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# Nation States, Cities, and People: Alternative Ways to Measure Globalization

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## Abstract

In the first decade of the 21st century, attempts to measure globalization have multiplied, and they have led to the devising of diverse instruments, most notably the A. T. Kearney/Foreign Policy Globalization Index, the CSGR Globalisation Index, the KOF Index of Globalization, and the Maastricht Globalisation Index. Besides important similarities as regards structure, the dimensions considered, and the indicators used, the main feature shared by these instruments is the fact that they all use the same unit of analysis: the nation-state. This is a somewhat paradoxical situation, if one considers that one of the most distinctive characteristics of globalization is precisely that its dynamics extend beyond the state and the country. Given this premise, the aim of the article is, on the one hand, to justify in any case the use of instruments that seek to measure globalization on the basis of states, and, on the other, to propose alternative approaches to such measurement. The article's underlying assumption is that different approaches to the measurement of globalization are not mutually exclusive. Rather, such a plurality of perspectives is opportune and desirable given the complexity and multidimensionality of the concept of globalization.

## Keywords

sociology, social sciences, globalization, measurement and scaling method, research methods, selection of research units, sociological research methods

## Attempts to Measure Globalization

The first decade of the 21st century saw the development of numerous instruments with which to measure globalization processes.<sup>1</sup> These are instruments that differ from each other in many respects, not infrequently because of different interpretations of the concept of globalization on which they are based. In this regard, a first distinction can be drawn between, on the one hand, indexes that attempt to capture the multidimensional nature of globalization and, on the other, those that focus exclusively on one dimension of the process, which is very often—but not always—the economic one. Considering that multidimensionality is one of the most characteristic features of globalization, this article will consider only instruments that adopt a multidimensional approach.

But besides differing because they take or do not take a multidimensional approach to measuring the phenomenon, globalization indexes are also distinguished by the choice of dimensions to be considered, the indicators used in constructing the index, the weights assigned to the indicators themselves, as well as the techniques by which the latter are aggregated. A further feature that differentiates among attempts made to date to measure globalization is whether they are essentially sporadic or, conversely, whether the instruments used are able to consolidate over time.

In this regard, four main instruments have received progressive development and at least some updating of the data on which they are constructed. First, there is the A. T. Kearney/Foreign Policy Globalization Index (The Global Top 20, 2007): This has been the first globalization index to gain some visibility in the scientific debate, given that all the authors who have subsequently attempted to develop globalization indexes have made reference to it, although not infrequently doing so in critical terms. Then there are the CSGR Globalisation Index (Lockwood & Redoano, 2005), the Maastricht Globalisation Index (Martens & Raza, 2010), and finally the KOF Index of Globalization (Dreher, Gaston, & Martens, 2008), which, among the instruments mentioned, is perhaps the most interesting as it is the one for which the data have been most frequently updated, the last occasion being in 2013.<sup>2</sup>

Referring to Caselli (2012) for detailed analysis of the ways in which these instruments are constructed and the

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**Table 1.** Dimensions of the Main Globalization Indices: A Comparison.

	ATK	CSGR	KOF	MGI
Economic dimension	Yes	Yes	Yes	Yes
Political dimension	Yes	Yes	Yes	Yes
Social dimension	Yes (called “personal contact”)	Yes	Yes	Yes
Technological dimension	Yes	Included in the social dimension	Included in the social dimension	Yes
Ecological dimension	No	No	No	Yes

Note. ATK = A. T. Kearney/Foreign Policy Globalization Index; CSGR = CSGR Globalisation Index; KOF = KOF Index of Globalization; MGI = Maastricht Globalisation Index.

Source. Caselli (2012, p. 98)

results that they have yielded, to be emphasized here is the remarkable similarity in the underlying structure of the four indexes mentioned, as evidenced in Table 1.

All four indexes, in fact, consider the economic and political dimensions of globalization. Likewise, all four of them consider both the social dimension—though the A. T. Kearney/Foreign Policy Globalization Index gives it a different name—and the technological dimension of the phenomenon, although the CSGR Globalisation Index and the KOF Index of Globalization consider these two dimensions jointly. The only exception is the Maastricht Globalisation Index, which, unlike the other three instruments, also includes an ecological dimension.

Because the cultural dimension of globalization is particularly difficult to measure,<sup>3</sup> none of the above four indices includes it among its fundamental dimensions. Nevertheless, all the instruments comprise indicators and variables that can be entirely or partly related to the cultural aspects of globalization, and which are included in either the social or the technological dimension.

Comparison of the results of the four indices is complicated by the fact that they refer to different years and are calculated for a more or less extensive range of countries.<sup>4</sup> However, Table 2 is an attempt to make such a comparison based on the relative positions of each country according to each index and limiting the analysis to the 55 countries for which all four indices have been calculated.

A first finding that emerges from the table is that the highest places in the rankings of all four indexes are mainly occupied by member-countries of the European Union, and particularly ones of small size.<sup>5</sup> This finding prompts the question of the extent to which the instruments effectively measure the degree of globalization of countries and the extent to which, instead, they measure regionalization dynamics. Accordingly, it would be advisable for globalization indexes to consider not only flows and relations between a particular country and other countries, but also the number<sup>6</sup> and the geographical position of those same countries (De Lombaerde & Iapadre, 2007). However, this undertaking would encounter the difficulty of collecting similar information, and the only (moreover partial) attempt in this direction has been made by Vujakovic (2010).

Inspection of Table 2 also shows that, while some countries are ranked by the various indices in substantially similar manner—this is the case, for example, of Switzerland,

Denmark, Sweden, New Zealand, Romania, Thailand, and Venezuela—there are others which the various instruments considered allocate to very different positions. This is the (striking) case of the United States, a country considered highly globalized by the A. T. Kearney/Foreign Policy Globalization Index and by the CSGR Globalisation Index (5th and 4th position respectively) but which occupies decidedly lower positions in the classifications drawn up on the bases of the KOF Index of Globalization and the Maastricht Globalisation Index (22nd and 36th position respectively). Other countries whose positions are not determined unequivocally are, for example, Canada, China, Russia, and Panama.

These considerations show that estimates of the globalization levels of individual countries may vary even markedly according to the measurement instrument used. This means that the choices made when constructing the instruments—especially selection of the indicators, as well as deciding the aggregation procedure and the weights—have important repercussions on the results obtained.

Now that the results of four globalization indexes have been presented, albeit partially, some brief considerations can be made concerning the use of these results. First, as suggested in Table 2, the results can be used synchronically to compare the levels of globalization of different countries. But they can also be used diachronically to consider the temporal dimension to analyze the different speeds and trajectories with which countries are globalizing (or, conversely, de-globalizing): a temporal dimension of especial significance because globalization is a process. For this purpose, however, the data necessary to calculate globalization indexes should be collected systematically and continuously in time, but this systematicity and continuity today seem guaranteed only, as said, by the KOF Index of Globalization.

### The Nation-State as the Unit of Analysis for Globalization Indices: Pros and Cons

The indices presented in the previous section, as well as many others, are rather heterogeneous, but they are united by the fact that they all use the same unit of analysis: namely the nation-state. This choice is made “for convenience” because most of the statistical data, and therefore indicators,

**Table 2.** Classification of Countries Based on the Degree of Globalization Estimated by the Main Indices.

Rank	ATK	CSGR	KOF	MGI
1	Netherlands	Belgium	Belgium	Ireland
2	Switzerland	Canada	Austria	Belgium
3	Ireland	United Kingdom	Netherlands	Switzerland
4	Denmark	United States	Switzerland	Netherlands
5	United States	Austria	Sweden	France
6	Canada	Sweden	Denmark	Austria
7	Jordan	Switzerland	Canada	United Kingdom
8	Estonia	France	Portugal	Germany
9	Sweden	Denmark	Finland	Denmark
10	United Kingdom	Ireland	Hungary	Spain
11	Australia	Germany	Ireland	Israel
12	Austria	Italy	France	Italy
13	Belgium	Malaysia	Spain	Sweden
14	New Zealand	Finland	Germany	Estonia
15	Norway	Australia	Australia	Jordan
16	Finland	Netherlands	Norway	South Korea
17	Israel	New Zealand	Italy	Norway
18	Germany	Russia	Poland	Greece
19	Malaysia	South Korea	United Kingdom	Portugal
20	Hungary	Japan	New Zealand	Japan
21	France	Spain	Estonia	Malaysia
22	Bulgaria	China	United States	New Zealand
23	Japan	Jordan	Greece	Bulgaria
24	Spain	Norway	Bulgaria	Poland
25	Panama	Poland	Chile	Finland
26	Portugal	Egypt	Malaysia	Australia
27	Italy	Israel	Jordan	Romania
28	South Korea	Portugal	Belgium	Russia
29	Romania	Hungary	Israel	Egypt
30	Philippines	Romania	Romania	Hungary
31	Costa Rica	India	Russia	Tunisia
32	Morocco	Estonia	Japan	Morocco
33	Poland	Argentina	Panama	China
34	Chile	Chile	Costa Rica	Canada
35	Greece	Pakistan	South Africa	Thailand
36	Tunisia	Greece	South Korea	United States
37	Mexico	Kenya	Thailand	South Africa
38	Colombia	Bulgaria	Peru	Costa Rica
39	Senegal	Nigeria	China	Mexico
40	Thailand	Brazil	Tunisia	Chile
41	Argentina	South Africa	Egypt	Panama
42	Egypt	Thailand	Argentina	Nigeria
43	Sri Lanka	Indonesia	Mexico	India
44	Nigeria	Morocco	Morocco	Pakistan
45	Peru	Bangladesh	Brazil	Venezuela
46	South Africa	Philippines	Colombia	Philippines
47	Kenya	Tunisia	Philippines	Sri Lanka
48	Russia	Senegal	Indonesia	Senegal
49	Pakistan	Peru	Nigeria	Brazil
50	Bangladesh	Mexico	Venezuela	Indonesia
51	China	Costa Rica	Pakistan	Kenya
52	Brazil	Venezuela	Sri Lanka	Colombia
53	Venezuela	Sri Lanka	India	Argentina
54	Indonesia	Panama	Senegal	Bangladesh
55	India	Colombia	Kenya	Peru

Note. Only considered are the 55 countries for which all four indices have been calculated. Year of reference: ATK 2005, CSGR, 2004, KOF 2007, MGI 2008.

available in regard to globalization have the state as the unit of analysis (Scholte, 2005, pp. 86-87). But this is not surprising if we consider that statistics and the use of indicators originally arose in regard to the state (Parra Saiani, 2009, pp. 9-10)—as demonstrated by the etymology itself of the word “statistics.”

Yet the somewhat obligatory choice of this unit of analysis raises some particularly problematic issues. One suspects, in fact, that measuring globalization by referring to the nation-state is to distort the very essence of the concept studied. As already pointed out by the scientific debate, it is of crucial importance to distinguish between globalization and internationalization: While the latter refers to processes and dynamics occurring within and in relation to the system of nation-states, the concept of globalization refers (also) to processes that unfold heedless of that system (Sklair, 1999, pp. 144-145). In this regard, various authors have stressed that the distinctive feature of globalization is deterritorialization (Giaccardi & Magatti, 2003; Sassen, 2000; Scholte, 2000, pp. 48-9), or the emergence of processes entirely free of territorial constraints—processes, that is, which may be situated anywhere or, conversely, nowhere (in virtual space for example).

In light of these considerations, reflection on the theme of globalization has induced several authors to dispute what has been variously labeled “methodological nationalism” (Beck, 2004), “embedded statism” (Sassen, 2000), or “methodological territorialism” (Scholte, 2000): that is, the perspective largely dominant since the origins of the social sciences and which envisages a substantial overlap between the concept of society and that of the nation-state, which is therefore considered the natural container of economic, cultural, and political processes.

That of the nation-state, therefore, cannot be the only perspective, the only lens through which one studies and analyzes a multidimensional and above all multiscale process like globalization (Sassen, 2007). However, this does not mean that it is illegitimate to use the nation-state as the unit of analysis for construction of a globalization measure. Affirming the existence of deterritorialized dynamics and processes is not to deny the persisting and in many respects renewed importance of the spatial dimension of globalization. Globalization, in fact, is an extremely complex phenomenon, and part of its complexity resides in the fact that it can be interpreted from different points of view: The deterritorialized dimension of globalization does not exclude the localized one, and the global dimension does not exclude the local one. The national point of view is therefore one of the many legitimate points of view from which globalization can be read (Beck, 2004). This is of particular importance if one considers that the state contributes substantially to shaping globalization processes: For example, it is the state that furnishes the infrastructures—particularly for transport and communications—that make possible the transnational flows that constitute the essence itself of globalization (Axford, 2007, pp. 322-323). Added to this is the fact that

nation-states continue to be key actors in the economic and social spheres (Ray, 2007, p. 75) as well as essential referents in the everyday lives of all the planet’s inhabitants.

Apart from practical convenience, therefore, using the nation-state as the unit of analysis in the study and measurement of globalization processes is in many respects an acceptable procedure. However, this should not obscure the fact that this procedure, however legitimate, allows the analyst to grasp only some aspects of globalization and not others, even though they are extremely significant. It has been pointed out, for example, that it is almost impossible to measure the ecological aspects of globalization by working on national bases (Dreher et al., 2008, p. 38). More generally, there is the problem of grasping more genuinely global aspects of the process on the basis of international data (Scholte, 2005, pp. 86-87). Nevertheless, if globalization processes are distinguished by their multiscale nature, the problem is not so much finding and using units of analysis alternative to the nation-state as combining several units of analysis and, therefore, different perspectives of inquiry. This is said in the awareness that no perspective and no unit of analysis, on its own, can enable an exhaustive account to be made of the complexity of globalization processes.

## Different Approaches

Although, for the reasons given above, it appears anyway acceptable to measure globalization on the basis of states—the paradox remains that studied at this level is a phenomenon among whose essential features is that, in certain significant domains, it annuls states, their role, and their boundaries. This latter consideration prompts the question as to whether instruments can be devised that measure globalization using other units of analysis. It should nevertheless be immediately pointed out that attempts in this direction should not be regarded as antithetical to, or in conflict with, the most common approach based on the state. In fact, as repeatedly emphasized, globalization is an extraordinarily complex process that can be analyzed and interpreted from numerous standpoints that are not alternative to each other but, on the contrary, complementary. As Beck (2004) puts it, the logic that guides us when analyzing globalization should not be that of “either . . . or . . .” but rather “both . . . and . . .”

In the same vein, Sassen (2007) explains—as already recalled in the previous section—that a distinctive feature of globalization is its multiscale nature. That is to say, globalization exerts its effects differently according to the territorial level considered—from the neighborhood to the planet as a whole. But there is something more. The effects of globalization differ not only according to territorial level but also according to social level. For example, by virtue of the so-called “mobiletic revolution” (Gross, 1966; Russett, 1967; Scidà, 1996, 2007), globalization transforms distances and therefore the configuration of physical space. Some distances shorten until they almost disappear and are no longer obstacles against human action, while others diminish much

**Table 3.** Comparison Among the Top 10 Cities in Relation to the *Global Network Connectivity Index* (Reference Year: 2000) and the *Global Cities Index* (Year of Publication: 2008).

Rank	Global network connectivity	Global Cities Index
1	London	New York
2	New York	London
3	Hong Kong	Paris
4	Paris	Tokyo
5	Tokyo	Hong Kong
6	Singapore	Los Angeles
7	Chicago	Singapore
8	Milan	Chicago
9	Los Angeles	Seoul
10	Toronto	Toronto

less markedly. The extent of this contraction of distance depends primarily on the characteristics of the places involved, and especially on the infrastructures with which they are endowed: Ease of transport connections makes the main cities of Europe or North America much closer to each other than are villages in many African countries. But it also depends on the characteristics of the people involved: For example, the distance between the European Union and Kenya is much shorter for the average citizen of the former than it is for the average citizen of the latter.

Given these premises, a first unit of analysis—different from but, as said, not alternative to the state—which can be used to construct an index of globalization is the city. This unit of analysis has already been used by the instruments proposed by Taylor (2004), in particular the one designed to measure Global Network Connectivity, and by the A. T. Kearney/Foreign Policy Global Cities Index (The 2008 Global Cities Index, 2008). These are instruments very different from each other in the number of cities taken into account and the way in which they are constructed,<sup>7</sup> although they yield largely similar results: As shown in Table 3, in fact, fully 9 cities appear in the top 10 positions in the *Global Network Connectivity* and the *Global Cities Index*.

Here, however, my intention is to focus in particular on another possible unit of analysis for the construction of instruments with which to measure globalization: the person. Given that it has not yet been systematically applied, in the next section suggestions will be made in regard to its possible definition and implementation.

### The Person-Based Approach

There are authors who point out that, with some exceptions, the human person is largely neglected by theories of globalization (Ley, 2004; Ray, 2007, p. 39). If this is so, it is not surprising that the instruments devised to measure the phenomenon have to date used units of analysis different from the person. Nevertheless, I argue that an approach to the measurement of globalization that focuses on the single

individual is broadly justifiable and, indeed, potentially very fertile for understanding the complex and multiform dynamics with which globalization manifests itself. This contention is borne out by the fact that, within a particular state, but also in a particular city, globalization can and has very different effects and meanings for different people. Added to this is the fact that the world is not just a set of states, it is also a set of people, whose relationships are not always mediated by their membership of a state or nation (Sen, 2002, p. 66).

Yet the aim of this section is not to devise an instrument for the measurement of globalization whose unit of analysis is the persons. Instead, its more modest intention is to put forward suggestions on how such an instrument could be constructed.<sup>8</sup>

Broadly speaking, I believe that a Person-Based Globalization Index (PBGI) should consider the following six main dimensions: (a) possession of the resources and the abilities necessary to move and act in the global scenario; (b) effective mobility and activity in supranational and tendentially global domains; (c) belonging and a sense of belonging to global, or at any rate nonterritorial, entities; (d) exposure to global flows of mass communication; (e) participation in global, or at any rate supranational, communication flows; and (f) degree of global consciousness.

#### *Possession of the Resources and the Abilities Necessary to Move and Act in the Global Scenario*

The ability to act in a context more extensive than the local and national one, and the ability to live, so to speak, globalization and not just undergo its consequences derives from possession of certain specific capacities and material resources. Indicators of this dimension could be, for instance, knowledge of an international *lingua franca* (primarily English), possession of a passport, possession of a credit card, access to the Internet and the ability to use it, and the amount of personal income. In regard to the first of these indicators—relative to language—it might be objected that this would benefit *a priori* the citizens of English-speaking countries. I would respond to this objection by pointing out that knowledge of English (but also other languages, perhaps with the attribution of diversified weights) is anyway an objective and important factor in the ability to move in the global scenario. It should therefore be considered.

#### *Effective Mobility and Activity in Supranational and Tendentially Global Domains*

Endowment with the above-mentioned resources and capacities may give rise to different forms—and especially intensities—of action in the global sphere. An element certainly to be considered is the international physical mobility of the subjects studied. In particular, one indicator could be the number of times in which, in a given period of time, a national border has been

crossed. However, this indicator should be combined with information relative to the number of borders crossed, as well as to the locations of the countries visited, the purpose being to distinguish (or at any rate evaluate differently) globalization from regionalization—or from commuting dynamics, as in the case of transfrontier workers: This problem has already been mentioned when examining the results of the tools that measure globalization on the basis of the nation-state.

Consideration could also be made of information concerning the range of action of people's jobs and investments. Further indicators could be the frequency with which subjects find themselves in what Marc Augé (1992) calls "non-places": That is, spaces devoid of local features and therefore able to minimize the cultural attrition due to travel and action in foreign countries, such as airports or hotels belonging to the great international chains. Again, this dimension could comprise the *deliberate* use and consumption of foreign products.<sup>9</sup>

### *Belonging and a Sense of Belonging to Global, or at Any Rate Nonterritorial, Entities*

As rightly emphasized by Sen (2002, p. 63), people increasingly identify with groups, or they have a sense of belonging, which are genuinely global in that they exist not through but despite national boundaries. This is a dimension that cannot be immediately translated into empirical terms, and whose detailed definition would be beyond the scope of the present discussion. However, I suggest that its principal indicator might be membership of, and activity in, groups of supranational extension. Tied to the sense of global belonging is also the spread of cosmopolitan lifestyles, attitudes, and relations (Hannerz, 1990). However, this is a key dimension of that cultural globalization that is very hard to grasp by using territorial indicators. A PBGI instead appears decidedly more promising, although identification of the specific indicators to use would require reflection falling outside the scope of this contribution. A proposal might be to use statements reflecting a more or less cosmopolitan vision of the world, and with which the subjects studied would express their degree of agreement or disagreement. The dimension of the sense of global belonging would thus also include, ultimately, the sharing of planetary-level values and principles, such as those expressed by the Universal Declaration of Human Rights. However, the inclusion of references to values in an instrument intended to be applicable to a global scale appears problematic. In fact, the risk of ethnocentrism is very high—and consequently so too is the risk that the instrument will not gain wide recognition.

### *Exposure to Global Flows of Mass Communication*

A particularly important aspect of globalization is the existence of communication flows that traverse the planet in

asymmetric and fundamentally unidirectional manner. There are consequently news stories—but also images, values, and patterns of consumption—which may be known to all or almost all of the planet's inhabitants, and which all or almost all of the planet's inhabitants can form an opinion about or discuss. An indicator of this dimension could be, for instance, the frequency with which people watch or listen to international television or radio news broadcasts, the frequency with which they visit international information websites, or their knowledge about certain global events (for example, the venue of the last Olympic Games or the last World Football Championships).

### *Participation in Global, or at Any Rate Supranational, Communication Flows*

The inhabitants of the Earth are not just passive recipients of the information and communication flows that traverse the planet. Very often, they themselves generate such flows, especially in the form of interpersonal communications at a distance. Indeed, thanks to the development of communication media and abatement of their costs, our planet is swathed by an extremely dense network of communications; a network whose existence is a further distinctive feature of globalization, and whose nodes are single individuals (or small groups). Indicators of this dimension could be the international contacts—telephone calls, SMS, email exchanges, and other contacts via the Web, as well as those through social networks like Facebook—made in a particular interval of time. In this case, too, as suggested above in regard to physical mobility, consideration should be made of the number and the locations of the countries involved in such exchanges, so that it is possible to distinguish genuinely global factors and situations from others that also come about on a supranational scale.

### *Degree of Global Consciousness*

"Global consciousness" is probably the aspect of globalization that is most difficult to study, and which, therefore, is least studied (Holton, 2005, p. 39). This is so despite the fact that—as emphasized since the first studies on the phenomenon (Giddens, 1991; Robertson, 1992)—it is one of the constitutive dimensions of globalization itself. And also despite the fact that the manner in which people interpret globalization processes, as well as their emotional reactions to them, play a crucial role in determining the strategies and the courses of action enacted individually and collectively in response to globalization. For example, the difficulty of implementing joint supranational policies to address issues of global importance, such as protection of the natural environment or the management of economic and financial crises, is probably due to the fact that, as some authors suspect, there is still insufficient awareness of the global reach of such issues (Kennedy, 2010, p. 5). Measurement of global

consciousness is precluded to instruments that use territorial units of analysis, but it becomes possible when the unit of analysis is the person—which further testifies to the potential of this approach. Nevertheless, it cannot be denied that the concept of global consciousness is very difficult to operationalize: that is, convert into empirically measurable terms. In this case, too, I suggest as possible indicators various stimuli with which to record the degree of agreement or disagreement of informants with statements concerning interdependence relations among different parts of the planet.

Besides theoretical considerations that may modify, enrich, or even reverse my suggestions concerning the possible dimensions and indicators with which to construct a PBGI, when creating such an instrument, a practical problem of particular importance would arise. Unlike the indices based on states or cities, in fact, a PBGI cannot be calculated on the basis of secondary data—that is, data collected from already-existing statistical sources. Nor, as in the case of the instrument proposed by Taylor, can it be calculated on the basis of information obtainable with “desk work”—for example, the exploration and analysis of websites. It will be instead necessary to go into the field and directly question a sample of informants: An operation that obviously entails difficulties in terms of organization and costs. In this regard, while a survey conducted on a planetary scale is unthinkable, ones of lesser extent, but nevertheless multilocal in scale, are feasible. However, the degree of territorial coverage will be less than that obtained by using the other instruments mentioned in the previous sections.

Given this difficulty and this consequent limitation, the construction of a PBGI should move through a first experimental phase, during which the largest possible number of indicators are tested for each of the above-suggested dimensions, as well as possible others. Subsequently, the results of this first phase should serve to select the indicators, among all those tested, to be included in the definitive PBGI. These indicators should be as few in number as possible. A particularly “slender” instrument, in fact, would not require the conduct of an *ad hoc* survey; on the contrary, it could be easily inserted into the numerous surveys periodically carried out in almost every part of the world, thus making the datum of the PBGI available on a potentially global scale.

Having stated the difficulties involved in the construction of a PBGI, also to be emphasized is what instead is one of its main strengths. This consists in the fact that, because the person is an elementary unit, the data collected in this way can then be combined in multiple different forms. The person-based approach, therefore, is not incompatible with those based on states or cities. For the information collected and organized by means of a PBGI would also be able, for example, to show the percentage of globalized subjects resident in a state or a city, and also in a sub- or supranational region. But this same information could also be used to compare the different levels of globalization among the members of different professions, or among different scientific communities, where the last two categories cut across the nation-state

dimension. Besides comparing the different levels of globalization, a PBGI could easily be used to identify and analyze the factors that most influence the degree of globalization of a person, community, or geographical area. The data of a PBGI would be characterized, that is to say, by high malleability, and they could therefore be adapted to different needs of research and analysis. Finally, as already emphasized in regard to the globalization indexes based on states, a PBGI could be used not only for synchronic comparisons but also for diachronic analysis. However, the latter would require further effort in data collection, with more surveys at regular intervals.

## Conclusion

In conclusion, globalization is a multiscale and multidimensional process difficult to grasp in its many aspects with a single measurement instrument. The simultaneous use of tools based on different units of analysis could nevertheless furnish a sufficiently rich and comprehensive account of its main dimensions.

However, there are crucial elements of globalization that cannot be grasped with tools that use the state, the city, or the person as their unit of analysis. This concerns the systemic elements of globalization, which can only be captured if the entire planet is used as the unit of analysis. Some of these elements, particularly those of an economic kind like the volume of world trade in proportion to global GDP, can be easily measured and used, in particular to determine their evolution over time. Instead, other elements, consisting of “indivisible” factors that involve all the inhabitants of the Earth, regardless of their spatial locations and social circumstances (Caselli, 2004), appear more difficult if not impossible to measure. These factors are, for example, the sustainability and exploitation of natural resources, or the threat raised by the existence of nuclear weapons. To these should be added the existence of certain procedures, techniques, and “expert systems” now used on a truly global scale. These are the procedures, techniques, and “expert systems” which make possible the flows of money, products, ideas, and people that the current globalization indices seek to measure. While these elements may not be measurable, it should nevertheless be stressed that a PBGI—and this is a further advantage of it—could quantify the degree of awareness of their existence among people; in other words, as emphasized in the previous section, it could measure that “global consciousness” which constitutes a key component of globalization itself.

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## Notes

1. This contribution draws on and develops discussion in Caselli (2012).
2. See <http://globalization.kof.ethz.ch>
3. To be mentioned in this regard is the Cultural Globalization Index proposed by Kluver and Fu (2008).
4. With reference to the most recent data offered by each instrument, in fact, the A. T. Kearney/Foreign Policy Globalization Index has been calculated for 72 countries, the CSGR Globalisation Index for 103, the Maastricht Globalisation Index for 117, and the KOF Index of Globalization for 187.
5. Small and/or less populated countries are, so to speak, forced to have relations with other countries. For this reason, the CSGR Globalisation Index has introduced a correction factor—in relation to economic indicators alone—which takes account of certain physical and demographic characteristics of the country considered. See Lockwood and Redoano (2005).
6. If, for instance, a country records high trade volumes, but these are primarily directed toward only one other country, this does not mean that it is strongly globalized; on the contrary, it means that it is strongly dependent (Kluver & Fu, 2008, p. 341).
7. For details once again see Caselli 2012.
8. For this reason, not discussed here are certain crucial technical aspects of construction of an index of this kind: for instance, the weighting of the indicators or the translation of the information collected in the field into aggregable values (normalization). For thorough examination of the options available to the researcher, see Caselli (2012, pp. 22-24).
9. I have emphasized “deliberate” because consumers very often do not know the real origins of the products that they use: In the absence of such awareness, it is difficult to collect information useful for construction of the index.

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