TIME AND WELLBEING IN ARTS AND MEDIA PARTICIPATION: DISENTANGLING AMERICANS' QUALITY OF EXPERIENCE

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ABSTRACT

This paper is a unique contribution to the evidence of positive effects associated with cultural participation, by analyzing how individuals' time spent on arts and media participation directly impacts on their subjective wellbeing. The only, so far, available national survey which tracks participation in all daily activities (including arts and media) and the corresponding level of wellbeing, the American Time Use Survey (ATUS), is used for the first time for this purpose. We first consider conceptual and measurement issues when dealing with cultural participation and subjective wellbeing. In the empirical model we explain the level of differently defined wellbeing states for various cultural activities. We further profile participants, and test if the people more likely to participate in the arts and media are from groups of people more or less likely to effectively benefit from such a cultural exposure. Main results show rather positive wellbeing effects for arts practices before arts attendance, with watching TV scoring the lowest ones.

Keywords: Arts and media participation; Time use; USA; Subjective wellbeing.

1 INTRODUCTION

Research has shown a bundle of positive effects associated with cultural participation, ranging from individuals' intellectual and cultural skills development, personal and social behavior, to community's and economy's more instrumental benefits, such as social and economic impact (see, among others, McCarthy, 2004; Evans, 2005; Snowball, 2007; Belfiore and Bennet, 2010; Walmsely, 2013). Within the sphere of individuals' happiness, some contributions have tried to capture the links between cultural activities and subjective wellbeing (Frey, 2008), with alternative outcomes, depending on the type of activity. By far, watching TV has been the most studied activity, because of its popularity, and hence data availability, showing to be a bad exception in terms of wellbeing, such as lower life satisfaction and higher material aspirations and anxiety (Frey et al., 2007) and lower relational activities (Bruni and Stanca, 2008). However, evidence has been, so far, based on a overall level of life satisfaction or happiness of individuals, responding to a question of the type "All things considered, how satisfied are you with your life as a whole these days?" (see, for instance, Krueger et al., 2008). This is also the kind of information usually available in national surveys and reports on cultural participation (for a recent one, see CASE, 2010).

Our paper is a unique contribution in analyzing how individuals' time spent on arts and media participation directly impacts on their own wellbeing. The only, so far, available national survey which tracks participation in all daily activities (including arts and media) and the corresponding level of wellbeing, the American Time Use Survey (ATUS), is used for the first time for this purpose.

We first consider conceptual and measurement issues when dealing with cultural participation, in comparison to more traditional measurements, considering research and application potentialities. We then attempt to define wellbeing, by referring ATUS indicators. These indicators are subsequently employed in an empirical model, explaining the level of the different wellbeing indicators for various arts activities on the basis of opportunities (e.g. available arts offer, such as in metropolitan areas) and constraints (e.g. occupational status and family burdens) to arts participation. Independent variables include geographical, demographic and socio-economic, similarly to the descriptive analysis. We further profile participants, and test if the people more likely to participate in the arts are from groups of people more or less likely to effectively benefit from arts exposure, for instance by experiencing low levels of

stress (Robinson and Martin, 2008).
The next section provides a comparative conceptual framework for time measurement of arts and media participation. Section 3 introduces the data sources and samples, providing descriptive statistics for arts and media activities and wellbeing indicators, as well as the socio-economic characteristics of individuals. Section 4 defines the empirical model and the implied hypotheses. Section 5 presents and discusses main results. The last section concludes the paper.

2 TIME, CULTURAL PARTICIPATION AND WELLBEING

Time is increasingly becoming a precious resource, shaping our lives. The amount of time allocated to arts and media activities (performing arts, visual arts, cultural heritage, DVD and video, television and radio, new media, music and books), either as attendance or amateur practices (hobbies or unpaid), can capture the quality, and hence the actual value that individuals place in culture, significantly adding to more traditional measurements, such as money spent, preferences stated by arts audiences and consumers, and recall-questions or retrospective surveys (Robinson, 2010; Battistin et al., 2003; Klevmarken et al., 2005; Schulz and Grunow, 2011). Furthermore, the current dynamics of digital technologies applied to the creation, distribution and access to the arts an media is urging an update and a reconsideration of the overall concept and modes of arts participation, and hence of its measurement and its impact at individual and socio-economic levels.

Time-use analysis presents a number of advantages, far from being exploited yet. Since diaries are completed almost in real time, and given their degree of detail, they are particularly accurate and reliable. The relative amount of time allocated to arts and media activities, can affect the quality of arts- participation experience (Bergadaa, 1990; Bittman and Wajcman, 2000; Botti et al., 2008). More recently, time use-data can also contain the information about associated wellbeing of individuals when doing an activity (Hallberg, 2003; Jenkins and Osberg, 2005).

The goal of time-use analysis is to measure how people divide their time among life's activities. Interviewees respond on how they spent their time, usually during the previous day. Usually, in national surveys arts- and media-related activities are quite detailed, encompassing arts attendance (e.g. of museums, theaters, etc.) practices (e.g. writing, dancing, etc.), arts lessons and various arts sectors (visual arts, performing arts, media, heritage, etc.). Diaries are completed by geographical, socio- demographic and economic information about the interviewees and their households.

For a few time-use surveys, the richness of information has been completed by general levels of wellbeing of individuals in the overall period around which the activities were recorded, such as a usual feel of stress, of having no time, etc. The Canadian, the Portuguese, and the Italian surveys are examples in this sense, all carried out by the respective national statistical offices.

For what concerns wellbeing, the US survey (ATUS) has been so far an exception, since its introducing for the first time a Wellbeing Module (WB) in the 2010 survey. The great advantage of this module, is that it tracks the individual's wellbeing precisely when somebody is doing the activity, and for a range of sampled activities, therefore directly relating activities in which individuals are involved with their wellbeing at that moment in time. Notice that we are here distinguishing between the participation in a given activity – a frequent approach in time use studies – and the association between the practice of that activity and quality of life – a rare approach in time use research. The WB module allows us the second approach. For very few general studies on time use and wellbeing see Kahneman et al. (2010), Krueger et al. (2009), and Krueger and Mueller (2012).

Within the ATUS conceptual framework, wellbeing is not considered as a unitary concept, since it is split into different positive, as well as negative types of emotional and/or physical states, including, on the one hand, happiness and meaningfulness, and, on the other hand, stress, tiredness, sadness and pain, where for each type of state, different levels, from the lowest to the highest, are possible. More precisely, wellbeing can correspond to high-low happiness and meaningfulness ("positive" wellbeing), as well as to low-high sadness, tiredness, pain and stress ("negative" wellbeing). As we can see, the different components of wellbeing are also differently characterized by emotional/psychological, as well as physical states.

What follows are the ATUS WB six conditions composing subjective wellbeing, with definitions provided:

- *Happiness*: Enjoying, showing, or marked by pleasure, satisfaction, or joy.
- *Meaningful*: Having meaning, function, or purpose.
- *Sadness*: Affected or characterized by sorrow or unhappiness (can also refer, among others, to depression and melancholy).
- *Tiredness*: Temporary loss of strength and energy resulting from hard physical or mental work.
- *Pain*: An unpleasant sensation occurring in varying degrees of severity as a consequence of injury, disease, or emotional disorder. Suffering or distress.
- *Stress*: A state of extreme difficulty, pressure, or strain.

3 DATA SOURCES AND SAMPLE

American Time Use Survey (ATUS) for 2010 and ATUS Well-being Module 2010 are the data sources used in this analysis. ATUS is conducted by the Bureau of Labor Statistics-United States Census Bureau, which collects information about the allocation of time during a day, and includes some economic and socio-demographic information about the respondents. The unit of observation is one individual per sampled household; the sample frame is American current Population Survey (CPS); the collection mode is computed through assisted telephone interview (CATI); and the reference period is a 24-hours day time diary (i.e. a 'yesterday' diary) (Horrigan and Herz, 2005).[1] Activities are coded by interviewers after diaries are collected.

ATUS has 17 major first-tier categories (ranging from work, personal care, household activities, caring for, respectively, household and extra-household members, education, various shopping, usage of government services, eating and drinking, socializing, sports, religious, volunteer, telephone and travel), 3 levels of codes, where the original codes define 424 different activities. From that group of activities, we have selected 27 Arts and Media activities.

We have grouped the 27 Arts and Media activities into 6 groups: 1 Arts Attendance; 2 Arts Practice; 3 Arts-related Activities; 4 Media – without Television and movies-not religious; 5 Arts & Media also included (groups 1 through 5) ; and 6 Television and movies (not religious). The first column in Table 1 presents the group classification.

1 A detailed presentation of the ATUS database can be found at the Bureau of Labor Statistics' website, http://www.bls.gov/tus.

Table 1 shows the list of the 27 activities, ordered by time allocated per day (mean), and the relative descriptive statistics. Watching TV/movies is the activity that occupies the most Arts and Media time of US people. Three activities, Reading for personal interest (20 minutes per day), Playing Games (11 minutes per day) and Computer use for Leisure (excluding Games) (11 minutes per day) correspond to less than one hour per day. The low values of the time allocated per day are affected by the low participation rate in each activity and also because secondary activities are not included in ATUS.[2] Notice, for instance, that listening to music or Listening to the radio are examples of frequent secondary activities in the Time Use Surveys (TUS) of other countries.

TABLE 1: TIME ALLOCATED PER DAY ON ARTS AND MEDIA ACTIVITIES

Activity Group (b)	Arts and Media Activities	Mean Minutes	SD	Min	Max
	per day				
6	Television and movies (not religious)	172.44	177.97	0	1215
1	Reading for personal interest	19.76	56.833	0	820
5	Playing games	11.02	50.282	0	1050
4	Computer use for leisure (exc. Games)	10.67	42.229	0	830
1	Listening to/playing music (not radio)	2.12	21.163	0	780
1	Attending movies/film	1.87	16.843	0	330
4	Listening to the radio	1.73	19.831	0	700
2	Arts and crafts as a hobby	1.54	19.762	0	720
1	Arts and entertainment, n.e.c.*	1.5	20.101	0	825
3	Travel related to arts and entertainment	1.14	9.694	0	305
1	Attending performing arts	0.92	13.499	0	485
5	Taking class for personal interest	0.51	9.202	0	345
1	Attending museums	0.49	11.376	0	525
2	Performing	0.48	8.63	0	375
5	Computer use	0.46	7.451	0	433
2	Dancing	0.43	9.595	0	425
2	Serving at volunteer events and cultural activities	0.23	8.464	0	555
5	Fundraising	0.22	7.775	0	510
2	Writing for personal interest	0.21	10.132	0	1061
2	Extracurricular music and performance activities	0.07	3.105	0	180
1	Watching dancing	0.05	4.677	0	525
5	Collecting as a hobby	0.05	2.617	0	180
5	Writing	0.04	1.732	0	120
5	Reading to/with no nhh children	0.03	1.066	0	60
2	Participating in performance and cultural activities, n.e.c.*	0.01	0.834	0	60
2	Arts and crafts with nonhh children [(a)]	0	0.434	0	50
3	Security procedures rel. to arts and entertainment[(a)]	0	0.368	0	30

Source: Authors' computation based on ATUS. Note: (a) The mean of time allocated per day/individual is very low, near zero. (b) Groups ofArts and Media created by the authors (see Table A1 in Appendix).

2 The only secondary activity included in ATUS is Child Care.

SESSION A2
HUMAN RESOURCES PRICING

The wellbeing module of ATUS collects wellbeing information associated with a specific activity. Each respondent answers about her feelings (Meaningful, Happy, Sad, Tired, Pain and Stress) during the period she performed a given activity. Table 2 shows the wellbeing (positive and negative) associated with the six Arts and Media activity group considered, 0 being the lowest level and 6 the highest wellbeing. In general, Arts and Media activities show a very low level of negative effects (Sad, Tired, Pain and Stress). Curiously, TV/movies watching presents the worst relative position in terms of negative effects (2.72). The Practice of Arts seems to create the relative highest level of wellbeing (10.23).

TABLE 2: POSITIVE AND NEGATIVE WELLBEING BY GROUP OF ARTS AND MEDIA ACTIVITIES

ARTS & MEDIA ACTIVITIES	Positive Wellbeing ***Meaningful + Happy*** (min=0; max:12) Mean Negative	Wellbeing ***Sad + Tired +Pain +Stress*** (min=0; max: 12)[(b)] Mean
1: Arts Attendance (N=765)	8.58	2.03
2: Arts Practice (N= 71)	10.23	2.01
3: Arts Related (N=115)	8.51	2.20
4: Media (without Television and movies-not religious) (N=421)	7.46	1.91
5: Arts & Media also included (N=353)	8.35	1.91
6: Television and movies (not religious) (N=3110)	7.74	2.72

Source: Authors' computation based on ATUS Wellbeing Module microdata. NOTES: (a) Original codes in ATUS: *1 Arts Attendance* (120312=1) (120306=1) (120403=1) (120499=1) (120401=1) (120402=1) (130209=1); *2 Arts Practice* (150499=2) (120309=2) (150401=2) (130109=2) (150402=2) (120313=2) (060202=2) (040104=2); *3 Arts Related* (181204=3) (120405=3); *4 Media (without Television and movies-not religious* (120303=4) (120308=4) (120305=4); *5 Arts & Media also included*(150105=5) (040102=5) (120307=5) (150101=5) (060102=5) (150106=5) (120310=5); and *6 Television and movies (not religious)* (120303=6) . (b) The original maximum value was 24 (correspondent to 4 answers with maximum values). The value was standardized by the authors for comparability with negative wellbeing.

Table 3 illustrates the differences for the positive and negatives wellbeing states for Media and Arts, and Table A2 in the Annex between women and men concerning the self-perception of wellbeing when occupied Arts & Media activities, showing that, in general, women have a stronger perception (positive or negative) of the effect of Arts and Media non wellbeing. The Arts activities seem in general to produce higher levels of wellbeing compared with the Media activities.

		meaningful01	happy01	sad01	tired01	pain01	stress01
Media	Mean	.5172	.6922	.0795	.3109	.1396	.1187
	SD	.49977	.46162	.27054	.46292	.34660	.32351
	N	3896	3909	3925	3924	3926	3925
Arts	Mean	.6868	.7600	.0542	.2260	.0946	.0790
	SD	.46402	.42733	.22646	.41848	.29281	.26988
	N	958	954	960	960	962	962
ARTS & MEDIA Total	Mean	.5507	.7055	.0745	.2942	.1307	.1109
	SD	.49748	.45585	.26263	.45574	.33714	.31405
	N	4854	4863	4885	4884	4888	4887

TABLE 3: ARTS VS. MEDIA AND WELLBEING

Source :ATUS Wellbeing Module 2010. Note: The binary *variables meaningful01, happy01, sad01, tired01, pain01 and stress01* were computed from the ATUS WB original variables (with 7 levels, from 0 to 6), defining 0 to 3 as 0 and 4 to 6 as 1.

4 THE EMPIRICAL MODEL

Our empirical model explains the different indicators of wellbeing associated with arts and media activities, the different indicators of wellbeing consisting in seven different levels – from the lowest (0) to the highest (6) – of, respectively, happiness and meaningfulness ("positive" wellbeing), and sadness, tiredness, pain and stress ("negative" wellbeing).

Wellbeing indicators are modeled on time spent on the different arts/media activities. Other explanatory variables control for some conditions of provision of arts and media goods and services (e.g. metropolitan areas), as well as for possible limitations or, on the contrary, incentives or predispositions, to access arts and media goods and services (e.g. occupation and family burdens vs. education and income).

Given the particular psychological and, sometimes, physical implications of the defined wellbeing indicators, and the different modalities of participating in the different arts and media activities, the specific associated hypotheses are detailed as follows.

Our main hypothesis is that, in general, arts and media activities are good for wellbeing. In particular, they are expected to contribute to higher levels of positive wellbeing indicators, such as happiness and meaningfulness. To some extent, we also expect they contribute lower levels of negative wellbeing indicators, in particular stress. Also notice that because of the particular content of arts and media, they may have a different impact on emotions in terms of sadness and pain (e.g. a listening to melancholic songs, or watching a moving movie). Furthermore, some arts, rather than media, activities can impact tiredness and even physical pain (e.g. walking through a museum exhibition, or even sitting in a not enough comfortable chair in a theater).

Other explanatory variables:
In a situation of substitute arts and media activities, a higher provision of certain arts and media goods and services can affect the participation to these goods and services, but also that to other arts and media goods and services. For instance, living in a

metropolitan area typically implies having access to a higher offer of arts-attendance activities, which may reduce, for instance certain media consumption.

Age is expected to be variously correlated with the different wellbeing indicators. For instance, all the other conditions being equal, tiredness, and even physical pain should be the case of older people rather than younger ones.

Women are expected to be more sensitive, emotional, and also engaged in arts and media participation. In terms of gender and marital status, married women are expected to benefit of a lower time quality compared to unmarried women and men, given the multitask patterns of their habitual day.

Having a full-time, rather than a part-time job, and family burdens (e.g. the number of children living at home) should rather increase stress.

Finally, a higher educational level (education defined through a group of dummy variables) or (to avoid multicollinearity problems) a highly qualified or paid job are expected to add to meaningfulness of the arts and media experience. Correspondingly, lower educational levels and less qualified/with lower responsibilities jobs might add to happiness (in particular in the sense of insouciance).

5 RESULTS

Tables A3 to A6 in the Annex show the main results from Probit models using as dependent variables the wellbeing produced by each of the six activities considered (Arts Attendance; Arts Practice; Arts Related; Media (without Television and movies-not religious; Arts & Media also included; and TV/movies (not religious) are mixed. Tables A3 and A4 show that the predictors for Meaningful and Happy while watching TV that are statistical significant are *age* (positive) and education (negative).

Table A5 shows the wellbeing indicator of stress clearly associated with the activity watching TV.

Tables A5 and A6 show the marginal effects of Probit models where the dependent variable is a binary variable: having or not positive wellbeing (Table A5) and having or not negative wellbeing (Table A6). We also studied, considering the global answers about wellbeing, it means, not only the wellbeing associated to the activities of Arts and Media, two additional variables: the positive self perceived wellbeing (wbpos01, combining the results for two answers Meaningful and Happy) and the negative (wbseg01, combining the results for four answers, Sad, Tired, Pain, and Stress). The probability of negative feelings while practicing arts activities increases with age, and is higher for women than for men. A weekend day and education act in the opposite direction. The positive feelings are affected by age, weekend and being woman. Education predicts both higher negative and positive feelings. Measured by marginal effects, being woman increases the probability of experiencing negative wellbeing by 1.9% and increases the probability of experiencing positive wellbeing by 3.2%. Finally, the area of residence (Metropolitan) did not reveal statistical significance (Tables A5 and A6).

6 CONCLUSION AND FUTURE RESEARCH

By applying different indicators of subjective wellbeing to time spent in arts and media activities, we found that, overall, cultural participation is positively associated with quite high levels of happiness and meaningfulness, and relatively low levels of emotional and physical states of negative wellbeing. In particular, arts practices (such as writing, arts and craft as a hobby, performing, dancing, etc.) revealed higher positive wellbeing levels than arts attendance (such as going to museums, theaters, cinemas, etc.), followed by media activities (computer use for leisure, listening to the radio and watching TV). Among the latter, when controlling for socio-economic characteristics of individuals, watching TV resulted contributing to positive wellbeing in the presence of low education, but also to relatively high level of stress.

Given the particular empirical nature of overall time-use research (Hamermesh, 2009), this paper is expected to contribute to theory building in highly relevant aspects of arts participation and consumer behavior, such as wellbeing, and implied quality of experience. The newly produced insights can both inspire decision makers in public cultural and social policies, as well as provide arts marketing, in order to better attract and involve arts audiences and customers.

The major applicable outcome of our research in terms of marketing, and in particular related to experience goods, consists in the use of diaries to estimate the degree to which psychological and physical impact of arts and media may block or enable the access to them by individuals, opening up, as further research, to the building and test of original indicators, to develop and assess the quality of cultural experience.

REFERENCES

Battistin, E., R. Miniaci, and G. Weber. 2003. "What Do We Learn from Recall Consumption Data?" The Journal of Human Resources, Vol. 38, no 2, p. 354-385.
Belfiore, E. and O. Bennett. 2010. The Social Impact of the Arts: An Intellectual History, Palgrave Macmillan.
Bergadaa, M. M. 1990. "The role of time in the action of the consumer". Journal of Consumer Research, Vol. 17, no 3, p. 289-302.
Bittman, M. and J. Wajcman. 2000. "The Rush Hour: The Character of Leisure Time and Gender Equity." Social Forces, Vol. 79, no 1, p. 165-189.
Botti, S., S. Broniarczyk, G. Häubl, R. Hill, Y. Huang, B. Kahn, P. Kopalle, D. Lehmann, J. Urbany, and B. Wansink. 2008. "Choice under restrictions." Marketing Letters, Vol. 19, no 3-4, p. 183-199. Bruni, L. and L. Stanca. 2008. "Watching alone: Relational goods, television and happiness." Journal of Economic Behavior & Organization, Vol. 65, no 3-4, p. 506-528.
CASE Programme. 2010. Understanding the value of engagement in culture and sport. Technical Report, London: Department for Culture, Media and Sport, England.
Evans, G. 2005. "Measure for Measure: Evaluating the Evidence of Culture's Contribution to Regeneration." Urban Studies, Vol. 42, no 5/6, p. 959-983.
Frey, B.S. 2008. "Cities, Culture and Happiness." Ethos, Vol. World Cities Summit, p. 02-11.
Frey, B.S., C. Benesch and A. Stutzer. 2007. "Does watching TV make us happy?" Journal of Economic Psychology, Vol. 28, p. 283-313.
Gershuny, J. 2011. "Time-Use Surveys and the Measurement of National Well-Being." Centre for Time- use Research, Department of Sociology, University of Oxford.
Hamermesh, D.S. 2009. "It's Time to "Do Economics" with Time-Use Data." Social Indicators Research, Vol. 93, no 1, p. 65-68.
Jenkins, S.P. and L. Osberg. 2005. "Nobody to Play with? The implications of Leisure Coordination." In The Economics of Time Use, D.S. Hamermesh and G.A. Pfann eds, Amsterdam: Elsevier, p. 113-145.
Kahneman, D., Schkade, D. A., Fischler, C., Krueger, A. B., and A. Krilla, A. 2010. "The structure of well-being in two cities: life satisfaction and experienced happiness in Columbus, Ohio; and Rennes, France." International Differences in Well-Being, Vol. 1, no 9, p. 16-34.
Kim, J., G.M. Allenby and P.E. Rossi. 2002. "Modeling consumer demand for variety." Marketing Science, Vol. 21, no 3, p. 229-250.
Klevmarken, N.A. 2005. "Estimates of a labour supply function using alternative measures of hours of work." European Economic Review, vol. 49, no 1, p. 55-73.
Kraaykamp, G., W. van Gils and W. Ultee. 2008. "Cultural participation and time restrictions: Explaining the frequency of individual and joint cultural visits." Poetics, Vol. 36, p. 316-332.
Krueger, A. B., D. Kahneman, C. Fischler, D. Schkade, N. Schwarz and A.A. Stone. 2009. Time use and subjective well-being in France and the US. Social Indicators Research, Vol. 93, no 1, p. 7-18.
Krueger, A. B. and A.I. Mueller. 2012. Time Use, Emotional Well-Being, and Unemployment: Evidence from Longitudinal Data. The American Economic Review, Vol. 102, no 3, p. 594-599.
McCarthy, K.F., .H. Ondaatje, L. Zakaras and A. Brook. 2004. *Gifts of the Muse: Reframing the Debate About the Benefits of the Arts*, RAND Research in the Arts.
Peterson, R.A. 2005. "Problems in comparative research: The example of omnivorousness." Poetics, Vol. 33, p. 257-282.
Robinson, J.P. 2010. "Sex, Arts and Verbal Abilities: Three Further Indicators of How American Life is not Improving." Social Indicators Research, Vol. 99, no 1, p. 1-12.
Robinson, J.P. 2011. "Arts and Leisure Participation Among IT Users: Further Evidence of Time Enhancement Over Time Displacement." Social Science Computer Review, vol. 29, no 4, p. 470-480.
Robinson, J. and S. Martin. 2008. "What do happy people do?" Social Indicators Research, Vol. 89, p. 565-571.
Schulz, F. and D. Grunow. 2011. Comparing Diary and Survey Estimates on Time Use. European Sociological Review, Vol. 0, no 0, p. 1-11.
Snowball, J. 2007. Measuring the value of culture: methods and examples in cultural economics. Springer.
Walmsley, B. 2013. ""A big part of my life": A qualitative study of the impact of theatre", Arts Marketing: An International Journal, Vol. 3, no 1, p. 72-81.

APPENDIX

TABLE A1: ARTS AND MEDIA ACTIVITIES

ARTS & MEDIA ACTIVITIES [(a)]	Positive Wellbeing *Meaningful + Happy* (min=0; máx:12) Mean	Negative Wellbeing *Sad + Tired +Pain +Stress* (min=0; máx: 12)[(b)] Mean
1: Arts Attendance (N=765)	8.58	2.03
- Attending movies/film		
- Attending museums		
- Attending performing arts		
- Arts and entertainment, n.e.c.*		
- Listening to/playing music (not radio)		
- Reading for personal interest		
- Watching dancing		
2: Arts Practice (N= 71)	10.23	2.01
- Arts and crafts as a hobby		
- Arts and crafts with non hh children		
- Dancing		
- Extracurricular music and performance activities		
- Participating in performance and cultural activities, n.e.c.*		
- Performing		
- Serving at volunteer events and cultural activities		
- Writing for personal interest		
3: Arts Related (N=115)	8.51	2.20
- Security procedures rel. to arts and entertainment		
- Travel related to arts and entertainment		
4: Media (without Television and movies-not religious) (N=421)	7.46	1.91
- Computer use for leisure (exc. Games)		
- Listening to the radio		
5: Arts & Media also included (N=353)	8.35	1.91
- Collecting as a hobby		
- Computer use		
- Fundraising		
- Playing games		
- Reading to/with non hh children		
- Taking class for personal interest		
- Writing		
6: Television and movies (not religious) (N=3110)	7.74	2.72
- Television and movies (not religious)		

Source: Authors' computation based on ATUS Wellbeing Module microdata. NOTES: (a) Original codes in ATUS: *1 Arts Attendance* (120312=1) (120306=1) (120403=1) (120499=1) (120401=1) (120402=1) (130209=1); *2 Arts Practice* (150499=2) (120309=2) (150401=2) (130109=2) (150402=2) (120313=2) (060202=2) (040104=2); *3 Arts Related* (181204=3) (120405=3); *4 Media (without Television and movies-not religious*(120303=4) (120308=4) (120305=4); *5 Arts & Media also included*(150105=5) (040102=5) (120307=5) (150101=5) (060102=5) (150106=5) (120310=5); and *6 Television and movies (not religious)* (120303=6) . (b) The original maximum value was 24 (correspondent to 4 answers with maximum values). The value was standardized by the authors for comparability with negative wellbeing.

TABLE A2 : ARTS AND MEDIA PARTICIPATION AND SELF-PERCEIVED WELLBEING BY GENDER

		mean ingful	happ y	sad	tired	pain	stress
Arts Attendance	Male	3.9	4.4	0.6	1.4	0.9	1.1
	Female	4.0	4.4	0.6	1.7	1.0	0.9
	Dif Fem-M	*0.1*	*-0.0*	*0.0*	*0.3*	*0.1*	*-0.2*
Arts Practice	Male	5.3	4.8	0.3	2.5	0.8	1.5
	Female	5.5	5.2	0.2	1.0	0.8	1.0
	Dif Fem-M	*0.3*	*0.5*	*-0.1*	*-1.5*	*0.1*	*-0.5*
Arts Related	Male	4.1	4.9	0.1	1.0	0.8	0.6
	Female	3.5	3.5	0.4	2.3	1.8	2.2
	Dif Fem-M	-0.6	-1.4	0.3	1.3	*1.0*	*1.5*
Media Without TV	Male	3.1	3.9	0.7	1.9	1.1	1.3
	Female	3.7	3.9	0.9	1.8	1.1	1.5
	Dif Fem-M	*0.6*	*0.1*	*0.2*	*-0.1*	*-0.0*	*0.3*
Arts and Media Related	Male	2.9	4.4	0.3	1.8	0.7	1.1
	Female	4.4	4.9	0.6	1.4	0.8	0.6
	Dif Fem-M	*1.4*	*0.5*	*0.3*	*-0.4*	*0.1*	*-0.5*
TV and Movies	Male	3.3	4.3	0.8	2.1	1.1	1.3
	Female	3.3	4.3	0.9	2.3	1.2	1.2
	Dif Fem-M	0.0	0.1	0.1	0.2	0.1	-0.0

Source: Authors' computation based on ATUS Wellbeing Module 2010.

TABLE A3 – RESULTS AFTER PROBIT
(DEPENDENT VARIABLE: WELLBEING MEASURE 'MEANINGFUL' ASSOCIATED TO TV WATCHING; PREDICTORS. GENDER, AGE, EDUCATION, WEEKEND)

```
-> Act_3g = 6

Iteration 0:   log likelihood = -532.48324
Iteration 1:   log likelihood = -521.64811
Iteration 2:   log likelihood = -521.64555
Iteration 3:   log likelihood = -521.64555

Probit regression                                 Number of obs   =        769
                                                  LR chi2(4)      =      21.68
                                                  Prob > chi2     =     0.0002
Log likelihood = -521.64555                       Pseudo R2       =     0.0204
```

meanf_rec	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
TESEX	.1221415	.0914772	1.34	0.182	-.0571506	.3014336
Age1424_2-65	.3051352	.079077	3.86	0.000	.1501472	.4601233
EDU_CU	-.2334611	.0922741	-2.53	0.011	-.4143151	-.0526071
weekend	-.0276347	.0926446	-0.30	0.765	-.2092147	.1539454
_cons	-.7362826	.2249228	-3.27	0.001	-1.177123	-.295442

TABLE A4 – RESULTS AFTER PROBIT
(DEPENDENT VARIABLE: WELLBEING MEASURE 'HAPPINESS' ASSOCIATED TO TV WATCHING; PREDICTORS. GENDER, AGE, EDUCATION, WEEKEND)

```
Iteration 0:   log likelihood =  -459.9936
Iteration 1:   log likelihood = -451.43741
Iteration 2:   log likelihood = -451.42399
Iteration 3:   log likelihood = -451.42399

Probit regression                                 Number of obs   =        768
                                                  LR chi2(4)      =      17.14
                                                  Prob > chi2     =     0.0018
Log likelihood = -451.42399                       Pseudo R2       =     0.0186
```

happy_rec	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
TESEX	.1000968	.0971267	1.03	0.303	-.0902681	.2904616
Age1424_2-65	-.2232389	.0844332	-2.64	0.008	-.3887249	-.057753
EDU_CU	-.2507236	.0974412	-2.57	0.010	-.4417048	-.0597423
weekend	.1288629	.097923	1.32	0.188	-.0630625	.3207884
_cons	.9273073	.2384143	3.89	0.000	.460024	1.394591

TABLE A5 – RESULTS AFTER PROBIT
(DEPENDENT VARIABLE: NEGATIVE WELLBEING (BASED ON 4 INDICATORS)

```
. probit wbneg01 Age1424_2564_65 wrkfll EDU_CU weekend Metropolitan_rec TESEX

Iteration 0:   log likelihood = -1649.0521
Iteration 1:   log likelihood = -1621.2407
Iteration 2:   log likelihood = -1621.0289
Iteration 3:   log likelihood = -1621.0289

Probit regression                                 Number of obs   =       7735
                                                  LR chi2(6)      =      56.05
                                                  Prob > chi2     =     0.0000
Log likelihood = -1621.0289                       Pseudo R2       =     0.0170
```

wbneg01	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Age1424_2564_65	.1970642	.0645342	3.05	0.002	.0705794	.323549
wrkfll	.0221486	.0574107	0.39	0.700	-.0903742	.1346715
EDU_CU	-.2684969	.0492468	-5.45	0.000	-.3650188	-.171975
weekend	-.1318532	.0472819	-2.79	0.005	-.224524	-.0391824
Metropolitan_rec	.1102909	.0661698	1.67	0.096	-.0193996	.2399813
TESEX	.1820173	.0483865	3.76	0.000	.0871816	.2768531
_cons	-2.147889	.1701731	-12.62	0.000	-2.481422	-1.814356

```
. mfx

Marginal effects after probit
      y  = Pr(wbneg01) (predict)
         =    .052433
```

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.	]	X
Age14~65	.0211074	.00689	3.06	0.002	.007606	.034609	1.97298
wrkfll*	.0023484	.00603	0.39	0.697	-.009461	.014158	.782418
EDU_CU*	-.0311638	.00612	-5.09	0.000	-.043164	-.019164	.676923
weekend*	-.014145	.00507	-2.79	0.005	-.024079	-.004211	.501875
Metrop~c*	.0111254	.00627	1.77	0.076	-.001162	.023413	.836458
TESEX	.0194957	.00515	3.79	0.000	.009401	.029591	1.5148

(*) dy/dx is for discrete change of dummy variable from 0 to 1

TABLE A6 PROBIT ESTIMATION RESULTS- MARGINAL EFFECTS AFTER PROBIT
DEPENDENT VARIABLE: POSITIVE WELLBEING (BASED ON 2 INDICATORS)

```
. probit wbpos01 Age1424_2564_65 wrkfll EDU_CU weekend Metropolitan_rec TESEX

Iteration 0:   log likelihood = -4813.2268
Iteration 1:   log likelihood = -4778.9188
Iteration 2:   log likelihood = -4778.9083
Iteration 3:   log likelihood = -4778.9083

Probit regression                                 Number of obs   =       7704
                                                  LR chi2(6)      =      68.64
                                                  Prob > chi2     =     0.0000
Log likelihood = -4778.9083                       Pseudo R2       =     0.0071
```

wbpos01	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Age1424_2564_65	.260266	.0414146	6.28	0.000	.1790949	.341437
wrkfll	.0368826	.0371538	0.99	0.321	-.0359375	.1097027
EDU_CU	-.0821456	.0328333	-2.50	0.012	-.1464977	-.0177935
weekend	.0983079	.0298669	3.29	0.001	.0397699	.1568459
Metropolitan_rec	-.0601014	.0410419	-1.46	0.143	-.140542	.0203392
TESEX	.0917419	.0304854	3.01	0.003	.0319917	.1514922
_cons	-.1455923	.1034268	-1.41	0.159	-.3483051	.0571204

```
. mfx

Marginal effects after probit
      y  = Pr(wbpos01) (predict)
         =  .68402003
```

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.	]	X
Age14~65	.0925787	.01473	6.29	0.000	.063715	.121442	1.97274
wrkfll*	.0131837	.01334	0.99	0.323	-.012971	.039338	.782191
EDU_CU*	-.0290073	.0115	-2.52	0.012	-.051556	-.006459	.67744
weekend*	.0349602	.01061	3.29	0.001	.014157	.055763	.501298
Metrop~c*	-.0211659	.0143	-1.48	0.139	-.049202	.00687	.836189
TESEX	.0326334	.01084	3.01	0.003	.011382	.053885	1.51402

(*) dy/dx is for discrete change of dummy variable from 0 to 1