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Prosperity Indicators: Foundations, Concerns, and Prospects of Usage in Policy Making-The Policy Compass Approach

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PROSPERITY INDICATORS: FOUNDATIONS, CONCERNS AND PROSPECTS OF USAGE IN POLICY MAKING – THE POLICY COMPASS APPROACH

Research in Progress

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Abstract

Prosperity indicators aim at making the concept of prosperity measurable, and hold thus the potential to be used for measuring and assessing the impacts of policies and policy measures over the society. Nevertheless, the abstract and multidimensional nature of prosperity, weaknesses around their definition from a methodological perspective and concerns on their legitimacy among other factors pose difficulties on the exploitation of prosperity indicators for public debate. This paper reviews the usage of prosperity indicators in policy making, bringing up developments, trends and concerns around their conceptualization and use. It further presents the Policy Compass approach, which provides an observatory for experimentation with prosperity indicators with the view of influencing the policy-making process at the local and regional level, and thus contributing towards the vision of more responsive governance.

Keywords: Prosperity Indicators, Policy Making, Policy Impact Assessment, Policy Analysis and Evaluation, Open Data, Conference Track: Electronic Government (GOV 2.0)

1 Introduction

With the advent of evidence-based policy making and the growing demand for government accountability of the recent years, it is not hard to observe an obsession with the heavy exploitation of indicators and all sorts of statistical measures in the public policy arena (Jany-Catrice and Marlier, 2013).

The term 'indicator' is one that people can easily understand. It is regularly conceived as a sort of 'statistical measure' that can adequately capture crucial aspects of a (social) phenomenon to be monitored, particularly when a specific policy measure is enforced to affect it. As put forward by Innes (1989), an indicator is "a set of rules for gathering and organising data, so that they can be assigned meaning". As far as policy implementation and impact assessment are concerned, an indicator is conceived as a concrete tool for justifying and optimizing resource allocation.

The idea of employing quantitative indicators in order to evaluate policy implementation is not a recent one but goes back to the '40s, when the US economy was being evaluated in terms of the 'Monthly Economic Indicators' (Wong, 2006). The success of this project was followed by an explosion of indicators for social change in the '60s, when actually the term `social indicators' was coined as a means of assessing where we stand and are going with respect to our values and goals, and to evaluate specific programs and determine their impact (Bauer, 1996).

The idea of exploiting social indicators and developing a theory for defining, using, combining and interpreting them, passed gradually from the US Administration to the large international organisations such as the United Nations (UN)[1] and the Organisation for Economic Co-Operation and Development (OECD)[2]. It was no later than the late '60s that researchers started to write about the 'social indicators movement'. As with most scientific and methodological breakthroughs though, the initial explosion of interest and enthusiasm was followed by scepticism and disappointment, which is quite apparent in the articles and studies of the '70s. The basic reason for this frustration was the identification of difficulties on the conceptual and the methodological recipes surrounding the definition, calculation and interpretation of indicators. Even more important, the general feeling was that policy makers were almost reluctant to use social indicators, as they did not seem adequate for measuring their concerns on policy evaluation.

Nevertheless, the early '90s witnessed a noisy comeback of the 'indicators methodology', through the so called 'community indicators movement' (Innes and Booher, 2000). This new wave of interest has been significantly motivated by the global questions on environmental matters and has led to a series of approaches, typically associated to the keywords 'indicators for quality of life', 'sustainability indicators', sometimes combined with other widely used terms in public discourse, such as 'economic competitiveness', etc. (Sawicki, 2002).

Although motivated by different concerns, i.e. the demand for social reform in the 60's and the need for sustainable economic growth and careful resource consumption in the 90's, these two movements converge under a major common goal, that of 'improving the living of people and places' (Wong, 2006). At this point, attention has to be drawn to the fact that one of the major concerns in the indicators construction and exploitation and also one of 'pitfalls' identified in the scepticism of the 70's has been the access to the relevant data and the difficulties in the collection and reliability of the data needed in order to calculate and interpret prosperity metrics. The revolution of the Web 2.0 and the Open Data Movement, conceived as "the idea that certain data should be freely available to everyone to use and republish as they wish, without restrictions from copyright, patents or other mechanisms of control" (Auer et al., 2007) arguably opens a new arena of experimentation with social indicators.

[1] http://www.un.org/

[2] http://www.oecd.org/

Still, the fundamental concerns and the controversy around the methodology of constructing prosperity indicators, as well as on the definition of prosperity itself remain. Additionally, the indicators' causal dimension, namely their use for the interpretation of policy effects, which is the key for turning indicator development into a decision making process seems to be so far neglected (Jany-Catrice and Marlier, 2013).

In this context, this paper attempts to provide an overview of the use of prosperity indicators in policy making. More specifically, departing from the above raised concerns, the paper discusses on the true sense and value of the experimentation with prosperity indicators and presents the Policy Compass approach as a means of bringing the use of the former into a new dimension. The rest of this paper is structured as follows: Section 2 addresses the concept of prosperity and presents some highlights on the "beyond GDP discussion" while also exposing trends and concerns on the design of related indicators. Section 3 presents the Policy Compass approach on the definition and usage of prosperity indicators, while finally Section 4 summarises the issues discussed and the arguments brought forward in this paper and highlights the ways in which the approach in question creates new prospects and advances the use of prosperity indicators in the policy arena.

2 Background

2.1 On the definition of Prosperity

The term 'prosperity' is frequently used as a synonym to other expressions such as 'welfare', 'well-being' or to what is rather abstractly called the 'quality of life', the latter being defined *as "the product of the interplay among social, health, economic and environmental conditions which affect human and social development"* (Ontario Social Development Council).

How to measure prosperity is a very fundamental and interesting question. Well-being or prosperity does not necessarily equal "economic growth". Economic growth means more consumption of goods and services, exchanged for money. Endless growth means endlessly increasing production and endlessly increasing consumption. Social critics have for a long time pointed out the hollowness carried by that thesis, as it is becoming increasingly apparent that infinite growth is impossible on a finite planet.

Many economists or policy-designers may employ a simple indicator such as the Gross Domestic Product (GDP) (Coyle, 2014) to measure prosperity in a country (or society). This is not to be considered strange, as GDP (either in total or in its 'per capita' version) is one of the most successful single indicators in the history of economics, capturing succinctly the value of all goods in the economy, and known to the vast majority of citizens around the world (although, not always with a positive feeling) and to the totality of people working in economics and political science. Yet, problems and shortcomings are also present in GDP and include the unavailability of correct prices for some goods and products (such as state-provided health care), the inability to reflect the technological quality improvements, etc. The basic problem is, succinctly stated, that such a 'dry', single, technical measure fails to reflect a lot of things about everyday life. As put forward by Robert Kennedy in 1968: *"…GDP measures everything …except that which makes life worthwhile"* (Kennedy, 1968). If real social phenomena, such as the quality of life or societal integration are to be assessed though, one might have to include other indicators, experiment on research assumptions and probably make a smart combination of measures that will reflect the phenomenon targeted.

2.2 Towards new definitions of prosperity - the beyond GDP Discussion

The assumption that the GDP is unable to gauge progress and prosperity is not entirely new. Ever since the concept of sustainable development has emerged, as the notion of development that meets the needs of the present without compromising the ability of future generations to meet their own

needs (WCED, 1987), it has been made clear that environmental and social factors have to be considered as well in measuring prosperity. Throughout the years several attempts have been made internationally to establish appropriate prosperity and sustainable development indicators.In 1993, OECD first published a set of environmental indicators, where the Pressure-State-Response (PSR) framework is used. The latter is based on the concept of causality: human activities exert pressures on the environment that affect its state, i.e. the quality and quantity of natural resources. In response to these pressures, environmental and economic policies are enacted and applied. The latter form a feedback loop to pressures through human activities. In a wider sense, these steps form part of an environmental (policy) cycle which includes problem perception, policy formulation, monitoring and policy evaluation.

The World Bank's attempts for measuring sustainable development led to a new way of thinking on what constitutes wealth and how it could be measured. In the publications "Monitoring Environmental Progress: A Report on Work in Progress" in late 1995 and "Expanding the Measure of Wealth – Indicators of Environmentally Sustainable Development" in 1997, a nation's wealth is determined as the combination of three major capital components, namely produced or human-made assets, natural capital and human resources, the latter including raw labour, human capital, and the elusive, but important, element known as social capital. The dynamics of creating and maintaining wealth are explored through the indicator of genuine saving, i.e. the true rate of a nation's saving after accounting for the depreciation of produced assets, the depletion of natural resources, investments in human capital and the value of global damages from carbon emissions. Negative rates of genuine saving lead eventually to declining well-being.

The need for sustainable development indicators to guide decision making has also been identified by the UN Conference on Environment and Development that took place in 1992. The preliminary draft report that came out in 1996 under the title "Indicators of Sustainable Development: Framework and Methodologies" included 134 indicators, classified under the social, economic, environmental and institutional dimensions of sustainable development, as well as a detailed presentation of the methodology adopted.

The Barometer of Sustainability, developed by Robert Prescott-Allen in 2001 is a two-coordinate measure, designed to gauge human and ecosystem wellbeing together without submerging one in the other. By assigning to both of its axes equal weight, the barometer sends the message that a healthy human sphere and eco-sphere are equally important for achieving sustainable development.

More recently, the Global Footprint Network, an association of researchers and activists founded by the "inventor" of the Ecological Footprint, Mathis Wackernagel in 2003, has been concerned with making the Ecological Footprint indicator popular as a measure for ecological sustainability, promoting its application and refining the method. First conceived in 1990, the Ecological Footprint measures nowadays humanity's demand on the biosphere in terms of the area of biologically productive land and water required to provide the resources we use and to absorb our carbon dioxide emissions.

The 'beyond GDP' discussion is further exemplified by the expert commission established by the German Federal Parliament and the French Government. The latter 'Commission on the Measurement of Economic Performance and Social Progress' has published a series of reports providing validation and legitimacy to the criticism raised about the adequacy of current GDP-based measures of economic performance and their relevance as measures of societal well-being, economic, environmental, and social sustainability.

The activities presented in this section are indicative of the prevalent trend towards a new definition of prosperity and the list of efforts attempting to replace the GDP is long and has resulted in more or less known indicators, analysing various financial, societal and environmental aspects; however none of them has established itself in a similar way as GDP.

2.3 Trends and Concerns in Indicator Design

Following the clutter around the concept and multidimensional nature of prosperity, recent trends on the design and exploitation of indicators in the policy context involve attempts to construct a single, composite, indicator in order to capture a quality-of-life dimension, the use of multiple, separate indicators for social problems, with the aim of capturing single important aspects of everyday life, such as crime rate, poverty level, air pollution, unemployment rate, etc. as well as the preparation of all-inclusive indicator reports, intended for wide distribution and consultation by decision makers and analysts in an iterative fashion.

From a different angle, parallel to international, national and regional, the use of local indicators seems to be gaining ground. The approach, suggested in (Innes and Booher, 2000) draws inspiration from complexity theory and views a city as an evolving organism which grows and adapts to its environment, proposing a layered indicator system which evaluates city performance in terms of system performance indicators that reflect central values of concern to those living in the city and how the whole urban system is working, (ii) policy and programme indicators, providing feedback to policy-makers on how specific programmes and policies are evolving, and (iii) rapid feedback indicators, facilitating citizens, agencies and businesses to make day-to-day decisions.

Putting aside the actual aspects of prosperity captured, initiatives on the development of prosperity indicators have to be further viewed with a certain degree of circumspection. With the discipline of economics historically defining wealth and progress in conjunction with establishing metrics of measurement, it comes as no surprise that the widespread usage of indicators may also have its roots in a fashion of quantification, giving in parallel rise to a trend of putting forth quantified allegations or more specifically numbers as incontestable arguments (Jany-Catrice and Marlier, 2013).

Care should be taken however to avoid turning policy-related discussions in a meaningless collection of statistics or number series, with questionable usability and unidentified direction. There exists a widespread distrust that attempts to measure prosperity-related, abstract concepts, e.g. quality of life, deprivation, welfare, environmental quality, etc. are not always supported by methodologically sound techniques and well-defined policy related frameworks (Innes and Booher, 2000).

The need for a solid formal methodological basis for indicator development appears to be self-evident. Several approaches have been proposed in the literature, each one employing a discrete number of steps, from the early conception of the idea to the final description of the conceived index. The four-step methodology by Coombes and Wong (1994) is indicatively presented here for its simplicity and flexibility. The approach comprises the steps of (i) conceptual consolidation, which corresponds to the process of clarifying the basic concept to be represented by the analysis, (ii) analytical structuring, pertaining to providing an analytical framework within which indicators will be collated and analysed, (iii) indicators' identification, i.e. translation of key factors identified in the previous step into specific measurable indicators and (iv) synthesis of indicators' values, i.e. synthesis of the identified indicators into a composite index (Wong, 2006).

Regardless of the methodological framework adopted, a well-defined and useful indicator should bring together the qualities of policy relevance, analytical soundness and measurability (UNEP, 2014). Additional concerns on the design of prosperity indicators, are raised with regard to the indicators' institutionalization and the avoidance of bias (Wong, 2006), suggesting respectively the need to setup routine procedures to ensure the continuing existence of an indicator and to legitimise the method of the measure, as well as to have them produced by professional statistical agencies with strong awareness of policy issues, but not actual responsibility for them.

These concerns support the argument that indicators should be a matter of experts and thereby come in contrast with the growing trend of re-inventing government on the basis of the Gov 2.0 notion, which emphasizes citizen engagement and dialogue in the design and use of measures of performance and customer satisfaction with government and in the interpretation of these in a complex, changing con-

text (Innes and Booher, 2000), thus advocating the use of indicators to facilitate the work of many players to make better choices, solve problems and be better able to respond to context and change.

In this respect, the fundamental question of how to integrate prosperity indicators in the policy lifecycle remains. At the heart of all policy design and implementation there is a need to understand why policies should be introduced and how well they are working. Prosperity indicators may provide evidence on the outcomes of policies, and thus answers on their expedience and efficacy. Moreover, they can be used to explore patterns of co-variation across different aspects of the phenomena studied (Wong, 2006). However, their analysis stumbles upon genuine difficulties on the identification of the causal relationships between different factors and is at best guided by existing theories or on a priori assumptions. Still, if statistics and indicators are to serve public debate and policy action, the causality dimension has to be addressed as well.

3 The Policy Compass Prosperity Indicator Framework

Along the above lines, controversy around the definition of prosperity, diversity on the scope and scale of application, indicator typology and design methodological issues, legitimacy concerns, and a great multitude of indicator development initiatives and approaches of different interest or even conflicting nature are the characteristics that make up the context in which citizens and the rest of societal actors are called to formulate their own judgement on the status and progress of prosperity in their countries or communities. Apparently, an ICT tool that allows the former stakeholders to experiment with and leverage prosperity indicators as an aid for policy analysis and evaluation becomes particularly important in this context.

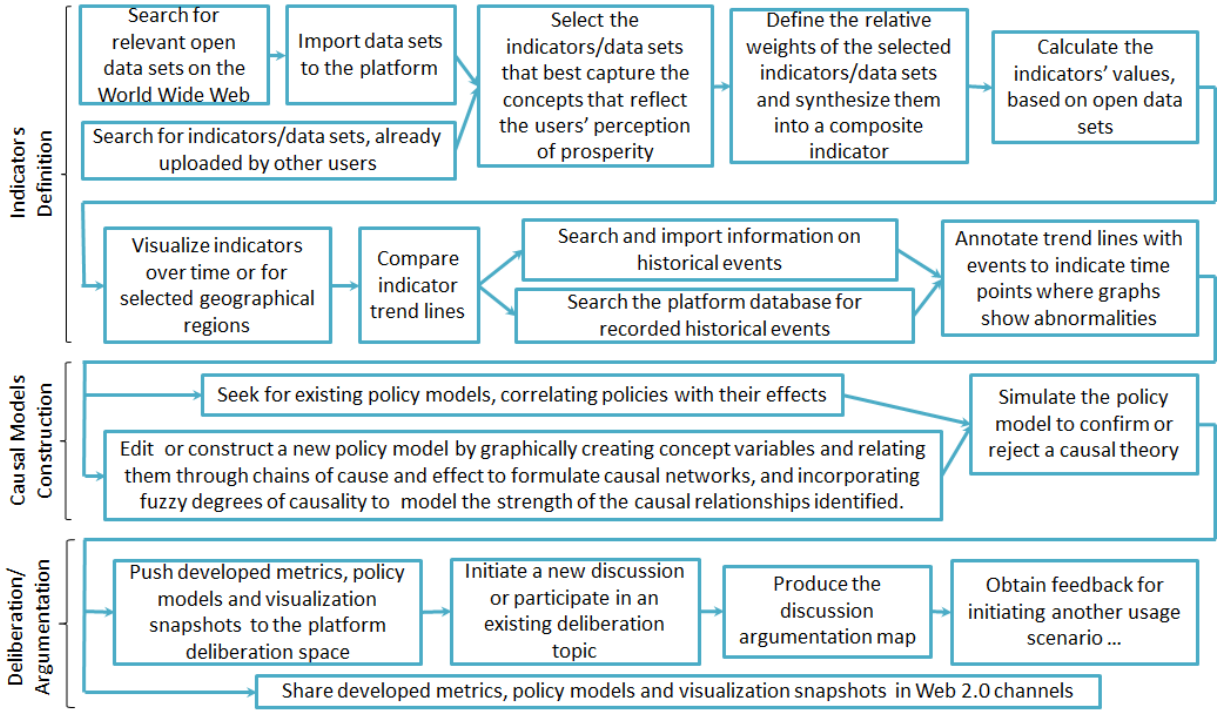

Figure 1. Policy Compass condensed approach

Targeting overall to facilitate factual, evidence-based, transparent and accountable policy evaluation and analysis, and following the view that *"Indicators and performance measures have become an im-*

portant element in policy initiatives relating to sustainability and to the re-invention of government" (Innes and Booher, 2000), the Policy Compass FP7 project[3] places particular emphasis on the design and usage of prosperity indicators. The project aspires more specifically to open new possibilities for the user to correlate, annotate and visualize data from various sources, with an emphasis on the ultimate aim of using them for evaluating policies at the local or regional level through the definition and monitoring of appropriate indicators. To this end, it provides a user-friendly, web-based platform, interfacing public open data sources and integrating a number of toolsets, that implement among others visualization, annotation, causal models' development, deliberation and argumentation functionalities, in order to offer citizens and societal actors a broad field for experimentation with prosperity indicators, overcoming the challenges and limitations, imposed by current conditions. On top of that, it incorporates web 2.0 features, thus offering the aforementioned stakeholders the capability to share information and engage in meaningful discussions.

Setting out from the citizens' or other interested stakeholders' wish to analyse and monitor the effectiveness and efficiency of political actions, a quite comprehensive scenario around the usage of prosperity indicators encompasses, as illustrated in Figure 1, the activities of indicators' definition, causal policy models creation in the interest of causally analysing changes in the prosperity level, and online deliberation and argument mapping, while simpler use case scenarios may employ selected steps of this workflow.

Currently under development and soon to be released as an operational prototype, the Policy Compass platform, and thereby the respective approach is to be evaluated through real case pilot scenarios at both regional and local level. More detailed information on the Policy Compass project and framework may be found in (Markaki et al., 2014a; 2014b). In brief, the strength of this powerful, Gov 2.0-oriented approach lies in allowing individuals to leverage the data released by governments and public organizations around the world and to create value by contributing their own views and perceptions of prosperity. Ultimately, citizens can formulate informed judgements, hold governments accountable and thus actively engage in policy design.

4 Discussion and Conclusions

The aim of this paper has been to provide a review of the important and fast-growing field of the use of prosperity indicators in policy modelling with the view to synthesize the background and the rationale that has led to the development of the Policy Compass approach and to bring to light the lessons learnt along the course of the project. In the interests of the completeness, the main issues addressed in this paper with regard to the indicators' applicability and legitimacy as well as the corresponding assumptions are summarised in the following paragraphs.

Experimenting with indicators that may complement or challenge GDP, seems completely feasible, technically speaking, yet it may not be "scientifically legitimate" at all times. In the literature, one can find strong statements in favour of the position that it makes little sense to propose alternatives to established and widely accepted and mature indicators, such as GDP. The latter has achieved a considerable level of legitimacy in quantitative representations and judgements of what wealth really is at the macroscopic level; thereby it seems very ambitious to try to replace it. However, the deep questions on 'what is a prosperous society' or a 'flourishing city/region', are put forward again and again. The purely economic response based on single indicators such as the GDP is consistently questioned (Jany-Catrice and Marlier, 2013). In particular, there is a growing concern on the limits of GDP-like measures for measuring societal welfare.

[3] Policy Compass | Opening Policy Horizons: Open Data-Driven Analysis and Impact Evaluation, http://policycompass.eu/

On the other hand, it makes perfect sense to construct aggregate, headline or composite indicators, in order to measure important social phenomena at the regional or municipality level. A strictly scientific approach can be pursued but also experimental approaches, with empirical weighting and evaluation schemes, are welcomed by the community of policy theoreticians (Jany-Catrice and Marlier, 2013). The major question here is of course, the 'legitimacy' of the proposed indicator, as it may be considered ad hoc or arbitrary in a subsequent political debate. This is an interesting and largely unexplored issue, which has to do also with political perspective.

Nevertheless, attention has to be drawn to the fact that there do not exist 'objective' or 'neutral' indicators of any kind. The community does not pursue objective indicators; it rather attempts to construct useful ones. Experience shows that, at the local or regional level community participation should involve the peaceful co-existence of economic, social, and environmental goals around some general vision of well-being, and a vision for the future. The construction and monitoring of the indicators should preferably be a community participation process and concern the setting of goals or benchmarks for monitoring progress of conventional policy along with social capital. Besides, the overall environment is highly encouraging: the advent of the open data movement and Web 2.0 provides a fantastic observatory of experimentation with social indicators for policy evaluation and the strengthening of the democratic process in societies. In this context, it should be clear that a broad experimentation on the calculation and exploitation of indicators, given the multitude of data available, is definitely interesting scientifically and will provide useful feedback.

The Policy Compass prosperity indicator framework is well in accordance with this perspective, as it intends to contribute to, reinforce and promote research and practice towards employing quantitative techniques to circumscribe social phenomena and thus evaluate the results of planned or enforced policy measures along the following key axes:

- Exploring the limits of social computing with quantitative indicators for policy design and assessment, given the unprecedented access to meaningful data provided by the open data sources available.
- Enhancing the experimentation with various kinds of social indicators, ranging from well-known and widely established metrics, such as the GDP and its variants, to the composite and headline indicators which can suitably apply to the regional or municipality level.
- Experimenting on the cross-fertilisation of today's ICT capabilities with the ideas and intuition of the social (and political/economic) motivation of describing societal welfare with well-defined, representative metrics.
- Importing the cause/effect component of policy analysis, directly into the indicator analysis process through the 'injection' of causal analysis tools in the Policy Compass platform and methodology.

Altogether, the Policy Compass methodological framework is anticipated to enrich significantly the experience of using prosperity metrics in the policy arena. Primary evidence on that prospect is going to come from the experimentation taking place in the frame of the project's pilot applications, so scheduled future work within the project shall include and put emphasis on the analysis of the pilot findings with regard to potential improvements to the project methodology, the project platform and the levels of acceptance of the proposed approach from citizens and other societal actors.

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