Whether Live or Online, Participation is Unequal: Exploring Inequality in the Cultural Participation Patterns in the US

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Abstract

Cultural participation is an individual activity with relevant social dimensions. Democratic societies are concerned about the representation of social groups in cultural audiences and promote policies to increase participation focusing on planning aspects, such as in creative placemaking, or educational policies and social interventions targeted at some under-represented social groups. Using the data derived from the 2017 *Survey of Public Participation in the Arts* from the US, we estimate Generalized Entropy Indexes to explore the more relevant dimensions to explain divides in cultural participation across the US adult population, considering geographical and socio-demographic variables. Cultural engagement is characterized by the participation by highbrow, lowbrow, passive, active, live, and digital activities. Overall, we find that spatial and racial characteristics are not the most relevant, while education appears to be the most important source to explain access inequality. The pattern of digital participation is remarkably similar to the pattern of physical participation, thus showing some evidence that the divide and stratification of cultural practices in the real world translates to digital practices.

Keywords: 2017 survey of public participation in the arts, entropy indexes, inequality, cultural participation.

[*]Vicky passed away once her contribution to this paper was finished. Her expertise, depth knowledge, sense of humor and, specially, her friendship with me made her the ideal coauthor. I miss her right now, and I know I always will.

1. Introduction

It is often believed that developing new cultural policies with emphasis on democratizing cultural access can address the failure in achieving equal participation in different groups of society. By engaging and enjoying common cultural experiences, individuals in a society participate and benefit from the construction of joint symbolic experiences and, if participation is increased, a societal benefit would arise. However, this argument confronts the unsolved fact of unequal cultural access. In fact, the stability, recurrence, and apparent omnipresence of divides in cultural participation face acritical narratives of only benefits and successes of any initiative that seeks to enhance the cultural participation of citizens while also neglecting the failures in achieving it (Coulangeon, 2013; Jancovich & Stevenson, 2021).

The societal benefits of cultural participation, linked to the positive externalities of consumption of highly symbolic goods, are supposedly leading to more democratic outcomes and societal cohesion (Campagna et al., 2020; Otte, 2019). However, there is abundant evidence of unequal representation of social groups in the production and enjoyment of culture (Brook et al., 2020), and an increasing concern about its implications. Some public interventions try to unlock the potential of instrumental values of the culture to deliver change and strengthen communities. For instance, the logic model adopted by the National Endowment for the Arts (NEA) of the United States for its creative placemaking program explicitly accounts for the actions related to active practices and engagement and sets one of the outcomes (or short-term impacts) in terms of the variety and diversity of the participants. Its accounting for the "quality" of the participation (as more active or passive) includes digital participation (NEA, 2021). Some other public interventions act through educational policies and programs of early exposure to the arts and culture, or target specific groups to increase their awareness and participation.

So far, there is a limited understanding of the inequalities in cultural participation. Research about social inequality in the cultural domain is still scarce (Van Hek & Kraaykamp, 2013), and its conclusions are usually derived from multivariable analysis methods in an attempt to determine which variables are correlated with cultural participation. For instance, the empirical sociological analysis has considered elements such as social class (Reeves, 2019), or the interaction of gender and social class, leading to more cultural consumption for some particular groups (Katz-Gerro, 2006). The contributions of economists have rather explained the correlates, driver and barriers for social participation in a wide variety of geographical and cultural contexts. The barriers are made visible in the form of spatial inequalities (Brook, 2016), racial and origin differences (Bertacchini et al., 2021; Novak-Leonard et al., 2015), and stratification by education and income (Suarez-Fernandez et al,

2020). There are some systematic patterns regarding the barriers to live (Blume-Kohout et al, 2015) and digital engagement (Van Deursen et al., 2015). Apart from the declared lack of interest linked to low educational attainment, the stated barriers are often associated with race and geography. Although digital participation was expected to alleviate some of those restrictions, it does not eliminate them (De la Vega et al., 2020). Actually, gender, age, education and income are found to be strong predictors of the inequalities of the use of Internet and the typology of users (Van Deursen et al., 2015; Yates & Lockley, 2018), and there is consistent evidence that real life inequalities could be replicated in online activities.

No doubt, location is important and has traditionally been considered a factor that explains differences in participation. This is a variable related to supply conditions for cultural services, typically subject to agglomeration phenomenon (Brook, 2016; Evans, 2016). However, when considering communitarian cultural practices and, more relevant, when considering the increasing possibilities of digital engagement, the geographical dimension of inequality should become less relevant for those practices (De la Vega et al., 2020). But this will only be true if high quality Internet access (e.g., broadband) is evenly distributed geographically. If not, the gap regarding physical access to the Internet between different social-groups would make geographical inequality in digital access to culture still relevant.

Instead of using a multivariate approach, e.g., regression, to estimate participation models, we propose a univariate approach, and we analyze inequality in access to culture using inequality indexes. That is, we do not control for correlations between cultural participation and other variables, such as education or income. In doing so, we assume that cultural participation is a key component of people's well-being, and that studying its dispersion could be a relevant topic for cultural economists, as income inequality in itself is relevant as an indicator of social welfare and has its own domain in the economic literature. The idea of using inequality indexes, which may be new for culture participation, has a long tradition within Health Economics (Pradhan et al., 2003). Also, we will decompose total inequality in cultural access in its between and within components, trying to find a specific pattern for some specific dimensions of inequality, especially inequality in access related to geographic factors. We vindicate the value of the proposed indexes to characterize inequity in the cultural participation and, in terms of evidence-based policy, we believe they are useful to guide public intervention, as well as to inform and evaluate social planning in contexts where geographical inequity and polarization are important.

2. Data

The 2017 Survey of Public Participation in the Arts (SPPA), run by the U.S. Census Bureau, along with the NEA in the U.S. as a supplement to the Current Population Survey (CPS) are our data sources. This survey provides data on participation patterns for different cultural activities. We use the information about cultural participation by attendance and by digital media, as well as rich information about regional and socio-economic conditions.

The structure of the 2017 SPPA is based on a core questionnaire and special modules, so not all the respondents answer all the questions in the survey. Instead of using the information about individual cultural practices as recorded in the survey, we combine the information from different questions related to similar practices and contained in different modules. This choice allows us to represent more potential variability by increasing the sample size. (otherwise, for some types of participation we would have a really small number of observations). To estimate inequality using entropy indexes, we need quantitative variables and, therefore, while information recorded as count outcomes (number of times) can be used directly,[1] the information derived from binary responses (yes or no), or as categorical (ordered outcomes) that lead to qualitative makers cannot be directly considered.[2]

For instance, we have calculated the number of times people made physical visits to heritage institutions by combining answers from questions about the number of art museums or galleries visited in the last 12 months (PEC1Q10A and PTC1Q10B) and about the frequency of visits to an art exhibit in the last 12 months (PEC2Q1B and PEC2Q2B). Since both questions are in different survey modules, their combination allows us to define the variable *Heritage Attendance* with 14,836 valid values, out of 17,572 potential observations, with a sample participation rate of 39.22% and a sample average number of visits of 1.0051.

Table A1 in the appendix presents the 16 variables used in the analysis, each of them representing a way of engagement: eight alternative forms of engagement with performing arts and music, four with literature, two with visual arts, one with heritage, and one for cinema going. It also contains the questions of the 2017 SPPA used for each of the cultural participation form and the code

[1] Only cardinal variables can be used with entropy indexes and standard inequality analysis tools, such as the *Gini Index*. An extension of the entropy indexes that can be applied to ordinal data is proposed by Cowell and Flachaire (2017). However, as it is not additively decomposable, it does not suit the purposes of this research.

[2] If ordered responses in the SPPA regarding frequency of attendance in the last 12 months include four possible answers ("At least once a week", "At least once a month", "At least 3 or 4 times but not every month", and "At least 1 or 2 times"), we recode these categories to number of times ("52 times", 1"2 times", "4 times", and "2 times", respectively).

of the original variable, the participation rate in the sample (percentage of individuals engaged with that cultural participation form), and the average number of times that the activity has been practiced.

Our unit of analysis is the household and its reference person, and is characterized in terms of place of residence, race, and education. Live attendance may be unevenly distributed by area of residence not just due to income or education difference associated with types of neighborhoods, but due to supply disparities. Similarly, availability of broadband access cannot be considered as geographically universal, being one important factor in the observed inequality in the digital access to culture.[3]

The CPS provides a rich characterization of the place of residence, and we can thus explore the geographical dimension of inequality into three dimensions: state, Combined Statistical Area (CSA) and the type of neighborhood.

We have classified households geographically according to their state of residence, their CSA[4] and, within CSAs, the nature of the type of neighborhood, whether it is urban, suburban, or mixed. We use the rich characterization of households in terms of racial origin and formal education achievement. We consider the race and education of the main respondent of the questionnaire. The racial groups are constructed by combining information for the variables on race and self-reported Hispanic status (PTDTRACE and PRDTHSP), leading to ten racial groups.[5] Education groups were considered as reported in the survey under 16 different educational attainment in the variable for highest level of school completed or degree received (PEEDUCA).[6]

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[3] Differences in Internet access, known as *first order* digital divide, are, obviously, one of the simplest ways in which to describe digital inequalities (Hargittai, 2021). The *first order* digital divide seems to be relevant in the U.S., where the Federal Communications Commission (2019) assessed that around 21 million Americans lack high-speed Internet access, but other sources claimed that the actual figure could be doubled (Busby et al., 2022). This low rate of broadband coverage would not necessarily have an effect on the inequality of digital access to culture if it were distributed evenly across the territory or among households. However, the Federal Communications Commission report (2019) shows that the gap between broadband access in rural and urban areas was really important and it differed dramatically from some states to others. From the initial analysis of *first order* digital divide, authors have explored the relevance of systematic differences between individuals concerning their skills in, uses of and outcomes derived from engagement with digital media (Büchi & Hargittai, 2022). This difference constitutes the *second-order* digital divide.

[4] Consolidated Statistical Area (CSA) Federal Information Processing Standards (FIPS) Code (variable GCTCS of the survey).

[5] (1) “non-Hispanic whites”; (2) “Hispanic whites”; (3) “non-Hispanic blacks”; (4) “Hispanic blacks”; (5) “non-Hispanic Native Americans”; (6) “non-Hispanic Asians”; (7) “non-Hispanic Hawaiians”; (8) non-Hispanic Pacific Islanders”; (9)”Hispanic of any mix of races”; and (10) “Native Americans, Asians and Pacific Islanders self-declared as Hispanics”. Since the resulting groups of Hispanics from minority racial groups are very small, they have been combined into this last group.

[6] (1) “less than 1st grade”; (2) “1st, 2nd, 3rd or 4th grade”; (3) “5th or 6th grade”; (4) “7th or 8th grade”; (5) “9th grade”; (6) “10th grade”; (7) “11th grade”; (8) “12th grade no diploma”; (9) “high school grad-diploma or equiv (ged)”; (10) “some college but no degree”; (11) “associate degree-occupational/vocational” (12) “associate degree-academic program”; (13) “bachelor's degree (ex: Ba, Ab, Bs)”; (14) ”master's degree (ex: Ma, Ms, Meng, Med, Msw)”; (15)”professional school deg (ex: Md, Dds, Dvm)”; and (16) “doctorate degree (ex: Phd, Edd)”.

3. Methods

The main unit of analysis is the household, and we can characterize behavior of households regarding cultural activities to represent their exposure to culture, from popular to highbrow culture, passive to active, and live to digital.

We estimate the *Generalized Entropy Index* with parameter zero, $GE(\alpha = 0)$, also known as the *Mean Log Deviation* (Theil, 1967; Shorrocks, 1980) to explore inequality in cultural participation.

The index is defined as:

$$GE(\alpha = 0) = \frac{1}{N}\sum_{i=1}^{N} ln\frac{\underline{x}}{x_i} = ln\underline{x} - \underline{ln(x)}$$

where x_i and $\underline{x}$ represent the value of the observation and the mean value for the reference group (partition), respectively. The index would take a value 0 in the case of perfect equality, so each of the individuals would have the same value, but has not necessary an upper bound.[7] To the best of our knowledge, inequality indexes have not been used previously to analyze inequality in cultural access or participation, but its analysis has a long tradition in fields such as Health Economics (Bleichrodt, 1997; Gakidou & King, 2002; Goesling & Firebaugh, 2004).

This novel approach to the analysis of inequality in cultural participation allows us to assess how unequal the distribution of participation is in a given cultural form, to compare the levels of inequality between different forms of cultural participation and, most importantly, due to its decomposability properties, it permits the consideration of different factors in terms of their contribution to explaining total inequality.

Suppose we had a variable measuring cultural participation for every individual in the US. Then, a decomposable inequality index, such as the *GE(0)*, could be calculated from the data, providing an estimate of the total inequality in cultural access. Alternatively, we could also estimate total inequality by adding the inequality among individuals within each state (within component of inequality), and the inequality estimated for the average participation of each of the U.S. states (between the component of total inequality). Further, this can be generalized by dividing the total population into subgroups, defined by partitions (hierarchical disjoint groups) of the total population in terms of their geographical or socio-economic characteristics. Hence, total inequality in cultural

[7] We use the Jann's (2020) dstat Stata module to compute the within and between decomposition of the GE=0 and their standard errors using

participation can be decomposed in different additive components, related, as we study, to states, areas, and urban nature of residence location to characterize geographical inequality, to racial groups for race inequality, or to educational achievement, for education inequality. The value of the index can then be decomposed by these subgroups and total inequality can be expressed as a weighted sum of the within group and the between group component. We use the Jann's (2020) dstat Stata module to compute the within and between decomposition of the $GE(\alpha = 0)$ and their standard errors. The decomposability property has been largely exploited to decompose total inequality of different social groups in their health status and their access to health services within and between components (Pradhan et al. 2003; Gakidou & King, 2002).

Moreover, the inequality aversion parameter of the *Generalized Entropy Index* can be adjusted in order to check the robustness of our findings to alternative weights, given the participation gaps at different parts of the distribution. In our approach, we set the value of the parameter equal to 0, so the bottom of the distribution (representing the disengagement for subgroups that have the characteristic/s of interest) is specially considered. In addition, it weighs the differences using the sample size, which is a natural way to do this.

4. Results

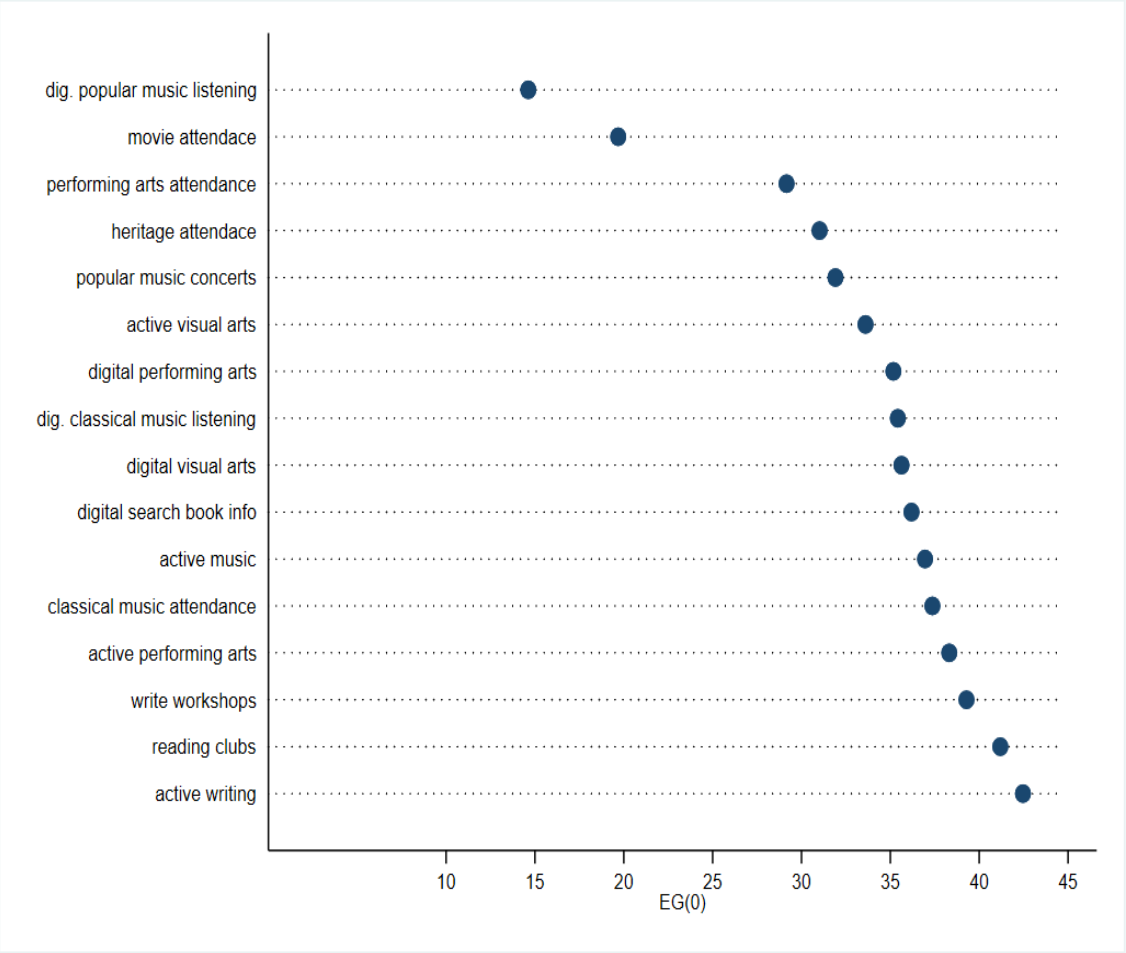
Total Inequality Levels by Activities

As the *GE(0)* estimated indexes show in Figure 1, access to culture is very inequitably distributed in the U.S., regardless of the activity considered or the means of access to it. Although the variability of these variables is conditioned by the questionnaire and sampling of the different modules, some patterns can be identified. First, differences in inequality of access are relatively small with the exception of pop music listening and cinema attendance. Second, reading and writing related activities form a cluster with the highest observed inequality, with *GE(0)* indexes close to or above 40. Third, it is remarkable that attendance at activities related broadly to the visual arts or the active practice of visual arts has a much lower level of inequality than that associated with using digital media to view or search for information on visual arts. Similarly, digital access associated with the performing arts presents greater inequality than live attendance, although less, as expected, than active practice of the performing arts (excluding music). In general, it does not appear that digitally accessed activities present significantly lower levels of inequality than equivalent or similar live activities in a systematic way. Apart from differences in the attractiveness of the various activities considered, geographic disparities in broadband access may also help explain the results on

digital access to culture, as we have argued in the previous section, since the gap between broadband access in rural and urban areas was notably high in some states.

Furthermore, active practice presents high levels of inequality, except for the visual arts. The main factor in explaining this result is the scarce number of people who actively collaborate with theater groups, play an instrument, or engage in creative writing practices.

Figure 1. *General Entropy Index for Cultural Participation Under Different Forms*



Source: Own elaboration using the data from the 2017 Survey of Public Participation in the Arts

In what follows, we concentrate our attention on the characterization of inequality in particular forms of participation. We compare activities and discuss several groupings in terms of highbrow or lowbrow (popular) practices, passive (receptive) or active, and live or digital.

Popular Culture: Pop Music and Movies

The most equal activities are going to the movies to see films and using digital devices to hear pop music of different styles, including jazz and Latin. This is not surprising, given that cultural industries market their products with the intention of reaching the widest possible audiences, with average participation rates of 56.91% and 69.80% percent, respectively. The total inequality for popular music concerts is much higher, and its average participation rate is 27.34%. The most equal activities include both blockbusters and products aimed at satisfying niche demand (so this could both be attending a blockbuster or a cult film; independent music, as well as top-selling artists and bands such as Bruce Springsteen, Taylor Swift, or Kanye West). The results for these three categories of lowbrow or popular cultural consumption are presented in Table 1.

Table 1. *General Entropy Indexes for Popular Music Digital Listening, Cinema Attendance, and Popular Music Concert Attendance*

	Dig. Popular Music Listening		Cinema Attendance		Att. Popular Music Concerts	
	GE(0)	Std. Err.	GE(0)	Std. Err.	GE(0)	Std. Err.
W-States	14.611	0.257	19.649	0.263	31.869	0.140
B-States	0.014	0.002	0.036	0.007	0.041	0.009
W-States/Metro	14.599	0.257	19.570	0.262	31.747	0.139
B-States/Metro	0.026	0.003	0.115	0.011	0.163	0.015
W-State/CBSA/Metro	14.551	0.257	19.450	0.261	31.716	0.139
B- State/CBSA/Metro	0.074	0.016	0.235	0.026	0.194	0.015
W-Education	14.611	0.257	19.642	0.262	31.799	0.140
B-Education	0.014	0.002	0.043	0.008	0.112	0.014
W-Race	14.620	0.257	19.682	0.263	31.898	0.140
B-Race	0.005	0.001	0.004	0.002	0.012	0.005
W-Education/Race	14.474	0.256	19.407	0.262	31.476	0.141
B-Education/Race	0.151	0.029	0.278	0.038	0.434	0.030
W-Education/Geo	13.809	0.253	17.836	0.258	29.535	0.145
B-Education/Geo	0.816	0.070	1.849	0.101	2.376	0.071
W-Race/Geo	14.407	0.256	19.183	0.261	31.188	0.140
B-Race/Geo	0.218	0.034	0.503	0.046	0.723	0.038
W-Education/Race/Geo	12.919	0.248	16.693	0.255	27.682	0.151
B-Education/Race/Geo	1.706	0.102	2.992	0.129	4.228	0.094
Total Ineq	14.625	0.258	19.685	0.263	31.910	0.140

Source: Own elaboration using the data from the 2017 Survey of Public Participation in the Arts
W and B stand for the within and between components of inequality, respectively

Given the near universal distribution of movie theaters across the geography of the U.S. and the close to universal availability of electronic devices that can play music, differences in access associated with geographic areas are not significant. First, we estimate between states differences, and they do not reduce within groups inequality appreciably. Then, within each state, we distinguish

between nonmetropolitan areas, principal cities and core-based statistical areas (CBSAs) balance areas (getting almost 200 geographical areas) and, again, within these areas inequality does not differ significantly from the total. Finally, we also differentiate these types of residence areas by CBSAs within states (defining more than 550 areas) and the results remain unchanged. That is, although listening to pop music or going to the movies are very popular activities with relatively small inequality of access, these differences do not seem to be related to the specific place of household residence.

The two variables used to socially categorize families, race and education, have not been found to be significant either. Neither the differentiation by racial groups nor educational attainment helps to reduce the estimated within groups differences in access to culture in a significant way, nor does the combination of the two. Although it is likely that the type of film chosen depends to some extent on educational level, training, or family background, it does not seem that the intensity of participation crucially depends on these variables. The same applies to listening to music using electronic or digital devices. Only the groupings by area of residence and the educational level seem to help explain part of the total inequality in the access to these two cultural activities, with a smaller contribution of the racial group when combined with the other two variables. In any case, the reduction of the within group inequality using the geographic unit, education and racial group allows us to explain little more than 10% of the total inequality observed for these two activities.

The third activity related to popular culture is the attendance to popular music concerts, including jazz, Latin music, pop, rock, etc. This activity can be considered a mixture of the other two. First, demand is determined by preferences very similar to that of listening to popular music by traditional or digital means. Second, it takes place outside the home, as does going to the movies. Third, to meet the demand, a supply of concerts is needed and, like cinema, this supply, directly or indirectly, is linked to the music industry, i.e., there is a private sector behind which largely provides these services. The average frequency of this variable (see Table A1 in the Appendix) is much lower than that of the other two activities. Likewise, the total inequality of pop music concert attendance is significantly higher, raising the *GE(0)* index above the upper bounds of the confidence intervals of the total inequality of cinema attendance and digital pop music listening. Having said that, the pattern of the decomposition of total inequality into within- and between-groups inequality using geographic units, education, and race is very similar to the other two activities. First, the within inequality expected drop associated to the sample split in geographical zones is not significant, and the between areas inequality in pop music concerts attendance represent less than 0.6% of the total

inequality. Actually, we found no important differences regarding pop concerts inequality between states, nor between types of residential areas within states, nor between CBSAs.

Also, as for cinema attendance and pop music listening, education and race, separately, do not define social groups leading to a significant reduction in the within inequality. Given the *GE(0)* index, the between educational groups inequality is about 0.3% of the total, while between race groups only accounts for 0.04%. However, unlike the other two activities considered in this section, the conjunction of education and race does form groups for which the within component of inequality is statistically smaller than the overall inequality. Although significant, differences between social groups formed by education and race explain less than 1.5% of the total inequality. Finally, adding the geographic units to education and race also yields significant differences. Residence area and social background, defined by education and race, account for slightly less than 15% of the total inequality measured by the *GE(0)*.

Classical Music and Active Music

Regarding active music practices, in the survey we cannot distinguish between popular or classical music. However, since it is a quite exclusive activity with high levels of inequality in its access, we have clustered it with cultural practices linked to classical music. Given the information in the different submodules of the SPPA, we have defined active musical practice as playing musical instruments, singing in a choir, following musical training, or digitally editing and remixing music. Despite this broad set of alternatives, around 80% of interviewees state that they were not engaged during the previous year.

Attending highbrow performing arts (classical music concerts, operas, or classical ballets) is even more elitist, and only 12% of the population reported having attended one of them in the previous year, with an estimated attendance of 0.33 times. Therefore, active musical practice and highbrow music attendance are characterized by a small minority that practices with certain regularity while a large mass of the public is disengaged. Consequently, the levels of inequality associated with these two activities, as measured by the *GE(0)* index and presented in Table 2, are particularly high.

However, these two activities present very different patterns when total inequality is decomposed using geographic and socioeconomic variables. Although between-states differences are not significant in either case, when territory is split into smaller areas, we find that geographical differentiation plays an important role in the case of attendance to highbrow music concerts, as

expected. Supply constraints might be an important factor in explaining unequal access to highbrow music performances between urban and non-urban residents. In fact, between zones differences explain as much as 7.5%of the total inequality regarding attendance to highbrow music, measured by the *GE(0)* index, while they are as low as 1% of the total for active musical practices.

Table 2. *General Entropy Indexes for Active Music Participation, Classical Music Attendance, and Classical Music Digital Listening*

	Active Music part.		Att Classical Music		Dig. Classical Music Listening	
	GE(0)	Std. Err.	GE(0)	Std. Err.	GE(0)	Std. Err.
W-States	36.932	0.152	37.239	0.128	35.327	0.209
B-States	0.021	0.005	0.128	0.021	0.094	0.016
W-States/Metro	36.809	0.153	36.287	0.139	34.584	0.214
B-States/Metro	0.144	0.020	1.080	0.067	0.837	0.066
W-State/CBSA/Metro	36.505	0.155	34.580	0.158	33.654	0.221
B- State/CBSA/Metro	0.448	0.038	2.787	0.109	1.767	0.098
W-Education	36.926	0.152	34.906	0.157	35.266	0.209
B-Education	0.027	0.006	2.460	0.105	0.155	0.020
W-Race	36.945	0.152	37.277	0.128	35.410	0.209
B-Race	0.007	0.003	0.090	0.018	0.011	0.005
W-Education/Race	36.438	0.156	33.962	0.165	34.323	0.217
B-Education/Race	0.515	0.043	3.405	0.120	1.099	0.080
W-Education/Geo	33.247	0.176	25.317	0.211	28.078	0.251
B-Education/Geo	3.705	0.113	12.049	0.199	7.343	0.194
W-Race/Geo	35.765	0.160	32.023	0.179	32.212	0.232
B-Race/Geo	1.188	0.065	5.344	0.146	3.209	0.134
W-Education/Race/Geo	30.833	0.188	22.898	0.217	24.949	0.260
B-Education/Race/Geo	6.120	0.141	14.469	0.210	10.472	0.224
Total Ineq	36.953	0.152	37.367	0.128	35.421	0.210

Source: Own elaboration using the data from the 2017 Survey of Public Participation in the Arts
W and B stand for the within and between components of inequality, respectively

Likewise, education is more relevant in explaining inequality in highbrow music attendance (7% of the total) than in explaining active music practices (0.07%). Additionally, racial differences alone do not explain much of the total inequality in either activity. When both education and race are considered jointly and population is split into racial-education groups, between these groups' inequality accounts for something less than 10% of the total regarding highbrow music attendance but remains low (1.4%) for any active music practice.

When education-racial groups are assigned to residence areas, the between groups inequality accounts for almost 40% of the total for classical music attendance, which can be considered a very high share given that only three factors account for it: geography, education, and race.

The use of digital and electronic devices to listen to classical music, with an average participation rate of 22%, can be considered an intermediate case of these two activities in terms of inequality. The disparity between states is small, but when differentiating areas within states, the inequality in listening to classical music between areas increases significantly, at approximately 5% of the total inequality measured by the *GE(0)*. This result lies in between the estimates for active music practice and attendance to classical music performances, although closer to the latter. Further, neither the differences between individuals of different educational level nor race alone are sufficiently important to generate decreases in inequality within groups. Therefore, the use of digital devices to listen to classical music resembles active musical practice more than does attendance to classical music performances in effect associated with these two variables. Finally, the combinations of race, education, and area of residence lead to a significant increase in between-groups inequality, explaining slightly less than 30% of total inequality.

Performing Arts

In relation to performing arts attendance, an activity practiced by around 47.23% of the sample, the level of inequality, measured by the *GE(0)* index in Table 3, is relatively low between all groups. This is because the classification of individuals into groups based on just one geographic or socioeconomic criteria does not significantly reduce the within estimated component of the inequality (it always remains within the interval of confidence of the observed total inequality). The reason for this result could relate to the great diversity of activities collected in the SPPA that can be considered or catalogued as performing arts: live play or musical, dance excluding ballet, festivals and fairs that featured performing artists. When groups are simultaneously defined by areas, education and race, the between-groups inequality rises to 17% of the total. A clearer distinction between lowbrow and highbrow might have led to different conclusions, with education playing a more important role (as in Suarez-Fernandez et al., 2020).

How often people act or dance is the basis for defining active participation in performing arts, with an average participation rate of 16%. Given the higher number of non-participants, total inequality related to the performing arts, as expected, is higher for active engagement than for attendance. Although educational attainment and race, separately, are unable to define groups whose between-inequality is larger than 0.2% of the total one, the conjunction of both factors defines groups sufficiently disparate that their between-inequality accounts for almost 2.8% of the total. Geographical differences are also much more relevant when the type of residence zone is considered,

being that the between states disparities are very small. The combination of geographical, educational, and racial factors can help to explain almost one quarter of the total inequality.

Table 3. *General Entropy Indexes for Performing Arts Attendance, Active Practice or Performing Arts, and Digital Performing Arts*

	Performing Arts Attendance		Active Performing Arts		Digital Performing Art Access	
	GE(0)	Std. Err.	GE(0)	Std. Err.	GE(0)	Std. Err.
W-States	29.098	0.168	38.246	0.125	35.066	0.210
B-States	0.063	0.011	0.070	0.016	0.104	0.019
W-States/Metro	29.021	0.167	37.687	0.130	34.667	0.212
B-States/Metro	0.139	0.013	0.630	0.045	0.503	0.048
W-State/CBSA/Metro	28.901	0.167	36.781	0.137	33.920	0.217
B- State/CBSA/Metro	0.259	0.021	1.535	0.070	1.250	0.080
W-Education	28.969	0.169	38.244	0.125	34.985	0.211
B-Education	0.191	0.022	0.072	0.015	0.185	0.033
W-Race	29.147	0.169	38.294	0.125	35.154	0.210
B-Race	0.013	0.006	0.022	0.008	0.016	0.007
W-Education/Race	28.403	0.169	37.250	0.135	34.231	0.217
B-Education/Race	0.757	0.045	1.066	0.061	0.939	0.074
W-Education/Geo	25.980	0.173	31.888	0.171	28.579	0.248
B-Education/Geo	3.180	0.091	6.428	0.139	6.591	0.185
W-Race/Geo	28.340	0.168	35.129	0.151	32.584	0.227
B-Race/Geo	0.820	0.045	3.187	0.101	2.586	0.118
W-Education/Race/Geo	24.044	0.176	29.310	0.182	25.836	0.257
B-Education/Race/Geo	5.116	0.115	9.006	0.159	9.334	0.214
Total Ineq	29.160	0.169	38.316	0.125	35.170	0.210

Source: Own ellaboration using the data from the 2017 Survey of Public Participation in the Arts
W and B stand for the within and between components of inequality, respectively

Finally, the use of digital means to watch or collect information about performing arts is a popular activity (23% participation rate). It has a total inequality index significantly larger that the inequality associated with live attendance. Despite the potential advantage of delocalizing access by using digital means, where people live is more relevant than traditional attendance, and this could be partly linked to the availability of broadband access. However, digital and live attendance inequality regarding performing arts follows the same pattern as education and race, being much more relevant when both variables are considered together.

Heritage and Visual Arts

The active practice of any type of visual art, be it painting, drawing, sculpture, or even different handicraft techniques (with a participation rate of 28%), is here compared with the digital access to visual arts (22%). This can be considered as the available participation activities most related to visits to museums, art galleries and other cultural heritage institutions (39%). The results are presented in Table 4.

Table 4. *General Entropy Indexes for Active Practice of Visual Arts, Heritage Attendance, and Visual Arts Digital Access*

	Act Visual Arts		Heritage Attendance		Digital Visual Art Access	
	GE(0)	Std. Err.	GE(0)	Std. Err.	GE(0)	Std. Err.
W-States	33.560	0.151	30.920	0.154	35.531	0.208
B-States	0.044	0.007	0.099	0.014	0.098	0.016
W-States/Metro	33.449	0.151	30.704	0.153	35.194	0.209
B-States/Metro	0.155	0.016	0.314	0.023	0.435	0.040
W-State/CBSA/Metro	33.269	0.152	30.581	0.153	33.776	0.221
B- State/CBSA/Metro	0.335	0.026	0.438	0.027	1.853	0.101
W-Education	33.551	0.151	30.500	0.155	35.376	0.209
B-Education	0.053	0.008	0.519	0.035	0.253	0.035
W-Race	33.573	0.151	30.989	0.154	35.621	0.209
B-Race	0.031	0.006	0.030	0.008	0.008	0.004
W-Education/Race	33.074	0.153	29.731	0.157	34.383	0.218
B-Education/Race	0.530	0.037	1.288	0.058	1.246	0.085
W-Education/Geo	31.087	0.161	27.212	0.162	27.943	0.253
B-Education/Geo	2.517	0.081	3.807	0.095	7.686	0.199
W-Race/Geo	32.662	0.154	29.987	0.155	32.436	0.231
B-Race/Geo	0.942	0.048	1.032	0.048	3.193	0.133
W-Education/Race/Geo	28.758	0.168	25.097	0.167	25.554	0.260
B-Education/Race/Geo	4.846	0.110	5.922	0.117	10.075	0.221
Total Ineq	33.604	0.151	31.019	0.154	35.629	0.209

Source: Own ellaboration using the data from the 2017 Survey of Public Participation in the Arts
W and B stand for the within and between components of inequality, respectively

The active practice of any of the visual arts is the form of active cultural participation with the lowest degree of inequality, while the use of digital media to watch programs about visual arts or gather information about them has a much higher level of inequality. Although there are no significant differences between states in the level of inequality for these three activities, the effect of place of residence is lower for active practice. For digital, again, despite the potential absence of supply-side restrictions on access under universal broadband availability, there are significant differences between territories, especially when distinguishing by type of population and CBSAs. This result, once again, points to the large differences in broadband Internet access among different types of neighborhoods (see Pew Research Center, 2021) as a relevant factor in explaining the existing differences in digital access to culture in the U.S.

The broad definition of visual arts in this survey which includes activities considered both highbrow and lowbrow culture, may be the reason why between educational groups inequality is quite low in relation to active practice as well as to digital access. Although, there are also no significant racial differences, the inequality between groups defined simultaneously in terms of education and race are significant and represent 1.5% and 3.5%, respectively, of the total for active practice and digital access. Even though attendance at heritage institutions has the lowest value of the GE(0) in this group, when decomposing the value of the index we get a significant between the inequality component by educational groups, accounting for 1.7% of the total, rising to 4.6% if considered simultaneously with race.

Writing and Reading

As mentioned above, we have observed large differences in the inequality of access to culture depending on the cultural activities considered. The most exclusive ones, with levels of inequality that can be classified as very high, are those activities related to writing or reading with a social component, such as writing workshops (with a 7% rate of participation), or participation in book clubs or reading groups (6%), presented in Table 5. It is worth noting that geographical differences are especially important regarding these activities. Between states differences are significant (its interval of confidence does not include the zero) and the estimated within states inequality is out of the interval defined for the total inequality. Moreover, as geographic units below state level are considered (distinguishing between principal city, balance, and nonmetropolitan neighborhoods) and, again, between CBSAs, between territories, inequality becomes larger (around one quarter of the total inequality) while differences between individuals within CBSAs fall. This result could be quite unexpected for active writing since this activity does not require a complex setup apart from a computer or just pencil and paper. Reading clubs or writing workshops, on the other hand, must be organized and given their limited popularity, states with a large and dense population might have an advantage to successfully hold these types of activities.

Regarding the two social variables considered for classified people, on one hand, the education effect is significant in the three cases. Although the between educational groups contribution to the overall inequality, measured by the GE(0), can be estimated around 4% of the total, it is significantly different from zero. On the other hand, inequality associated to groups defined by race is very low for these activities, and the within race GE(0) does not statistically differ from the overall inequality, implying that the between race groups inequality tends to be

unimportant. Hence, inequity in access is related to educational attainments but not with race for activities related to writing and social reading. Finally, as expected, when geographic and social backgrounds are considered jointly, larger number of groups causes inequality between groups to increase, reducing inequality within groups to below half of the total.

Table 5. *General Entropy Indexes for Active Writing, Writing Workshops, Reading Clubs and Digital Search of Book Information*

	Active Writing		Write Workshop		Reading Clubs		Dig search book information	
	GE(0)	Std. Err.	GE(0)	Std. Err.	GE(0)	Std. Err.	GE(0)	Std. Err.
W-States	41.497	0.072	38.873	0.101	40.402	0.111	36.100	0.199
B-States	0.967	0.066	0.412	0.058	0.787	0.073	0.092	0.017
W-States/Metro	34.020	0.160	34.878	0.152	35.659	0.185	35.322	0.205
B-States/Metro	8.444	0.160	4.406	0.147	5.530	0.174	0.870	0.067
W-State/CBSA/Metro	29.728	0.183	31.610	0.180	30.968	0.224	34.089	0.215
B- State/CBSA/Metro	12.736	0.183	7.674	0.182	10.221	0.221	2.103	0.107
W-Education	41.477	0.074	37.379	0.156	39.500	0.137	35.326	0.206
B-Education	0.987	0.067	1.905	0.109	1.689	0.103	0.866	0.071
W-Race	42.449	0.034	39.061	0.115	41.084	0.094	36.182	0.199
B-Race	0.015	0.011	0.223	0.047	0.105	0.026	0.010	0.005
W-Education/Race	39.011	0.115	36.032	0.155	37.446	0.171	34.366	0.214
B-Education/Race	3.453	0.112	3.252	0.134	3.743	0.149	1.826	0.102
W-Education/Geo	19.099	0.198	22.210	0.216	20.755	0.257	27.539	0.252
B-Education/Geo	23.365	0.199	17.074	0.229	20.434	0.260	8.653	0.208
W-Race/Geo	25.734	0.194	29.178	0.195	27.703	0.242	32.948	0.224
B-Race/Geo	16.730	0.195	10.106	0.201	13.486	0.242	3.244	0.134
W-Education/Race/Geo	16.131	0.193	19.258	0.217	17.607	0.254	24.928	0.259
B-Education/Race/Geo	26.333	0.194	20.026	0.233	23.582	0.259	11.264	0.229
Total Ineq	42.464	0.033	39.284	0.119	41.189	0.094	36.192	0.199

Source: Own ellaboration using the data from the 2017 Survey of Public Participation in the Arts
W and B stand for the within and between components of inequality, respectively

When these kinds of activities are done digitally, and people declare how often they have used a device to watch or listen to programs or information about books or writers in the last 12 months (20%), we observe a significantly smaller inequality (below the lower limits of the intervals of confidence of the other writing/reading activities), but still quite large. Despite its lower value, when it is decomposed into its between and within components, we observe a similar pattern being the only difference that the between states component now only accounts for 0.26% of the total inequality. This result could be explained by the fact that, conditional on even availability of broadband access among aficionados, participation in digital activities linked to writing and reading would be characterized by not being linked to territory, but would remain, like physical access,

determined by socio-economic variables, especially education (Suarez et al, 2020). Since this group of activities is very exclusive (exhibiting the largest degree of inequality in their access), the assumption of even Internet access among those interested does not seem too extreme. Furthermore, within-states differences in education are more important than differences in the states' educational means. In fact, when smaller geographic areas within each state are considered, the within areas inequality is found to exhibit statistically significance declines and the between areas inequality accounts for 6% of the total inequality.

5. Conclusions and Final Discussion

In this paper, we have described cultural participation in the U.S. in terms of its territorial and social dimensions to describe the factors for which participation is more uneven. The consideration of live and digital participation allows us to explore if inequalities of live participation could be overcome or amplified in the digital world. The most important conclusion of our paper is that race groups are less significant than educational level in explaining differences in cultural participation. However, when the effect of education and race are considered simultaneously, inequality between groups increases significantly regardless of location and inequality within groups (i.e. related to any factor not linked to education or race) falls below half of the total.

Since educational attainment is not randomly distributed between race groups, this result does not imply that cultural access is not unequal by race groups, but it is more related to their unequal access to high levels of education. Hence, at first sight, it might seem that racial differences are the fundamental factor behind social differences like access to culture. The results obtained from the decomposition of the inequality indices used in this paper support the intuition that there is an indirect transmission mechanism of these inequalities through racial differences in access to education. Unequal educational attainments by racial groups are the main factor perpetuating other observed social inequalities.

Additionally, location has traditionally been considered a relevant factor explaining differences in live cultural participation due to the unequal supply of cultural services, usually better allocated in urban areas. However, for digital participation, the geographic dimension is often regarded as less important. This is only true if good quality Internet access is evenly distributed geographically. Otherwise, differences in physical Internet access rates between residents of different areas would continue to make geographic inequality in digital access to culture relevant. Geographical disparities in Internet access remain significant in the U.S., being a larger problem in

states with larger rural populations and among poor neighborhoods. Accordingly, we find the pattern of digital participation is remarkably similar to the pattern of physical participation, thus showing some evidence that inequalities and stratification of cultural practices could be reproduced in online activities.

This pattern of geographic inequality could also be explained by the appearance of new cultural omnivores, characterized by the simultaneous consumption of different cultural goods, both traditionally and digitally. For them, traditional and digital cultural consumption would be complementary goods, i.e., they were consumed simultaneously. In this case, urban consumers with better access to, for example, live performing arts, would consume live cultural goods with a higher probability. Then, digital consumption being a complementary good to live attendance, they would also consume performing arts digitally. However, people in rural areas would not have the opportunity to attend live performing arts and the complementarity property would suggest they not consume performing arts digitally either, even if Internet access in these areas is not deficient.

Finally, we believe that our analysis is relevant, first, because of the different implications in terms of individual well-being of live and digital cultural engagement (Büchi & Hargittai, 2022). Second, in terms of the effects of engagement over social capital, evidence indicates that instead of fulfilling the promise of removing barriers to increase the equity in the access to culture, digital access (Yates & Lockley, 2018) is reproducing the divides and inequality (Vandenplas & Picone, 2021). An additional problem that also affects a variety of cultural participation is the richness of cultural offerings. That is, how the supply-side affects cultural inequities and the possible impact of new digital platforms (Peukert, 2019; Salganik et al, 2006). However, this is beyond of the scope of this research, focused on the demand side.

Our results also have important implications in terms of the policies that can be designed at the local level in terms of increasing the diversity of social groups participating in cultural activities. If policy-makers are interested in promoting the representation of certain social groups, they should work out educational policies that favor early socialization in the arts involving, for instance, school age children.

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Appendix

Table A1

Classification of Cultural Activities

	Activities: Questions and SPPA2017 codes	H/L	A/R	L/D	% Part. Rate	# Times
Cinema	Cinema going: *Last 12 months, did you go out to the movies or go see any films?* (PEMDQ1I) *Last 12 months, how often did you go out to the movies or go see a film?* (PEMDQ2I)	L	R	L	56.91	4.53
Performing arts and music	Popular music attendance: *Attended a live jazz performance in the last 12 months* (PEC1Q1A) *Attended a live Latin, Spanish, or salsa music performance in the last 12 months* (PEC1Q2A) *Attended a live music performance the last 12 months* (PEC2Q1C) *How often attended a fair or festival the last 12 months* (PEC2Q2A) *How often attended a live music performance the last 12 months* (PEC2Q2C) *Number of live jazz performances last 12 months* (PTC1Q1B) *Number of live Latin, Spanish, or salsa music performances last 12 months* (PTC1Q2B)	L	R	L	27.34	1.30
	Digital listening of popular music: *In the last 12 months used a device to watch or listen to jazz music* (PEMAQ1A) *In the last 12 months used a device to watch or listen to Latin, Spanish, or salsa music* (PEMAQ1B) *In the last 12 months used a device to watch or listen to other kinds of music, such as rock, pop, country, folk, rap or hip-hop* (PEMAQ1D) *How often use a device to watch or listen to jazz music?* (PEMAQ2A) *How often use a device to watch or listen to Latin, Spanish, or salsa music?* (PEMAQ2B) *How often use a device to watch or listen to other kinds of music such as rock, pop, country, folk, rap or hip-hop?* (PEMAQ2D)	L	R	D	69.8	3.69
	Classical music concert attendance operas or classical ballets: *Attended a live classical music performance in the last 12 months* (PEC1Q3A) *Attended a live opera performance in the last 12 months* (PEC1Q4A) *Attended a live ballet performance in the last 12 months* (PEC1Q7A) *Number of live classical music performances last 12 months* (PTC1Q3B) *Number of live opera performances last 12 months* (PTC1Q4B) *Number of live ballet performances last 12 months* (PTC1Q7B)	H	R	L	12.0	0.33
	Active practice of music: *Last 12 months, did any singing?* (PEMBQ1A) *Last 12 months, sang with others?* (PEMBQ1AA) *Last 12 months, played any musical instruments?* (PEMBQ1B) *Last 12 months, played a musical instrument with others?* (PEMBQ1BB) *Last 12 months, created or performed music in ways other than singing or playing an instrument?* (PEMBQ1C) *Last 12 months, used a computer, laptop, or mobile device to edit or remix music?* (PEMBQ1CC) *Last 12 months, did you take any lessons/classes in music - either voice-training or playing an instrument?* (PEMEQ3A) *(25+) Last 12 months, did you take any lessons/classes in music - either voice- training or playing an instrument?* (PEMEQ3AA) *Last 12 months, did you learn through other means in music - either voice-training or playing an instrument?* (PEMEQ4A) *Last 12 months, how often did any singing?* (PEMBQ2A) *Last 12 months, how often played a musical instrument?* (PEMBQ2B) *Last 12 months, how often created or performed music in ways other than singing or playing an instrument?* (PEMBQ2C) *Last 12 months, how often used a computer, laptop, or mobile device to edit, or remix any music?* (PEMBQ2CC)	H	A	L	22.83	7.09
	Digital listening of classical music: *In the last 12 months used a device to watch or listen to classical music or opera?* (PEMAQ1C) *How often use a device to watch or listen to classical music or opera?* (PEMAQ2C)	H	R	D	21.96	5.47

	Active practice of performing arts: *Last 12 months, did any dancing?* (PEMBQ1D) *Last 12 months, did any dancing with others?* (PEMBQ1DD) *Last 12 months, did any acting?* (PEMBQ1E) *Last 12 months, involved in the production of any theatrical performances?* (PEMBQ1F) *Last 12 months, did you take any lessons/classes in acting or theater?* (PEMEQ3D) *(25+) Last 12 months, did you take any lessons/classes in acting or theater?* (PEMEQ3DD) *Last 12 months, did you take any lessons/classes in dance?* (PEMEQ3E) *(25+) Last 12 months, did you take any lessons/classes in dance?* (PEMEQ3EE) *Last 12 months, did you learn through other means in acting or theater?* (PEMEQ4D) *Last 12 months, did you learn through other means in dance?* (PEMEQ4E) *Last 12 months, how often did any dancing?* (PEMBQ2D) *Last 12 months, how often acted?* (PEMBQ2E)	L / H	A	L / D	16.05	2.21
	Performing arts attendance: *Visited an outdoor festival that featured performing artists last 12 months* (PEC1Q12A) *Attended a live musical stage play in the last 12 months* (PEC1Q5A) *Attended a live nonmusical stage play in the last 12 months* (PEC1Q6A) *Attended a live dance (non-ballet) performance in the last 12 months* (PEC1Q8A) *Attended some other live music/dance/theater performances last 12 months* (PEC1Q9A) *Attended a fair/festival featuring crafts, visual or performing arts the last 12 months* (PEC2Q1A) *Attended a live play or musical the last 12 months* (PEC2Q1D) *Attended a live dance performance the last 12 months* (PEC2Q1E) *Attended any other kind of live performance the last 12 months* (PEC2Q1G) *Attended an event at a college or university campus the last 12 months* (PEC2Q3A) *Attended in the last 12 months to experience a performance in a particular location* (PEC2Q4F) *Attended in the last 12 months to see a specific individual performer or exhibit* (PEC2Q4G) *How often attended a live play or musical the last 12 months* (PEC2Q2D) *How often attended a live dance performance the last 12 months* (PEC2Q2E) *Number of live musical stage plays last 12 months* (PTC1Q5B) *Number of live nonmusical stage plays last 12 months* (PTC1Q6B) *Number of live dance (non-ballet) performances last 12 months* (PTC1Q8B)	L / H	R	L	47.23	1.42
	Digital performing arts: *In the last 12 months used a device to watch or listen to theater productions, such musicals or plays, or information about theater* (PEMAQ1E) *In the last 12 months used a device to watch or listen to dance performances or programs or information about dance* (PEMAQ1F) *How often use a device to watch or listen to theater productions such as musicals or stage plays, or information about theater?* (PEMAQ2E) *How often use a device to watch or listen to dance performances or to programs or information about dance?* (PEMAQ2F)	L / H	R	D	22.52	4.82
Visual arts	Digital visual arts: *In the last 12 months used a device to watch or listen to programs or information about the visual arts* (PEMAQ1G) *How often use a device to watch or listen to programs or information about the visual arts?* (PEMAQ2G) *During the last 12 months, did you use a device to view paintings, sculpture, pottery, or other visual art?* (PEMAQ3A) *How often do you use a device to view paintings, sculpture, pottery, or other visual art?* (PEMAQ3B)	L / H	R	D	21.7	6.06

	Active practice of visual arts: *Last 12 months did you do any painting, drawing, sculpture, or printmaking activities* (PEMCQ1A) *Last 12 months did you take any photographs as an artistic activity* (PEMCQ1B) *Last 12 months did you edit any photographs as an artistic activity* (PEMCQ1C) *Last 12 months did you create any films or videos as an artistic activity* (PEMCQ1D) *Last 12 months did you design or create any animations, digital art, computer graphics, or video games* (PEMCQ1E) *Last 12 months did you make any pottery, ceramics, or jewelry* (PEMCQ1F) *Last 12 months did you do any leatherwork, metalwork or woodwork* (PEMCQ1G) *Last 12 months did you do any weaving, crocheting, quilting, needlework, knitting, or sewing* (PEMCQ1H) *Last 12 months did you do any scrapbooking, origami or other paper-based art* (PEMCQ1I) *Last 12 months, how often painted, drew, sculpted, or made prints?* (PEMCQ2A) *Last 12 months, how often took photographs as an artistic activity?* (PEMCQ2B) *Last 12 months, how often edited photographs as an artistic activity?* (PEMCQ2C) *Last 12 months, how often created films or videos as an artistic activity?* (PEMCQ2D) *Last 12 months, how often designed or created animations/digital art/computer graphics/video games?* (PEMCQ2E) *Last 12 months, how often made pottery, ceramics, or jewelry?* (PEMCQ2F) *Last 12 months, how often did leatherwork, metalwork or woodwork?* (PEMCQ2G) *Last 12 months, how often did weave, crochet, quilt, needlework, knit, or sew?* (PEMCQ2H) *Last 12 months, how often did scrapbooking, origami or other paper-based art?* (PEMCQ2I) *Last 12 months, did you do any interior, architectural, fashion, or landscape design?* (PEMDQ1F) *Last 12 months, did you do any projects where you repurposed materials or customized something as an artistic activity?* (PEMDQ1G) *Last 12 months, how often did you do interior, architectural, fashion, or landscape design?* (PEMDQ2F) *Last 12 months, how often did you repurpose materials or customize something as an artistic activity?* (PEMDQ2G) *Last 12 months, did you take any lessons/classes in photography or filmmaking?* (PEMEQ3B) *(25+) Last 12 months, did you take any lessons/classes in photography or filmmaking?* (PEMEQ3BB) *Last 12 months, did you take any lessons/classes in visual arts such as drawing/painting/pottery/weaving/design?* (PEMEQ3C) *(25+) Last 12 months, did you take any lessons/classes in visual arts such as drawing/painting/pottery/weaving/design?* (PEMEQ3CC) *Last 12 months, did you learn through other means in photography or filmmaking?* (PEMEQ4B) *Last 12 months, did you learn through other means in visual arts such as drawing/painting/pottery/weaving/design?* (PEMEQ4C) *Last 12 months, did you did you take lessons or classes in computer animation or digital art?* (PEMEQ5)	L / H	A	L	28.36	5.31
Heritage	Visits to heritage: *Visited art museum or gallery last 12 months* (PEC1Q10A) *Visited a crafts fair or visual arts festival last 12 months* (PEC1Q11A) *Visited a historic park or monument or tour a building/neighborhood for historic design last 12 months* (PEC1Q13A) *Visited an art exhibit the last 12 months* (PEC2Q1B) *Attended in the last 12 months to experience high-quality art* (PEC2Q4A) *Attended an event at a museum or gallery the last 12 months* (PEC2Q3F) *Number of art museum or gallery visits last 12 months* (PTC1Q10B) *How often visited an art exhibit the last 12 months?* (PEC2Q2B)	H	R	L	39.22	1.01
Literature	Active writing: *Last 12 months did you do any creative writing?* (PEMCQ7) *Last 12 months did you how often did you do any creative writing?* (PEMCQ8) *Last 12 months, did you take any lessons/classes in creative writing?* (PEMEQ3F) *(25+) Last 12 months, did you take any lessons/classes in creative writing?* (PEMEQ3FF) *Last 12 months, did you learn through other means in creative writing?* (PEMEQ4F)	H	A	L	5.59	1.00
	Reading club: *Last 12 months, did you participate in any book clubs or reading groups?* (PEMDQ1J) *Last 12 months, how often did you participate in a book club or reading group?* (PEMDQ2J)	H	R	L	5.57	0.97
	Creative writing workshop: *Attended an event featuring a poet or writer the last 12 months* (PEC2Q1F) *How often attended an event featuring a poet or writer the last 12 months* (PEC2Q2F)	H	A	L	7.04	0.25
	Digital search of book information: *In the last 12 months used a device to watch or listen to programs or information about books or writers* (PEMAQ1H) *How often use a device to watch or listen to programs or information about books or writers?* (PEMAQ2H)	L / H	R	D	19.75	4.16

Column titles stand for
H/L: Highbrow or Lowbrow. **A/R:** Active or receptive. **L/D**: Live or digital. **% Part. Rate**: Average participation rate. **# Times**: Average number of times