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Are people satisfied with their time use? Empirical evidence from German survey data

Marcus Dittrich
Deggendorf Institute of Technology

Bianka Mey
Chemnitz University of Technology

Abstract

Using data from the German Time Use Survey, we examine how people allocate their time and how satisfied people are with their time use. Our results suggest that people are more satisfied with the time spent on work and work-related activities than with the time spent on leisure, family, and friends. Moreover, we find that non-employed individuals are more satisfied with their time spent on private and leisure activities than employed individuals. Exploring the factors that affect overall time use satisfaction, we find - among significant age and gender effects - a much more positive effect of time spent on various leisure activities for employed than for non-employed individuals.

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Contact: Marcus Dittrich - marcus.dittrich@th-deg.de, Bianka Mey - bianka.mey@wirtschaft.tu-chemnitz.de.
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1 Introduction

Time is one of the most important limited resources in daily life, and decisions on time allocation strongly affect individual well-being. Consequently, the study of time use has become of increasing interest in social sciences. Previous approaches discuss the relevance of, for example, working and non-working time as determinants of individual welfare (Becker, 1965; Dow and Juster, 1985; Pollak and Wachter, 1975). Reviewing the recent economic literature, Dolan et al. (2008) confirm that the amount of time spent on work and leisure activities significantly affects our perceived well-being.

In social science research, subjective well-being is often, explicitly or implicitly, derived from observed time allocations. Most approaches assume that individual time use choices are the results of utility-maximizing processes. However, only a few studies examine whether people are really satisfied with their time use. Therefore, a more direct approach focusing on the relationship between time allocation and time use satisfaction may lead to deeper insights into the determinants of subjective well-being.

This paper aims to explore this relationship using data from the German Time Use Survey. This survey asks for people's time spent on various daily life domains—work, housework, leisure, partner, children, friends, and volunteer labor—as well as for individual satisfaction with the time use in these domains. We study the relationship between time allocation in various domains and overall time use satisfaction. The survey data also enables us to explore sociodemographic determinants of time use satisfaction.

The paper is organized as follows. Section 2 provides a brief review of the literature on time use and life satisfaction. In section 3, we present our empirical approach and the results. Section 4 concludes.

2 Time Use and Life Satisfaction

Time use studies with an economic focus examine, among others, changes and trends in the amount of total work and leisure activities (Aguiar and Hurst, 2007; Burda et al., 2013; Gimenez-Nadala and Sevilla, 2012). The uncovering of time allocation is an important aspect of welfare analysis and economic decision making since time is a limited and costly input in individual utility functions. The seminal work of Becker (1965) argues that individuals derive utility from "commodities", which are the output of combining market goods and time inputs subject to price and resource constraints. Pollak and Wachter (1975) expand Becker's model and allow for the existence of joint production. The authors argue that time is likely to be an input as well as an output. Households derive utility not only from some output good but also from the time spent on an activity that produces this output.

Some attempt was made to estimate individual well-being generated from time allocation, which can be found in the literature as experienced utility or process benefits. These notions measure the duration-weighted sum of the average positive and negative emotions or levels of enjoyment during the time the individual is engaged in an activity. Using American survey data, Dow and Juster (1985) examine process well-being along a set of various activities, which are ranked by the level of enjoyment. The

regression analysis shows that females, married individuals, and individuals who have children report lower process well-being. Employed people and older people, on the other hand, show higher process benefits, whereas income variables turn out to be not significant. Dow and Juster (1985) argue that several of the independent variables, which impose time constraints, induce low process benefits. A relatively new approach for assessing subjective well-being through daily experiences is the Day Reconstruction Method (DRM) (Kahneman et al., 2004a). Individuals are asked to fill out a diary for the previous day and to state what they were doing and with whom they spent their time. In addition, individuals state how they felt during each episode. The highest net affects are found for leisure activities, while the lowest affects are found for paid work, child care, and personal maintenance activities (Kahneman and Krueger, 2006; Kahneman et al., 2004a). Similar results are reported by Krueger (2007) using data from the Princeton Affect and Time Survey, which is a phone survey version of the DRM. Though the author finds that there is an increase in time allocation for non-market leisure activities since the mid-1960s, the whole population does not spend less time on activities accompanied with negative emotions. Applying the DRM on a sample of employed and unemployed individuals, Knabe et al. (2010) find that the employed report higher life satisfaction and more positive feelings than the unemployed while engaged in similar activities. The ranking of activities is, however, similar for both groups; for example, individuals receive the highest episode satisfaction during leisure activities, and the lowest scores when commuting, working in the household, or seeking a job. However, weighting the activities with the actual time used on them shows that the average experienced utility does not differ between the two groups. Knabe et al. (2010) suggest that unemployed people are able to compensate their non-working time by more enjoyable activities.

In addition, time allocation data are used to assess domain or overall life satisfaction. Using data from the German Socioeconomic Panel (SOEP) for the period 1992–1997, van Praag et al. (2003) explore domain satisfaction for East and West Germany and include some time variables, such as hours spent on work and leisure, as predictors. Their results indicate that working more hours has no significant effect on job satisfaction but strongly decreases leisure satisfaction. More time spent on leisure has a significant, though small, positive effect on leisure satisfaction. Meier and Stutzer (2008) find that increasing working time positively affects life satisfaction. Phipps et al. (2001) examine the satisfaction with the amount of time available for non-work activities among full-time employed husbands and wives. They find that employed women are less satisfied than employed men with the time used for themselves. Particularly, children living in the household decrease the time use satisfaction of females much more than that of males. Using the British Household Panel Survey, Booth and van Ours (2008) study the relationship between part-time work, on the one hand, and working time, job, and life satisfaction as measures of individual well-being on the other hand. The authors find that working more than 30 hours per week significantly reduce the female working time satisfaction, whereas men report the highest satisfaction if they work in a full-time job. Hafstrom and Paynter (1991) study time use satisfaction of 685 farm wives in the South and Midwest USA. The authors regressed merged satisfaction responses of "time spent on household tasks" and "time spent on farm tasks" on several management-related and sociodemographic variables. The results indicate that time

use satisfaction is positively predicted by management variables (e.g., farm operation, extent of control over life, higher education, and non-farm employment). Using SOEP data, Eriksson et al. (2007) find evidence that income has no effect on the satisfaction with leisure time, but spare time and control over time are highly significant predictors of leisure time use satisfaction. Finally, time spent on commuting, caregiving, volunteer work, sports and exercising, and religious activities are identified to influence perceived well-being (for an overview see Dolan et al., 2008).

Though time use is relevant for life satisfaction, Dow and Juster (1985) argue that process well-being measures satisfaction associated with current activities, whereas life satisfaction might reflect stocks that also depend on choices made in the past. In addition, using time-based measurements to evaluate subjective well-being may show lower discrepancies than addressing general life satisfaction (Kahneman et al., 2004b). In this paper, we examine the relationship between an overall time use satisfaction variable and actual time spent on the most important domains of daily life. Previous studies use the time spent on activities to evaluate feelings experienced during an activity and to assess domain time use satisfaction or general life satisfaction. We provide evidence on utility-enhancing time use choices, which represent the total set of available time during a day. We further investigate the determinants of time use satisfaction and consider the amount of time spent on activities as well as sociodemographic variables. We predict that time allocation is a significant predictor of time use satisfaction. Since time spent on leisure activities is enjoyable, we expect much time use satisfaction in this domain. Though participating in the paid labor market generates higher life satisfaction, the results of DRM studies show that working time ranks low in the episode satisfaction scale, and evidence of the extensive margin is mixed. We assume that time allocation for paid work leads to time use satisfaction, although this effect is likely to depend on the amount of time devoted. Time allocation for housework, e.g., child care, cooking, and cleaning, yields low process well-being. We assume that household chores might lead to lower values of time use satisfaction as well. Moreover, we assume that some individual and household characteristics are important constraints.

3 Empirical Analysis

3.1 Data

We examine individual satisfaction with time spent on different domains of daily life. Our empirical analysis is based on diary data from the German Time Use Survey. The survey was conducted in 2001/02 by the Federal Statistical Office among 5,400 German households with more than 12,000 individuals.[1] The participants were asked to keep a time use diary for three days—two weekdays and one weekend day—and to indicate all activities in plain text that last at least 10 minutes. The observations were spread over the survey year, starting in April 2001 and ending in March 2002, to avoid seasonal distortions. The activities reported in the diaries were coded into predefined categories

[1]The German Time Use Survey data is available at the Research Data Center of the German Federal Statistical Office. More detailed information about the survey data, including sampling and the broad range of its economic applications, can be found in Merz (2009).

of time use by the Federal Statistical Office. In addition, the survey collected detailed information on individual and household specific sociodemographic and economic variables.[2] For the purpose of our paper, two main parts of the survey are of interest. First, the participants indicated how much time they spent on all activities performed on three days a week. All activities are sorted into nine main domains: recovery (including food and sleep), work, education, housework, volunteering, social life, sports, hobbies, and media.[3] Moreover, the survey provides predefined categories of the social status, which we use in our analysis: active individuals (employees, self-employed persons, and soldiers) and non-active individuals (children, students, pensioners, and unemployed persons). Table 1 presents the mean hours spent on the nine domains by active and non-active individuals.

Table 1: Time spent on different domains.

Domain	All		Active		Non-active	
Recovery	10.95	(1.57)	10.49	(1.46)	11.57	(1.49)
Housework	3.28	(2.47)	3.14	(2.22)	3.48	(2.76)
Work	2.34	(2.69)	3.83	(2.65)	0.28	(0.56)
Media	2.61	(1.58)	2.34	(1.40)	2.98	(1.72)
Social life	1.92	(1.53)	1.88	(1.51)	1.98	(1.56)
Education	0.99	(2.03)	0.43	(1.38)	1.75	(2.49)
Sports	0.57	(0.83)	0.48	(0.75)	0.70	(0.91)
Hobbies	0.53	(0.94)	0.29	(0.57)	0.86	(1.20)
Volunteering	0.37	(0.84)	0.36	(0.82)	0.38	(0.85)
Observations	11,158		6,463		4,695	

Mean hours per day reported; standard deviation in parentheses.

Second, the participants were asked how satisfied they are with their time use. Time use satisfaction is measured in seven domains—work, housework, leisure, partner, children, friends, and volunteering—on a seven-point scale ranging from "very satisfied" (1) to "very dissatisfied" (7), respectively. Table 2 presents the mean satisfaction levels. In addition, individuals evaluated their time use by answering the question "How do you evaluate your present time use?" with either "too little", "just right" or "too much". Table 2 presents the distribution of the answers in these three categories for all subjects as well as for the subsamples of active and non-active individuals.

3.2 Results

Table 1 shows that people spend most of their time on recovery, followed by housework, work, and media consumption. Not surprisingly, active individuals spend more time on work and less time on all other domains compared with the non-active population.

[2]Juster and Stafford (1991) state that diary data tends to be a valid approach to measure time use as individuals memorize time allocation more accurately after reporting them at the end of or during the day instead of answering questions like "How much time did you spend last year on...".

[3]Table 4 in the appendix provides a detailed description of the domains.

Table 2: Subjective evaluation of time use.

	Work	Housework	Leisure	Partner	Children	Friends	Volunteer
All (obs.)	8,004	10,125	11,005	7,208	6,213	10,635	3,614
Satisfaction	3.63	3.61	3.71	3.73	3.72	3.77	3.53
Evaluation							
"too little"	12.7%	28.8%	47.7%	46.6%	41.5%	47.6%	22.1%
"just right"	56.2%	57.1%	47.4%	51.5%	54.6%	50.4%	59.4%
"too much"	29.6%	12.9%	4.5%	1.0%	2.3%	1.3%	16.2%
Active (obs.)	5,915	5,997	6,404	5,055	4,354	6,238	2,467
Satisfaction	3.58	3.78	4.16	3.98	3.98	4.04	3.68
Evaluation							
"too little"	10.1%	33.8%	60.8%	54.9%	49.8%	55.5%	23.6%
"just right"	55.1%	52.3%	36.3%	43.6%	47.6%	43.0%	56.6%
"too much"	34.1%	12.9%	2.7%	0.8%	1.6%	0.9%	17.8%
Non-active (obs.)	2,089	4,128	4,601	2,153	1,859	4,397	1,147
Satisfaction	3.76	3.35	3.10	3.14	3.12	3.38	3.20
Evaluation							
"too little"	19.9%	21.7%	29.4%	27.1%	22.0%	36.5%	18.9%
"just right"	59.5%	64.2%	62.7%	70.1%	70.8%	60.7%	65.3%
"too much"	17.0%	12.9%	7.2%	1.5%	4.0%	1.8%	12.9%

Percentages of subjects who indicated that they spent "too little", "just right" or "too much" time on the various domains. Percentages do not sum up to 100% because of missing answers. Satisfaction ranges from 1 ("very satisfied") to 7 ("very dissatisfied"); mean values reported.

Mann-Whitney tests report significant differences along all domains ($p < 0.01$), except time spent on volunteer work.

We examine whether time use satisfaction differs among the various domains presented in table 2. The mean satisfaction values indicate that people are more satisfied with their time spent on work in a broad sense, that is, work (3.63), housework (3.61), and volunteer activities (3.53), than with the time spent on leisure (3.71), friends (3.77), partner (3.73), and children (3.72). Pairwise Wilcoxon signed-rank tests indicate highly significant differences ($p < 0.01$) among all seven domains in the full sample. Only the differences between work and volunteering, housework and children, and leisure and friends are significant at 5%. Differentiating between active and non-active individuals, we find very similar results for the active subsample. Wilcoxon signed-rank tests indicate significant differences between all seven domains ($p < 0.01$). Non-active individuals, however, are most dissatisfied with their work time and more satisfied with the time use in all other domains. Wilcoxon signed-rank tests indicate significant differences between most of the seven domains ($p < 0.01$). Exceptions are the differences between work and housework ($p = 0.07$), and between children and partner, children and volunteering, and partner and volunteering ($p < 0.05$). The differences between housework and friends and between leisure and volunteering are not significant. Comparing active and non-active individuals, a Mann-Whitney test indicates highly significant differences ($p < 0.01$) in the mean satisfaction values among all seven domains. That is, active individuals are more satisfied with the time spent on work, whereas non-active individuals are more satisfied with the time spent on all

other domains.

The subjects also indicated whether they spent "too little", "just right" or "too much" time on various activities. Table 2 shows that the majority of all individuals perceive their time use as "just right". From the rest of the subjects, a higher proportion indicated that they spent "too much" time on work (29.6%) and "too little" time on the other six domains, respectively. We find a similar pattern for active individuals, who also feel to spend "too much" time on work. In the domains leisure, family, and friends, even more active individuals indicate to spend "too little" time than "just right". Moreover, table 1 shows that active individuals spend more time on paid work and are rather satisfied with their working schedule. Non-active individuals spend more time on all other domains and report consistently higher time use satisfaction values than the active population. So far, spending more time on an activity seems to increase the perceived satisfaction with time use.

Next, we explore how time allocation affects time use satisfaction. We create an overall satisfaction index variable for each individual, *TS*, and regress it on the time use diary data as well as on personal and household variables. We calculate *TS* as the average of the satisfaction levels indicated in the seven domains (see table 2).[4] Thus, *TS* is a continuous variable in the interval [1,7]. In order to be able to use the index variable in the regression, we test whether the seven individual levels are based on the same underlying construct (Cronbach's $\alpha = 0.797$). The average general time use satisfaction values are 3.67 for the full sample ($N = 9{,}952$), 3.89 for active individuals ($N = 6{,}233$), and 3.30 for non-active individuals ($N = 3{,}719$). A Mann-Whitney test states that non-active subjects are significantly more satisfied with their general time use than active individuals ($p < 0.01$).

We then analyze overall time use satisfaction with OLS using household clustered standard errors and fit the following model:

$$TS = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \epsilon, \tag{1}$$

where X_1 is a vector of time use diary data; X_2 is a vector of socioeconomic controls; β_0, β_1, and β_2 are vectors of parameters to be estimated; and ϵ is a random error term.[5]

The results are summarized in table 3. In the full sample (model (1)), time spent on all domains—except of working time and time spent on housework—is a significant predictor. Spending more time on food and sleep, leisure activities (social life, hobbies, and media consumption), as well as education and volunteer work leads to an increase in time use satisfaction. Thus, time spent on these activities may be perceived as a satisfying process.

[4] We only consider participants who gave answers for at least four out of the seven domains in the survey.

[5] A description of the independent variables is presented in the appendix (table 4).

Table 3: OLS estimates for time use satisfaction.

	Time use satisfaction (TS)					
Variables	(1) All		(2) Active		(3) Non-active	
Recovery	−0.0463***	(0.0165)	−0.0506***	(0.0195)	−0.0230	(0.0299)
SocialLife	−0.0693***	(0.0164)	−0.0782***	(0.0197)	−0.0272	(0.0299)
HobbySports	−0.0674***	(0.0180)	−0.0654***	(0.0228)	−0.0564*	(0.0309)
Media	−0.1546***	(0.0259)	−0.1064***	(0.0334)	−0.1729***	(0.0434)
$Media^2$	0.0103***	(0.0031)	0.0049	(0.0043)	0.0148***	(0.0046)
Education	−0.0840***	(0.0271)	−0.0719*	(0.0367)	−0.0719*	(0.0429)
$Education^2$	0.0106***	(0.0037)	0.0125**	(0.0050)	0.0092*	(0.0053)
Work	0.0025	(0.0220)	−0.0535**	(0.0250)	0.0316	(0.0917)
$Work^2$	0.0035*	(0.0018)	0.0074***	(0.0019)	0.0050	(0.0187)
HouseFamily	0.0173	(0.0218)	0.0586**	(0.0262)	−0.0131	(0.0386)
$HouseFamily^2$	0.0004	(0.0017)	−0.0048**	(0.0022)	0.0061**	(0.0026)
Volunteer	−0.0662**	(0.0313)	−0.0976**	(0.0380)	0.0300	(0.0513)
$Volunteer^2$	0.0100	(0.0062)	0.0093	(0.0072)	0.0074	(0.0103)
Age	−0.0144***	(0.0014)	−0.0106***	(0.0018)	−0.0169***	(0.0023)
Female	−0.0442*	(0.0254)	0.0797**	(0.0364)	−0.0947**	(0.0414)
Married	0.0366	(0.0377)	0.0047	(0.0444)	0.0634	(0.0660)
TimeMgmt						
Schedule			reference			
Spontaneous	−0.0361	(0.0359)	−0.0465	(0.0443)	−0.0003	(0.0627)
Vary	0.0193	(0.0287)	0.0311	(0.0332)	0.0146	(0.0535)
Health	0.2988***	(0.0182)	0.3317***	(0.0221)	0.2541***	(0.0290)
HSize	0.0497***	(0.0184)	0.0604***	(0.0206)	0.0585*	(0.0324)
Child	0.1000**	(0.0505)	0.0799	(0.0580)	0.1068	(0.0901)
HSizeXChild	−0.0222**	(0.0108)	−0.0213*	(0.0129)	−0.0219	(0.0174)
Status						
Whitecollar			reference			
Self	0.0490	(0.0450)	0.0651	(0.0465)	—	
Official	0.1310***	(0.0445)	0.0259	(0.0482)	—	
Bluecollar	−0.0614	(0.0407)	−0.0641	(0.0418)	—	
Trainee	−0.3089***	(0.0741)	−0.0884	(0.0777)	—	
Military	−0.2960	(0.2092)	—		—	
NonActive	−0.2223**	(0.0980)	—		—	
School						
ALevel			reference			
StillSchool	−0.2940***	(0.0603)	−0.2190***	(0.0847)	−0.4007***	(0.0985)
SecSchool	−0.1605***	(0.0288)	−0.1124***	(0.0335)	−0.2340***	(0.0569)
NoSchool	−0.1256	(0.1909)	−0.2551	(0.2179)	0.0361	(0.2717)
WestGermany	−0.0307	(0.0348)	−0.0992**	(0.0409)	0.0255	(0.0553)
WorkInc	0.0560	(0.0937)	—		—	
InInc	—		0.3365***	(0.0462)	—	
$InInc^2$	—		−0.0501***	(0.0097)	—	
HInc	−0.0099	(0.0136)	−0.0474***	(0.0166)	0.0020	(0.0221)
Constant	4.6230***	(0.3625)	4.2708***	(0.4168)	4.1415***	(0.6571)
R^2	0.1562		0.1169		0.1229	
Observations	9,135		5,612		3,448	
Clusters	4,282		3,389		2,454	

Significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Overall time use satisfaction is measured by the mean of the respective time use satisfaction values in the seven domains. Household clustered standard errors in parentheses.

We find all these results also for the active subsample (model (2)). Compared with the full sample, the time use satisfaction of active individuals is additionally affected by their working time. This result is in line with the results of Meier and Stutzer (2008). The negative *Work* and the positive $Work^2$ coefficients indicate an inverse U-shaped relationship between working time and time use satisfaction, reaching a maximum of 3.63 hours. This result could be interpreted in a way that active individuals are most satisfied if they work part-time. Moreover, spending more time on housework and family care decreases time use satisfaction. This result is in line with Kahneman et al. (2004a), who report that activities concerned with housework and child care generate low positive feelings. As control over time is important (Eriksson et al., 2007), individuals may be dissatisfied when doing housework or family care because of the perceived loss of control over time.

Somewhat surprisingly, time use satisfaction of the non-active subsample (model (3)) is virtually unaffected by the time allocation. Thus, the significant time effects in model (1) seem to be driven by active, but not by non-active, individuals. Although non-active individuals are able to allocate more time to all leisure and non-paid work activities, time allocation does not predict satisfaction with time use. Moreover, as discussed above, non-active individuals are, in general, more satisfied with their time use (see table 2). This result is confirmed by the negative regression coefficient for non-active individuals in the full sample, compared with the reference group of white-collar workers. While non-employed individuals usually report lower values for life satisfaction in the subjective well-being literature, or a similar satisfaction with life if the amount of actual time spent on activities is considered (Knabe et al., 2010), our results suggest that time use satisfaction is higher for the non-active population and virtually unaffected by the allocation of time.[6]

Regarding sociodemographic variables, we find that older people are more satisfied with their time use, both in the full sample and in the two subsamples. Gender has only a weakly significant effect in the full sample. This weak aggregated effect, however, seems to be driven by opposing gender effects in the two subsamples. Active females are less satisfied with their time use than males, whereas non-active females are more satisfied than males. The less satisfaction of active females may support the findings that working women perceive too little time available for themselves (Phipps et al., 2001) and face more time constraints in enjoyable activities (Dow and Juster, 1985). This is confirmed by the finding that non-active females have higher time use satisfaction than males. While income variables have no effect in the full sample, both individual and household incomes turn out to be highly significant in the active subsample. Higher individual income initially decreases time use satisfaction, but the significant $InInc^2$ coefficient indicates a U-shaped relationship. Higher household income, however, has a positive effect on time use satisfaction. Higher household income—besides being an important aspect of general life satisfaction (van Praag et al., 2003)—may give individuals more freedom to allocate their time to more favorable activities. Moreover, the estimation results suggest that poor health status decreases time use satisfaction. This is in line with previous findings that good health is a significant and positive predictor.

[6]The non-active subsample consists of individuals with different social statuses. Within, we apply the above model on subsamples of children/students, non-employed and unemployed, and retired persons, respectively. Results can be found in the appendix (table 5).

We assume that poor health not only directly leads to lower life satisfaction, but also constrains time allocation options. As Krueger (2007) shows, subjects report the lowest emotional net effects along activities that involve medical care or services.

4 Conclusion

Time is an important and scarce resource in daily life. In this paper, we examine how satisfied people are with their time allocation. We explore how much time people spent on various domains of everyday life and how this allocation affects perceived satisfaction with time use. We use actual time data from diaries to predict global time use satisfaction and provide insights in an important dimension of experienced utility.

Our results suggest that actual time allocations are significant predictors of perceived time use satisfaction. Active individuals are more satisfied with the time spent on work, housework, and volunteering than with the time spent on leisure, friends, and children. Non-active individuals are, in general, more satisfied with their time use than active individuals. However, they are least satisfied with the time spent on work. Moreover, we explore how time allocation and sociodemographic characteristics affect time use satisfaction. We find that more time spent on private activities, such as food and sleep, social life, sports, media consumption, and volunteer work, significantly increase time use satisfaction. These results, however, are driven by active individuals' time use satisfaction. For non-active individuals, we find only weak evidence that time spent on private activities increases satisfaction, though we report that these individuals show on average a higher time use satisfaction than the active population.

Research on time use satisfaction provides some important insights for the assessment of individual well-being. Thus, this approach and the findings complement previous research on subjective well-being. However, our analysis may have limitations. For example, unlike the Day Reconstruction Method, our survey does not ask for subjects' current satisfaction with individual activities, but we have "remembered" time use satisfaction. Moreover, our results suggest that women perceive an overall lower time use satisfaction than men. This finding is interesting since, inter alia, Burda et al. (2013) report that men and women do not differ in the amount of total work. Thus, further research could study gender differences in time use satisfaction in more depth.

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Appendix

Table 4: Variable description.

Dependent variable	
TS	Overall time use satisfaction as average of all domains (work, housework, leisure, partner, children, friends, and volunteering); ranging from 1 ("very satisfied") to 7 ("very dissatisfied"). Mean: 3.97; standard deviation: 1.10.
Independent variables	
Recovery (*code*0)	Time spent on recovery, food and sleep, other activities along the personal realm and commuting time (mean hours per day).
Work (*code*11, 12, 91)	Working time (main occupation and side occupations), and commuting time (mean hours per day).
Education (*code*2)	Time spent on school and university lectures and further education (personal reasons, job-related) and commuting time (mean hours per day).
HouseFamily (*code*3)	Time spent on housework, maintenance, cleaning, cooking, child care and care for elderly, and commuting time (mean hours per day).
Volunteer (*code*4)	Time spent on volunteer labor, informal help, gatherings, and commuting time (mean hours per day).
SocialLife (*code*5)	Time spent on social life, entertainment and culture, rest, and commuting time (mean hours per day).
HobbySports (*code*6, 7)	Time spent on hobbies, games, sports, activities in the nature and commuting time (mean hours per day).
Media (*code*8)	Time spent on media consumption, such as reading, TV, computer, Internet, radio, and commuting time (mean hours per day).
Age	Age in years.
Female	= 1 if female.
Married	= 1 if married.
TimeMgmt	*Schedule*: individual makes time schedules (reference). *Spontaneous*: prefers spontaneous time management. *Vary*: makes sometimes schedules.
Health	Evaluation of health status, ranging from very good (1) to very bad (5).
School	Highest school-leaving qualification. *ALevel*: university-entrance diploma (reference). *StillSchool*: still in school (not yet graduated), *SecSchool*: secondary school, *NoSchool*: no school-leaving certificate.
HSize	Number of people living in the household (from 1 to 8).
Child	Number of children aged under 18 living in the household (from 0 to 6).
HSizeXChild	Interaction term: number of people in the household times number of children.
Status	Occupational status. *Whitecollar*: white-collar worker (reference), *Self*: self-employed and farmer, *Official*: Officials and civil servants, *Bluecollar*: blue-collar worker, *Trainee*: commercial, industrial, or technical trainee, *Military*: military and alternative civilian service, *NonActive*: non-active population.
InInc	Monthly labor net income from main or side occupation (in €1,000). If no income indicated, we use the midpoint of the reported income class.
HInc	Monthly household net income (in €1,000). If no income indicated, we use the midpoint of the reported income class.
WorkInc	= 1 if individual receives an income from a main or side occupation.
WestGermany	= 1 if living in West Germany.

Note: *code* refers to the activity codes in the Scientific Use File of the German Time Use Data.

Table 5: OLS estimates for time use satisfaction on non-active subsamples.

	Time use satisfaction (TS)					
Variables	(1) Pensioners		(2) Children/students		(3) Non-/unemployed	
Recovery	−0.117*	(0.069)	0.048	(0.039)	−0.016	(0.057)
SocialLife	−0.122*	(0.067)	0.007	(0.037)	0.014	(0.062)
HobbySports	−0.069	(0.071)	−0.028	(0.040)	−0.036	(0.065)
Media	−0.190**	(0.085)	−0.097	(0.063)	−0.196**	(0.083)
$Media^2$	0.007	(0.008)	0.008	(0.007)	0.026***	(0.009)
Education	−0.405*	(0.210)	−0.042	(0.049)	−0.035	(0.144)
$Education^2$	0.144**	(0.062)	0.008	(0.006)	0.017	(0.020)
Work	−0.317	(0.321)	0.112	(0.103)	−0.190	(0.360)
$Work^2$	0.061	(0.044)	−0.010	(0.020)	0.081	(0.098)
HouseFamily	−0.154*	(0.092)	0.079	(0.055)	−0.034	(0.076)
$HouseFamily^2$	0.012	(0.008)	−0.001	(0.005)	0.009*	(0.005)
Volunteer	−0.029	(0.087)	0.088	(0.100)	0.027	(0.097)
$Volunteer^2$	0.013	(0.013)	−0.008	(0.029)	0.002	(0.020)
Age	−0.016***	(0.005)	0.021**	(0.008)	−0.008*	(0.005)
Female	−0.022	(0.069)	−0.211***	(0.063)	−0.098	(0.117)
Married	0.121	(0.108)	−0.060	(0.221)	−0.122	(0.120)
TimeMgmt						
Schedule			reference			
Spontaneous	−0.034	(0.105)	0.126	(0.109)	−0.126	(0.116)
Vary	0.049	(0.089)	0.045	(0.099)	−0.023	(0.089)
Health	0.304***	(0.049)	0.221***	(0.050)	0.240***	(0.052)
HSize	−0.046	(0.076)	0.044	(0.050)	0.163***	(0.050)
Child	−0.120	(0.341)	0.022	(0.127)	−0.081	(0.191)
HSizeXChild	0.030	(0.078)	−0.013	(0.022)	0.019	(0.040)
School						
ALevel			reference			
StillSchool	—		0.099	(0.145)	−1.768***	(0.359)
SecSchool	−0.198**	(0.092)	−0.260	(0.188)	−0.143*	(0.084)
NoSchool	0.559	(0.366)	—		−0.385	(0.416)
WestGermany	0.014	(0.103)	0.011	(0.076)	−0.010	(0.110)
HInc	0.090**	(0.046)	−0.033	(0.030)	0.031	(0.041)
Constant	5.867***	(1.516)	2.121**	(0.886)	3.394***	(1.305)
R^2	0.088		0.054		0.124	
Observations	1,152		1,338		958	
Clusters	909		1,014		900	

Significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Overall time use satisfaction is measured by the mean of the respective time use satisfaction values in the seven domains. Household clustered standard errors in parentheses.