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Role of Socio-economic Indicators in Development and Education

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Abstract

Combinations of broad-defined indicators of wellbeing, social harmony, education, etc., have been used to provide comparative assessments of socio-economic conditions in various nations and stimulate policy changes. In this short review we compare conceptual frameworks and actual models based on subjective (social) and objective (analytical) socio-economic indicators. An interplay of subjective and objective indicators is also the basis of an approach for interdisciplinary education of young generations, particularly in nations characterized by ethnic conflicts and/or poor wealth distribution. The interaction between social and economic indicators suggests the need of a more integrated socio-economic outlook.

Keywords: socio-economic indicators, interdisciplinary education, wellbeing, ethnic compatibility, subjective and objective parameters, authentic development, sociological theory

1. Introduction

Socio-economic indicators include statistical evaluations of social harmony, level of education, health, housing conditions, income. Indicators are often a reflection of cultural evolution and therefore it is appropriate to consider them within a conceptual framework. Moreover, indicators are also associated to progress, and help to identify social changes, policies and interventions.

The current operational description of socio-economic indicators includes objective parameters, such as those that describe the level of education and income (e.g., Ph.D., GDP), as well as subjective evaluations, as in the case of happiness or the strength of social ties (Sachs 2012). Selected combinations of normalized indicators are used to assess and compare the socio-economic development of individual countries (Stiglitz et al 2020). Socio-economic indicators have also been used as resources for interdisciplinary education aiming to the cultural evolution of young generations (Ciferri, 2018; Ciferri and Soldi, 2021). A broader outlook includes the elaboration of a new discipline that handles analytical and subjective parameters (Abel 2003, Egidi 2020) and the sociological features of education (Ballantine et al 2021).

In the present note we review the conceptual background supporting the indicators, current models that use indicators in development analysis and our own contribution to the use of indicators as educational resources.

The perspective feature of this review is the emphasis on authentic development that balances social harmony and economic well-being (Goulet 2006), and the quest for a new interdisciplinary discipline having analytical and humanistic bases.

2. Conceptual Background

Important advances in social, educational, and economic areas occurred at the turn of the twentieth century. Some advances that promoted developments in the educational area are highlighted in this section. These advances contributed to stimulate a variety of socio-analyses in several nations, four of these models are highlighted in the subsequent sections.

2.1 Interdisciplinary Education

Although the terms interdisciplinary and multidisciplinary are often used indiscriminately, a significant difference is that multidisciplinary refers to different specialists working together, each within his own areas, whereas interdisciplinary refers to experts in different fields working in one integrated project (Jones 2010). Interdisciplinarity has been pursued by early pedagogists and it is still being introduced in the curricula of modern countries, both at the advanced and elementary level (Mårdm 2021). A recent article discusses how learning, research and interaction promote social capital and new interdisciplinary disciplines (Klaassen 2020). A

new educational approach was recently advocated that includes concepts of economy, sociology, development ethics and the historical evolution of cultures (Ciferri and Soldi 2021).

2.2 Behavioral Economy

From the time of the first book of Adam Smith to recent Nobel Prize winners, economists have tackled the issue of poverty. Camerer (1999) pointed out that Adam Smith advocated in his earliest book the association of personal interests with moral sentiments, whereas such an interplay of economic, moral and psychological concepts was dismissed in his later work. Such a dichotomy appears to have a recurrent character among economists. Behavioral economics was indeed defined by Ogaki and Tanaka (2017) as the study of economics that does not rely on the assumption of the rational, selfish economic man. Banerjee and Duflo (2012) suggested that anti-poverty policies would fail unless economic aids were tailored to the lives and expectations of the poor. Tailoring economic aid to the expectation of the poor is definitively a subject that currently attracts behavioral economists. However, the real problem is "understanding", not just addressing, human expectations (Ciferri 2019). An even closer association of the analytical approaches of economists and the humanistic approaches of sociologists has been advocated, but not widely implemented in the educational area (Egidi 2020, Lavecchia et al 2014).

2.3 Social Sciences

Sociologists analyze human values and relationships. Micro and macro theoretical elaborations in the areas of social institutions, social conflicts, social interactions and self-interest have been considered (Crossman 2020). *Social cohesion* is essential to development. *Sociology of education* focuses on the interaction between education and sociology. For instance, promoting an environment that aims to greater social equality, or child development (Ballantine et al 2021). *Social capital* is an old concept that has more recently been the object of stringent definitions. It should be distinguished from economic or cultural capital (Woolcook 1998, Bjornskov and Sondersskov 2013). It describes a social aggregation of people who can cooperate and achieve objectives of common interest, such as easy communication, establishment and maintenance of community or web practices. Such an enhanced power in the community is reflected even at the personal level. *Positive psychology* promotes an optimistic view of the quality of life, rather than dwell on pessimistic visions and shortcomings (Sellgam et al 2000) . Its main aim is to encourage people to discover and emphasize features such as positive experiences that lead to increase in self-esteem, (i.e., improved relationships, learning, travel), positive individual traits (i.e., creativity, autonomy, compassion) and supports positive learning institutions**.** Peterson (2000) dealt with the future of optimism and the relationship between optimism and reality, and the costs of optimistic beliefs that prove to be wrong.

As in the case of complex, multi-variable phenomena (i.e., the Complexity Theory, cf., Mitchell 2011), sociologists find that it is more realistic to use the term "paradigm" rather than theory. The difference between paradigm and theory is that paradigm refers to a background general framework, whereas theory describes a specific phenomenon

(https://www.differencebetween.com/difference-between-paradigm-and-vs-theory.sociologists).

2.4 Development Ethics

Denis Goulet (2006) was a French theorist on human development, promoter of *development ethics* (Gasper 2008). He pioneered the concept that development should simultaneously aims to improve economic growth and social harmony. *Authentic development* should also strive to make every person "more human" thus promoting the good of individuals and of the society as a whole (Goulet 2006, Keleher 2018). Indeed, the idealistic feature of authentic development advocates that the poor should be relieved of poverty and that every person should experience a relationship of solidarity with the human family. Goulet regarded development ethics as a new sub-discipline and suggested that social harmony (including mutual esteem and freedom) and fair wealth distribution should be the main indicators for authentic development. The variety of information needed to implement authentic development would indeed favor the establishment of a new discipline having interdisciplinary character. Authentic development courses have recently been elaborated (cf. seq.).

3. Development Models

3.1 Human Development Index

The Human Development Index (HDI) attempts an *objective* measure of life quality in different nations in terms of three indicators assumed to represent: 1: life expectancy at birth (LEI), 2: level of education (EI), 3: purchasing power (II) (Roser 2019, UNDP 2020). Indicators are assessed using published statistical data relevant to each index. LEI primarily reflects a good health system and is assessed for all groups members using the average age

at death (cf., Life expectancy 2020). LEI is taken to be = 1 when life expectancy at birth is 85 and = 0 when life expectancy at birth is 20. EI is assessed from the actual and expected years of schooling for adults over 25 years old, and from expected years of schooling for children. Specific areas of education are not emphasized (EDI 2009). II is assessed from *the* Gross National Income per capita adjusted for the price level of each country and is taken to vary between 0 and 1 corresponding to actual GNI between $100 and $75,000 (P.P. Purchasing Power 2020). Normalized, unit-free indicators within the 0 to 1 range are obtained by suitable algebraic expressions. HDI scores are calculated from the geometric mean of equally weighted normalized indicators in subsequent years: $HDI = (LEI \times EI \times II)^{1/3}$. Detailed examples of calculation are available (HDI reports to 2021).

The HDI analysis affords a quantitative scheme of important indicators such as long life, basic level of education and wealth. However, a more sophisticated analysis of human development would require an analysis of the quality of life, of the type of education, along with a rational use of wealth. Indicators such as social harmony, justice, preservation of the environment are not easily amenable to a quantitative evaluation but may be qualitatively handled by the "subjective" analyses discussed below.

3.2 World Happiness Report

A speculative assessment of human happiness and the measure of well-being through subjective approaches attracted the interest of the United Nations Sustainable Development Solutions Network (Sachs 2012). Since 2012 ten World Happiness Reports have attempted to evaluate and compare happiness in different countries. A detailed description of the approach is given in the 2012 report, which also includes details on the calculations (Sachs 2012). Six indicators are considered in the current approach: gross domestic product (GDP) per capita, social support, life expectancy, freedom to make life choices, generosity, perception of corruption. The evaluation of these indicators is based on the "opinions" of representative experts in different nations who estimate the best possible value of each parameter assigning to scores between 0 and 10 (Marquez-Padilla 2018). Each country is further compared with a hypothetical nation called Dystopia characterized by the lowest possible values of the six variables. Data from the Gallup Pool are extensively used (Gallup 2017). The latter measure the attitudes and behaviors of residents in various nations using direct phone calls. In recent years, the countries of north Europe and Switzerland have been ranked as the happiest countries in the world.

Whereas the indicators considered above for the assessment of HDI were objectively and quantitatively evaluated from published data, the indicators considered in the assessment of happiness have a subjective and qualitative character. A natural scientist would not consider handling a theoretical relationship including six variables not mutually independent, nor would he consider placing much significance on subjective opinions. Indeed, the approach for the assessment of happiness highlighted above was elaborated by social scientists (sociologists and psychologists) and was often harshly criticized by economists (Smith 2017). The following is a summary of the main shortcomings of that current approach:

1) It is misleading to present quantitative comparisons among all countries of the world based on subjective opinions.

2) The indicators are not mutually independent. It would be almost impossible to identify the effect of a single independent indicator on happiness.

3) The six indicators are allegedly relevant in all countries. Nevertheless, the *relevance* of each variable changes from country to country and from person to person.

4) Subjective analysis is affected by the memory and by the optimism/pessimism of the interviewed experts.

5) The happiness reports primarily use data from the Gallup World Poll, whereas it would be mandatory to verify the agreement between each set of similar measurements made by different groups.

Psychologists and political scientists have nevertheless offered some support to the happiness subjective approach. A 2010 paper by Helliwell and Barrington-Leigh (2010) highlighted the significance of measuring and understanding subjective well-being. They argued that subjective well-being data can be used as proxy measures for experienced (medical) utility and are useful in situations where preferred analysis is not possible. A paper by Uuk (2020) judged the World Happiness Report to be "moderately good".

3.3 OECD Better Life

The basic concept of GDP was discussed at the end of the 18th century. It was elaborated by Simon Kuznets in 1934 and adopted as measure of the US economy at the Bretton Woods conference in 1944. It is defined as total of all added value produced in a country. Already in 1968, the US politician Robert Kennedy (1968) criticized the GDP economic parameter and said "…it measures everything in short, except that which makes life

worthwhile". In 2008, the French President N. Sarkozy asked the economists J.P. Fitoussi and J.E. Stiglitz to organize an international expert commission for the evaluation of economic and social development. In 2013 the commission was incorporated into a larger structure sponsored by the Organization for Economic Cooperation and Development and by the High-Level Group for the Measurement of Economic Performance and Social Progress (HLEG 2014).

A total of 11 economic and social indicators was eventually adopted for the assessment of the economic performance and life quality of the people in 37 participating countries. These indicators were: Income and wealth, Work and Job quality, Housing, Work-life balance, Health, Knowledge and Skills, Social connections, Civic engagement, Environmental quality, Safety, Subjective Well-being. Each of said indicators was further subdivided (for instance, social connections had three sub-queries: Social support, Time spent in social interactions, Satisfaction with personal relationships).

Scores for each indicator were assessed from averages of several subjective interviews (similar to those done by the Gallup Pool). Data bases were used when available. The 2013 and 2021 reports include the values of the various indices. The comparison between different countries can be made using the scores of indicators during a given year. The OECD Regional Well-Being website also allows an interactive approach to assess relevant indicators in any new community. The progress made over time by any particular country cannot be simply assessed by the values of given indicators (cf.wellbeing@oecd.org).

Considering the large number of the above indicators and the establishment of working groups in the administration of several countries, the OECD-HLEG reports should eventually offer important suggestions for fundamental social and economic policies (HILEG 2014). For instance, there is a recognized correlation between reduced opportunities and reduced economic performance in young generations (Corak 2013). This inequality is unfair and negatively affects socio-economic development. It might be assessed but would not be resolved by purely economic indicators. Indeed, interventions of an economic nature do not correct the inequality of opportunities for children from poor families in Guatemala (Ciferri 2019). A recent study by Hong Kong psychologists shows that parental direct involvement is essential to children's development (Dong et al. 2020). A more sophisticated approach emphasizing social indicators is therefore needed.

3.4 Authentic Development

The authentic development analysis originates from appreciation of Goulet's development ethics and from the development activity of the present authors in Central America with the support of the Jepa-Limmat Foundation (Jepa 2021). The latter activity led the authors to share Goulet's belief that social harmony and economic well-being ought to be considered as the two most important indicators for the promotion of authentic development. Indeed, it was evident that real changes would hardly be achieved unless a definite appreciation of what was possible to change, and what was instead worth preserving was developed. It was argued that the materialistic nature and isolation associated with purely economic growth promoted the inequality of opportunities for children mentioned above. A cultural evolution of the whole society ought to be promoted by a better balance between the social harmony and the analytical well-being indicators suggested by Goulet. The application of the latter concept led to the development of interdisciplinary courses described below.

3.5 Interdisciplinary Courses Based on Authentic Development

The recently adopted strategy for balancing social harmony and well-being was based on two resources: a history book that focused on developments in the 28 nations of the American continent, and a course on authentic development tailored to high school and college students. The book was published by Cambridge Publishers in the UK (Ciferri 2019) and courses were run in Guatemala from 2018 to present time (Ciferri and Soldi 2021). The two resources complemented each other in the following way. During the first semester, students attended classes of general culture on standard economics, sociology, and political issues. The following semester included classes based on the book, focusing on the origin of national identities and on events that favored the success or the shortcoming of individual countries.

During the latter stage, the students developed an appreciation for the origin of the events that affect their lives. They also attended a laboratory in which, following additional group discussions, they expressed their *subjective* evaluation of two main indicators: social harmony (F) and economic well-being (G), attributing to each of them scores of 1 (negative), 2 (sufficient) or 3 (laudable). Positive thinking was emphasized. The ratio F/G directly expresses the "balance" between the two indicators. For example, F/G was evaluated to be >> 1 for Guatemala and << 1 for the United States, clearly demonstrating that both developed and developing countries do need authentic development. The students suggested their own strategies to achieve a better balance of the two

indicators (F/G tending to 1). Details on the methodology have been reported in a recent article published by the UNESCO's educational journal (Ciferri and Soldi 2021).

Similar projects could be considered in other geographical areas using the same or different indicators, depending upon the particular circumstances. For the application to any country, it should be appreciated that G may be based on a quantitative indicator (GNP) whereas F (intensity of family ties, ethnic/class issues…) relies on subjective evaluations. The qualitative nature of the above analysis is evident. Nevertheless, it is consistent with the sociology of education approach, and indeed aims to promoting a culture that balances human values and economic well-being within a historical perspective. The students will thus be better prepared to select their careers and face the basic issues that control their lives. In particular, coupling this approach with matching the natural inclinations of a younger person, would allow for a better life and a retirement that would no longer be regarded as the end of any social participation.

We noted that university students that had not completed the bachelor's degree could master and deliver integrated notions of sociology, history, and economics to high school students[1]. For both students and teachers, the *simultaneous*, rather than *sequential*, learning of these disciplines appeared to be a most productive one, suggesting a strategy for interdisciplinary education.

4. Conclusions

Table 1 summarizes the relevant features of four approaches to assess socio-economic performance. The need for improvements is evident. HDI has the distinct advantage of being based on objective measurements, but only for three fundamental indicators. The assessment of World Happiness is a fundamental quest, yet an extremely elusive goal. The Better Life approach evidences the complexities involved in handling an extremely large number of indicators. The reliability of the methods based on subjective indicators does indeed increase with number of indicators, if their interdependence is known, with the extent and the quality of the pools. The Authentic Development approach emphasizes the *balance* between social harmony and well-being, assessing it by a simple ratio of a subjective (F) and an objective (G) indicator, the limitations of both having been evidenced above. Since the latter approach contributes an assessment of only two broad indicators, it is insufficient for a reliable classification of well-being in various nations. It is nevertheless useful as an educational model aiming to familiarize the students to the basic issues that will affect their lives (Ciferri and Soldi 2021).

Table 1. Features of main development models

Model NAME	TYPE	INDICATORS	RANGE	REFERENCES
HDI	Objective	Life expectancy at birth Level of education Purchasing power	0 to 1	Roser 2019
Happiness	Subjective	GDP per capita Social support Life expectancy Freedom to make life choices Generosity Perception of corruption	0 to 10	Sachs 2012 Uuk 2020
OECD Better Life	Subjective	Income and wealth Work and Job quality Housing Work-life balance Health Knowledge and Skills Social connections Civic engagement Environmental quality Safety Subjective Well-being	Varies with indicator	Stiglitz et al 2020
Authentic Development	Subjective	Social Harmony GDP per capita	1 to 3	Ciferri, Soldi 2021

The basic problem is that indicators such as the quality of life cannot be objectively assessed, evidencing an outstanding epistemological/philosophical issue. Is truth objective or subjective? Humans are permanently in subjective reality. However, scientific truth is regarded as an objective reality since natural scientists and mathematicians rely on objective indicators. The former rely on models based on the retention of matter property at the molecular level (Ciferri 2020) that need to be consistent with phenomenological relations evidenced by macroscopic systems (Treloar 2005). Instead, social scientists need to consider any truth implicit in subjective indicators. A blend of objective and subjective indicators is often used in real life. For instance, the quality/price ratio associated to commercial items is essentially a ratio of subjective and objective indicators.

Interaction between sociology and economics is also occurring since both have social implications. However, the complexity of human behavior is aggravated by the different visions of sociologists and economists. More integrated, interdisciplinary approaches have been advocated (Abell 2013, Egidi 2020). The need is particularly relevant when ethnic and religious differences occur (i.e., in Europe, Central Asia…) and in the migration issues that affect the stability of present societies (Boswell 2008). Differences in methodology and fundamental assumptions appear to be those that require more substantial evolution (Egidi 2020). Scattered suggestions have been made concerning the detailed topics to be included in a new socio-economic discipline. Particularly relevant are notions of history essential to understand the origin of ethnic conflicts and national identities (Ciferri and Soldi 2021, Ballantine et al. 2021)

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