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# Cultural Well-Being and GDP Per Capita in Italy: Empirical Evidence

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## Abstract

Social and cultural participation has always been a means to promote high economic growth and the development of the individual in a given society. Public and private institutions often try to make available efforts and resources to promote the usability of free time and social participation. This paper uses data from the multipurpose survey on Italian households, conducted by the Italian Institute of Statistics, and it analyses the relationship between cultural capability and the income and economic means of Italian households through the construction of a composite indicator of cultural well-being. The analysis of the individual indicators of education and cultural participation makes it possible to study issues related to the development of social capital in the northern and southern areas, thus highlighting the gap and enabling the decision-maker to apply possible corrections.

**Keywords:** cultural participation, well-being, GDP, additive model, composite indicator

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## 1. Introduction

The concept of human well-being has been changing over time and space. It changes over time, because what defined it in past times is different from what guaranteed well-being a few decades ago, or what guarantees it today. The society of mass phenomena, consumer goods, and fashions has made it more complex to evaluate what ensures well-being: there are no longer only basic needs neither a certain degree of personal satisfaction to be achieved because, in advanced countries, the same needs are created by rapid economic and social dynamics.

The idea of well-being also changes through space: certainly, there are communities that are happy to just satisfy basic needs, and which do not suffer consumerist influences; others,

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instead, have to manage a complex set of relationships between health, needs, and what is necessary for their fulfillment.

For many years, quantifying and measuring the level of well-being of a society has been the object of research for many researchers, economists, international organizations, and institutions. Many conceptualizations of well-being have been provided over the years. The first conceptualizations were utilitarian and reduced well-being to a hedonistic dimension and to subsequently scalar-valued utility. Subsequently, it has become more common, and perhaps necessary, to consider well-being as a multidimensional concept. In this regard, McGillivray identifies some of the multidimensional conceptualizations of well-being [1], such as the capabilities approach by Sen [2], the basic human values approach [3], the intermediate needs approach [4, 5], the universal psychological needs approach [6], the axiological categories approach [7], the universal human values approach [8], the domains of subjective well-being approach [9], the dimensions of well-being approach [10], and the central human capabilities approach [11].

Therefore, the term “well-being” is used to refer to all those areas (or dimensions, indeed) taken into consideration for an assessment of one's life. Seligman adds a positive sense, defining well-being as a positive assessment of an individual's life, which includes positive emotions, engagement, satisfaction, and meaning [12].

For decades, the idea has been accepted that this kind of research was useful when it referred to third world countries, later labeled “developing,” which did not enjoy high enough levels of income and consumption to guarantee a sufficient degree of well-being. It was believed that the Western countries, given the well-established high standard of living and the ability to access a wide range of services in all areas of life (health, education, social security, etc.), did not need such studies. For this reason, the attention of scholars and economists has often been given to the measurement of strictly economic variables, such as production, consumption, and per capita income. In this way, the increase of wealth and social progress was closely linked to the growth of GDP per capita [13].

However, the political and economic events that have occurred since the early 1970s and 1980s have questioned this paradigm, highlighting an increase of inequalities even in high-income countries, both in access to resources and to services [14].

The relationship between the individual's well-being and economic well-being, while being in part undeniable, is therefore not so solid; the interpretation proposed in the literature by Amartya Sen shows that well-being depends on many other factors [2, 15–20]. The attempts to identify and quantify these factors, developed over the years, are an integral part of welfare economics and statistics, but they are now also very important for the initiatives of national and international institutions, which have the primary goal to provide guidelines and directions for policy interventions [21]. It is possible to make a distinction based on the origin of the different measures; the first category is based on the idea that access to certain goods or services constitutes a prerequisite of well-being, and this access is quantified through the use of “Social indicators of objective variables.” A second type of measure directly regards the psychological states of individuals, through the results obtained from investigations on the subjective well-being, and from research on the dynamics concerning emotional experiences; these measures are called “Subjective Indicators of Well-being.”

Not only is the multidimensionality of well-being taken for granted (multidimensionality is now widely accepted in the literature: for example, see Ref. [22–25]), but also primary importance is attached to dimensions closely related to the participation of citizens in activities that allow the growth of the person and of human relations. Therefore, a concept of “cultural well-being” arises, which is seen as a means of fostering high economic growth and the development of the individual in a given society [26].

The growth of an individual's cultural well-being is therefore based on two different areas that contribute to its formation; on the one hand, education, because everything that a society has made for itself is made available through education to its future members [27]. On the other hand, the factors of cultural participation constitute the specific and personal resources used to meet a more general need called “cultural appreciation,” together of course with some degree of personal taste [26]. Several studies have shown that participation rates to events of cultural nature can be associated with urban residence [28], income [29, 30], and pressures stemming from membership in a particular social group [28] and age [31].

The measurement of cultural well-being is therefore essential to define one of the components of well-being that affects the material and social aspects of a person. Following the path traced by Dasgupta [32] in wanting to quantify well-being using indicators [33], one has to remember that in processes of aggregation it is possible to use different types of indicators and variables. In this case, we prefer to provide a measurement of cultural well-being at the regional level, which is a sufficiently uniform level to ensure consistent conclusions in order to understand and analyze how Italian citizens in different contexts have reached different levels of education and use their leisure time by investing resources in cultural activities.

To achieve the aim, we will build an indicator of cultural well-being, assuming that a higher level of education and greater participation in educational and cultural activities result in a better quality of life. It will be interesting to see whether an active participation in sociocultural activities and lifelong learning can be related with the strictly economic aspects of life through the use of the variable of disposable income per capita. An examination of this kind assumes considerable importance because, as noted, the reference economic measures used as standards for measuring the quality of life, do not take into account the activities covered by this analysis.

## 2. Materials and methods

The analysis of the literature offers several solutions to derive a priori what should be the most appropriate variables to be included in an indicator. The choice, of course, is conditioned both by the availability of data and by the purposes of the indicator itself [34–40]. The choice of variables depends on several considerations, although there seem to be no strict and validated criteria prevailing. However, we may highlight some common practices. The availability of the data constitutes one of the most difficult problems to solve; in fact, it conditions the choice of variables to be included, and so, ultimately, the very composition of the indicator [41, 42].

To define the scope of investigation, we performed a preliminary analysis on the data availability and opted to build an index on a regional basis, using variables included in the multipurpose survey on Italian households, carried by the Italian Institute of Statistics (ISTAT).

With the aim of a subsequent aggregation of the variables, we chose to maintain the same weight to each indicator, reducing interference to a minimum, even if the choice to assign the same weight to all the variables implies an implicit judgment on the variables [43]. We also note that some authors [44, 45] identify the equal weighting of the variables as the preferred procedure adopted in most applications, failing to agree [46] on the adoption of alternative procedures [47, 48].

In order to proceed with the construction of the indicators, after identifying the reference area to select the variables and build the indexes, we proceeded according to the classic additive model, which represents the most used model in the literature. The classic methodology aims to realize an index [34, 36, 49, 50], consisting of the weighted [34] or non-weighted sum [36, 49, 50] of the previously selected partial indicators.

The indicators were obtained by adding the contributions of selected variables (**Table 1**). Due to the lack of homogeneity of the selected variables, in terms of units of measurement, it was considered necessary to carry out standardization. The variables with different scales, in fact, would have a different weight in the calculation of the total score compared to the other variables [51]. Therefore, for each observation, we calculated the z-scores for each of the variables under consideration, obtained by subtracting at each observation the value of the average of the regions and dividing the result by the standard deviation of the regions. The index of education consists of the non-weighted sum of three z-scores, and the one related to cultural participation, instead, uses six z-scores [36, 49, 50, 52].

The index of education is calculated as the non-weighted sum of  $Z_i$ : given:

$$Z_1 = \frac{x_1 - \mu x_1}{\sigma x_1} \quad Z_2 = \frac{x_2 - \mu x_2}{\sigma x_2} \quad Z_3 = \frac{x_3 - \mu x_3}{\sigma x_3} \quad (1)$$

and being  $x_i$  and  $\sigma x_i$  ( $i = 1, 2, 3$ ), the averages and standard deviations of the variables under consideration for the area are equal to:

$$\text{Education index: } \sum_1^3 Z_i \quad (2)$$

Similarly, the social participation index is calculated as the non-weighted sum of the remaining  $Z_i$  given:

$$Z_4 = \frac{x_4 - \mu x_4}{\sigma x_4} \quad Z_5 = \frac{x_5 - \mu x_5}{\sigma x_5} \quad Z_6 = \frac{x_6 - \mu x_6}{\sigma x_6} \quad Z_7 = \frac{x_7 - \mu x_7}{\sigma x_7} \quad Z_8 = \frac{x_8 - \mu x_8}{\sigma x_8} \quad Z_9 = \frac{x_9 - \mu x_9}{\sigma x_9} \quad (3)$$

and being  $\mu x_i$  and  $\sigma x_i$  ( $i = 4, 5, 6$ ), the averages and standard deviations of the variables under consideration for the area, the index is equal to:

$$\text{Cultural participation index: } \sum_4^9 Z_i \quad (4)$$

Positive values of the indexes indicate situations of cultural well-being while, on the contrary, negative index values identify deficit situations. Note that the indexes are the sum of addenda that can be positive or negative and, therefore, may compensate each other in some way.

A composite indicator is obtained through the standardized sum of the two indicators. It is called "Composite Index of Education and Cultural Participation (ICIC)" normalized to the minimum value, thus obtaining a value of 0 for the region in the last position.

$$\text{ICIC: } \sum_1^2 S_j \quad (5)$$

Thematic areas	Variables
Education	<p>Percentage of population aged 25–64 who received education or training in the four weeks, preceding the interview (excluding self-learning activities)—<b>Lifelong learning</b></p> <p>Ratio—for each region—of people aged 15–24 enrolled in a course of studies (levels 1–8 of ISCED 2011) to the population of the corresponding age group residing in the same region. The students include those enrolled in 3- and 4-year courses of vocational education and training (VET)—<b>Participation in education and training system</b></p> <p>Percentage of people aged 30–34 that achieved any university degree—<b>University Education</b></p>
Cultural participation	<p>People aged 6 and above who have attended classical concerts outside the home in the last 12 months—<b>Classical music concerts</b></p> <p>People aged 6 and above who have visited museums and exhibitions outside the home in the last 12 months—<b>Museums and exhibitions</b></p> <p>People aged 6 and above who have visited archaeological sites or monuments outside the home in the last 12 months—<b>Archaeological sites and monuments</b></p> <p>People aged 6 and above who have attended theater performances outside the home in the last 12 months—<b>Theater</b></p> <p>People aged 6 and above who have read at least one book in the last 12 months—<b>Books</b></p> <p>People aged 6 or above who have read newspapers five times a week or more—<b>Newspapers</b></p>

<sup>1</sup>In the variables that make up the indicator, we chose to exclude cinema and concerts—except for those of classical music—because they are considered mainly as leisure activities.

**Table 1.** The variables considered (ISTAT, 2013, Italian male and female population aged between 15 and 64)<sup>1</sup>.

### 3. Results

In this section, using the set of indicators and the above methodology, we proceed to the analysis of the results obtained through a Composite Index of Education and Cultural Participation (ICIC) built ad hoc from the synthesis of the two thematic indicators of education and cultural participation.

The ICIC index has both positive and negative values indicating better education and participation, and vice versa. Therefore, in order to allow better reading, we show the rank value in a ranking that assigns 1 to the best region and 20 to worst (**Table 2**).

First, in order to evaluate the correct choice of the indicator, we proceeded to evaluate the relationship existing between the two thematic indicators. Then, we observed the link between the composite indicator and the GDP per capita.

The link between the indicators of education and cultural participation is measured by the Pearson coefficient of linear correlation—which is equal to 0.73636—indicating that the two variables express a direct relationship between them.

Rank	Regions	Index
1	Trentino-Alto Adige/Südtirol	6.07
2	Lazio	5.65
3	Friuli-Venezia Giulia	5.36
4	Emilia-Romagna	5.21
5	Lombardia	4.51
6	Umbria	4.51
7	Toscana	3.99
8	Liguria	3.83
9	Marche	3.8
10	Veneto	3.2
11	Piemonte	3.2
12	Abruzzo	3.08
13	Sardegna	2.6
14	Valle d' Aosta/Vallée d' Aoste	2.25
15	Molise	1.56
16	Basilicata	1.22
17	Puglia	0.74
18	Campania	0.27
19	Calabria	0.14
20	Sicilia	0

**Table 2.** Ranking of Italian regions according to scores of the composite ICIC indicator.

It appears useful at this point to compare the ICIC index with a variable that expresses the economic well-being. As a proxy, we chose the variable of GDP per capita. The data is provided by ISTAT, with reference to the year 2011 (see **Appendix Table 1**).

The existing relationship can be measured on the actual values of the variables by using the Pearson coefficient. This turns out to be 0.80473, indicating that cultural well-being is higher in regions where the GDP per capita is higher.

**Figure 1** relates the rank of the two classifications, highlighting the situations of greater disparity between the two quantities analyzed.

We observe a difference between the position in the ranking of Valle D' Aosta as regards GDP per capita (2nd) and the level of the ICIC (14th), of Umbria, 12th and 6th, respectively, of Friuli-Venezia Giulia, 9th for GDP per capita and 3rd for the ICIC index, of Sicily, 17th for GDP per capita and last for the ICIC. The other regions have positions that deviate slightly from one variable to the other.

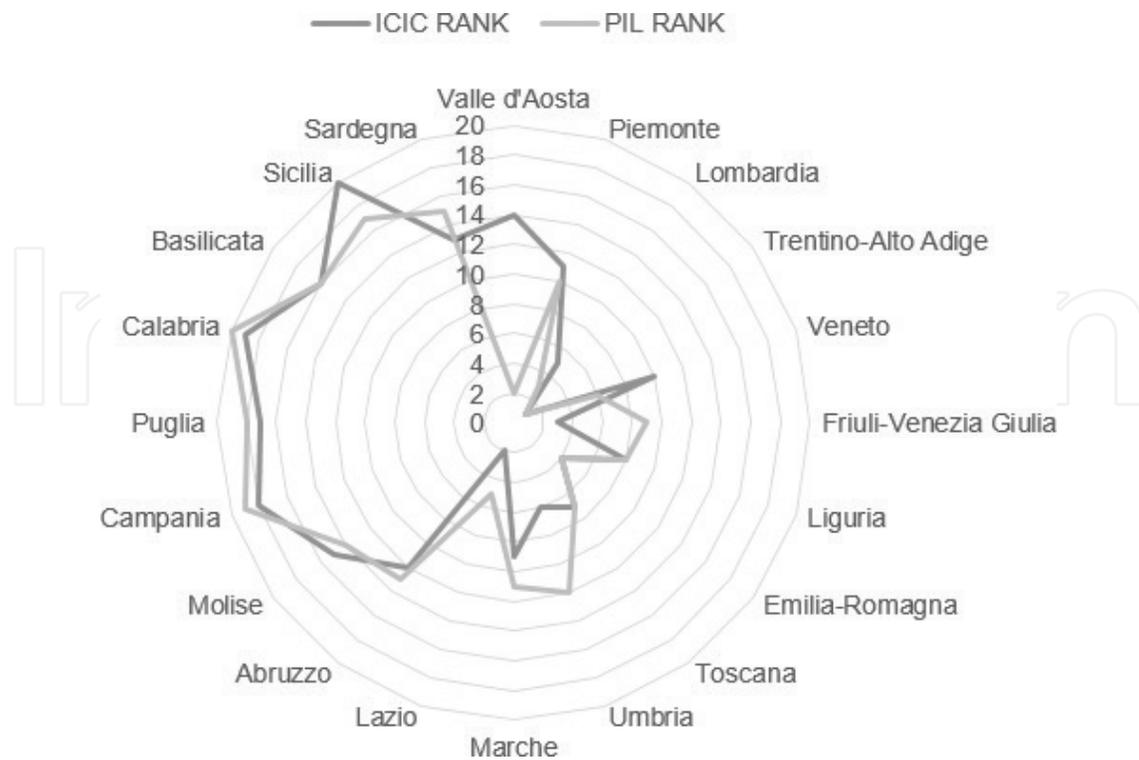


Figure 1. Comparison of the ranks between the ICIC and the GDP per capita of the Italian regions.

#### 4. Discussion

First, it is helpful to look at some situations closely linked to the Italian context. Contrary to what is suggested by Checchi [53], the Italian regions have neither an enrolment rate nor a cultural participation rate homogeneous from north to south. The regions are not arranged randomly but, with the exception of the Valle d'Aosta/Vallée d'Aoste, all northern regions appear in the top positions above the average; on the contrary, most of the regions of Southern Italy appear in the last places with considerable differences between them and the northern regions. The strong presence of criminal organizations could partly explain this result, at least for Sicilia, Calabria, and Campania, located in the last three rankings [54, 55]. The geographical stratification is similar to that shown by the disposable income per capita, as confirmed by the calculation of the Pearson coefficient between the two values (0.80), which implies a very close relationship between education and cultural participation, and income. On closer analysis, separating the two thematic indicators and later correlating them with GDP per capita, it can be observed that cultural participation is the driving indicator, with a linear correlation coefficient of Bravis Pearson equal to 0.89, versus a thematic education index of 0.61. Both indicators appear to be influenced by the economic possibilities of the households. Costs, such as the price of a ticket, are elements that prevent participation in an event, just like education can be heavily influenced by economic aspects. In addition to these economic barriers, there are also some informational and social ones: certain activities (such as attendance to theater performances and classical

music concerts), used as variables in the indicator, are in fact traditionally linked to more affluent social classes. This interpretation also explains the good relationship recorded between educational and cultural participation indicators and GDP per capita, because people from the upper classes tend to continue more easily their studies for economic reasons [56, 57]. The relationship between the ICIC index and the GDP per capita implies a clear relationship between education, cultural participation, and available resources; one can easily observe that, in the richest regions, people have more resources to be allocated for this purpose, while in the poorest regions that possibility is more difficult to realize.

However, a rather important difference remains, which is not explained by income availability and that persists in the identification of cultural well-being, income per capita being equal. Although this conclusion confirms a concept related to cultural participation already found in the literature [28–30], it can be said that such relationship can also be applied to a more general idea of participation, which includes social participation and the use of free time and continuing education.

## 5. Conclusion

This research developed from the assumptions that basing the measurement of cultural well-being only on economic parameters can be misleading, and that the use of social indicators can be a way to overcome this obstacle; they also provide a useful tool for evaluating policies implemented by policy-makers.

In this light, the results have produced conflicting directions: on one hand, even if GDP per capita can be considered a reasonable approximation to the well-being, it is still not enough to give a complete and comprehensive description, making it necessary to expand the amount of essential information to complete the evaluation as much as possible. However, the good value of the Spearman's Rho coefficient leads to think that, all in all, GDP per capita gives an approximately similar result to the index of cultural well-being; on the other hand, it does not account for a number of essential elements related to cultural training, which can create more or less useful bases for an improvement in well-being.

The assumptions that form the basis for this research are that basing a measure of cultural well-being only on a few parameters can be misleading, and that using social indicators can be a way to overcome this obstacle. Indicators are a sensitive tool and each of them represents a number that can have greater or lesser significance depending on the importance that is given to them and on the knowledge available to interpret them. On the other hand, it is evident that in societies that are oriented towards performance, the indicators are valuable data. Furthermore, an indicator is the only means that we have at our disposal to give a numerical form to the efforts and results of economic and social policies, so it would be a mistake to deny their usefulness or underestimate their use.

It is necessary to point out that the quantitative exercise carried out is structurally based on the use of statistical data. The information provided by the data should not be considered an indisputable truth, nor the best description possible of the phenomenon; it should instead be taken for what it is, i.e., the representation of the phenomenon analyzed, extrapolated from

a set of proxies. This representation, however true and accurate, is still only a representation. What statistical data gathers is only a small portion of the truth, an approximation of it. A large amount of data can, therefore, guarantee a satisfactory approximation of reality, but it is not a substitute for it. This is particularly true when the intention is to provide a synthesis of the data available, which leads to a further loss of information. It is only by bearing in mind these aspects that it is possible to evaluate what the indicator reveals.

It is possible to open debates and make hypotheses, considering cultural well-being either a universal or totally subjective concept; it is possible to discuss abilities and applications. However, social policies, public investment, and government decisions are real quantities, economic means, and resources that are distributed among the population. Here lies the importance of the indicator: it is a tool to direct policies and its aim is to provide information to decision-makers.

In this perspective, the analysis of the cultural well-being distribution in the Italian regions makes it possible to study issues related to the development of social capital in the northern and southern areas, thus highlighting the gap and enabling the decision-maker to apply possible corrections.

## Appendix

Rank	Regions	GDP per capita
1	Trentino-Alto Adige/Südtirol	35,256.98
2	Valle d' Aosta/Vallée d' Aoste	34,523.20
3	Lombardia	33,765.74
4	Emilia-Romagna	31,081.20
5	Lazio	30,294.42
6	Veneto	28,373.13
7	Toscana	27,746.40
8	Liguria	27,240.77
9	Friuli-Venezia Giulia	26,767.30
10	Piemonte	26,564.90
11	Marche	23,994.59
12	Umbria	22,863.86
13	Abruzzo	22,621.22
14	Molise	19,487.88
15	Sardegna	19,122.95
16	Basilicata	18,148.69
17	Sicilia	16,416.51
18	Puglia	16,388.15
19	Campania	16,210.55
20	Calabria	15,247.28

**Appendix Table 1.** Ranking of the Italian regions relative to GDP.

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