Evaluating the Economy-wide Opportunity Costs of Culture

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1. Introduction: Why is Culture so Relevant?

- For the Society and Wel-being:
  - United Nations (2018): Sustainable Development Goals: Target 4.7
    - "Promotion of sustainable development and education for global citizenship and appreciation for cultural diversity"

    ↓

    - Positive Externalities!: societies that are less divided, less confrontational and more tolerant

    - Reaching this target is essential for improving relationships between regions, promoting peace and fruitful linkages, enhancing governance, respecting human rights, supporting sustainable development and ensuring that "no one is left behind"

1. Introduction: Why is Culture so Relevant?

- For Business and Value-Added Generation (EU context): Supply Perspective

  - Remarkable share of SMS companies: Most of the EU cultural sector's value added was generated by SMS companies (6.3 % of total business)
  - Three key cultural sectors: Arts and entertainment activities (27.4%); Publishing (14.9%) and architecture (14.6%) accounted for the largest shares of the total value added generated by the EU's cultural sector.
  - Four major EU economies: Just over half of all cultural enterprises in the EU (51.5%) were located in 4 EU countries: France (17.5%), Italy (12.5%) the Netherlands (12.0%) and Spain (9.4%).
  - In terms of Value Added, Three key EU economies: In 2022, Germany accounted for the highest proportion of value added generated by cultural enterprises in the EU (26.4% of the EU total), followed by France (17.4%) and Italy (11.5%)

    - Together, these three countries accounted for 55.3% of the total value added generated. The same three countries also accounted for 53.9% of the EU cultural sector's turnover.

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- For Business and Value-Added Generation (EU context): Demand perspective
  - In 2020, 2.7% of total consumption expenditure by EU households went to culture-related goods and services.
  - In 2020, Eight countries recorded a share of cultural expenditure in total household budgets above the average among the 24 EU countries with available data. The highest percentage of the household budget spent on cultural purposes was in Denmark (3.9%). By contrast, in 16 countries the share was below the EU average, with the smallest share in Greece (1.3%).
  - Spain, for instance, the share is 1.6% (also bellow the EU average).
  - On average, EU households allocated about a quarter of their cultural expenditure to information processing and audio-video equipment and another quarter to books and newspapers

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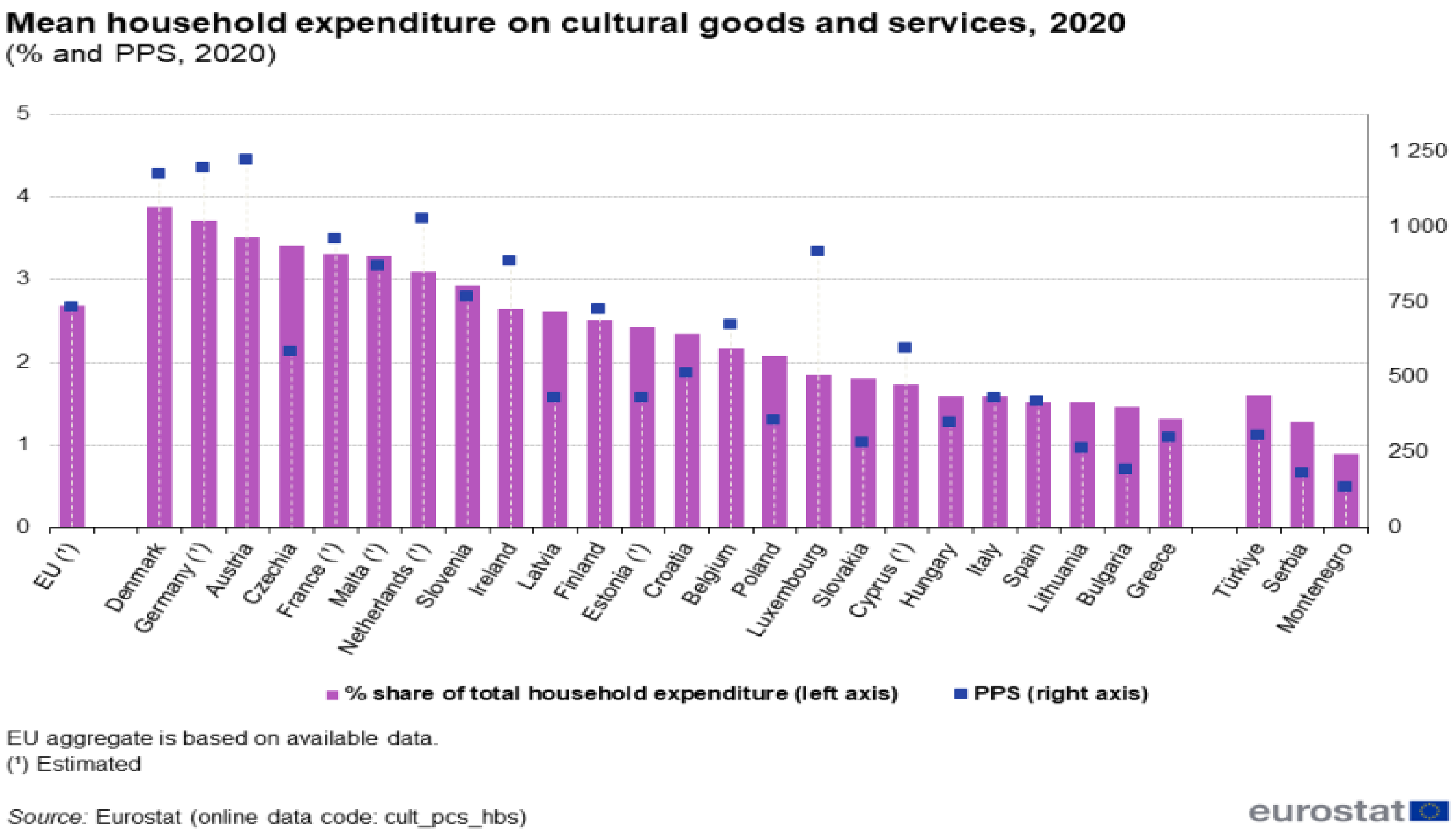

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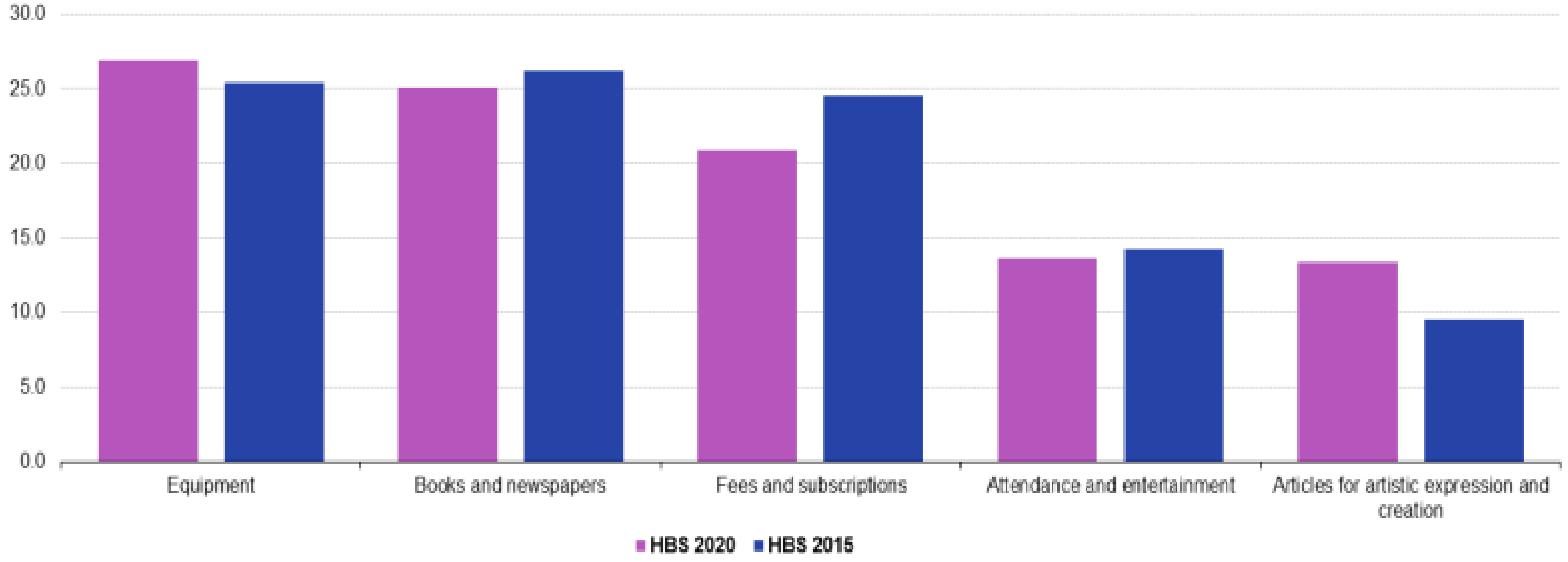
Mean household expenditure on cultural goods and services, by broad expenditure purpose
(% share of all household cultural expenditure, EU, 2020 and 2015)



Note: estimate based on available data.
Equipment includes information processing equipment, reception, recording and reproduction of sound and vision, reception, recording and reproduction of sound, repair of audio-visual, photographic and information processing equipment, recording media.
Books and newspapers includes books, newspapers and periodicals.
Fees and subscriptions includes television and radio fees and subscriptions, hire of equipment and accessories for culture.
Attendance and entertainment includes cinemas, theatres, concerts, museums, libraries, zoological gardens, services of photographers and performing artists.
Artistic expression and creation includes photographic and cinematographic equipment, musical instruments, stationery and drawing materials.
Source: Eurostat (online data code: cult_pcs_hbs)

eurostat

1.Introduction: Why is Culture so Relevant for the Spanish Economy?

- Cultural sector relevant for the Spanish economy: In Spain, the importance of the cultural sector is evident in the interest (on the initiative of Eurostat) in developing satellite accounts for culture (CulturaBase MCUD, 2021).
- A vulnerable sector (as in the case of the Tourism sector): The strong impact of COVID-19 on average annual cultural employment in 2020 (with a drop of almost 6%) was much higher than for the economy as a whole (this is a particularly vulnerable sector: low level of resilience regarding
- A Relevant sector in terms of Employment and Value-Added: This figure also highlights the importance of raising the profile of the cultural sector, as it is not only important for employment but also for GVA (3.5% of GDP) (Pérez-Corrales, 2021).

2. Contribution:

- One of the factors that boosts these figures (supply-side figures) are demand factors, consumption patterns…Nihil Novum Sub Solem!…

    - Hence, It is necessary to integrate both perspectives (demand-supply perspectives "plus" introducing An Economy-wide Approach…: a key aspect for both getting a more comprehensive specific policy analyses and evaluation of macroeconomic impacts…

- Why do some households spend more on culture than others? Why do households in some countries and regions devote more resources to culture? Because of:

    - Income levels (Throsby and Whithers, 1979; Getzner, 2002)
    - Age along with other idiosyncratic determinants (Bennett et al. 2009, Katz-Gerro, 2002)
    - On the opportunity costs…(spending on food and the rental price of housing) (Eurostat,2024).

2. Contribution

- Therefore, the contribution of this analysis consists in presenting a methodology that allows computing the total opportunity costs of the private (household) expenditure on culture in Spain.

  - Since the consumption in culture strongly depends on income levels, in our analysis the total opportunity costs of cultural expenditure is computed considering eight Households' categories sorted out by his income levels i.e. the monthly net income.

- In doing so, we use a SAM for Spain 2022 constructed by the authors (INE, 2024) and a Bridge-matrix that links Households COICOP consumption with the CPA classification. This bridge-matrix was updated from that estimated by Cazcarro et al. (2022).

3. Methodology: An Application of the Restricted SAM Multipliers

- We depart from the standard demand-driven SAM model (Miller and Blair, 2022):
  - $\mathbf{X}' = [\mathbf{I} - \mathbf{A}]^{-1} \cdot \mathbf{H}' = \mathbf{M} \cdot \mathbf{H}'$ (1)
- Where $\mathbf{H}'$ represents the new exogenous households account that lead to changes in the total outlays SAM outlays $\mathbf{X}'$
- Since we seek to compute the economy-wide opportunity costs of the expenditure on cultural goods and services i.e. the costs associated with the movement along the EPF, $\mathbf{H}'$is expressed as a partitioned matrix and defined as:
  - $\mathrm{H}' = \begin{bmatrix} h'^{e}_{i} \\ h^{-e}_{m} \end{bmatrix}$ (2)
- Where h'^{e}_{i} refers to the new final demand of households' consumption in each sector *i,j*=1…..N whereas h^{-e}_{m} relates to the other uses of households' income that remain constant in this case *m*=N+1,….,M (savings and tax payments among others).

3. Methodology: An Application of the Restricted SAM Multipliers

- In order to capture the economy-wide opportunity costs of households' consumption on cultural commodities and thus movements along the EPF associated to an increase in their consumption, we define the vector of changes in the exogenous variables in model as $[\boldsymbol{\delta}']_c^e = \delta'^e_c = h'^e_c$ (Guerra and Sancho, 2011).
- This vector informs about the evaluated variations in households' expenditure according to the different COICOP (classification of individual consumption according to purpose) categories *c,s*=1,…C.
- In other words, this vector captures the essence of the "restricted" multipliers since they allow total households' consumption to be constant.
- Thanks to this <u>"restricted" exogenous changes in households' consumption any variation in the households' expenditure on cultural commodities *k* δ'^e_k is compensated with a decline in the expenditure on the other goods and services $\delta'^e_{c\neq k}$ such that total households' expenditure remains constant</u> i.e. $\sum_{c=1}^{\mathrm{C}} h_c^e = \sum_{c=1}^{\mathrm{C}} h'^e_c$.

3. Methodology: An Application of the Restricted SAM Multipliers

- In our case, we have evaluated a compensated increase in cultural expenses that amounts to 100 million of euros (symbolic because of the linearity of this type of models).
- Consequently, the new vector of households' expenditure i.e. evaluated exogenous change according to the COICOP classification is given by:

$$h'^{e}_{c} = \delta'^{e}_{c} \qquad c = k \qquad (4)$$

$$h'^{e}_{c} = \delta'^{e}_{c} = -\sum_{k \neq c}^{C} \frac{h^{e}_{c}}{\sum_{s \neq k} h^{e}_{s}} \quad c \neq k$$

- Then, using a bridge matrix $[\mathrm{B}]_{ic}$ that transforms the COICOP classification into the (Classification of Productive Activities) CPA classification, we obtained the new households' expenditure vector h'^{e}_{i}:

$$h'^{e}_{i} = \sum_{c=1}^{C} b_{ic} \cdot h'^{e}_{c} \qquad (5)$$

3. Methodology: An Application of the Restricted SAM Multipliers

- Therefore, using the new vector of the total SAM outlays obtained through (2), we compute the new equilibrium SAM as follows:

$$\mathrm{X}' = \mathrm{M} \cdot \mathrm{X}' + \mathrm{H}' \qquad (6)$$

- The new SAM captures the changes in total GDP along with the primary, secondary income distribution changes that will occur when moving across the EPF i.e. when consumption baskets are swapped whilst household expenditure remains constant. Consequently, the economy-wide or total opportunity costs (TOC_k) of Households' spending on each cultural commodity *k* in terms of GDP is defined as:

$$\mathrm{TOC}_k = \frac{GDP - GDP\prime}{\delta\prime_k^e} \qquad (7)$$

3. Methodology: Identifying Cultural Goods and Services within Consumption Patterns

Household expenditure on cultural good and services by broad categories and ECOICOP codes involved

Broad category	ECOICOP Code	Code name
Information processing equipment, audio-video equipment and recorded media	CP09111	Equipment for the reception, recording and reproduction of sound
	CP09112	Equipment for the reception, recording and reproduction of sound and vision
	CP09113	Portable sound and vision devices
	CP09119	Other equipment for the reception, recording and reproduction of sound and picture
	CP0913	Information processing equipment
	CP0914	Recording media
	CP0915	Repair of audio-visual, photographic and information processing equipment
Books and newspapers	CP0951	Books
	CP0952	Newspapers and periodicals
Fees and subscriptions	CP09423	Television and radio licence fees, subscriptions
	CP09424	Hire of equipment and accessories for culture
Attendance and entertainment	CP09421	Cinemas, theatres, concerts
	CP09422	Museums, libraries, zoological gardens
	CP09425	Photographic services
Articles for artistic expression and creation	CP0954	Stationery and drawing material
	CP09121	Cameras
	CP09122	Accessories for photographic and cinematographic equipment
	CP09221	Musical instruments
	CP09429	Other cultural services

Source: Eurostat (Guide to Eurostat culture statistics — 2018 edition)

eurostat

In our case, we use 3 digit broad categories from 091-095

3. Methodology: Identifying Households Categories.

Table 1: Households' Disaggregation of Total Final Consumption (Expenses) based on Monthly net income. Spanish Households' Budget Survey 2023. Spanish Institute of Statistics.		
Households' group r	Monthly net Income Bracket	Total Aggregate Expenditure (Millions of Euros)
r=1	Up to 499 euros	6,759.7922
r=2	From 500 to 999 euros	43,309.2976
r=3	From 1,000 to 1,499 euros	91,801.0638
r=4	From 1,500 to 1,999 euros	101,565.3070
r=5	From 2,000 to 2,499 euros	115,686.4110
r=6	From 2,500 to 2,999 euros	132,263.7170
r=7	From 3,000 to 4,999 euros	210,460.7870
r=8	5,000 or more	72,650.6249
Total Households' Expenses		774,497.000

4. Results&Conclusions: Average Spanish Household

Table_2. Economy-Wide Opportunity Costs of Households' Expenditure in Culture Commodities. Effects on Primary and Secondary Income Indicators.
An evaluated-compensated increase of 100 millions of 2022 euros. Spanish SAM. Units: Millions of Euros

	All cultural Related COICOP categories	COICOP 091	COICOP 092	COICOP 094	COICOP 095
GDP	-4.2848	-9.4504	-7.5605	-1.9614	-8.7187
Net labour income	5.2174	2.4142	2.1317	5.3717	7.6408
Labour contributions paid by employers	4.3053	0.3453	0.7699	5.9837	-0.5303
Gross Operating Surplus	-14.2582	-12.2755	-10.9021	-14.2796	-13.7861
Taxes less subsidies on Activities[1]	-0.6994	-1.1127	-0.9323	-0.4691	-0.9677
Taxes less subsidies on Commodities[2]	1.1502	1.1782	1.3723	1.4318	-1.0753
Foreign Direct Investment	-2.2703	-2.2703	-2.2228	-5.5454	-4.2144
Foreign Deficit	0.0151	0.4473	0.3538	0.8816	0.1014
Gross National Savings	-4.8970	-1.8230	-1.8670	-5.6640	-4.1130
Direct Taxes[3]	-0.5910	-0.3130	-0.2960	-0.6490	-0.5540
Total Tax Revenues[(1+2+3)]	-0.14020	-0.2475	0.1440	0.3137	-2.597

Conclusions (1) from Table 2

The opportunity costs of cultural expenses are small but negative:
"for each euro spent on cultural commodities and diverted from other consumption purposes, the Spanish economy loses 0.042 cents"

Mobilising consumption resources from the non-cultural consumption to the cultural consumption is costly, at least, for the Spanish economy.

The Households' spending on ***Audio-visual, photographic and information processing equipment*** (COICOP 091) shows the highest economy-wide opportunity costs, whereas expenditure on ***Recreational and cultural services*** occupies (COICOP 094) the last position

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Conclusions (2) from Table 2

Regarding Primary Distribution of Income:

The owners of the gross operating surplus are the ones that bear the bulk of the economy-wide opportunity costs whereas the owners of labour income benefit from that switch in consumption flows, the exception being the Households' consumption of *Newspapers, books and stationery* (COICOP 095).

Why?

This is because, most of the opportunity costs of the Households' cultural consumption is borne by *Real estate services*.

4. Results&Conclusions: Average Spanish Household

Table_3. Economy-Wide Opportunity Costs of Households' Expenditures on Cultural commodities. Distributive effects among Products Categories. An evaluated-compensated increase of 100 millions of 2022 euros. Spanish SAM.		
All cultural Related COICOP categories	CPA 2008	Millions of Euros
Real estate services	68	-12.6836
Accommodation and food services	55-56	-9.3279
Food, beverages and tobacco products	10-12	-3.3705
Financial services, except insurance and pension funding	64	-2.3226
Products of agriculture, hunting and related services	01	-1.6823

Conclusions from Table 3

In comparison to other CPA categories, **the Real estate services** are relatively more intensive in gross operating surplus than in terms of labour income i.e more than 90 per cent of its value-added allocates to gross operating surplus.

For all cultural related COICOP categories, most of the derived costs are bear by the *Real estate services* followed by the *Accommodation and food services* and *Food, beverages and food services*.

These industries are relevant for some specific COICOP categories within the Spanish Households' consumption patterns: Catering Services, Rental Services…etc

4. Results&Conclusions: Average Spanish Household

- Two key Conclusions:
  - Reducing the amount of money households spend on housing, and specifically on rent and mortgage payments, can significantly increase consumption of cultural goods and services.
    - In this regard, the high housing costs faced by Spanish families, which account for a significant proportion of household expenditure (35 % on average), are not only representing an opportunity cost for industries linked to culture and creativity, but are also leading to a reduction in the positive externalities associated with culture.
  - Any policy that encourages the consumption of cultural goods by slightly altering consumption patterns, i.e. without changing total household expenditure on final goods, will negatively affect the sectors or production activities that play a more prominent role in initial household consumption patterns and in the economy as a whole i.e. food and beverages industries and Real State services.

4. Results&Conclusions: Heterogeneous Spanish Household by income levels.

Table_4: Economy-Wide Opportunity Costs of Total Households' Expenditures on Cultural commodities for each Household category. An evaluated-compensated increase of 100 millions of 2022 euros in cultural expenses. Spanish SAM				
	TOC_K	GDP	Gross Labour Income*	Gross Operating Surplus
r=1	-0.1343	-13.4256	10.2455	-24.0250
r=2	-0.1015	-10.1547	12.0733	-22.3366
r=3	-0.0918	-9.1780	10.7475	-19.9689
r=4	-0.0811	-8.1065	10.6034	-18.5303
r=5	-0.0783	-7.8305	9.7099	-17.3709
r=6	-0.0634	-6.3445	11.5539	-17.6535
r=7	-0.0561	-5.6103	10.3128	-15.9064
r=8	-0.0583	-5.8256	9.9729	-15.8411

There is a clear inverse relationship between the total opportunity costs of cultural spending and Households' income levels.

This is so even though, as indicated in the existing economic literature, the direct spending on culture is positively correlated with income levels i.e. the higher the Household income,
The higher the cultural spending.

The rest of the patterns are similar to those Already escribed for the average Spanish Households.

4. Results&Conclusions: Heterogeneous Spanish Household by income levels.

- High Income Households: This implies that, any policy that seeks to alter Households' consumption patterns i.e. increasing the proportion of income devoted to cultural expenses, would be an efficient decision for the case of middle-income and high-income households' i.e. by providing more information and running marketing and promotional campaigns.
- Low Income Households: Nevertheless, for low income households, subsidising cultural expenses would be justified since persuading them to increase the proportion of their income allocated to this type of activity would entail higher total opportunity costs: for r=1, the poorest Household group, the opportunity costs: the opportunity cost is three times that of the wealthiest group of households.
  - Increasing proportionally the expenses on cultural commodities for low income households would entail not only high direct costs for this Households' group i.e. income to covert basic needs such as housing should be reduced but also, as It has been shown here, relatively higher total economy-wide costs for the whole economic system.

Evaluating the Economy-wide Opportunity Costs of Culture

Culture is the memory of a people, the collective consciousness of historical continuity, and a way of thinking and living. Milan Kundera (1929-2023)

Any comments are welcome: anaisabelguerra@ugr.es