequalities in health but they also control for the endogenous factor of an individual’s income. The standard concentration indices, however, have been criticized by Erreygers, Clarke & Van Ourti and Erreygers and Van Ourti for being “invariant to proportional changes” as they lack a ratio-scale (such as in the Gini index) and a “mirror property”- “when comparing two different distributions, it can occur that the distribution with the highest measured degree of health inequality does not show the highest degree of measured ill health inequality”.⁷¹

Bommier and Stecklov claim that concentration indices are closely related to WHO’s concepts of health and equity, and to the two principles of justice expressed in John Rawls’ “A Theory of Justice”. His first principle of justice states that each person must have an equal entitlement to basic liberties, even though he did not count health outcomes as part of his theory of basic liberties, but rather focused on political and property rights.⁷² Nevertheless, Bommier and Stecklov claim that access to proper healthcare could be considered an entitlement to basic liberties since it gives an individual the liberty to function equally with others.⁷³ They claim that

⁶⁹ Adam Wagstaff, Pierella Paci, and Eddy van Doorslaer, “On the Measurement of Inequalities in Health,” *Social Science & Medicine* 33, no. 5 (1991): 556.

⁷⁰ Roemer, *Equality of Opportunity*, 1998, 43.

⁷¹ Guido Erreygers and Tom Van Ourti, “Measuring Socioeconomic Inequality in Health, Health Care and Health Financing by Means of Rank-dependent Indices: A Recipe for Good Practice,” *Journal of Health Economics* 30, no. 4 (July 2011): 692;

Guido Erreygers, Philip Clarke, and Tom Van Ourti, “Mirror, Mirror, on the Wall, Who in This Land Is Fairest of All? - Distributional Sensitivity in the Measurement of Socioeconomic Inequality of Health,” *Journal of Health Economics* 31, no. 1 (January 2012): 9.

⁷² Antoine Bommier and Guy Stecklov, “Defining Health Inequality: Why Rawls Succeeds Where Social Welfare Theory Fails,” *Journal of Health Economics* 21, no. 3 (May 2002): 512;

Rawls, *A Theory of Justice*, 53.

⁷³ Bommier and Stecklov, “Defining Health Inequality,” 505.

their version of the concentration index fulfills Rawls' prerequisites and this is why concentration indices are the most appropriate choice when one wishes to measure health inequality.

The next sets of clusters will be more diverse in their nature and more related to two different scholarships: gender studies (gender inequality) and psychology (subjective inequality). However, the thesis will continue to remain focused on the topic of measurement.

1.4 Gender Inequality

First of all it should be stated what is meant in the present thesis by the term “gender inequality”. Here, the thesis will adopt the definition used by Ferber and Nelson: “Gender, as the word is used by many feminists, means something quite different from biological sex. Gender is the social meaning given to biological differences between the sexes; it refers to social constructs rather than to biological givens”.⁷⁴ This is the case with the majority of gender inequality indices which do not measure strictly differences between biological sexes but disparities between socially constructed “genders”.

Gender inequality indicators can be generally considered as part of the (in)equality of opportunity, measuring differences between men and women (group based inequality) in terms of many opportunity-related issues such as empowerment, political participation and labor market participation. However, most of them measure it in terms of outcomes such as educational attainment and life expectancy. Even concepts such as “political participation” are usually measured as outcomes: ratio of female vs. male parliamentary members. Some of these areas are related to White's idea of a “weak meritocracy” where people should not be discriminated based on their gender (political participation, labor market participation and empowerment), but also the concept of “strong meritocracy” where both men and women should have equal starting

⁷⁴ Marianne A. Ferber and Julie A. Nelson, *Beyond Economic Man: Feminist Theory and Economics* (University of Chicago Press, 2009), 9–10.

resources in terms of educational attainment and health (life expectancy).⁷⁵ In terms of a sectoral analysis, gender inequality indices can, however, overlap with the clusters of economic, health, subjective and educational inequality. Moreover, they measure these issues only from the viewpoint of gender inequality.

Anand and Sen have formulated that well-being indices which wish to be gender-sensitive (weighted for gender inequality) have to take into account gender disparities in terms of “(1) the efforts and sacrifices made by each, and (2) the rewards and benefits respectively enjoyed”.⁷⁶ These issues are generally measured with the same means as economic inequality, using either the Gini coefficient with the Lorenz curve or the Atkinson index, much like the case of economic inequality. The inclusion of gender inequality as an indicator into well-being indices expresses the developers’ concern of existing gender disparities. This is extremely important as gender inequality has been found to be one of the largest hindrances to development in the world.⁷⁷

The next cluster of indices “subjective inequality” focuses on the issue of a society’s perception of inequality and fairness.

1.5 Subjective Inequality

Subjective or perceived inequality is defined here as an individual’s subjective opinion on the existence of inequality in a society. This is hence a subjective means of inequality measurement as opposed to measures that aims to capture “objective” inequality. Subjective inequality can be measured with questionnaires both in terms of outcomes and opportunities. In the case of the former, the measure wants to know the citizens’ perception of inequality while the latter would aim to capture whether citizens consider their society meritocratic or not.

⁷⁵ White, *Equality*, 56–60.

⁷⁶ Sudhir Anand and Amartya Sen, “Gender Inequality in Human Development: Theories and Measurement,” in *Readings in Human Development: Concepts, Measures and Policies for a Development Paradigm*, ed. Sakiko Fukuda-Parr and A. K. Shiva Kumar (New Delhi, 2003), 2.

⁷⁷ *Human Development Report 2010: The Real Wealth of Nations: Pathways to Human Development*, 20th Anniversary Edition (UNDP, 2010).

Inequality is not perceived everywhere in the same way. People's opinion of inequality of outcome (subjective inequality) can be to a considerable extent culturally or historically determined which influences the fact whether they consider it fair or not. Di Tella, Alesina and MacCulloch found in their 2004 comparative study that people in Europe and the US evaluate inequality differently. They determined that while the happiness of Europeans was very strongly affected by inequality, a "complete lack of any effect of inequality on the happiness of the American poor" was found.⁷⁸ In order to measure happiness and carry out the said study, questionnaires from the United States General Survey were used for US data and Euro-Barometer Survey series for European countries.⁷⁹ Furthermore, a recent study, conducted by Christian Bjørnskov, Axel Dreher, Justina A.V. Fischer, Jan Schnellenbach, and Kai Gehring, using the World Value Survey, concluded that "the respondents' belief that income inequality in their society is the result of a comparably fair market process makes them considerably more satisfied with their lives, while a demand for more government redistribution for correcting the market-income distribution is negatively associated with happiness".⁸⁰ Thus, subjective inequality could be an even more multifaceted indicator of well-being than other types of inequality and harder to capture.

The measurement of subjective inequality of opportunity, on the other hand, has not however, been without criticism. A study conducted in 2008 showed that opinion poll respondents either exceedingly underestimated (22%) or overestimated (28%) their level of current social status in relation to their father's position and only half of the respondents gave an answer that was consistent with their actual social mobility.⁸¹ This can put under question whether people are actually able to estimate the existence of social mobility or the levelness of the

⁷⁸ Rafael Di Tella, Alberto Alesina, and Robert MacCulloch, *Inequality and Happiness: Are Europeans and Americans Different?*, Scholarly Articles (Harvard University Department of Economics, 2004), 19.

⁷⁹ *Ibid.*, 6.

⁸⁰ Christian Bjørnskov et al., "Inequality and Happiness: When Perceived Social Mobility and Economic Reality Do Not Match," *Journal of Economic Behavior & Organization* (March 2013): 36.

⁸¹ Marie Duru-Bellat and Annick Kieffer, "Objective/subjective: The Two Facets of Social Mobility," *Sociologie Du Travail* 50 (2008): e7.

playing field in their country. While it is important to measure inequality and social mobility from a subjective point of view, it is not the most accurate measure of inequality. Indicators of “subjective inequality” can be affected by multiple cultural or social factors which are not measurable. For this reason it is possibly not the best plan of action in the future to include “subjective inequality” measures into objective well-being indices as this would blur the line between objective and subjective types of indicators.

In the next chapter we will move to the empirical chapter where we look at well-being indices and see how they fit into the theoretical framework established in this chapter. We will thus distinguish whether the indices used the current tools for the measurement of inequality made available to them by scholars or not. The same clusters in terms of economic, educational, health, gender and subjective inequality developed in this chapter will be analyzed.

Chapter 2 – How do Well-being Indices Measure Inequality?

This chapter discusses well-being indices that are sensitive to inequality, which are grouped into sectoral clusters based on the type of inequality that they have included into their methodology. These are economic, educational, gender, health or subjective inequality as opposed to an inequality of opportunities vs. outcomes approach (as developed in the previous chapter). Moreover, it should be noted that the large majority of well-being indices are not distribution-sensitive- they do not account for inequality at all. Among these indices are for example the Happy Planet Index, OECD Better Life Index, the standard Human Development Index, the Sustainable National Income and the Satisfaction with Life Index that include sub-indicators which are based on averages.⁸² By not accounting for distributional issues in their measurement, they fail to capture the inequality of well-being. As can be seen from Table, the majority of indices which measure inequality have opted to include strictly economic inequality in their measurement, while non-economic inequality of well-being has been to a large extent disregarded by the index developers. Only a few indices have included non-economic inequality in terms of education, gender or health. One index, the Legatum Prosperity Index has chosen to measure the subjective inequality of opportunity.

⁸² “OECD Better Life Index,” *OECD Better Life Index*, accessed May 7, 2013,

<http://oecdbetterlifeindex.org/>;

Abdallah, S., Michaelson, J., Shah, S., Stoll, L., & Marks, N. *The happy planet index: 2012 report: A global index of sustainable well-being*. London: New Economics Foundation (NEF). 2012;

Onno Kuik, *Sustainable National Income (SNI)* (Vrije Universiteit Amsterdam, n.d.); A. White, “A Global Projection of Subjective Well-being: A Challenge To Positive Psychology,” *Psychtalk* no. 56 (2007): 17–20.

Table. “Types of Inequality as sub-indicators in Human Well-Being Indices”⁸³

Index:	Economic inequality:	Educational inequality:	Health Inequality:	Subjective Inequality:	Gender Inequality:
Gender Inequality Index	-	-	-	-	+
Genuine Progress Indicator	+	-	-	-	-
Globeco WHI	+	-	-	-	-
Global Gender Gap	-	-	-	-	+
Index of Economic Well-being	+	-	-	-	-
Index of Sustainable Economic Well-being	+	-	-	-	-
Inequality-Adjusted Human Development Index	+	+	+	-	-
Legatum Prosperity Index	-	-	-	+	-
Sustainable Society Index	+	-	-	-	+ (Gender Gap Index)

First off, this chapter should note the disparity between what the indices aim to achieve and are able to accomplish in practice. The majority of well-being indices selected for this thesis have been designed with the objective to measure human well-being beyond purely economic

⁸³ World Happiness Index: Why? How? What Results? (June 2010).

<http://www.globeco.fr/public/index.php?a=world-happiness-index>. Accessed: 4.05.2013;

GII Technical Note 1 HDR 2007/2008, Human Development Report (UNDP, 2008 2007);

Philip A. Lawn, “A Theoretical Foundation to Support the Index of Sustainable Economic Welfare (ISEW), Genuine Progress Indicator (GPI), and Other Related Indexes,” *Ecological Economics* 44, no. 1 (February 2003): 105–118;

Ricardo Hausmann, Laura D. Tyson, and Saadia Zahidi, *The Gender Gap Report 2012* (World Economic Forum, 2012);

Géraldine Thiry, *Beyond GDP : Conceptual Grounds of Quantification ; the Case of the Index of Economic Well-Being (IEWB)*, Discussion Paper / UCL, Département Des Sciences Economiques ; 2011,48 (Louvain-la-Neuve : UCL, 2011), <http://hdl.handle.net/2078/96960>;
<http://sites.uclouvain.be/econ/DP/IRES/2011048.pdf>;

Geurt Van de Kerk and Arthur R. Manuel, “A Comprehensive Index for a Sustainable Society: The SSI — the Sustainable Society Index,” *Ecological Economics* 66, no. 2–3 (June 15, 2008): 228–242, doi:10.1016/j.ecolecon.2008.01.029;

Alkire and Foster, *Designing the Inequality-Adjusted Human Development Index (IHDI); 2012 Legatum Prosperity Index Methodology and Technical Appendix* (London: The Legatum Institute, 2012).

means such as the average income of a population or GDP *per capita* (also and average) which do not take into account the distribution of well-being or economic outcomes.⁸⁴ The methodological reports and theoretical articles state as an underlying motivation of selected well-being indices such as the HDI-based IA-HDI (Inequality-Adjusted Human Development Index) the inadequacy of average measures of human development (such as GDP *per capita*).⁸⁵ Philip Lawn, when writing about the theoretical underpinnings of the GPI (Genuine Progress Indicator) and the ISEW (Index of Economic Well-being), claims that the main rationale for creating these indices was the fact that to a large extent GDP includes in its measurement activities and issues that are completely unsustainable and detrimental to human development.⁸⁶ The creators of the SSI (Sustainable Society Index) have left GDP *per capita* out of its indicator list as they found it to be lacking in many important regards, referring to a 2007 article by van den Bergh.⁸⁷ In a similar vein, the foreword to the methodology of the LPI (Legatum Prosperity Index) reiterates that the index is meant to move “beyond GDP”.⁸⁸ Likewise, the IEW (Index of Economic Inequality) states the belief that indicators such as GDP *per capita* and per capita disposable income “were not truly capturing trends in economic well-being” and were unjustifiable since they didn’t account for income inequality.⁸⁹ However, if the selected well-being indices wish to “move beyond” economic measures, then why do they still mainly include economic inequality as part of their measurement and not non-economic inequality?

⁸⁴ Philip A. Lawn, “A Theoretical Foundation to Support the Index of Sustainable Economic Welfare (ISEW), Genuine Progress Indicator (GPI), and Other Related Indexes,” *Ecological Economics* 44, no. 1 (February 2003): 105–118;

2012 Legatum Prosperity Index Methodology and Technical Appendix;

Lars Osberg and Andrew Sharpe, “The Index of Economic Well-being: An Overview” (presented at the National Conference on Sustainable Development Indicators, Westin Hotel, Ottawa, Ontario, 2001);

Alkire and Foster, *Designing the Inequality-Adjusted Human Development Index (IHDI)*;

Ricardo Hausmann, Laura D. Tyson, and Saadia Zahidi, *The Gender Gap Report 2012* (World Economic Forum, 2012).

⁸⁵ *Human Development Report 2010: The Real Wealth of Nations: Pathways to Human Development*, 87.

⁸⁶ Lawn, “A Theoretical Foundation to Support the Index of Sustainable Economic Welfare (ISEW), Genuine Progress Indicator (GPI), and Other Related Indexes,” 109.

⁸⁷ Van de Kerk and Manuel, “A Comprehensive Index for a Sustainable Society,” 231; Jeroen C. J. M. van den Bergh, “Abolishing GDP” (2007).

⁸⁸ *2012 Legatum Prosperity Index Methodology and Technical Appendix*, 3.

⁸⁹ Osberg and Sharpe, “The Index of Economic Well-being: An Overview,” 3, 6.

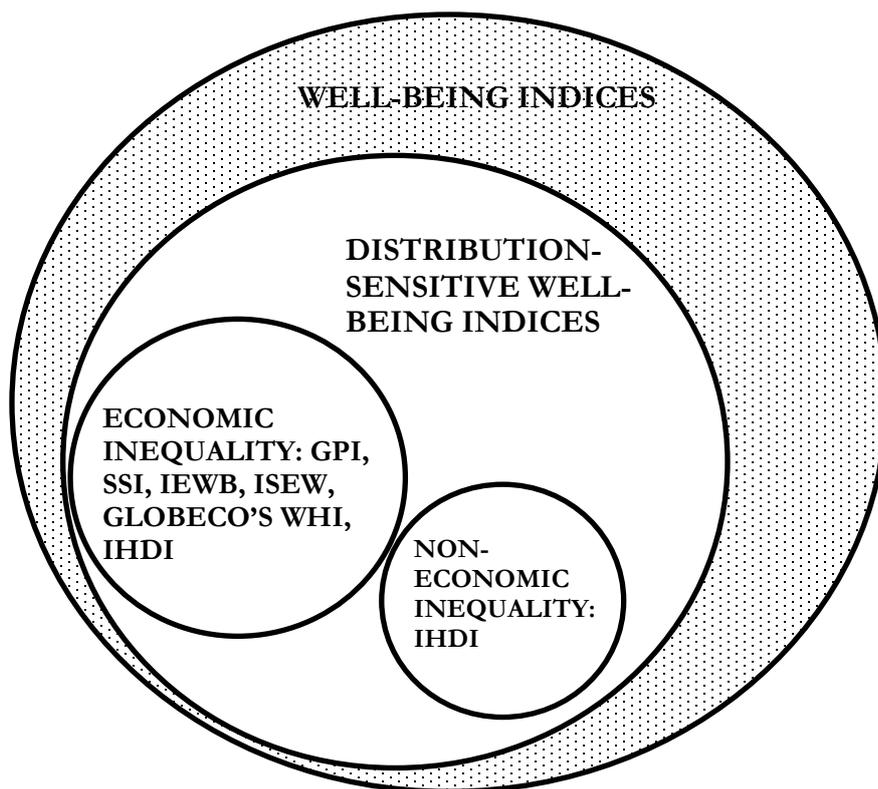


Figure 2. “How do well-being indices measure inequality?”⁹⁰

2.1 Economic Inequality: GPI, SSI, IEWB, ISEW, Globeco’s WHI, IHDI

Economic inequality has proven to be the most widely used indicator of inequality within well-being indices: six from a total selection of nine well-being indices capture economic inequality. Only three indices that measure inequality, the Legatum Prosperity Index (LPI) which measures subjective inequality of opportunity, the Global Gender Gap (GGG) and the Gender Inequality Index (GII) which measure gender inequality, do not include economic inequality in

⁹⁰ World Happiness Index: Why? How? What Results? (June 2010).

<http://www.globeco.fr/public/index.php?a=world-happiness-index>. Accessed: 4.05.2013;

GII Technical Note 1 HDR 2007/2008;

Lawn, “A Theoretical Foundation to Support the Index of Sustainable Economic Welfare (ISEW), Genuine Progress Indicator (GPI), and Other Related Indexes”;

Hausmann, Tyson, and Zahidi, *The Gender Gap Report 2012*;

Thiry, *Beyond GDP*;

Van de Kerk and Manuel, “A Comprehensive Index for a Sustainable Society”;

Alkire and Foster, *Designing the Inequality-Adjusted Human Development Index (IHDI)*; *2012 Legatum Prosperity Index: Methodology and Technical Appendix*.

their measurement at all.⁹¹ Moreover, all of the indices which measure economic inequality calculate it as an indicator through either the Gini coefficient or the Atkinson index. While none of the reports or the methodologies indices included in this thesis' selection do not explicitly state whether they consider income and opportunity or a well-being outcome (inequality of outcome vs. inequality of opportunity), they still seem to have considered it to be adequate evidence of the disparity of well-being. Income equality has been recognized in this sense by the index developers to be sufficient for creating a "level-playing-field" where everyone is fairly competing for their well-being outcomes- a notion that was contested in the previous chapter.⁹²

However, as has been stated in previous chapter, most of the indices vary in the sense 1) how they adjust or weight income inequality sub-indicators in comparison to other indicators and whether they measure it universally or on a group-basis; 2) which type of indicators they use in order to calculate economic inequality. In order to answer the two issues, we have to look at the indices individually.

The SSI (Sustainable Society Index) and Globeco's WHI (World Happiness Index) have chosen to include economic inequality as a sub-indicator, giving it equal weight in comparison to other sub-indicators such as "military expenditures" or "average life expectancy at birth".⁹³ Thus, none of the two indices have given inequality a higher importance among the sub-indicators, giving it the same weight as other sub-indicators. However, while Globeco's WHI has chosen to include economic inequality through the Gini index (a universal measure), the SSI uses a group-based 10%/10% ratio of the wealthiest and poorest.⁹⁴ This means that while Globeco's WHI has chosen a universal measure, the SSI has focused on extreme incomes (poorest and wealthiest).

⁹¹ 2012 Legatum Prosperity Index Methodology and Technical Appendix; Hausmann, Tyson, and Zahidi, *The Gender Gap Report 2012*; GII Technical Note 1 HDR 2007/2008.

⁹² See p. 14

⁹³ World Happiness Index: Why? How? What Results? (JUNE 2010).
<http://www.globeco.fr/public/index.php?a=world-happiness-index>. Accessed: 4.05.2013;

Van de Kerk and Manuel, "A Comprehensive Index for a Sustainable Society."

⁹⁴ Ibid.

The IEWB (Index of Economic Well-being), however, has given the variable “Gini of Income Inequality” a weight of 0,25.⁹⁵ The aforementioned variable and “Poverty Rate and Gap” (poverty intensity) variable with a larger weight of 0,75 make up the sub-indicator “Income Distribution”.⁹⁶ Géraldine Thiry notes that since the authors of IEWB have given a measure of poverty intensity a three times larger weight than for income inequality, they seem to promote John Rawls’ second principle of social justice which states that the conditions for fair equality of opportunity needs to favor the least advantaged.⁹⁷ This means that the authors of the IEWB have given poverty greater significance than inequality.

Nevertheless, the IEWB is different from the methodology of the GPI (Genuine Progress Indicator) and the ISEW (Index of Sustainable Economic Well-being) which are computed with the use of personal consumption expenditures and then weighted by an index of income inequality in order to “reflect the social costs of inequality and diminishing returns to income received by the wealthy”.⁹⁸ The law of diminishing returns states that when the use of one input (income in this case) increases while holding all other inputs constant (for example life expectancy, housing and life expectancy), after a certain degree, its marginal physical product would decrease (higher income becomes less useful).⁹⁹ This relates to the fact that a poorer person will witness greater betterment of their well-being by a small increase in income while the same incremental increase for a wealthy individual would entail a smaller boost.

The Inequality-Adjusted HDI (IHDI) is a modified inequality sensitive version of the highly appreciated but likewise criticized Human Development Index (HDI) which is part of the “capabilities approach” family of indices (such as the Human Poverty Index) developed by Amartya Sen and Mahbub ul Haq in 1990. Since 2010 the Human Development Index is an

⁹⁵ Osberg and Sharpe, “The Index of Economic Well-being: An Overview,” 14.

⁹⁶ Ibid.

⁹⁷ Thiry, *Beyond GDP*, 14–15; Rawls, *A Theory of Justice*, 302.

⁹⁸ John Talberth, *Sustainable Development and the Genuine Progress Indicator: An Updated Methodology and Application in Policy Settings*, Summary (Center of Sustainable Economy, October 17, 2012), 1–2.

⁹⁹ Satya P. Das, *Microeconomics for Business* (Sage Publications Pvt. Ltd, 2007), 185.

aggregate measure of three dimensions: “education” which is measured through mean years of schooling and expected years of schooling, “health” which is accounted for with the indicator “life expectancy at birth”, and “standard of living” which is measured with Gross National Income (GNI) per capita.¹⁰⁰ These dimensions are meant to constitute a combination of Sen’s “capabilities” and “functionings” which could be compared between countries.

The creators of the Genuine Progress Indicator, the Index of Economic Well-being and the Globeco World Happiness Index have opted for the use of the Gini index of income inequality. As stated before in the Theoretical Framework, this measure satisfies the Pigou-Dalton Transfer Principle which states that a transfer of income from a richer person to a poorer person should contribute to greater income equality while a transfer from a poorer person to a richer person should contribute to greater income inequality.¹⁰¹ However, as a note of criticism, even though income inequality data for the Gini index is generally more easily accessible than data on other inequalities, it does not represent net worth, as disparities in overall wealth inequality can be much higher than between incomes. This can be exemplified by the United States, where in 2009 the top 1% of income earners received 17.2% of all incomes but the top 1% of households owned 35.4% of all privately held wealth.¹⁰² So far none of the observed well-being indices have measured economic inequality in terms of net worth (wealth).

The IHDI is based on the methodology proposed by Foster, Lopez-Calva and Szekely that makes use of the Atkinson’s measure of inequality.¹⁰³ In the case of IHDI, disposable household income per capita or household consumption per capita imputed on an asset index are adjusted for inequality by deducting its average value according to its level of inequality in a

¹⁰⁰ *Human Development Report 2010: The Real Wealth of Nations: Pathways to Human Development*, 15.

¹⁰¹ Dalton, “The Measurement of the Inequality of Incomes.”

¹⁰² G. William Domhoff, “Who Rules America: Wealth, Income, and Power,” *Sociology Dept., University of California at Santa Cruz*, accessed May 3, 2013, <http://www2.ucsc.edu/whorulesamerica/power/wealth.html>.

¹⁰³ James Foster, Luis Lopez-Calva, and Miguel Szekely, “Measuring the Distribution of Human Development: Methodology and an Application to Mexico,” *Journal of Human Development and Capabilities* 6, no. 1 (2005): 5–25.

country.¹⁰⁴ However, at the same time the three main dimensions of the HDI are kept with equal weights. Foster *et al.* report that in the case of the three HDI dimensions the IHDI adjusts for inequality, income is usually the most affected by a correction as it is the only one that does not have a natural upper bound such as in the case of health and education- it is technically possible that all of the income in a country is accumulated to one person while inequality of this sort could never happen in the case of educational attainment and life expectancy.¹⁰⁵ As we can see, most of the indices have chosen to account for economic inequality with the Gini coefficient of income. However, as economic inequality is not sufficient to control for the distribution of well-being in populations, in the next sub-chapters we will move to the non-economic clusters of well-being such as education and health inequality.

2.2 Educational Inequality: IHDI

The inclusion of educational inequality can be considered the most important step in the measurement of well-being. A previous study on Mexico has shown that education outcomes could be significantly lower when adjusted for inequality.¹⁰⁶ The same has proven to be true in the case of South Asia and the Arab States where losses due to education inequality have on average amounted to 50% - 57% of their original HDI levels. The smallest losses have been on average noted in developed countries and the largest in developing countries.¹⁰⁷ Hence the measurement of educational inequality would matter a lot for rankings made for developing countries.

From a theoretical perspective, education plays an important role in Roemer's "level-the-playing-field principle" where education is an important input in order to facilitate a good life to which access should be equalized.¹⁰⁸ In this model, education is not only an instrument for

¹⁰⁴ *Human Development Report 2010: The Real Wealth of Nations: Pathways to Human Development*, 218.

¹⁰⁵ Foster, Lopez-Calva, and Szekely, "Measuring the Distribution of Human Development," 23.

¹⁰⁶ *Ibid.*, 24.

¹⁰⁷ *Human Development Report 2010: The Real Wealth of Nations: Pathways to Human Development*, 88.

¹⁰⁸ Roemer, *Equality of Opportunity*, 1998, 6.

earning income but also increases a person's self-esteem by allowing the person to use his skills fully which can be connected to increased well-being beyond in terms of income.¹⁰⁹ The same applies to Sen's "capability approach", as educational attainment could be considered one of the most important "capabilities" that allows a person to reach greater "functioning"- the constitutive elements of a person's well-being.¹¹⁰ As part of the "capabilities approach" education can be considered a factor that greatly influences a person's "functionings", his being and doings, by allowing the person to enjoy greater self-respect and position in a society.

Only one well-being index, the Inequality-Adjusted Human Development Index, was recognized by the thesis to measure educational inequality. In line with the standard HDI, IHDI consists of three dimensions which have been given equal weight: education, health and income.¹¹¹ The IHDI is measured in three steps: first of all, inequality of education is measured with the variables "years of schooling" and "household income/consumption", then secondly, the HDI data on educational attainment is adjusted for inequality, and thirdly, the educational dimension is adjusted for to inequality-related losses.¹¹² In the case of perfect equality the HDI aggregate of a country stays the same but when there is an existence of educational inequality (or income and health for that matter), the country drops in the level of its original HDI. Hence, as there are no perfectly equal societies in the world, all states witness a loss in their traditional HDI- the only question is, by how much.

Although IHDI is distinctive in the sense that it measures educational inequality, it accounts for education outcomes only with the standard HDI variable of "years of schooling" (maximum years of schooling per person). This variable is easily accessible as most countries in the world have data for it but at the same time not precise enough as are variables like the

¹⁰⁹ Ibid., 61.

¹¹⁰ Sen, *Inequality Reexamined*, 39–41.

¹¹¹ *Human Development Report 2010: The Real Wealth of Nations: Pathways to Human Development*, 218.

¹¹² Ibid.

“distribution of workforce by education level” used by Abdelbaki.¹¹³ IHDI does not control for inequality due to an individual’s free choice to study fewer years, the chance that an individual could be learning disabled or affected by exogenous factors outside state policy. As the IHDI does not control for effort levels, it contradicts Roemer’s idea that people should be equally compensated for their differential abilities but not for their differential effort that is spent on gaining education. Roemer wishes that educational resources should be invested so “regardless of type, all children who expend the same effort will have the same adult earning capacity”.¹¹⁴ The IHDI, however, is not able to make sure whether children’s lack of schooling is due to the failing of the state or the student. However, in the case of very high inequality of years of schooling, one can make the case that it is very unlikely the general fault of the students.

2.3 Health Inequality: IHDI

Now we will move to the issue of health inequality. It can be considered an issue of both the (in)equality of outcome and opportunities, since a good and healthy life is both an integral part of an individual’s well-being but it can also provide him or her with equal opportunities for increased well-being. Hicks notes that significant disparities exist in the life-span of individuals, “ranging from infants who die at birth or before age one, to persons who die at ages over 100 years (Table 2).¹¹⁵ However, as was the case concerning education inequality, IHDI is the only well-being index that includes health inequality into its measurement- other indices either dismissed health or included an indicator of average population life expectancy. Likewise, as was with education inequality, the IHDI takes the health dimension of the HDI and discounts its health dimension (the variable “life expectancy from birth”) for losses due to inequality.¹¹⁶ The health data is derived from UNDESA (2009d) which provides a distribution of mortality rates

¹¹³ Abdelbaki, “An Analysis of Income Inequality and Education Inequality in Bahrain.”

¹¹⁴ Roemer, *Equality of Opportunity*, 2000, 60.

¹¹⁵ Douglas Hicks, “The Inequality-adjusted Human Development Index: A Constructive Proposal,” *World Development* (1997): 1289.

¹¹⁶ *Human Development Report 2010: The Real Wealth of Nations: Pathways to Human Development*, 88.

and average age at death across age intervals (0–1, 1–5, 5–10, ... , 85+) which is then used to assess inequality in a country with the help of Atkinson’s inequality measures.¹¹⁷

According to the IHDI in 2010, Sub-Saharan Africa witnessed the largest loss of HDI due to health inequality: When health inequality was taken into account, a decrease of 45% was observed in the HDI health dimension.¹¹⁸ A study measuring IHDI in the municipalities of Mexico projected HDI outcomes of life expectancy were to decrease by 0.7% due to distributional issues.¹¹⁹ However, inequality related losses in HDI were observed to be much higher in other HDI dimensions (income and education) than health, meaning that health seems to be less affected by inequality than education and income. This is mostly due to the fact that, as has been previously stated in this thesis, health has a clearer upper bound (maximum achievable life expectancy in this case), which is for example not the case with income (which can have a more unequal distribution than health).

Health inequality along with educational inequality can be considered as the most vital clusters of non-economic inequality as they take into account issues which purely economic means are not able to. Moreover, education and health are two of the main components of well-being that can impact a person’s livelihood. As can be seen in Table 2, countries can suffer under considerable amount of health inequality, ranging from 0.039 in Japan and 0.478 in Burundi. Sixty percent of all births in developing countries take place without any health professionals present and 20% of the population lacks literacy, while certain parts of the society can afford the best healthcare in the world and education on the level of North-American countries.¹²⁰ Indices should be able to capture these issues.

2.4 Gender Inequality: GGG, GII, SSI

¹¹⁷ Ibid., 218.

¹¹⁸ Ibid., 88.

¹¹⁹ Foster, Lopez-Calva, and Szekely, “Measuring the Distribution of Human Development,” 25.

¹²⁰ Kevin Watkins, *Human Development Report 2005: International Cooperation at a Crossroads: Aid, Trade and Security in an Unequal World*, Human Development Report (New York, New York: UNDP, 2005), 6, 337.

Gender inequality has been taken into account by three well-being indices. Firstly, we'll look at the GGG (Global Gender Gap Index), published annually since 2006 by the World Economic Forum, which takes into account gender inequality in terms of four pillars of issues such as “economic participation and opportunity”, “educational attainment”, “health and survival” and “political empowerment”.¹²¹ The second index is the GII (Gender Inequality Index), introduced by UNDP in their 2010 Human Development Report as a successor to the heavily criticized Gender Development Index and the Gender Empowerment Index. The GII measures gender inequality within five sub-indicators: “maternal mortality”, “adolescent fertility”, “parliamentary representation”, “educational attainment (in secondary education and above)” and “labor force participation”.¹²² With the use of the aforementioned five indicators, the GII calculates losses in the HDI distribution due to gender inequality.¹²³ The third index is the SSI (Sustainable Society Index) which includes the sub-indicator “gender equality” which is basically the GGG (Global Gender Gap Index) borrowed to be a part of the SSI's sub-indicator list. Hence the SSI will be analyzed as part of this sub-chapter since it makes use of the GGG.

Essentially, only two different methods of measuring gender inequality as part of a well-being index have been established: the methodologies of the GGG and the GII (the SSI uses the GGG as an indicator). The Gender Empowerment Measure (GEM) and the Gender-related Development Index (GDE), both proposed in 1995, have been left out of this analysis as they have been considered outmoded after the 2010 release of the reformed Gender Inequality Index which was meant to address criticism related to the GDE and GEM.¹²⁴

The three indices, GGG, GII and the SSI are similar in the sense that all of them measure gender inequality in terms of outcomes such as economic empowerment, education and health outcomes but also labor market participation rates. The GGG, for example, does include the

¹²¹ Hausmann, Tyson, and Zahidi, *The Gender Gap Report 2012*, 4.

¹²² *Human Development Report 2010: The Real Wealth of Nations: Pathways to Human Development*, 90.

¹²³ *Ibid.*, 92.

¹²⁴ *Ibid.*, 90.

dimension “Economic Participation and Opportunity” in its methodology, but the opportunity is meant here in terms of economic outcomes (e.g. ratio of female professional and technical workers over male value) and not in terms of meritocracy as espoused by Stuart.¹²⁵ The GII score is higher when inequalities in various complimentary dimensions such as “empowerment”, “labor market” and “reproductive health” correlate with each other, meaning that more inequality exists among all dimensions.¹²⁶ The GII is more methodologically robust than GGG as it is association sensitive. This means that it captures possible overlap between the dimensions.¹²⁷ This can be considered one of the strongest perks of the GII. As such, when one wishes to get a better idea of gender inequality, the GII is probably the strongest methodologically.

2.5 Subjective Inequality: LPI

The present thesis, however, found no trace of well-being indices that include perceived inequality of outcome as part of their measurement.¹²⁸ Well-being indices that measure happiness/subjective well-being but do not adjust it for perceived inequality such as the Happy Planet Index, which only accounts for “experienced well-being” (subjective well-being) among its two other dimensions (life expectancy at birth and ecological footprint per capita), should fall under the strongest criticism as many of the countries at the top of its 2012 ranking are Latin American countries such as Costa Rica, Columbia and Belize which are not only known for high income inequality but also tend to exhibit high levels of happiness inequality.¹²⁹

¹²⁵ Hausmann, Tyson, and Zahidi, *The Gender Gap Report 2012*, 5.

¹²⁶ *Human Development Report 2010: The Real Wealth of Nations: Pathways to Human Development*, 90.

¹²⁷ Ibid.

¹²⁸ For well-being indices that incorporate average subjective life satisfaction, see NEF-s Happy Planet Index

¹²⁹ Abdallah, S., Michaelson, J., Shah, S., Stoll, L., & Marks, N. *The happy planet index: 2012 report: A global index of sustainable well-being*. London: New Economics Foundation (NEF). 2012;

Jan Delhey and Ulrich Kohler, “Is Happiness Inequality Immune to Income Inequality? New Evidence through Instrument-effect-corrected Standard Deviations,” *Social Science Research* 40, no. 3 (May 2011): 749.

The only observed well-being index to take into account any type of subjective inequality is the Legatum Prosperity Index which is produced by the Legatum Institute.¹³⁰ The index aims to measure well-being/prosperity among eight equally weighted dimensions such as “economy”, “governance”, “education”, “health”, “safety and security”, “personal freedom”, “social capital” and “entrepreneurship and opportunity” which consist of several sub-indicators that have been determined to be important for well-being outcomes by regression analysis.¹³¹ The latter dimension, “entrepreneurship and opportunity”, includes the variable “perception that working hard gets you ahead” which is meant to determine access to opportunity and level of subjective meritocracy- whether citizens believe that it is possible in their country to get ahead by hard work as opposed to favoritism.¹³² For example, Gallup World reports that in 2011 among European countries the citizens of Germany were the most likely and the citizens of Romania were least likely to say that “people in this country get ahead by working hard”.¹³³ This, however, does not show a society’s relative inequality but its level of perceived fairness. It shows whether citizens consider possible unequal distributions of wealth in their country fair or not- as was stated in the Theoretical Framework, it is possibly not the most practical way looking at inequality and should be perhaps ignored as part of objective well-being indices.

This survey can be related to Roemer’s conceptualization of “equality of opportunity” which consists of the “non-discrimination principle” and the “level-the-playing-field principle”, where people are given equal chances since the possible occupancy of a job position should be judged only by “attributes relevant for the performance of the duties of the position”.¹³⁴ The questionnaire “does working hard get you ahead in this country?” satisfies Roemer’s concept by measuring whether individuals consider the playing field level/nondiscriminatory and to which

¹³⁰ Mick O’Leary, “Prosperity Index Defines National Well-Being,” *Information Today* 25, no. 1 (January 2008): 35.

¹³¹ *A Unique Inquiry into Wealth and Wellbeing: The 2012 Legatum Prosperity Index*, 34–36.

¹³² *Ibid.*, 39.

¹³³ Gallup World. <http://www.gallup.com/poll/153224/europeans-believe-ahead-hard-work.aspx>.

Accessed: 30.04.2013

¹³⁴ Roemer, *Equality of Opportunity*, 1998, 1.

extent individuals agree that job rewards in their countries are based on a person's actual work performance and not by some external factors such as nepotism.¹³⁵

In this chapter we found out that most well-being indices do not control for inequality. "Economic inequality" has proven to be the most popular type of inequality measured by well-being indices and within this cluster the Gini index has found the most use. Among the non-economic inequality clusters "educational inequality" and "health inequality" are difficult to capture but not impossible. Gender inequality is an important type of inequality to control for and the GII (Gender Inequality Index) has proven to be the most effective measure for gender inequality as it captures the overlap between different dimensions.

¹³⁵ Gallup World. <http://www.gallup.com/poll/153224/europeans-believe-ahead-hard-work.aspx>. Accessed: 30.04.2013

Chapter 3 – Discussion

Three main points have become clear in the previous chapters. Firstly, a large majority of universally applicable well-being indices do not account for within country inequality at all. This group includes indices such as the Happy Planet Index, the OECD Better Life Index, the standard Human Development Index, the Sustainable National Income index and the Satisfaction with Life Index that include sub-indicators which are based on an average and are not distribution-sensitive.¹³⁶ If the indices do not account for any type of distributional issues, no matter whether as outcomes or opportunities, then they are bound to miss the larger picture of the state of world well-being. For instance, hypothetically in the case of a country where an elite class constitutes only 10% of the whole population but possesses 60% of all the wealth, lives two times longer than the lower 10% and gains better access to higher levels of tertiary education while a large size of the population does not have access to secondary education and has the life expectancy of 35 years, could still rank quite high in the country ranking of a well-being index. This happens because that index accounts for the mean of a sub-indicator. This can be noticed in the case of the Happy Planet Index (HPI). Its ranking of countries does completely differ from average measures such as GDP *per capita* or HDI, but many of the highest ranking countries in HPI's list are known to be extremely unequal (as shown in chapter Chapter 2).

Secondly, the majority of the well-being indices which measure inequality (six out of nine), however, focus mainly on economic well-being (see Table). This list includes indices such as the GPI (Genuine Progress Indicator), the SSI (Sustainable Society Index), the IEWB (Index of Economic Well-being), the ISEW (Index of Sustainable Economic Well-being) and Globeco's World Happiness Indicator (Globeco's WHI). As has been referenced before from the reports and methodologies of these indices, all of them aim to go beyond a purely economic definition of

¹³⁶ "OECD Better Life Index.";

Abdallah, S., Michaelson, J., Shah, S., Stoll, L., & Marks, N. *The happy planet index: 2012 report: A global index of sustainable well-being*. London: New Economics Foundation (NEF). 2012;

Kuik, *Sustainable National Income (SNI)*; White, "A Global Projection of Subjective Well-being: A Challenge To Positive Psychology."

well-being (such as GDP) but do not go beyond economic inequality. One could claim that this is due to a lack of data on inequalities in non-economic dimensions but this has not proven to be the case as many studies have already produced robust methods, measures or indicators for it.

For example, among newer studies on education inequality that could be used in the service of modern well-being indices, Benaabdelaali, Hanchane and Kamal developed a longitudinal dataset of education inequality for 146 countries from 1950-2010.¹³⁷ In 2012 Abdelbaki released an article on educational inequality in Bahrain with the variable “distribution of work force by educational level” which could be measured in other Middle-Eastern or developing countries.¹³⁸ Health inequality has also been to a large extent neglected by inequality indices (see Table), although, it plays an important role for the well-being of a country. Research about the effect of income inequality on health outcomes (income and health inequality have either a non-linear relationship, as demonstrated by Andrew Leigh or other factors could be at play as shown by Neil Craig) has also sparked interest in the measurement of health inequality – data gathering has grown by leaps and bounds thanks to the work done by the UNDP and the World Bank.¹³⁹ Guidelines for the measurement of health inequality were published already in 1991 by Adam Wagstaff, Pierella Paci and Eddy van Doorslaer and a more comprehensive study by Anand *et al.* in 2001.¹⁴⁰ The measurement of gender inequality has become more common and a lot of data exists on it, due to research done by UNDP for the creation of the GII and the Gender Development Index (GDI) prior to GII. As can be seen, indices primarily measure economic inequality of well-being and have not switched to measuring non-economic inequality. This demonstrates that there still is room for improvement among well-being indices.

¹³⁷ Benaabdelaali, Hanchane, and Kamal, “Educational Inequality in the World, 1950-2010.”

¹³⁸ Abdelbaki, “An Analysis of Income Inequality and Education Inequality in Bahrain,” 679.

¹³⁹ Norman Daniels, *Just Health: Meeting Health Needs Fairly*, 1st ed. (Cambridge University Press, 2007), 97; Davidson R. Gwatkin, “12.4 Reducing Health Inequalities in Developing Countries,” in *Oxford Textbook of Public Health*, ed. Roger Detels et al. (Oxford University Press, 2009); Leigh, Jencks, and Smeeding, “Health and Economic Inequality,” 6; Craig, “Exploring the Generalisability of the Association Between Income Inequality and Self-assessed Health,” 2486.

¹⁴⁰ Wagstaff, Paci, and van Doorslaer, “On the Measurement of Inequalities in Health”; Anand et al., “Measuring Disparities in Health: Methods and Indicators.”

Thirdly, the most comprehensive index among the indices that account for inequality has been the Inequality-Adjusted Human Development Index (IHDI) which adjusts the dimensions of the traditional Human Development Index for inequality of incomes, health and education.¹⁴¹ IHDI was also the only well-being index that measured health and educational inequality while other indices chose to ignore it. Inequality was not added as a separate indicator into IHDI but the existing HDI dimensions were modified according to the level of corresponding inequality. The IHDI, for example, estimates that while high within country inequalities are correlated with lower HDI levels, this relationship is stronger with disparities in education and health than with income inequality.¹⁴² This provides another reason to measure non-economic inequality. Even though inequality outcomes could to a certain extent estimate the inequality of opportunity, the IHDI is a pure measure of well-being outcomes, as it does not take into account potential inequality of opportunity. Moreover, IHDI does not weight for gender inequality since a separate index (GII) was introduced for that. Any future indices that aim to measure human well-being should apply the same methodology where average indicators should be adjusted for possible inequalities.

3.1 A Proposal for Future Well-being Indices

This thesis will make a proposal for future well-being indices which wish to give a greater insight into global well-being that is measured beyond GDP *per capita*. Further to the arguments provided in the previous chapters, a contemporary well-being index should take into account three main points:

- 1) In addition to economic inequality, future well-being indices should adopt distribution-sensitivity. Firstly, as has been discussed previously in the thesis, income inequality may not be the most accurate representation of the inequality of well-being, especially, if one considers the fact that most contemporary well-being indices reject purely economic means as a sign of human

¹⁴¹ Hicks, "The Inequality-adjusted Human Development Index: A Constructive Proposal."

¹⁴² *Human Development Report 2010: The Real Wealth of Nations: Pathways to Human Development*, 58.

well-being. Secondly, authors such as Will Wilkinson have confronted the income inequality debate by claiming that while income inequality is on the rise in the developed world, other non-economic inequalities such as happiness inequality have actually declined and while the income disparity has increased, this has not affected people's standard of living.¹⁴³ By including the measurement of non-economic inequality into global well-being indices, they could give better insight into whether this is true or not. Indices should take into account the distribution of various dimensions such as health and education across the population. Thirdly, the rankings/outcomes of inequality-sensitive indices would capture distributional issues that could noticeably change their rankings: the 2006 Human Development Report noted that taken separately, Shanghai province in China would be on the same HDI level as Greece, while some West-Chinese provinces would rank on the same level as African countries.¹⁴⁴ The importance of a non-economic well-being distribution should become the main theoretical foundation of future well-being indices. All well-being indices should acknowledge non-economic inequality of well-being.

2) The index should be association-sensitive and capture possible overlap of education, health and gender inequalities. Something the IHDI, for example, does not account for yet.¹⁴⁵ This issue is called association-sensitivity, when an index is able to demonstrate that same individuals endure multiple inequalities, and needs to be solved. Among the indices part of the analysis, the GII for instance is association-sensitive, which means that it is able to present "joint deprivations": "dimensions are complementary and that inequality in schooling tends to be correlated with, say, access to work opportunities and maternal mortality".¹⁴⁶ This would provide a better outlook on well-being.

¹⁴³ Will Wilkinson, "Thinking Clearly About Economic Inequality," *Cato Institute: Policy Analysis* no. No. 640 (July 14, 2009).

¹⁴⁴ *2006 Human Development Report*, Human Development Reports (New York and Oxford: UNDP, 2006), 271.

¹⁴⁵ *Human Development Report 2010: The Real Wealth of Nations: Pathways to Human Development*, 90.

¹⁴⁶ *Ibid.*

3) The index should make use of the attributes of Atkinson family of inequality measures which give a stronger weight to transfers at the lower end of the distribution. The Gini index, for example, puts more weight to transfers at the center of the distribution.¹⁴⁷ This would emphasize deprivation at the lower end of the distribution, which is in accordance with part (a) of Rawls' second principle of justice: social inequalities must be arranged so that they are greatest benefit of the least advantaged.¹⁴⁸ This is based on Rawls' notion that the adversity of a few would not be used as justification for the advantage of the many.

4) Most importantly, the index needs to be based on a strong set of data. Success in this regard has been the creation of a Gini of world education outcomes and studies that have looked into health inequalities in multiple countries.¹⁴⁹ Data on individual health outcomes in the majority of countries is, however, limited. Peter and Evans who regard health inequality to be one of the primary injustices in societies, consider the fact that data on individual health outcomes is missing in many countries as another indicator of general injustice in a world where "people do not count".¹⁵⁰ Moreover, at the moment, child mortality data which has been used to measure health inequality in most parts of the world, does not exist for all developing countries- one of the most realistic approaches has been to rely on the means of the distribution of life expectancy for different age cohorts of a population.¹⁵¹ As can be seen, data on health inequality is in need of a serious update and assistance is expected to come from the WHO-led World Health Survey that has been this far been conducted in 80 countries.¹⁵² This could be the main limitation of this proposal as data does not exist for all countries yet. Nevertheless, that does not mean that it should not be collected for use in future well-being indices.

¹⁴⁷ Atkinson, "On the Measurement of Inequality," 256.

¹⁴⁸ Rawls, *A Theory of Justice*, 266.

¹⁴⁹ Benaabdelaali, Hanchane, and Kamal, "Educational Inequality in the World, 1950-2010."

¹⁵⁰ Fabienne Peter and Timothy Evans, "Ethical Dimensions of Health Equity," in *Challenging Inequities in Health: From Ethics to Action: From Ethics to Action*, ed. Timothy Evans, Margaret Whitehead, and Finn Diderichsen (Oxford University Press, 2001), 46.

¹⁵¹ Alkire and Foster, *Designing the Inequality-Adjusted Human Development Index (IHDI)*, 26.

¹⁵² WHO: World Health Survey. <http://www.who.int/healthinfo/survey/en/>. Accessed: 12.05.13

The situation is not, however, too challenging. Currently, inequality data for variables “years of schooling” and “income inequality” is available from the Luxembourg Income Study, the EU Statistics on Income and Living Conditions, the United Nations Children’s Fund Multiple Indicator Cluster Surveys, the Measure DHS, the UN University’s World Income Inequality Database and the World Bank’s International Income Distribution Database.¹⁵³ Data on the inequality of the distribution of life expectancy can be taken from the database of the United Nations’ Population Division.¹⁵⁴

3.2 Limitations of the proposal

First of all, the proposal is based on the notion that inequality is harmful to societies and should be averted as much as possible. As such, the proposal does not take into account arguments against equality and egalitarianism by authors such as Michael Huemer.¹⁵⁵ However, empirical studies have also shown that economic inequality is known to have strong negative effects on the socio-economic sphere of human development.¹⁵⁶ Moreover, economic inequality does not however, always correlate with disparities in terms health.¹⁵⁷ This thesis finds that inequalities in various dimensions such as health, education and gender have a detrimental effect on human well-being and should be of concern, not matter which type of definition the well-being index uses. Thus, inequality should matter irrespective of which type of economic or welfare theory the well-being index draws upon.

¹⁵³ Jeni Klugman, Francisco Rodríguez, and Hyung-Jin Choi, *The HDI 2010: New Controversies, Old Critiques*, Human Development Research Papers (2009 to present) (Human Development Report Office (HDRO), United Nations Development Programme (UNDP), 2011), 280.

¹⁵⁴ Ibid.

¹⁵⁵ Michael Huemer, “Non-Egalitarianism,” *Philosophical Studies* 114, no. 1–2 (2003): 147–171.

¹⁵⁶ R. G Wilkinson, “Socioeconomic Determinants of Health: Health Inequalities: Relative or Absolute Material Standards?,” *BMJ* 314, no. 7080 (February 22, 1997): 591–591;

Morgan Kelly, “Inequality and Crime,” *The Review of Economics and Statistics* 82, no. 4 (November 1, 2000): 530–539;

William Easterly, “Inequality Does Cause Underdevelopment: Insights from a New Instrument,” *Journal of Development Economics* 84, no. 2 (November 2007): 755–776;

Robert J. Barro, *Inequality, Growth, and Investment*, NBER Working Paper (National Bureau of Economic Research, Inc, 1999).

¹⁵⁷ Costa-Font and Hernández-Quevedo, “Measuring Inequalities in Health,” 203.

Secondly, the proposal does not take into account the (in)equality of opportunity as has been stated in the previous chapter, as it is considerably difficult to measure on a global scale. The proposal pertains to the inequality of outcome unless one considers the equalization of health and education an opportunity issue- a reasonable point of view.

Thirdly, the proposal does not take into account Dworkin's concern of an individual's level of effort as it is very challenging to control for. As part of the research for this thesis, no hints were found of measures that would be able to take would be effort-sensitive. This would be the strongest drawback in relation to educational (or health) inequality. One could make the argument that certain individuals might influence the outcome of the measure by preferring not to study. This thesis, however, suspects that in the case of high inequality, lack of effort due to preference would play a non-existent role in the overall score.

Conclusion

The thesis looked at the way universal well-being indices approach distributional issues. The first chapter explained theoretical underpinnings behind inequality, the issues related to the definitions and focal points in equality. It was concluded that while the literature on equality has focused on the debate between outcomes and opportunities, most of the scholarship on measuring inequality intended to capture outcomes. Subsequently, the first chapter introduced the clusters of inequality (organized into sub-chapters) which were based on the practical observation how contemporary well-being indices measured inequality. Based on the literature five clusters of inequality were developed: “economic inequality”, “educational inequality”, “health inequality”, “gender inequality” and “subjective inequality”. The thesis argued that “educational inequality”, “health inequality” and “gender inequality” should be considered the most important types of inequality that indices ought to measure as they have the strongest effect on human well-being and would be most affected by changes in inequality. Indicators which measure “subjective inequality” were not considered to be very dependable as the results can be influenced by a multitude of factors such as cultural and social preferences outside the scope of the intended measure.

The second chapter (the empirical chapter) focused on the currently in use well-being indices. Firstly, it was revealed that a significant number of well-being indices were not distribution-sensitive, since they did not take into account inequality of well-being. Secondly, it turned out that most of the indices that were distribution-sensitive, measured only economic inequality. This was mainly accomplished with the help of either the Gini coefficient or the Atkinson measure of inequality. The Atkinson measure of inequality is a better indicator of inequality extremes, while the Gini index is best for portraying inequality across the whole distribution. Most of all, the Gini coefficient satisfies the Pigou-Dalton principle which states that a transfer of income from a richer person to a poorer person should contribute to greater

income equality.¹⁵⁸ The only index to control for educational and health inequality, two of the most important issues in well-being, was the Inequality-Adjusted Human Development Index (IHDI), a feat unchallenged by other indices. The only indices to measure gender inequality were the Gender Inequality Index (GII) and Global Gender Gap (GGG) among which the GII was found to be methodologically convincing as it is association-sensitive: GII takes into account overlapping disparities between dimensions such as “empowerment”, “labor market” and “reproductive health”. Subjective inequality was measured by the Legatum Prosperity Index which aims to capture the level of meritocracy in a society by method of survey. The IHDI was found to be the most comprehensive association-sensitive index as it accounted for income, education and health inequality for the whole population of a country.

Chapter three included a proposal for future well-being indices, no matter whether they adhered to Sen’s “capability approach”, Roemer’s “level-the-playing-field principle” or Rawls’ two principles of justice. The thesis argued that future indices should adopt distribution-sensitivity and control for inequality within key non-economic well-being dimensions such as health and education. This would be further strengthened by association-sensitivity as when the overlap between different dimensions is captured. Moreover, such as the Atkinson measure of inequality, future well-being indices should put more weight to transfers at the lower end of the distribution. This would be in line with Rawls’ second principle of justice that social inequalities have to be to the advantage of the most disadvantaged. The third chapter makes the argument that, while non-economic well-being has suffered from a lack of data, the situation has, in fact, been improving and it is possible now to develop indices that are sensitive to the non-economic distribution of the population. Strides made by the UNDP and the developing team of the IHDI have been the most successful in this respect but other indices should also take note of the issue of non-economic distribution. Common indices of human well-being that address various forms of distributional inequality would enable national governments and international organizations to

¹⁵⁸ Dalton, “The Measurement of the Inequality of Incomes.”

measure and compare human well-being more comprehensively across states and on a global scale.

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