

## Collecting Measures of Subjective Well-being in Time Use Surveys

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### Abstract

In 2010, following the recommendations of the *Commission on the Measurement of Economic Performance and Social Progress* (2009), France decided to add a new column in the time use survey (TUS) diaries for a sub sample of 1 000 households to measure the affective state of the respondent. The column asked : “was that moment pleasant or unpleasant ?”. The respondent had to give each moment a mark between minus 3 and plus 3. The presentation will focus on the consequences of the addition of a new column: because respondents had to fill a supplementary column, it is possible that the additional response burden had an impact on the response rate and number of activities in a diary. We will then have a look at the way respondents answered the question. For example, the negative side of the scale is not very often used: just 4 % of time spent is marked negatively. On the contrary, more than 40 % of time spent is rated +3. Then, some results will be presented: the least pleasant activities are work, commuting and housework. While French people spend half of their leisure time watching television, it is one of the least pleasant leisure types. We finally show that some activities are more pleasant when they are done with other persons.

Key words : France TUS, hedonic dimension, objective happiness, subjective well-being

### 1. Introduction

Over the past decade there has been an increasing interest in subjective measures of well-being from both researchers and policy-makers. In particular, Recommendation 1 of the Report by the Commission on the Measurement of Economic Performance and Social Progress (the Stiglitz-Sen-Fitoussi report) suggests that aspects of subjective well-being – life evaluation, positive and negative emotions – should be collected as part of official statistics. The report recommends that affect need to be collected in real time. Indeed, there were already questions for a list of activities, like « if you enjoy doing an activity a great deal, rank it as ‘10’. If you dislike doing it a great deal, rank it as ‘0’ » from Juster (1985). But these kind of questions gave unreliable answers because it requires that respondents are able to synthesize all their experience of the activity. The retrospective judgment of happiness can be a lot different from the extrapolated total of happiness. That’s why Kahneman defined “objective happiness” as “the total utility experienced during an interval of time by the temporal integral of instant utility” (Kahneman, 1995). Time use surveys are one of the primary vehicles for collecting such information. Two methods have been developed for the collect of instantaneous information on subjective well-being as part of time use diaries and both methods are recommended by the OECD Guidelines on the Measurement of Subjective Well-being (OECD, 2013). In the first method, called the Day Reconstruction Method (and used in the USA), respondents have to give their emotions in 3 randomly selected activities. 6 emotional scales are used: stressed, tired, happy, sad, interested, painful. An episode is considered as unpleasant if the respondent reported a higher total score for negative emotions than for positive emotions. Then an “unpleasantness index” of an activity is obtained as the percentage of time spent doing that activity categorized as unpleasant. The second method is based on a simpler question on enjoyment for each activity. This yields an enjoyment score for every activity of the day, but on a single dimension. It is used by a lot of studies collected by academic researchers (Michelson 2009, Robinson & Godbey 1999, Gershuny 2011), and now by the French time use survey.

## 2. French time use survey

In 2010, France added in a new column in the time use survey (TUS) diaries for a sub sample of 1 000 households to measure the affective state of the respondent. The column asked : “was that moment pleasant or unpleasant ?” (see Figure 1). The respondent had to give each moment a mark between minus 3 and plus 3. 1 600 individuals were interviewed and 2 600 diaries were filled in.

Figure 1 : French time use diary

	What are you doing ?	What else are you doing ?	Is the moment pleasant or unpleasant ?
18 h			-3 -2 -1 0 +1 +2 +3
	Going back home	Conversation	-3 -2 -1 0 +1 +2 +3
	Watching TV		-3 -2 -1 0 +1 +2 +3
19 h			-3 -2 -1 0 +1 +2 +3
			-3 -2 -1 0 +1 +2 +3
			-3 -2 -1 0 +1 +2 +3
			-3 -2 -1 0 +1 +2 +3

The tests indicated several important points about the placing of an affect scale in a time diary. First, the enjoyment column should be placed after the secondary activity, or at the end of the diary. Respondents give their enjoyment of the total episodes, not just of the primary activity. The consideration of the context in which an activity is carried out is decisive in this appraisal: the same person may rank the same activity differently. For example, a bus journey may be experienced as more or less enjoyable depending on whether the person is seated or standing. Second, the scale has to be visually present, it is physically easier for the respondent to just circle a point and it eliminates the cognitive burden associated with the respondent having to hold the scale in its mind. In addition, having the scale present avoids the respondent writing a number which might then prove to be illegible. More than seven people on ten said that they prefer a visual scale. Third, testing showed that a bipolar scale (plus versus minus) better conveyed the idea of positive versus negative feelings than a unipolar scale (1 to 5) which encourages the respondent to interpret the question as capturing just one emotional dimension. In keeping with what has been found for other measures of subjective well-being, the tests showed that negative items are much less frequently used than the positive side of the scale.

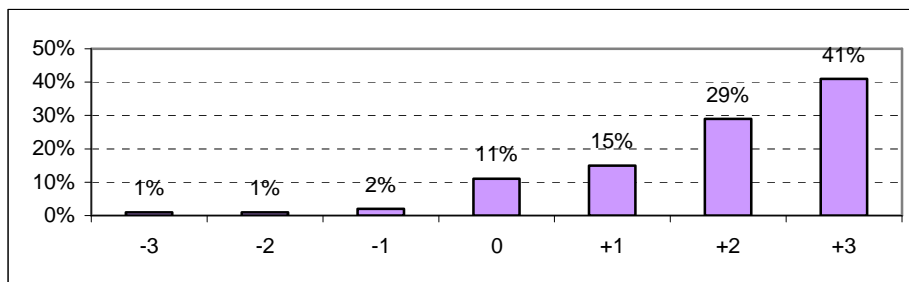
Because respondents had to fill a supplementary column and they were asked to create a new episode when their satisfaction level change within a same activity, it was possible that the additional response burden has an impact on the quality of diaries. In fact there is no noticeable difference in the response rates between the 2 sub-samples. It’s about 55 % in each case (for an individual questionnaire and a diary fullfilled). This is in line with findings elsewhere that the inclusion of subjective well-being questions in a survey generally have little impact on response rates.

Respondents generally filled correctly the appreciation column. The non-response rate for the appreciation column is about 5 %. Some activities were more difficult to mark - personal care activities such as sleeping or taking medication, for example, had an item-specific non-response rate of 8 %. The fact that some activities are less often rated is still valid when controls are added, in particular with sleep or work. Moreover, some individuals are more likely to give a mark, for example, workers answer more than white collar and highly qualified workers.

The negative scale is not very used: just 4 % of time spent is marked negatively (see Figure 2). On the contrary more than 40 % of time spent is rated +3. However, this should not necessarily be taken as a

problem with the scale, as other studies tend to support the view that states of positive affect are more common than states of negative affect.

**Figure 2 : Distribution of scores**



Source: Insee, 2010 Time Use Survey.

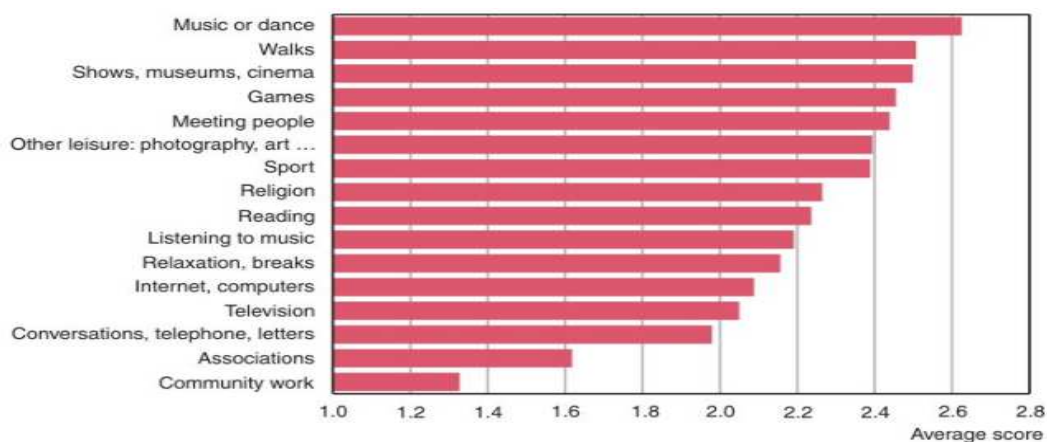
### 3. Result by activities

We can divide the average day into five major phases : time devoted to physiological necessities (sleeping, washing, eating), time spent working, time spent doing domestic tasks, time spent traveling and, last but not least, the time left over after these four necessities - free time. The activities we enjoy the most are those associated with our free time (with a score average of 2,2). Physiological necessities are also considered to be enjoyable experiences (2,1). Time spent traveling (1,3) and time spent performing domestic chores (1,3) are next in the appreciation stakes, but they fall far behind our enjoyment of leisure activities and physiological functions. Finally, time spent working or studying is generally the time we least enjoy (0,9).

a) Television, one of the least enjoyable leisure activities

Appreciation of free time varies according to the activities to which it is devoted. Free time activities can be divided into two main categories: the first covers social activities (conversations, religious practices, clubs and associations), with the second including all leisure activities (watching television, playing games, sport). DIY and gardening are quasi-leisure activities, and for the purposes of this study are classed as domestic tasks. Outdoor activities such as walking or going to the beach are among the activities judged to be the most enjoyable by those engaging in them (see Figure 3).

**Figure 3 : Enjoyment of different free-time activities**



Source: Insee, 2010 Time Use Survey

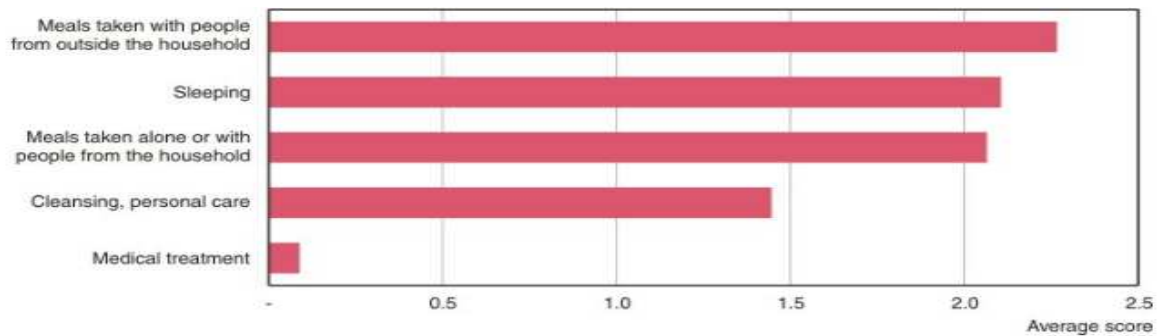
People who engage in artistic activities, such as singing in a choir or taking dance lessons, rate these activities highly. Watching television takes up on average 42 % of French free time, but time spent in

front of the screen does not rank among the most enjoyable leisure activities, regardless of age, socio-professional category or gender. The average rating attributed to time spent on the internet or on the computer is only slightly higher than that accorded to television viewing, despite the fact that the time devoted to such activities continues to grow (the average time devoted to these activities across the whole population is 15 minutes per day). Social activities involving a degree of responsibility, such as supervising a polling station or doing voluntary secretarial work for a club, are the free time activities deemed least enjoyable

b) Mealtimes, a moment to savour

Although the average time spent sleeping has been declining over the past twenty years, sleep is still considered enjoyable (see Figure 4). The ratings attributed by both sexes and across the different age categories show little variation. It is those people who find other activities encroaching upon their sleep time who most appreciate the time they do get to spend in bed. Mealtimes are considered to be enjoyable moments, particularly when they involve guests from outside the household. The people who most enjoy moments relating to mealtimes are those who devote the most time to such moments. Administering medicines or care is held to be very disagreeable, as such activities are linked to health problems (rating of around 0).

**Figure 4 : Medical treatment is the least enjoyable part of physiological needs**

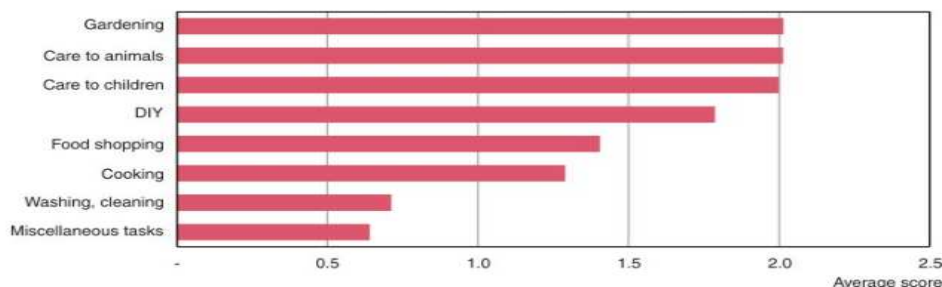


Source: Insee, 2010 Time Use Survey

c) The tighter our schedules, the more we resent domestic tasks

The most enjoyable domestic tasks are taking care of children or taking care of animals (see Figure 5). Quasi-leisure activities such as gardening and DIY rank among the domestic tasks we most enjoy, but their average appreciation ratings are still inferior to those given to free-time activities.

**Figure 5 : Quasi-leisure and care are the most enjoyable part of domestic chores**



Source: Insee, 2010 Time Use Survey

Shortage of time has a great influence on the way people perceive domestic tasks: people who are often short of time rank domestic chores at 1.1 on the enjoyment scale, while the average is 1.4 among people with fewer time constraints. Thus housewives and retired people find household tasks less unpleasant and spend more time on them than people in employment or education. This is consistent with the fact that 35 % of working people say they feel time pressure every day, compared to 9 % of

retirees and 17 % of housewives. It is possible that women who have made a decision not to work find performing domestic duties less disagreeable than women who have jobs. Nonetheless, despite the fact that women devote an average of 100 minutes more to domestic duties than men do, they do not find these tasks any more enjoyable than their male counterparts.

#### d) Journeys made by bicycle are the most enjoyable

The time spent traveling is seen as a burden by those people who say they are often in a hurry (+1.2 against +1.5 for people with fewer time constraints). Irrespective of the length of traveling time, whether or not a journey is pleasant is strongly dependent on its purpose. A journey is not an end in itself but a necessity for the fulfillment of numerous activities. Commuting is thus judged to be the least agreeable journey, even though commuters can read or listen to music as they travel. Even here there are nuances. The journey into work is enjoyed even less (+0.7) than the trip back home (+1.5). Trips to get to an association or to help other households are the ones most positively experienced. Irrespective of the purpose of the trip, walking and cycling are far more enjoyable than driving or taking public transport. Lastly, traveling with someone makes the journey more enjoyable (+1.5 against +1.2 for a journey alone).

#### e) The self-employed get more satisfaction out of work than employees

The activities considered as least enjoyable are those related to work or studies, with an average ranking of zero, although they do not prejudice general well-being. The youngest school pupils like study periods the least, and appreciation of study time increases with age (although these results should be treated with caution due to the low number of observations). This may be explained by the fact that the young people who least enjoy school are those who are least inclined to continue their studies.

Self-employed people enjoy the time spent on their professional activity more than employees (1,5 against 1,0). Among employees, there is little difference in enjoyment levels according to hierarchical position or the status of their employer (public/private). Working outside home or at home does not change the level of enjoyment of professional tasks. The more people say they are tired at the end of the day, the less they enjoy the time devoted to work, particularly when the tiredness is due to the atmosphere at work. Unlike with domestic tasks, being short of time has no influence on their judgment.

#### f) Limits

It seems that the scale is not used in the same way by different type of population. For example, there is some evidence that younger people use more often negative marks than older people which only use "+2" or "+3". 25 years old people use in mean 4,1 different marks whereas 75 years old people use only 3,5 different marks. But here it is difficult to interpret if it is just that younger dare more to use negative part of the scale or if that older people are more satisfied with their instantaneous moment ? It is the same question with the social position. People from upper class used more often different marks than the workers or farmers. But is it a different enjoyment or is this just that upper class have more propension to use negative scale ?

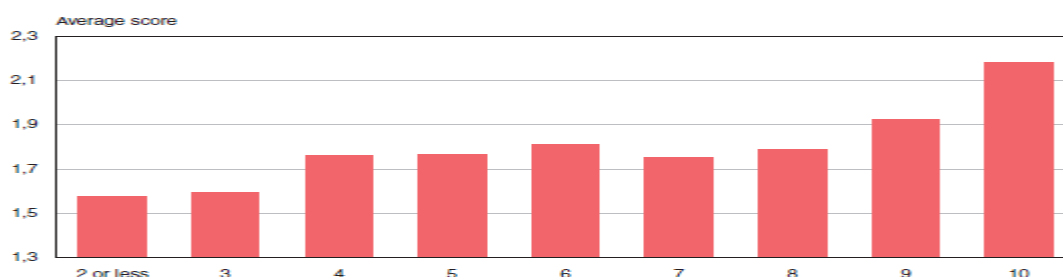
### 4. Objective happiness

It is possible to compare the enjoyable aspect of the day described with the general response to satisfaction with life :

- Each 10-minute period was ranked from -3 to +3 by respondents, and the daily average was calculated by assigning the same importance to each period irrespective of activity and context ;

- Enjoyment of life in general is the answer to the question : "On a scale of 0 (not at all satisfied) to 10 (very satisfied), how satisfied are you with the life you lead at present ?"

**Figure 6 : Objective happiness and general satisfaction in current life**



How to read it : The average score associated with the people who gave 2 or less in answer to the question of enjoyment in life in general is 1.6

Source: Insee, 2010 Time Use Survey

It is observed that the more satisfied individuals are with their life in general, the higher the average of the day described (see Figure 6). However, this positive link is not true across all groups. For example, people aged under 20 give a negative judgment of their study time, which mechanically leads to a low daily average. But when asked about their general satisfaction with life, they are very happy (8.4 for satisfaction against an average of 7.4). So they do not enjoy study time but only accord a low level of importance to it in their general well-being. Similarly, as work is not considered as a very enjoyable activity, people with a job spend slightly less enjoyable days than the unemployed (+1.8 against +1.9) ; however, their satisfaction with life is far higher than that of the unemployed (7.4 against 6.0).

The average level of enjoyment of a day is the result of all the effects highlighted above. Working days are those that are enjoyed the least. Retired people show no difference in satisfaction between these days and the weekends. It is also observed that the scores are higher in July and August, usually the months where people work the least, than in the other months of the year. Lastly, on average, a day is considered more enjoyable when the weather is clement. This is not only linked to the summer : the nice-weather effect remains constant independently of the day of the week, the month, and whether the day under consideration is a working day or not.

As what is found in other French studies about other well-being output, there is no gender effect in objective happiness and having health problems leads to a lower enjoyment of day.

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