Cultural Participation in the digital Age in Europe: a multilevel cross-national analysis

*La partecipazione culturale nell’era digitale in Europa: un’analisi multilivello transnazionale*

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**Abstract** Considering a broad spectrum of cultural activities, this study aims to deepening European countries differences in Cultural Participation taking into account micro, meso and macro determinants. For this aim, we used the large dataset provided by the Special Eurobarometer survey n.399 collected in the European countries. The main goals are the following: 1) to outline a multidimensional view of Cultural Participation; 2) to analyse, through a multilevel approach, the determinants of Cultural Participation of European citizens, considering the relationships with both socio-demographic characteristics of people and other relevant contextual features.

**Abstract** *Considerando un ampio spettro di attività culturali, questo studio mira ad approfondire le differenze della partecipazione culturale nei Paesi europei tenendo conto delle determinanti che possono intervenire, a livello micro, meso e macro. A tal fine, viene utilizzato il dataset dell’Eurobarometro Speciale n.399, rilevato nei paesi europei. Gli obiettivi principali sono i seguenti: 1) delineare una visione multidimensionale della partecipazione culturale nell’era digitale; 2) analizzarne, attraverso un approccio multilivello, le determinanti, considerando sia le relazioni con le caratteristiche socio-demografiche degli individui sia quelle con altre rilevanti caratteristiche di contesto.*

**Key words:** Cultural Participation, Digital Age, Multilevel analysis.

1. On Cultural Participation

Cultural participation is not only a right enshrined in the United Nations Declaration of Human Rights, but it is also considered a key element for the quality of individual and collective life, as widely recognized by both literature and international Agencies that have contributed to define its concept and setting up of some indicators for its empirical analysis [11,3,1]. At European level, the relevance of this issue is highlighted by the Agenda for Culture adopted in 2007 by the Council of the European Union and the European Council, as well as a number of policy actions set out in the Work Plan for Culture for 2015-2018, adopted by EU Culture Ministers in December 2014.

The concept of Cultural Participation can be made operative on the basis of the main international and European projects: Unesco's Framework for Cultural Statistics in 1986 [10], LEG (Leadership Group on Cultural Statistics) in 2000 [3] and ESSNet-Culture (European Statistical System Network on Culture) in 2011 by Eurostat [1]. These projects, albeit with some differences, agree to adopt a pragmatic definition based on the identification of so-called cultural domains and to include cultural practices that fall into those domains without any distinction in terms of quality and including different types of participation.

Furthermore, these projects emphasize the changes in cultural practices deriving from the rise of ICT (Information and Communication Technology) and especially from the new possibilities offered by the Internet that make cultural participation more complex. Media users have more and more control over the selections of cultural contents offered via different channels, including mobile media. This is the *convergence culture* in which patterns of media use are merging, moving from medium specific content toward content flowing across multiple media channels [6].

In this study, we consider a broad spectrum of cultural activities. The main goal is to deepening European countries differences in Cultural Participation taking into account micro, meso and macro determinants. To this end, the specific objectives are the following:

1) to outline a multidimensional view of cultural participation, considering a broad spectrum of cultural activities;

2) to analyse the determinants of cultural participation of European citizens deepening the direction of the relationships with socio-demographic and other relevant contextual characteristics by using a multilevel approach.

2 Data and Indicators

We analysed the large dataset provided by the Special Eurobarometer survey n.399 collected in the European countries in 2013. This survey detects the attitudes of the European public towards a range of cultural activities, looking at their participation as both consumers and performers of culture. The sample considered in this contribute has a total size of 26,053 individuals aged 15 years and over in 25 european countries[[2]](#footnote-2).

The choice of indicators was driven by the conviction that nowadays Cultural Participation is carried out through traditional activities as well as using the Internet.[[3]](#footnote-3) In the Eurobarometer survey the following 9 variables are dealing with traditional cultural activities: 1- seen a ballet, a dance performance or an opera; 2- been to the cinema; 3- been to the theatre; 4- been to a concert; 5- visited a public library; 6- visited a historical monument or site (palaces, castles, churches, gardens, etc.); 7- visited a museum or gallery; 8- watched or listened to a cultural program on TV or on the radio. Responses modes are: 1- not in the last 12 months; 2- 1-5 times in the last 12 months; 3- more than 5 times in the last 12 months.

Moreover, other variables, which can supplement the previous ones, allow us to take into account some cultural activities performed by the Internet: 1- visiting museum or library websites or other specialized websites ; 2- downloading movies, radio programs (podcasts) or TV programs; 3- watching streamed or on demand movies or TV programs; 4- reading newspaper articles online; 5- downloading music; 6- listening to radio or music; 7- reading or looking at cultural blogs; 8- searching for information on cultural products or events. Responses modes are: 1- not mentioned; 2 - mentioned.

To explain the individual differences of Cultural Participation, other variables were introduced in the analysis. They concern socio-demographic and cultural characteristics of people and some aspects of the community where they live: gender, age, education, occupation, family social class, type of community. Furthermore, since it is reasonable suppose that some features of the country affect significantly Cultural Participation, the following macro level variables were also considered: economic aspects (Gross Disposable Income of Households), political choices (Government Expenditure in Cultural Services), consistency of cultural offer (Employments in Cultural Sector) and level of urbanization (Distribution of Population in the cities)[[4]](#footnote-4).

4 Methods and Results

The previous selected variables were the input for a strategy of analysis that consists in the following two steps: 1) calculate a synthetic index of Cultural Participation at European level; 2) identify the determinants of participation at both individual and country level.

4.1 A Synthetic Index of Cultural Participation at European level

Considering that the variables dealing with cultural activities, including those carried out via the Internet, are all categorical (both nominal and ordinal), Nonlinear Principal Component Analysis (NPCA) was applied to calculate a synthetic index of Cultural Participation.

As it is known, in NPCA, optimal quantiﬁcation replaces the category labels with category quantiﬁcations in such a way that as much as possible of the variance in the quantiﬁed variables is accounted for. Speciﬁcally, the method maximizes the ﬁrst *p* eigenvalues of the correlation matrix of the quantiﬁed variables, where *p* indicates the number of components that are chosen in the analysis. The aim of optimal quantiﬁcation is to maximize the Variance Accounted For (VAF) in the quantiﬁed variables [4,8].

The first dimension (alpha=0.87, VAF=32.12%) has positive correlations (between 0.5 and 0.7) with all variables. The choice of ordinal analysis levels for the variables has been evaluated by examining their transformation plots: for ordinal variables, they indicate that the categories are in the right order and the difference between categories 1 and 2 is slightly larger than that between 2 and 3. For nominal variables, straight lines indicate that they are linearly related to the other variables. The stability of results have been confirmed according 95% bootstrap confidence regions for eigenvalues, component loadings, person scores and category quantifications [7] estimated using balanced bootstrap with 1000 bootstrap samples.

The first component can be interpreted as a Cultural Participation Synthetic index (CPS). The index (ranging from -1.2 to 3.6; mean=0; median=-0.19; standard deviation=1; asymmetry=0.72; Kurtosis=-0.23) assumes different mean values by gender, age, education and country. It is highest among women, decreases as the age increases, it steps up with higher levels of education and is quite different among European countries: its minimum pertains to Portugal (-0.59), the maximum to Sweden (0.9) with different distributions inside each country.

What are the determinants of those different levels of Cultural Participation in the European countries?

***4.2 The determinants of Cultural Participation in the European countries: a multilevel approach***

The structure of the data to be analysed is clearly hierarchical, since individuals are nested within countries. Given the intrinsically hierarchical nature of the data set and hypothesizing that the variability of the CPS index can depend on both the people characteristics and the different contexts in which they live, a multilevel approach was used [9].

In our case, data consist of the values of CPS index (dependent variable) and several explanatory variables, both social–demographic individual features and countries variables, referred to *i*-th respondent in *j*-th country (, and ). Therefore, there are two levels of analysis: level two, the highest, is that of countries, and level one, the lowest and nested within the higher level, is that of the individuals.

Since it is reasonable assume that countries can have a systematic effect on the Cultural Participation of individuals, CPS index values within the same countries are dependent or correlated. In this context a multilevel analysis with no explanatory variables at all, the so called *intercept-only model*, was firstly applied

 , and (1)

where represents some individual-dependent residual while is a random country-dependent deviation. Model (1) provides a partitioning of the variance between the first () and second () level (residual effect and random effect covariance, respectively) and allows us to evaluate the Intraclass Correlation Coefficient (ICC) for the country effect. ICC can be considered both a measure of the between countries variability and the degree of the non-independence of individuals nested into countries. In our case intercepts vary significantly across countries (Wald Z=3.44, p-value=0.001) and ICC=0.136 (Table 1) shows that about 13.6% of the CPS index variability is due to the variability between countries.

Since these previous results justify a multilevel approach [10,5], we performed an analysis in two steps: first, *q* level-one (individual) *Xq* explanatory variables were introduced in the multilevel model and then *p* level-two (country) *Zp* explanatory variables were also put in defining the following final model (3)

 , and (2)

 , and (3)

In model (2), taking into account only the individual covariates, ICC= 0.113 was still high, even if less than one obtained from model (1), so there still was a fair amount of variation (11.3%) across countries that can be explained by level-two covariates. Actually, in model (3) ICC drastically decreases to 0.031, a value lower than a cut-off (0.05) fixed by most of the researchers [10,5] (Table 1).

The results from model (3), which is the best of the three models according to AICC and BIC (Table 2), show that all predictors are significant. Compared to the reference value, CPS index increases in youngest aged 15-20 people, who are still studying, is self-employed, is living in cities and belongs to high social class (Table 3). Nonetheless, the results show that differences at individual level are not sufficient to explain all the determinants of Cultural Participation. It is necessary to take into account some characteristics of the countries: all the predictors - economic, cultural, and political - considered in model (3) have a positive influence on CPS index, especially the Employment in cultural sector (that is a proxy of cultural offer) and Gross disposable Income of household (Table 3).

**Table 1:** Residual and Random effects

|  |  |  |  |
| --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3  |
|  | Estimate |  Sig. | Estimate |  Sig. | Estimate | Sig. |
| Residual Effect | 0.872 | 0.000 | 0.618 | 0.000 | 0.618 | 0.000 |
| Random effect Covariance | 0.137 | 0.001 | 0.079 | 0.001 | 0.020 | 0.001 |
| ICC | 0.136 | - | 0.113 | - | 0.031 | - |

**Table 2:** Models fit statistics

|  |  |  |  |
| --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3  |
| Akaike Corrected (AICC) | 70507,095 | 59427,695 | 59410,96 |
| Bayesian (BIC) | 70523,431 | 59443,957 | 59427,22 |

**Table 3:** Model 3 Fixed effects

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Model Term |  | Coeff. | Std. Error | t | Sig. |
| Intercept |  | -1.074 | .0706 | -15.219 | .000 |
| Gender (reference: Female) | Male | -.114 | .0190 | -5.999 | .000 |
| Age (reference: Over 65) | 15-29 | .297 | .0422 | 7.049 | .000 |
| 30-49 | .215 | .0288 | 7.480 | .000 |
| 50-65 | .080 | .0206 | 3.877 | .000 |
| Education (reference: No full education) | Still studying | 1.299 | .0786 | 16.529 | .000 |
| 20 years and older | .974 | .0720 | 13.531 | .000 |
| 16-19 years | .422 | .0684 | 6.168 | .000 |
| Up to 15 years | .119 | .0627 | 1.904 | .057 |
| Occupation (reference: Not working) | Self-employed  | .307 | .0326 | 9.404 | .000 |
| Employed  | .218 | .0197 | 11.065 | .000 |
| Community (reference: Rural area) | Large town | .261 | .0255 | 10.252 | .000 |
| Small/middle town | .101 | .0187 | 5.382 | .000 |
| Family Social Class (reference: Low level) | High level | .331 | .0291 | 11.385 | .000 |
|  | Middle level | .160 | .0142 | 11.252 | .000 |
| Gross Disposable Income | .108 | .0218 | 4.959 | .000 |
| Government Expenditure in Cultural Service (%GDP) | .090 | .0197 | 4.566 | .000 |
| Employment in cultural sector as % of total employment | .134 | .0367 | 3.650 | .000 |
| Distribution of population in the cities (%) | .048 | .0222 | 2.178 | .029 |

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2. Only countries with a sample size > 1000 were considered. They are: France, Belgium, Netherlands, German, Italy, Denmark, Ireland, Great Britain, Greece, Spain, Portugal, Finland, Sweden, Austria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia, Bulgaria, Romania, Croatia. [↑](#footnote-ref-2)
3. The set of variables concern only with one form of cultural participation such as attending and receiving. Others two forms (amateur practice and social participation) are not considered in this contribute. [↑](#footnote-ref-3)
4. In addition to these variables (source: Eurostat), other ones were also considered in some preliminary analyses, but they resulted not significant: Government expenditure as % GDP in Education, Cultural enterprises % of total of services, Tertiary education (levels 5-8) of the aged population 25-64 (%), Participation rate in education and training (%), Households Broadband coverage (%). [↑](#footnote-ref-4)