Introduction
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The past decade has been characterized by a considerable flourishing of new concepts regarding individual and social well-being which have been investigated theoretically and empirically. The impetus for this new research came from increasing demand from both policy makers and society for measures of progress that went beyond the analysis of production and, at the same time, better datasets allowing individuals and households to be followed over their life courses. The aim of this Handbook is to provide extensive surveys of many of the recent themes that have been developed in this literature. It does so by offering a unique collection of less-traditional measures of well-being that are not otherwise easily accessible in a convenient and concise manner. Each topic is covered in two chapters: the first contains the theoretical approaches behind the indices; the second focuses more on empirical findings and issues related to the application of the measures.

When I accepted the invitation to edit the Handbook I thought that having two groups of experts write on the same subject was a good idea that, in addition to the choice of the topics, would have rendered the Handbook unique. I later regretted it: it was difficult to receive all the paired chapters from very busy experts who had non-stationary preferences. I hope the reader appreciates this time-consuming effort, which took four years to bear fruit.


A few lines follow to explain the choice and order of the topics. The Handbook starts by going beyond gross domestic product (GDP), in acknowledgement of the fact that production is not an appropriate indicator of individual and social well-being. Since its introduction, GDP has been extensively used to measure welfare, although it was never designed for this purpose. Criticism of its use as a measure of well-being, and attempts to overcome some of its most obvious limitations, first appeared in the 1970s, but it was not until the 1990s that viable alternatives to this approach began to emerge, stemming from pioneering work by leading welfare economists. A remarkable example of this new trend was the introduction of the Human Development Index (HDI) by the United Nations, which for the first time combined per capita income with non-income measures, such as life expectancy and education. With the Great Recession, a renewed emphasis has been put on the consequences of inequality and the distribution of resources; in this context,
the high GDP growth experienced by many countries in the years preceding the crisis proved emblematic of the limitations of this indicator in reflecting economic and social conditions. The debate over the inadequacy of GDP has stimulated a great number of both national and international initiatives, giving rise to a new individual-centred set of measures and frameworks, some of which are reviewed in the first two chapters of this *Handbook*.

The measurement of human development and human poverty is addressed next: these were the first common efforts of most of the countries in the world to measure the well-being of their populations from multiple angles. The first *Human Development Report* was launched in 1990 and continues to be updated.

However, the issue of multidimensionality is particularly challenging, as it requires a formal review of the axiomatic approach characterizing its theoretical framework. Chapters 5 and 6 of the *Handbook* contain a discussion of the topic. This is accompanied by a review of the measurement of material deprivation, a concept which is closely linked to multidimensional poverty: while the latter accounts for both material and non-material dimensions of well-being, the indices of material deprivation refer to deprivations in the realm of material living conditions only.

The choice to move along to the topic of social exclusion was triggered by my personal view of the latter as persistence in the state of deprivation. The paternity of the term ‘social exclusion’ is usually attributed to René Lenoir (1974), a member of the French Government, who considered that France was threatened with internal disaggregation because of social exclusion. For Lenoir (1974), this term refers to individuals who are excluded from the welfare system because of their inadaptation to our society. At the European level, the concept of social exclusion became the reference paradigm for questions linked to poverty.

The analysis of persistence leads to the chapters on poverty over time. The introduction of a dynamic framework makes it possible to capture the heterogeneity of poverty in terms of individual intertemporal patterns, allowing researchers to discriminate between chronic poverty and transitory poverty, and to give more weight to consecutive poverty spells.

However, the measures of poverty over time illustrated in Chapters 9 and 10 are typically backward-looking. The two topics that follow, vulnerability to poverty and economic insecurity, are more concerned with the anticipation of future events. Although there is no consensus on the formal definition of these forward-looking concepts, empirical evidence reassuringly shows qualitatively similar results across different methods and definitions. Such findings suggest that, despite the future challenges, there already is some scope for public-policy recommendations.

Having tackled various forms of poverty, the *Handbook* then moves on to indicators of non-standard inequalities. While inequality is usually concerned with differences in the distribution of an attribute in the population, relative deprivation and satisfaction measures focus on one-sided differences only, either with respect to richer individuals or with respect to poorer ones. Moreover, differently from inequality, these two concepts do not necessarily refer to a set of individuals, but can also refer to single individuals. The desire to obtain measures of inequality at the individual level has thus contributed to the study of relative deprivation and relative satisfaction. The focus on these two concepts also calls for the introduction of relativist concerns in the theoretical models aimed at explaining...
a wide range of social phenomena. The dedicated chapter reviews the main theoretical models that have been developed that adopt a relativistic specification of utility, thus accounting for the presence of interpersonal comparisons. From a theoretical point of view, the acknowledgement of the role played by interpersonal comparisons requires the reformulation of some well-established concepts in microeconomics, such as those linked to the individual utility function. This process may consequently have important repercussions on the formulation of policy recommendations, for instance by bringing distributive considerations into the formulation of policies aimed at promoting economic growth.

The chapters dealing with social inequality follow. Social inequality is concerned with differences in variables other than income, including health, educational achievement, happiness, access to amenities, and so on, which are also often used to evaluate living standards in society. Although the measurement of inequality with respect to social variables is closely related to the measurement of income inequality, the types of variables under study have generated new measurement challenges. In particular, the chapter deals with ordinal variables and bounded cardinal variables.

Polarization is addressed next. As opposed to inequality, polarization focuses on clusters of individuals forming groups in different parts of a given distribution, particularly at its extremes, and the hollowing-out of the middle class. The interest in polarization can be partly attributed to the existing relationship between inequality and social instability and conflict. It has been widely argued that more polarized societies are more prone to social unrest and tension. While the adoption of inequality measures to empirically investigate this relationship has produced mixed and often inconclusive evidence, polarization indices have typically performed better in explaining episodes of social tension or conflict. From a theoretical point of view, many contributions to the polarization literature have tried to establish a clear distinction between the concept of inequality and that of polarization. As is the case with inequality, the concept of polarization can refer to both income and non-income variables, such as ethnicity or religion. Both income and social polarization are thus addressed in the two dedicated chapters.

Segregation, which is addressed next, is an even broader concept. The multifaceted nature of the concept has thus led to the development of numerous indices. The focus of the theoretical chapter is on axiomatic models. The rationale behind this choice is that the axiomatic approach, by emphasizing common and different properties of the various measures, can help to select the segregation indices that best suit the purposes of the researchers. The empirical chapter attempts to review the empirical literature covering various aspects of segregation: residential segregation by race or income; occupational segregation by gender, race or ethnic group; and school segregation.

The Handbook ends with the more general concepts of diversity and social fractionalization. Diversity can be applied in a variety of contexts. Its conceptualization and measurement have consequently been addressed by a number of disciplines, among which are ecology, biology, sociology and political science. Over the last decade, it has increasingly become an object of interest for economists and other social scientists. This growing interest has been motivated by a number of different concerns, from those for biodiversity and the development of conservation policies, to those for socioeconomic diversity. In particular, the latter is closely related to the concept of social fractionalization, which addresses the partitioning of a given population in different groups according to social attributes, such as language, religion or ethnicity. The empirical literature has focused on
social fractionalization as a further predictor of social conflict, other than polarization. The two concepts capture different aspects of the distribution of a given population with respect to a set of characteristics, and exhibit two major differences. While fractionalization increases with the number of groups in the population, polarization decreases. Moreover, while most measures of polarization account for inter-group distances, indices of fractionalization are generally independent of this dimension. By capturing different aspects of inequality, these two concepts can thus help to explain different instances of social tension and conflict, as the empirical literature seems to suggest.

As briefly summarized above, this *Handbook* offers the reader a comprehensive overview of many measures of individual and social well-being and their applications. It is my hope that this collection will foster further discussion in the common effort to meet the growing demand for a more accurate measurement of these dimensions, which will be at the basis of future economic policies.