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ABSTRACT

The Time Cost of a Disability*

We consider how a physical disability alters patterns of time use. A disability may raise the time cost of all activities; of some—making them differentially less worth doing; or it may make switching activities more costly. The first yields no predictions about time use, but the latter two possibilities both predict that fewer activities will be undertaken, with more time spent on each. These explanations describe our findings based on non-working ATUS 2008-22 respondents ages 70+, 32 percent of whom self-assess a disability. Data from the Polish Time Use Survey, where disability is medically certified, show similar results; and they demonstrate the same loss of variety over multiple days. Remarkably similar basic results are found using homogenized British, Canadian, French, Spanish, and Italian time-diaries. Overall, a mobility/physical disability leads an otherwise identical person to engage in over 10 percent fewer activities on a typical day. The lost variety represents extra costs equivalent in data from six countries to over twice the average annual income among older individuals in the country.

JEL Classification: J14, I10, D13
Keywords: disability, time use

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I. Introduction

Having a physical disability may be life-limiting in many ways, as large literatures have shown. It reduces employment and workhours (e.g., Stapleton and Burkhauser, 2003; Ameri *et al*., 2018); it lowers labor-force participation (Parsons, 1980; Stern, 1989); it reduces earnings (Haveman and Wolfe, 1990; Charles, 2003; DeLeire, 2003; Kostøl and Mogstad, 2015; Kruse *et al*., 2018), and thus consumption (Meyer and Kok, 2019) and wealth (Deshpande *et al.*, 2021). A disability affects human happiness (Oswald and Powdthavee, 2008; Freedman *et al.*, 2012; Flores *et al*., 2015), partly through labor-market effects, partly through its inherent impact. A disability can affect marriage markets (Charles and Stephens, 2004; Singleton, 2018); and its effects can be very long-lasting (Corman *et al*., 2024; Millard, 2025). Efforts to accommodate disabilities, whether providing income support for someone with a disability or requirements that employers improve working conditions, might alter all these outcomes. (DeLeire, 2000; Acemoglu and Angrist, 2001; Autor and Duggan, 2003; Bell and Heitmueller, 2009; Maestas *et al*., 2013; Hill *et al*., 2016; Jones and McVicar, 2022; Levere *et al*., 2025, are just a few of the myriad studies on this issue.)

Remarkably, given how both income and time jointly determine utility, much less research has shown how people with disabilities spend their time, and how a disability alters time use. Only a few studies have examined this issue: Pagan-Rodriguez (2013) considered time stress among Spanish workers by disability status; Enam *et al*. (2015) examined heterogeneity of (recalled, not diary) reports of time use, and Kalenkoski and Pabilonia (2023) studied how adults' time use is affected by their child's disability. The paucity of studies is disturbing, since learning more about this issue might be as important as examining labor-market outcomes, given that even the prime-age population spends less than ¼ of its time in paid work. It may be especially important for older people, since they are more likely to have a physical disability, and less likely to be working for pay, than other people. It may also be informative about policies that ease the daily lives of people with a disability.

The use of time is an alternative dimension of life that contributes to well-being. If disabilities result in someone altering how they spend time, that should change how we think of their impact on well-being. Because household production functions—the ways that people combine time with purchased goods and

services—may be subject to more constraints among people with disabilities, having a physical disability can additionally reduce well-being through its impact on household production.

The difficulty throughout the literature is in designating what constitutes a disability. Measurement error, in the sense that the person who reports a disability may be under- or overstating its severity, might be important, so that using reports of disabilities can lead to biased estimates of their impact on behavior. Several studies have examined this problem in the case of disabilities and related issues, including measuring ill-health (Kapteyn *et al*., 2007; Kreider and Pepper, 2007; Blundell et al., 2023). To circumvent this problem, and to make sure that we are dealing with general rather than country-specific issues, we examine the relationship between disabilities and time use by analyzing data from seven countries: the U.S., Poland, Canada, France, Italy, Spain, and the U.K. In Poland, unlike in the other countries, disability is an officially certified status, while in the other six it is self-assessed.

In what follows we examine the role of people's physical disabilities on time use, focusing partly on how the activities in which they choose to engage differ from those chosen by otherwise similar people. The major focus, however, is not so much on "what" activities they choose, but rather on the patterns of activities that they undertake. This allows us to make more general statements about this additional dimension of loss that people may face.

In the next Section, we discuss a theoretical approach to considering the impact of physical disabilities on time use. Section III presents the U.S. data used in the analysis and some descriptive statistics from those data. Section IV describes the central empirical results of the study from the American data and offers a variety of robustness tests on those results, including a discussion of whether they reflect the role of physical disabilities or, instead, of general ill-health. Section V introduces the Polish data, goes through analyses like those conducted on the American data, but does so over two days of time diaries and then considers how a disability affects time use among couples. Neither analysis is possible with the American data. Section VI offers a brief check on the American and Polish results using data from five other countries, in which the presence of a disability/health-based limitation is recorded. Section VII uses the results to infer the nature of the imposition of disabilities on household production, while Section VIII simulates the

additional dimension of the income equivalent of the utility loss facing those with disabilities because of changes in their use of time.

II. Theoretical Motivation

A physical disability imposes a constraint on how a person spends his/her time. Some things become more difficult, perhaps even impossible, to do, essentially raising the amount of time spent on that activity needed to achieve a given amount of satisfaction from it. For others the rise in the cost of time inputs to that activity may be less; but other than passive leisure and passive personal activities, it is difficult to think of endeavors whose cost is not raised by a physical disability. We motivate the empirical analysis with a brief theoretical description of the role of disability in time use.

Let Person 1 have no physical disability. S/he maximizes utility over all possible activities A_j, j=1, …, Z, with Z a very large number, by choosing some activities in which to engage, others not to spend any time on. Thus her/his utility function consists of:

(1) $U = U(A_{1,1}, \ldots, A_{M,1}, A_{M+1,1}, ..., A_{Z,1})$,

with the arguments of U indicating the time spent on each activity. The opportunity cost of a minute of time spent on each activity is w, presumably a function of the Lagrangian multiplier in the time constraint facing Person 1. Assume Person 1 maximizes (1) by choosing to spend time on activities 1 through M, but not to engage in activities M+1 through Z. Following a hierarchy of needs (Maslow, 1954), A_1 is the most needed, and the activities descend in importance from there. Person 1's utility-maximizing choices yield:

(2) $U_1(A_{1,1}) = ... = U_M(A_{M,1}) > U_{M+1}(A_{M+1,1} = 0) \geq \ldots \geq U_Z(A_{Z,1} = 0)$,

with $[A_{1,1} + ... + A_{M,1}] = 1440$, the daily time endowment in minutes. Time spent on each activity that is undertaken yields identical satisfaction at the margin; and that extra satisfaction is higher compared to the satisfaction that the first minute spent on any other activity, A_{M+1} through A_N, would yield. We thus observe the person engaging in M different activities, enjoying variety in life indexed as V(M).

We can think in several different ways about how Person 2, who has some physical disability but is otherwise identical to Person 1, will choose to spend time. One possibility is that every activity becomes

equally difficult at the same rate $\gamma < 1$. Thus in (1) each term is multiplied by γ, so that Person 2 maximizes satisfaction following (2), exactly like Person 1, engaging in the same activities and spending the same amount of time on each as does Person 1.

A second possibility is that some activities become more difficult than others for Person 2, creating a vector $1 > \gamma_j \geq 0$, reducing utility differentially from time spent in different activities. This will lead Person 2 to abandon those activities in which γ_j is smaller and concentrate on a smaller set of activities than Person 1. This assumption yields the additional prediction that time spent in Person 2's activities, a subset of Person 1's, might be disproportionate from what Person 1 spends in the same activities. Person 2 thus maximizes utility by engaging in only K activities, K<M, setting:

(3) $U_1(A_{1,2}) = ... = U_K(A_{K,2}) > U_{K+1}(A_{K+1,2} = 0) \geq U_M(A_{M,2} = 0) \geq \ldots \geq U_Z(A_{Z,2} = 0)$,

with $[A_{1,2} + ... + A_{K,2}] = 1440$. It is possible, if the γ_j on some previously not undertaken activities are larger than those on some of the A_M activities, that activities that had previously been in the set [M+1, Z] will now be undertaken; but, in general, we would expect that the total number of activities will still be less than those of Person 1.

A third possibility is that the physical disability makes switching activities more difficult—getting to a movie theatre, arising from a chair to eat dinner, dressing to go out for a walk, etc.—which might entail additional time that does nothing to increase the person's utility. These fixed costs create a wedge so that the person facing them spends no time on some activities that s/he would otherwise have enjoyed (exactly as do people choosing whether to engage in market work (Cogan, 1981) or firms choosing to alter employment (Hamermesh, 1989)). A physical disability might thus essentially engender additional costs of beginning any new activity, A_k. With that additional cost, some activities that were engaged in by Person 1 are no longer economic, because spending even a minute on them generates lumpy extra time costs. Under this assumption, Person 2 will also engage in fewer activities than Person 1, exactly as in (3).

By raising the cost of beginning new activities, or by making some activities relatively more difficult, the disability makes activities K+1 through M no longer worth doing. Person 2 will engage in K < M activities, enjoying variety V(K) < V(M). S/he will spend 1440/K minutes on average on the activities

undertaken, more time per activity than the 1440/M minutes spent by Person 1. With the same preferences over time use, Person 2 will thus spend more time in activities 1 through K than Person 1.

Both the disproportionate time costs and the switching cost arguments predict that the person with the physical disability will enjoy less variety of activities and spend more time on them than the person without the disability. Indeed, the theory here demonstrates that the average person with a disability will not simply choose a different set of activities from those undertaken by Person 1. This prediction distinguishes both possibilities from the first argument; it is testable and forms the basis for much of the empirical work here. It is important, because variety in time use is income superior (Gronau and Hamermesh, 2008), so that, if supported by the data, it provides an additional dimension of the loss engendered by a disability.

The disproportionate time cost argument yields an additional prediction: Within the smaller set of activities undertaken by the person with the disability, those that are especially difficult (γ_j closest to 0) will be engaged in less than others. Not only will the person exclude some activities; but among the (smaller) set of activities that s/he undertakes, while the average positive time spent in those activities will exceed that of the person without the physical disability, the pattern of time use will be disproportionate across activities compared to other people's time use. It seems easier to identify how a physical disability generates differences in the productivity of time in different activities than how the fixed costs of switching to a new use of time differ across activities; but the existence of switching costs implies that few people with a disability will spend only a little time in each activity that they undertake. Examining how the patterns of the (fewer) activities engaged in by the person with the disability differ may provide a way of distinguishing between the second and third possible underlying causes of differences in time use.

III. U.S. Data and Descriptive Statistics

The American Time Use Survey (ATUS) 2003-present contains on average roughly 12,000 annual one-day diaries in which respondents, one per household, keep a record of how they spent their time on the previous day (4AM-3:59AM). ATUS respondents are selected randomly from participants in the U.S.

Current Population Survey (CPS) who had completed their eighth (final) appearance in the CPS between two and five months (typically three months) earlier. In their CPS Months 5 respondents provided information on self-assessed disabilities, and this disability information is included in the ATUS datasets. We thus have information on respondents' disabilities as reported somewhere between five and eight months before they filled out a time diary; and the CPS also contains the same information from CPS Month 1, somewhere between 17 and 20 months before. Throughout most of the analysis we use the more recently reported set of disabilities.

In some years special questions were added to the ATUS to elicit self-assessed health status. We use all years that include these questions plus several other recent waves of the ATUS. The total sample consists of 87,337 ATUS respondents ages 15+ from years 2008-16 and 2019-22. While almost all the focus of the literature on disabilities is on the labor market, and thus on prime-age individuals, including the choice of labor supply complicates any analysis of time use by implicitly introducing a margin of choice between work and non-work. To remove that consideration and to concentrate on the demographic group with the highest rate of reported disabilities, we base the analyses on the sub-sample of 11,188 ATUS respondents ages 70+ who reported: 1) Being out of the labor force in their final CPS interview; and 2) Doing no paid work on the day for which they completed a time diary.[1]

CPS interviewees report whether they have any of the following difficulties: in personal care; in vision; in hearing; in mobility; in physical activities; and in remembering. Table 1 presents statistics (using ATUS sampling weights, as with all the statistics/analyses here) describing the incidence of the various types of reported disabilities by gender and age.[2] As can be seen by summing up in each column, a person can report any specific difficulty (so that, for example, the sum of the incidence of disabilities among men ages 85+ is 111.6 percent). After considering each reported difficulty separately (in unpublished tables) we

[1] The sub-sample excludes 70 non-working older people whose diary times did not add to 1440 minutes. It also excludes 13.5 percent of otherwise eligible older respondents who either worked on the diary day or reported being employed at their most recent CPS interview. The excluded people were only 1/3 as likely to report any disability as those included in the sub-sample.

[2] The ATUS provides individual years of age for respondents up through 79, with those 80-84, and 85+, classified only into a group in the age range.

then disaggregate the sub-sample of respondents 70+ into those with a mobility/physical difficulty (22.5 percent), those with some other difficulty only (9.2 percent), and those with no reported difficulty (68.3 percent of this older population).

Not surprisingly, the incidence of all these disabilities rises with age among the older sub-population, to the point where about half those ages 85+ list having at least one disability, twice the rate of those in their 70s. What may be surprising is the sharp difference in the rates of reported disability between those 15-69 and even those ages 70-79, with the rates of incidence of most disabilities three times higher in the latter group. This distinction alone justifies concentrating the analysis on the older population. Also interesting is the relative absence of differences by gender in reports of disabilities. Fewer men than women report mobility or physical difficulties, while more men report hearing or vision problems. Overall, however, gender matters little in these reports.

The measures of disability in the ATUS data are based on respondents' subjective views of their physical state. This means for example, that one may wear eyeglasses yet not report vision difficulties or wear hearing aids but report no difficulties hearing.[3] Even this pair of contrasts underestimates the possible disjunction between the self-reports and what an outsider might view as a person's disabilities. Suffice it to note that: 1) Later we analyze whether these self-assessments merely reflect differences in general health; and 2) In the Polish example we examine the relationship of time use to an officially certified disability status.

The ATUS classifies time use into over 400 different activities ($Z > 400$). Of course, the number of activities engaged in depends on the number possible; but even with this many possibilities, most people engage in only a few of these on any given day. Thus comparing time use in all activities would not be useful. Instead, we ask how many (extensive margin) and how much time conditional on positive time (intensive margin) in sets of commonly undertaken activities is spent by non-working older people without and with physical disabilities. We define four sets of activities in the ATUS: Those 13 non-work activities

[3] The former seems especially likely when one contrasts the rarity of reported vision difficulties with the ubiquity of eyeglasses among those under age 70 (1.1 percent, in Table 1, versus 62 percent of adults reported in the National Health Interview Survey-- https://www.overnightglasses.com/eyewear-industry-statistics/).

on which the average American (of all ages) in our ATUS sub-sample spends at least 10 minutes on the diary day; those activities, plus the 11 others on which the average time spent is [5,10) minutes/day, i.e., the 24 most time-consuming activities; 46 activities, adding in those on which the average American spends [2,5) minutes/day; and the top 74, adding in those to which the average American devotes [1,2) minutes daily. Appendix Table A1 lists these activities.

Table 2 shows the total time, number, and time per activity (conditional on positive time) in the Top 13, Top 24, Top 46, and Top 74 activities in the sub-sample of non-working older Americans, separately by disability status (none, mobility/physical difficulty, other difficulty) as reported in their fifth CPS month. The Top 13 (Top 74) activities account for 83 (95) percent of the time of those with a physical/mobility disability, and slightly less among those with another disability or none. Older non-workers engage in the same (non-work) activities as the average American adult.

While older people with mobility/physical disabilities spend more time than others in any group of activities, they engage in fewer of them. Indeed, while the older person without a disability undertakes 9.6 different activities in a typical day, the person with a mobility/physical difficulty undertakes on average over 1 less activity. Coupled with the greater total amount of time spent in each group of activities, this means that older people with mobility/physical disabilities average 5 (3) percent more time in the Top 13 (Top 74) activities than those without such disabilities. As the fixed-cost and heterogeneous time-cost arguments suggest, a disability leads people to cut back on the number of things they do, and to do them more intensively. While there is substantial heterogeneity in the three outcomes within the sub-sample, the distributions of the number of activities are close to symmetric around their means.

Not all those CPS respondents asked to participate in the ATUS after they completed their stint in the CPS fill out time diaries. The time diarists do not appear to be non-randomly selected (self-selected) along the usual demographic dimensions (race, sex, age—Abraham *et al* (2006); but the issue here is whether selective nonresponse along the dimension of disability might be generating the results in Table 2 (and in the next section). Comparing the incidence of disability among people 70+ in the entire CPS samples in 2013-14 to the incidence in the ATUS, it is substantially lower in the ATUS, ranging from as little as 1.7

percent lower among women 70-79 to 11.9 percent lower among women 85+. Assuming that CPS respondents who are unable or unwilling to complete time diaries are among those whose disability is more severe than others', this selectivity means that the differences shown in Table 2 understate the difference in time use between the average person with and without a disability.

IV. Central U. S. Results

A. Basic Regressions

The differences in the means shown in Table 2 might arise from demographic differences. For example, we know that, even among those 70+, people ages 80+ sleep more than others; and with the incidence of disability rising with age (Table 1) the differences in time use by disability status might arise from these correlations. To account for this, and other possible correlations with disability status and with the incidence and intensity of time use, we control for a large array of demographic measures.[4] These include: gender; educational attainment—indicators for a high-school diploma, some college, a bachelors, and an advanced degree; race/ethnicity—indicators for white non-Hispanic, black non-Hispanic, Asian non-Hispanic, Hispanic (with non-Hispanics of other races the excluded category); whether the person has a partner, a child, or a non-spouse adult in the dwelling; location in a metropolitan area; single-year indicators of age; and whether the diary was recorded on a weekend or a weekday.[5]

Appendix Table A2 shows the means of these control variables by disability status. People listing no disability are younger than others.[6] Also unsurprisingly, those listing no difficulty are more likely than those with a mobility/physical disability to be better educated, non-minority, female, partnered, and without

[4] Including vectors of year and state indicators in the estimates reported in Table 3 might generate biases due to differences in state policies regarding disabilities or to cyclical effects. This might be important, but it would mask the averages we are trying to discover. In any case, additional estimates that include vectors of these indicators yielded essentially identical results.

[5] Half of ATUS diaries are taken on weekends, with the sampling weights adjusted to account for the over-sampling of weekend days.

[6] Because the age of those 80-84 is coded as 80, those 85+ as 85, if anything this comparison understates the differences among the groups.

a non-partner adult in their residence. The small group of older non-workers with another disability differs less from those with no difficulty; indeed, they are slightly better educated and less likely to be minorities.

Table 3 presents the estimated impacts of disability status on total time, number of activities, and intensity for each of the four successively broader aggregates of activities, while Appendix Table A3 presents the coefficient estimates of the controls for the aggregate of 46 activities.[7] The main difference is between those with a mobility/physical difficulty and those with no disability. The former group spends more time in the restricted set of activities than do others, whether in the small set of the 13 most frequent activities or the much broader group of 74 activities. As the table shows, while those with other difficulties do spend more time than the comparison group in these aggregates of activities, the differences are small and never statistically significant.

Considering the number of different activities undertaken, using the largest sample (74 activities) we see that those with a mobility/physical disability engage in nearly one less activity per day than those with no disability, a highly statistically significant difference of 10 percent (on a mean of 9.63).[8] Older people with mobility/physical difficulties not only spend more time on these activities; they do fewer of them. Those with disabilities that are not mobility limiting, however, participate in the same number of activities as older non-workers with no disabilities. Overall, their time use differs little from that of otherwise identical individuals with no reported difficulty. Finally, and essentially a result of the findings on total time and incidence, the estimates on conditional time show that those with mobility/physical disabilities spend more time in the (fewer) activities which they undertake than those with no disabilities or some other disability.[9]

[7] Appendix Table A3 shows the coefficient estimates on the control variables, although only for the aggregate of 46 activities. The results for the 13, 24, or 74 most frequently chosen activities are very similar.

[8] If we re-estimate the models describing the counts of the incidence (number of activities undertaken) using the appropriate Poisson estimator, the estimated impacts of disability status shown in Table 3 become slightly more significant statistically.

[9] One might reasonably hypothesize that the easy access to services resulting from residence in a city center might offset the variety-limiting effects of a disability. It does not, or only barely so: Estimating the models in Table 3 separately for center-city residents, suburbanites, and rural residents shows roughly similar effects on, for example,

The regressions described in Table 3 summarize the differences in time use by disability status, but they do not indicate whether the differences arise from just a few of the 13 (up through 74) activities, or whether they are pervasive across most activities. In only 20 of the 74 activities does the total time spent by those with a mobility/physical disability exceed that spent by those with no disabilities (t = -4.33). The distinction is even starker when we consider the incidence of the activities: In only 16 of the 74 uses of time are those with such disabilities more likely to participate (t = -5.80). Conditional on engaging in an activity, however, such people spend more time in 44 activities (t = +1.79). Again, the differences between people with another disability and those with none are quite small.

Although additional educational attainment leads to a greater variety of activities undertaken, an interesting question is whether disability has the same impact by educational level. Disaggregating the sample used in Table 3 shows that there are remarkably similar negative impacts of disability on variety across the four education groups, college or more, some college, high school, and less than high school, with parameter estimates of -0.82 (s.e.=0.15), -0.68 (s.e.=0.14), -0.79 (s.e.=0.11), and -0.80 (s.e.=0.14) respectively. Additional education does not substitute for the negative effects of a disability on time use.

Sleeping and watching television are the default options of time use by non-workers, with 99.9 percent of this sub-sample sleeping on the diary day, and 98.1 percent watching some television. Moreover, those with a mobility/physical difficulty spend 882 minutes per day in these activities alone, while people with no disabilities spend only 807 minutes. The differences demonstrated in Table 3 do not, however, arise from the much greater conditional time spent sleeping, being sleepless, or watching television by older non-workers with mobility/physical difficulties. Ignoring these three activities does not qualitatively alter the conclusions above. People with mobility/physical difficulties spend more time in total than others in only 17 of 71 activities (t = -5.02), and are more likely to engage in only 14 of 71 activities (t = -6.28).[10]

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the number of activities (among 46) undertaken: The impacts of a mobility/physical limitation are -0.625 (s.e. = 0.133), -0.879 (s.e. = 0.106), and -0.861 (s.e. = 0.153) respectively.

[10] Re-estimating the models in Table 3 excluding the three activities, sleeping, sleeplessness, and television-watching, yields the same qualitative conclusions about the impact of disabilities on the variety of activities chosen, as the results in Appendix Table A4 illustrate.

B. Measurement/Reporting Error, and Short- or Long-run Effects

The analysis thus far is based on reports of disability fairly near the date when the respondents completed their ATUS diaries. These one-time responses may reflect measurement error, perhaps because of uncertainty about how to respond to the questions about difficulties. On the other hand, some people who report difficulties might have a temporary disability (e.g., a badly broken leg that limits mobility), so that they have not fully adjusted their use of time, since they view the disability as ephemeral. Measurement error would bias down the estimated differences in time use between those with reported disabilities and others. If we are interested in long-term effects of disabilities, so too would using a one-time report alone. With only two reports, we cannot distinguish between these two possible sources of bias, but we can at least measure how important they are together.

To examine these effects, we also use reports of physical difficulties provided in the respondents' first CPS interviews. Of the 11,188 individuals in the ATUS sub-sample, we have that information on 9,689 (87 percent) of them. Table 4 shows the transition matrices between Period t-1 (1st CPS interview) and Period t (5th CPS interview, one year later) for mobility/physical disabilities and others. Among respondents listing a mobility/physical impairment in Period t-1, 58.2 percent also noted this difficulty in Period t. A similar although slightly weaker conclusion can be drawn for the presence of other difficulties. One can infer that there may be some measurement error in the responses from CPS Month 5 that are used in the ATUS, but that there is also substantial persistence.

To examine whether the presence of measurement error or of a longer-term disability affects the estimates, Table 5 Columns (1), (3), and (5) list the estimated impacts (in this slightly reduced sample) of the presence of a disability reported in CPS Month 5; Columns (2), (4), and (6) then add the report in CPS Month 1. With only the more recent report, a person with a mobility/physical difficulty engages in 0.81 fewer activities than someone with no reported difficulty (unsurprisingly almost identical to the estimate in Table 3 over the full sub-sample). With both reports the impact rises to 1.07 fewer activities. A similar

comparison can be made for the conditional time spent on those activities that are undertaken.[11] Overall, the results suggest that failing to account for measurement error or longer-term effects of disabilities (we cannot distinguish between these) leads to an underestimate of the impacts of mobility/physical difficulties.[12] As with most of the results here, providing longer-term measures of the presence of other disabilities does not change the conclusion that these matter little for time use.

Yet another measurement concern might be that some people simply complain about their physical state regardless of any objective difficulty. If some people tend to complain, we would expect that the aspect of their complaining would be independent of its importance for time use. Thus a possible test of the true role of limitations on variety in time use might be the difference between the impact of a mobility/physical difficulty and that of other difficulties. With parameter estimates on the indicator of other difficulties in Table 3 being essentially zero and statistically insignificant, we can infer that the true role of limitations nearly equals the impact of having a mobility/physical difficulty. Thus no concern should arise from this possible form of mismeasurement.

C. Disability or Poor Health?

Reports of disabilities may simply be reports of general ill health. A person seriously ill with cancer might also be limited in her/his physical activities and will correctly report poor health and the presence of a mobility/physical difficulty. Obversely, a paraplegic may reasonably view her/himself as generally healthy but correctly report limited mobility. To examine whether the results thus far merely reflect the mistaken conflation of general ill-health with the presence of a disability, we expand the estimates in Table 3 to account for self-assessed health status (only available in the ATUS survey itself, not earlier in CPS

[11]About 12 percent of the respondents included in Table 5 were also in one of the CPS Disability Supplements, with ¾ of them also reporting disability status after CPS Month 5. Re-estimating the models in Table 5 over this small number of respondents and adding this third measure of their disability status hardly alters the inferences about the effects of longer-term disability.

[12]If we only include the measures of disability status from the first CPS interview, the estimated impacts of a mobility/physical difficulty on the three outcomes are 29.03 (s.e.=3.68), -0.726 (s.e.=0.095), and 21.80 (s.e.=1.78) respectively, while those of other difficulties are 11.81 (s.e.=4.96), 0.134 (s.e.=0.095), and -1.54 (s.e.=2.40) respectively.

Month 5 when disability status was recorded). We can do this for a sub-sample of 8,931 (80 percent) of those time diarists included in the estimates underlying Table 3.

Self-assessed health in the ATUS sub-sample of older non-workers is based on a five-point scale: Excellent (11 percent of this sub-sample); very good (28 percent); good (35 percent); fair (19 percent); poor (7 percent). While subjective, the self-assessments have long been shown to be highly correlated with objective measures (Bound, 1991). We create an indicator of good or worse health and add it to the specifications in Table 3. For each of the three time-use outcomes Table 6 first shows the impact of having good or worse health status, then adds the indicator(s) of disability to the specifications.

As the top row of the Table shows, being in good or worse health causes people to engage in fewer different activities and spend more time on each of them. Including both the measure of health and the measures of disabilities does reduce the estimated impacts of the latter; but comparing these estimates to those in the Column (3) of Table 3 demonstrates that the reductions are never more than one-third; and, in the case of the number of activities undertaken, the estimated impacts of disabilities are almost unchanged.[13] The results demonstrate that the possible conflation of health status and disability status is not producing the estimated impacts of the latter on time use. Although correlated, general health and disabilities have separate impacts on how older Americans use time.

V. Certified Disabled, Time across Two Days: Time and Disability in Poland

A. A Differently Constructed Dataset

Despite being the largest time-use dataset in the world, the ATUS data have several drawbacks for our purposes: 1) They rely on self-assessments of the presence of a disability; and 2) They have only one daily diary per person. The former might be problematic if those who feel themselves as having a disability are also those who would inherently choose to engage in comparatively few activities. The latter might

[13] None of these conclusions changes if, instead of a single indicator of health, we include a vector of four indicators that spans the set of responses to this question in the ATUS. Also, the impacts of increasingly better reported health on the outcomes are monotonically negative, positive, and negative on total time, incidence, and conditional time spent respectively.

present difficulties if the fixed costs of switching activities lead a person with a disability to undertake one set of activities on one day, and a quite distinct set on another day, so that over two days they engage in as many different activities as individuals with no disability.

The Polish Time-Use Survey (PolTUS), conducted by the Polish Central Statistical Office, should vitiate both these problems. First, it includes an indicator of whether the respondent had been granted the official status of having a disability. Also, unlike the ATUS, respondents report on their time use on two randomly assigned days – one weekday and one weekend day. We use the most recent available round of the survey, from 2013, which includes diaries kept by over 40,000 individuals aged 10-102. Over 96 percent of respondents completed two diaries. To match the ATUS we exclude respondents below age 15; we also exclude those who marked one of the days as a holiday, those for whom diaries were completed by a proxy respondent, and those not present in the household. We also only keep those who filled in their diaries on both days, and we exclude those whose diaries are incomplete. The main sample includes 35,299 individuals and twice as many daily diaries.

Given Poland's retirement age of 65/60 in 2013 (for men/women), we select those aged 65+ who reported being out of the labor force and did not report any paid work-related activity in their time diaries. This yields a sample of 7,090 people and 14,180 diaries. We first use the full sample to identify the most common (non-work) activities out of an extended list of 131 categories, classified according to the average time per day spent in these activities. Appendix Table A5, analogous to Appendix Table A1 for the ATUS, lists the top 71 activities with the average times spent of over 1 minute per day, distinguishing those with the average time spent more than 2, 5, or 10 minutes per day.

B. Registered Disability Status in Poland

Official disability status (*Orzeczenie o niepełnosprawności*) in Poland can be granted to individuals aged 16 and older following an official medical examination, during which certified doctors determine both the status and one of its three degrees (significant, moderate, and low).[14] PolTUS does not distinguish

[14] According to the official, statutory criteria, disability is defined rather broadly as the inability to fulfill social roles effectively, i.e. the inability or difficulty in everyday activities and social participation resulting from impairment of the body's efficiency. The status is granted to individuals who: have impaired physical or mental abilities, the expected

between the degrees of disability and only records whether a respondent has disability status. In our sub-sample of older non-workers (see Table 7) the average disability rate is almost identical to that in Polish household data (20.4 percent), and it is slightly higher among older men (22.2 percent) than women (19.5 percent). As the Table shows, the level of disability rises significantly with age.

C. Responses to Disabilities over Two Days

Table 8 corresponds to the ATUS-based results presented in Table 2. We distinguish the same categories of non-work activities based on the full sample, and present the total time, the number of activities and time conditional on performing an activity in four groups of activities: top 16, 30, 47 and 71. In all four aggregates of activities older individuals with a disability perform about 0.5 fewer activities on the average of the two days than those without a disability. Conditional on undertaking these activities, they spend about 10 minutes more on average.

The main results for Poland are in Table 9, where we present the estimated coefficients of disability status describing a variety of outcomes. Conditional on an extensive set of controls (see Table A6 in the Appendix for details), older people in Poland with a disability perform about 0.3 fewer activities than those without a disability; and this result is stable across the different categories of activities. Moreover, while in total they commit similar amounts of time as others to activities in the four groups, because the number of activities they engage in is less, the conditional time spent per activity is 7-9 minutes greater depending.[15]

D. The Role of Partners

It is not clear how having a partner affects the three outcomes that we examine. On the one hand, bargaining with a partner might lead to a solution where more different activities are undertaken so that, if

duration of which exceeds 12 months, and who require full care or assistance in meeting basic life needs. The decision concerning the status is taken by county-level disability assessment teams consisting of at least two specialists, including at least one qualified medical doctor. More information is available at https://niepelnosprawni.gov.pl/strona-glowna

[15] As with the U.S. results, the impacts of a disability on the three outcomes differ little by educational attainment. The impacts on temporal variety, for example, for activities on which the general population spends at least two minutes (Column 3 of Table 9) are -0.20 (s.e.=0.19), -0.35 (s.e.=0.15), and -0.24 (s.e.=0.16) among those with at least a general secondary education, a vocational education, or primary or no education respectively.

the partners' preferences differ sufficiently, a compromise will arise with both partners' preferred solutions undertaken, with more activities, and less time in the activities chosen (essentially the mixed-strategy solution to the "Battle of the Sexes" game). On the other hand, difficulties in partners switching from one jointly consumed activity to another may generate the opposite effect. In any case, other than while sleeping, partners spend relatively few of their 24 hours per day engaged in the same activity in the same location (Hamermesh, 2019, Ch. 6), so partnership status may have little impact on these outcomes.

The coefficients listed in Appendix Table A3 demonstrated that having a partner led ATUS respondents to undertake fewer different activities. The more important question, however, is how the presence of a partner affects time use by disability status, and how any effects differ by gender. With data on both partners' time use and their disability status, the PolTUS allows us to explore this question.

Given that the individual-level response rate in the PolTUS 2013 survey (conditional on household participation) was about 78 percent, and because not all respondents filled in both diaries, the sample of married couples where both partners are aged 65+ (and non-working) and both filled in two diaries is small (892 couples). For the analysis based on couples we thus include slightly younger individuals, extending the sample to non-working adults aged 60+. Using this sub-sample of 1,410 couples (and 5,640 diaries), we examine how the disability status of each partner affects the other's time allocation.

We use seemingly unrelated regressions (SUR) to account for the correlation of the residuals in the respective partners' time-use equations. The outcomes are the number of activities undertaken within each of the top four activity categories. We condition each equation on the respective disability measures of the examined person (own disability) and his/her partner (partner's disability). 17.7 percent of women and 23.2 percent of men are classified as disabled in our sample of couples. We also include the same covariates used in the estimates shown in Table 9, except for partnership status.

Table 10 shows the coefficient estimates on the disability indicators for both equations, describing the man's activities and then the woman's activities. For broader activity categories men react by reducing the number of activities in very similar ways in response to both their own and to their partner's disability: they cut the number of activities performed by about 0.2 when either they *or their partner* is disabled. In

contrast, women living in couples only react negatively to their own disability (with the number of activities reduced by about 0.3). Indeed, they increase the number of activities in situations when they live with a disabled partner and are not disabled themselves. Although not tiny, this positive effect is not significantly different from the negative effect of a woman's disability on her partner who does not have a disability. When we interact the disability indicators (in a separate specification, not shown), we find that if both partners have a disability the number of activities men perform is reduced by a little more than 0.2, and women also perform about 0.2 fewer activities.[16]

VI. A Verification with Data from Five Other Countries

The results thus far suggest that the predictions of the theoretical discussion describe differences in time use in the U.S. and Poland by people with or without a disability very well and remarkably similarly, and that the results do not arise from a variety of confounding factors. They represent, however, only two "laboratories"—the U.S. and Poland, so that they may arise from the unique definitions of disability in the underlying data and/or from possibly culturally unique treatments of people with disabilities. To verify that the general predictions apply elsewhere, we examine readily available homogenized and simplified data from time diaries from Canada, 2005 and 2010; the United Kingdom, 2000 and 2014; France, 1998; Italy, 2008-09; and Spain, 2002 (https://www.timeuse.org/mtus/surveys). The Multinational Time Use Study (MTUS) contains time-diary data from many countries, but these are the only ones that have sufficient observations of older non-workers and that provide an indicator of the presence of a disability/health problem. The measure of disability that we use describes both disability and health problems, "[Respondent] has disability/limiting health condition," and is thus not strictly comparable to the measures of disability in either the U.S. or Polish data. Rather, it combines both the self-reported disability and health measures in the U.S. data (and the precise country definitions may differ).

[16] It is noteworthy but not surprising that the cross-equation correlations of residuals are positive: Partners engage in activities jointly, with both partners having unusually large or small numbers of different activities, etc.

We construct sub-samples of these data, restricting them to all individuals 65 or older who report no work time on their diary day, do not usually work for pay, whose total time accounts for the full day. These restrictions yield sub-samples of 8,560, 4,276, 2,933, 8,944, and 9,491 observations in Canada, the U.K., France, Italy, and Spain respectively.[17] There are many fewer possible non-work activities, only 57, than in the U.S. and Polish data, and these are defined more broadly than in those datasets. Not all of these are performed by all older non-working respondents: Only 55, 54, 44, 54, and 52 of these non-work categories are reported by at least one time-diarist as having been performed on the diary day in the five countries respectively.

The top parts of Tables 11 and 12 list the incidence of disability/health limitations in each country's sub-sample by age and gender, broken down by a set of age indicators that is common to all five datasets. The rates differ somewhat from those among Americans and Poles of the same age/gender, although the differences in the question identifying the limitation (which apparently gave rise to the extremely high reported rates in France, which shows up even for younger French people) make comparisons of little value. Suffice it to note, however, that in all five countries the reported limitation rates are generally higher among women; and unsurprisingly, they generally rise with age.

As the second panels in Tables 11 and 12 show, those older non-workers stating that they have a disability/health limitation engage in anywhere from only 0.02 fewer activities (Canadian women) than people of the same age and gender with no limitation to as many 2.45 fewer activities (Italian women). As in the U.S. and Polish data, this broad set of examples generally shows that having a disability/health problem limits the variety of activities engaged in each day. Whether or not the respondent has a difficulty, on average in both countries older men engage in significantly fewer different daily activities than women.[18]

[17] As in the Polish data, we use a younger age cut-off here than in the U.S. because retirement from work in Europe is substantially earlier (which also allows us to create larger sub-samples than otherwise).

[18] The lesser variety of activities among men is a common finding in studies of time use, as shown for Australia, Israel, and West Germany in Gronau and Hamermesh (2008).

In estimating regressions describing the number of activities undertaken, for each of the five countries we adjust for a large variety of control variables, matching as closely as possible those used in the ATUS and PolTUS data. These covariates include whether the respondent has a resident partner, has co-resident children or other adults, lives in an urban area, if the diary is recorded on a weekend, indicators of educational attainment, and indicators of single years of age. Accounting for this large array of controls yields for each country the estimated impacts of disability/health status on the number of activities undertaken shown in the third panels of Tables 11 and 12. These controls do matter—having a disability/health issue does reduce the differences compared to people without one, in four of the five countries (although it increases the difference in the Canadian data). The estimated impact of a disability ranges from almost 0 (the U.K.) to nearly over 15 percent (Italy and Spain). The main point is that, even though the activities are more highly aggregated than in the U.S. and Polish data, we confirm the general finding of fewer activities being performed by those reporting a disability/health issue.[19]

As with the Polish data, the MTUS data for these five countries allow us to examine the cross-effects of one partner's disability/health on the time use of the other, and whether the observed effects of both partners' disability compound or offset each other's effect on the spouse's variety of time use. We present the estimates for the five countries in the bottom panels of Tables 11 and 12. In the two English-speaking countries (Table 11) the man's limitation has a more positive effect on the variety of his wife's activities than vice-versa (just as in the Polish data). In the three Mediterranean countries (Table 12) we see the exact opposite: A less positive/more negative effect of the husband's limitation on the wife's activities than the opposite. In three of the five countries the cross-effects are significantly different. That in half of the countries (among these five and Poland) the cross-effects are more positive on men, while in the other half more positive on women, shows that we cannot draw any general conclusion about the relative magnitude

[19] We aggregated the activities in the Polish Time Use Study to match as closely as possible the definitions in the homogenized MTUS data sets. With this aggregation, re-estimating the models depicted in Table 9 we see an effect of a disability on the number of activities undertaken of -0.310 (s.e. = 0.103), and on the conditional time spent per activity of 7.73 minutes (s.e.= 1.61). These impacts are remarkably close to those shown in Table 9 when we take the 47 most frequent activities.

of these impacts. Similarly, if both partners' have a disability/health limitation, in some cases the spouse's limitation compounds the impacts of one's own limitations, in others it offsets them.

VII. Switching Costs or Inherent Heterogeneity of Costs?

Some insight into an answer to this question, which is implicit in Section II, can be gained by considering which of the 74 activities in the U.S. and 71 activities in Poland show the biggest difference in time use between older non-workers with or without a disability. (There are not sufficient individual activities in the MTUS data to allow for a useful comparison.) The left-hand column of Table 13 lists the ten activities in the U.S. (upper panel) and Poland (lower panel) in which those without a disability spend the most additional time compared to those with a mobility/physical difficulty (in Poland, those with disability certification), ranked by the differences in minutes/day. The right-hand column presents the reverse—those ten activities in which people with such a disability spend the most extra time.

With the exceptions of "eating and drinking," and "insufficient detail," in the U.S., activities performed more by those without a disability require moving around. The activities which people with a disability do most are, except for "health-care…" and "travel related…" in the U.S., and "personal paid or insured services" and "crafts and clothing production" in Poland, ones that require little or no moving around. These differences are entirely consistent with the hypothesis that the disability raises the cost of certain activities, moving them out of the set of optimal choices discussed in Section II. Table 13 also provides some evidence of substitution of activities with similar purposes. The presence of a mobility limit leads people seeking religious expression to substitute religious activity at home for such activity away from home. Given the importance of community in religious expression (Iannaccone, 1998), this substitution is not without (utility) cost to the person with the disability.

We would like to test whether a disability leads to less switching among activities, other things equal, independent of the number of activities undertaken. Unfortunately, given the levels of aggregation used in these two datasets, no such test would be convincing: The number of switches is essentially equal to the number of activities, since most of these activities are engaged in only once daily.

VIII. The Impact of Disabilities on Temporal Variety

A substantial literature has shown how, even among non-workers, the presence of a disability adds to the monetary cost of maintaining a given living standard (see, e.g., Morciano *et al*., 2015, and Blavet, 2024). Here we showed that having a disability decreases the number of different activities undertaken, because the disability makes some activities more difficult than others, essentially raising their relative time cost. By analogy, then, by reducing the temporal variety that a person can enjoy, disability reduces living standards in an expanded framework that recognizes the joint roles of time and income. We cannot infer the change in utility from the imposition of these extra costs and the loss in variety; but we can ask how much compensation (income) would allow the person with the disability (and less time variety) to achieve the same variety in time use as an otherwise identical person.

In the first and second columns of Table 14 we report re-estimates of the models in Tables 3 and 9 for the U.S. and Poland, using all activities in which the broader populations spends at least 2 minutes per day (and deleting a small number of respondents whose information on whose income was unavailable in the data).[20] The same controls are included (except for educational attainment, given very high correlation of education with household incomes in this non-working sample). Incomes included in the regressions are annual measures at the family (U.S.) or household (Poland) level.[21] The estimates of the impacts of disabilities are nearly the same as in Tables 3 and 9, since disability status is essentially unrelated to income in these samples. The impact of income on variety is positive and statistically significant in both countries. For the U.S., removing a disability would increase variety in time use by the same amount as an increase

[20] All the results discussed in this section are qualitatively the same if we instead considered the most frequent 13, 24, or 74 activities in the U.S. or the most frequent 16, 30, or 71 activities in Poland.

[21] For the U.S. the values are in thousands of dollars and are constructed as mid-points of the 16 categories in the responses in the ATUS, with the top-coded amount multiplied by 1.5. For Poland we use actual reported income (if available) or the means of bracketed responses, and convert all income measures to (annual) 2013 U.S. dollars. Trimming the top 0.5 percent of outliers and dropping observations with no usable income measures reduces the Polish sub-sample by about 15 percent.

in income of $272,000. In the Polish data, to enjoy the same variety as others, someone with a certified disability status would need an additional $5,760 of income per year.[22]

The third through sixth columns of Table 14 present analogous estimates relating temporal variety to disability status and household income for all the countries included in Tables 11 and 12 (except Italy, for which income data were unavailable in the MTUS). As in the U.S. and Polish cases, the estimated impacts of having a disability remain the same as before, and higher incomes produce increases in the temporal diversity of activities undertaken.

Making comparisons across the six countries in the trade-off between disability status and income as they affect temporal variety is difficult. To simplify those comparisons, we calculate the monetary compensation C relative to the mean average annual income of older non-workers, Y_{AVE}, that would equalize the temporal variety enjoyed by people with/without a disability:

$$(4) \quad C = -[\alpha_D/\alpha_Y]/Y_{AVE} \ ,$$

where the α_j are the estimated impacts of disability status and income on variety. The final row in Table 14 shows the estimate of C in each of the six countries. It ranges from a low of 61 percent of average annual income (the U.K.) to nearly five times average annual income (the U.S.). The weighted (by sample size) average of the six estimates is 2.24.[23]

Whether for one country or aggregated, the monetary compensation for the disability-related loss of variety in time use is very substantial and reflects a significant loss of lifetime utility even among those who are no longer active in the labor market. While the calculated equivalents are certainly large in relation to annual incomes, compared to overall estimates of the implicit utility cost of an injury or to the estimates of the value of a statistical life (VSL) they do not seem so great. Using the results in Viscusi and Aldy's (2003) meta-analysis, the best estimates of the VSL are in the range of $2 million - $20 million (2024

[22] The estimates do not arise because people with disabilities are included here. Excluding them (and thus the disability indicators) slightly raises the effect of income for the U.S. to 0.0035 (s.e. = 0.00065), for Poland to 0.053 (s.e. = 0.017).

[23] The calculations are all made at the sample averages. In all but Poland and Spain the true relationship between variety and income is inverse U-shaped. Thus the appropriate replacement would vary with income (and, of course, with the extent of the disability, which we cannot measure).

dollars), while the implied cost of an injury may be between $200,000 and $1,000,000. Compared to these values, even the projected present value of lost variety over the remaining years of the older non-worker's life is clearly not extremely large. We need to bear in mind though, that the implications of disability for time-use are likely to be greater for younger adults, whose long-term disability would have consequences over many more remaining years.

IX. Conclusions and Implications

We have demonstrated that a physical disability alters the way a person spends the day. More time is spent doing fewer things, so that on average each activity undertaken consumes more of the individual's time. Particularly, more time is spent sleeping and watching television, and less time is devoted to activities that require active participation, such as cooking, cleaning, and attending religious services. These results are clearly shown in data for non-working older (age least age 70) people from the U.S. for 2008-22 and (for those 65+) Poland in 2013. They are corroborated by results from five other countries, Canada, the U.K., France, Italy, and Spain. They do not arise from differences in a large variety of demographic characteristics; nor do they stem from any correlation of reported disabilities with general ill-health.

That older people with disabilities engage in fewer activities than otherwise identical individuals implies a loss of well-being because people generally find variety enjoyable—it is income superior. Indeed, the estimates show that it would take more than a doubling of their annual income to compensate them for this loss compared to an older person without a disability.

The results cry out for a host of additional research studies if the appropriate data are available. Can one construct an example that allows distinguishing more clearly between our two explanations for the difference in behavior between those with a disability and other people, namely adjustment costs or limitations that raise the cost of certain activities? Can one specify the structure of the utility model in such a way that allows inferring the utility cost, in terms of the reduced variety of time use, which is generated by having a physical disability? How can we incorporate the implications of disability for variety in time

use with its consequences for labor market activity so that these questions could also be addressed using data on working age adults?

With disability rates among older people in the range of between 20-50 percent depending on the age, and with a non-negligible proportion of the working age population having a disability, better understanding of different dimensions of utility loss that results from it seems necessary to specify appropriate policy recommendations. By analyzing how a disability affects the time use of older people, we have opened a large variety of questions and areas for future research that will add to our understanding of the impact of disabilities. A comprehensive approach to the consequences of disability, going beyond the limitations at the workplace and beyond the expense of medical interventions, is necessary to structure policies focused on relaxing time constraints and thus, among other things, allowing those with disabilities to enjoy a greater variety of activities.

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Table 1. Disability Measures by Gender and Age (Percentage with Difficulty), ATUS 2008-22

	Women				Men			
Age:	15-69	70-79	80-84	85+	15-69	70-79	80-84	85+
Difficulty:								
Any	7.5	25.1	36.3	50.9	7.5	24.3	37.8	54.5
Personal care	1.1	2.8	4.4	10.1	1.0	3.1	4.3	6.7
Vision	1.1	4.0	6.4	8.8	1.0	3.1	5.4	10.5
Hearing	1.1	6.6	12.1	21.3	1.9	12.5	22.3	32.8
Mobility limitation	2.4	7.7	12.0	24.7	1.9	5.2	6.9	19.2
Physical	4.5	18.0	24.6	36.2	3.8	13.1	20.2	31.4
Remembering	1.5	3.6	5.0	9.8	2.5	3.4	5.0	11.0
N =	40,292	4,322	1,575	1,297	33,701	2,530	884	580

Table 2. Means and Standard Deviations, by Disability Status, Nonworkers Ages 70+, ATUS 2008-22

	Time Categories			
	Top 13	**Top 24**	**Top 46**	**Top 74**
No difficulty, N = 7,445				
Total time	1138.0	1202.9	1283.5	1332.3
	(192.7)	(179.8)	(153.7)	(128.2)
# activities	5.74	7.13	8.70	9.63
	(1.51)	(2.20)	(2.92)	(3.47)
Conditional time	213.17	187.22	167.13	159.57
	(73.37)	(73.58)	(69.54)	(69.75)
Physical or mobility difficulty, N=2,782				
Total time	1195.4	1243.8	1328.9	1368.4
	(192.4)	(176.1)	(130.2)	(100.6)
# activities	5.36	6.39	7.83	8.55
	(1.48)	(2.15)	(2.82)	(3.33)
Conditional time	241.72	219.58	195.83	188.74
	(86.10)	(89.06)	(83.70)	(85.08)
Other difficulty, N = 961				
Total time	1156.5	1220.8	1297.3	1343.9
	(191.2)	(173.9)	(142.5)	(121.0
# activities	5.69	7.00	8.57	9.47
	(1.43)	(2.08)	(2.88)	(3.44)
Conditional time	218.49	192.76	171.85	164.31
	(76.87)	(75.75)	(73.36)	(73.35)

Table 3. Impact of Disability Status on Time Use among Nonworkers Ages 70+, ATUS 2008-22 (N=11,188)[a]

	Time Categories			
	Top 13	**Top 24**	**Top46**	**Top74**
Total time				
Mobility/physical difficulty	41.10	27.68	33.28	26.51
	(4.49)	(4.17)	(3.46)	(2.87)
Other difficulty	5.83	9.06	8.70	6.25
	(6.33)	(5.88)	(4.88)	(4.04)
Adj. R^2	0.065	0.055	0.058	0.49
# activities				
Mobility/physical difficulty	-0.380	-0.695	-0.799	-0.995
	(0.034)	(0.050)	(0.066)	(0.079)
Other difficulty	0.037	0.029	0.095	0.067
	(0.049)	(0.070)	(0.093)	(0.111)
Adj. R^2	0.089	0.097	0.103	0.103
Conditional time				
Mobility/physical difficulty	25.74	29.19	25.86	26.63
	(1.74)	(1.77)	(1.67)	(1.68)
Other difficulty	-0.61	-0.18	-0.53	-0.10
	(2.46)	(2.49)	(2.35)	(2.37)
Adj. R^2	0.120	0.121	0.121	0.116

[a] The regressions include: Vectors of indicators of individual age, education, race/ethnicity, indicators of metropolitan status, diary day (weekend), presence of partner, of children, or other adults in household. Standard errors in parentheses below the parameter estimates.

Table 4. Reported Disability in the CPS Months 1 and 5, (N=9,689)

		Mobility/physical difficulty$_t$		
		0	**1**	**Total**
Mobility/physical difficulty$_{t-1}$	**0**	88.3	11.7	77.5
	1	41.8	58.2	22.5
	Total	77.8	22.2	100
		Other difficulty$_t$		
		0	**1**	**Total**
Other difficulty$_{t-1}$	**0**	93.9	6.1	89.6
	1	64.2	35.8	10.4
	Total	90.8	9.2	100

Table 5. Longer-term Disability and Time Use, ATUS 2008-22, 46 Activities (N = 9,689)[a]

	Total time		# activities		Conditional time	
Mobility/physical difficulty	34.76	26.96	-0.810	-0.605	26.53	20.89
	(3.72)	(4.15)	(0.071)	(0.079)	(1.80)	(2.00)
Mobility/physical difficulty$_{t-1}$	-------	17.27	-------	-0.464	-------	12.71
		(4.10)		(0.078)		(1.98)
Other difficulty	7.17	3.39	0.117	0.093	-0.85	-0.61
	(5.22)	(5.49)	(0.100)	(0.105)	(2.52)	(2.65)
Other difficulty$_{t-1}$	-------	9.18	-------	0.144	-------	-2.65
		(5.22)		(0.100)		(2.52)
Adj. R^2	0.058	0.059	0.106	0.110	0.124	0.129

[a] The regressions include the same controls as in Table 3. Standard errors in parentheses below the parameter estimates.

Table 6. General Health and Disability Impacts on Time Use, 46 Activities, ATUS 2008-22 (N=8,931)[a]

	Total time	# activities	Conditional time
Health alone:			
Health good or worse	28.85	-0.429	14.04
	(3.23)	(0.063)	(1.54)
Adj. R^2	0.062	0.091	0.106
Health and disability:			
Health good or worse	24.67	-0.283	9.56
	(3.31)	(0.064)	(1.57)
Mobility/physical difficulty	22.55	-0.756	23.40
	(3.98)	(0.077)	(1.89)
Other difficulty	7.38	0.144	-1.57
	(5.40)	(0.105)	(2.560)
Adj. R^2	0.065	0.101	0.122

[a] The regressions include the same controls as in Table 3. Standard errors in parentheses below the parameter estimates.

Table 7. Disability Status by Age and Gender (percentage), PolTUS 2013

Age:	15-64	65-74	75-84	85+	65+
Men:					
Official disability status	10.2	18.1	28.7	33.5	22.2
N individuals	9,903	1,641	852	115	2,608
Women:					
Official disability status	8.0	15.9	25.0	25.4	19.5
N individuals	17,821	2,987	1,678	302	4,967

Table 8. Means and Standard Deviations of Time Use by Disability Status, Non-workers Ages 65+; PolTUS 2013

Time Categories:	Top 16	Top 30	Top 47	Top 71
No disability:				
11,114 diaries; 5,557 individuals				
Total time	1209.05	1317.50	1389.49	1418.90
	(144.99)	(122.55)	(86.73)	(58.94)
# activities	8.04	9.69	11.18	11.66
	(1.81)	(2.25)	(2.70)	(2.86)
Conditional time	157.94	141.01	132.09	129.72
	(40.79)	(37.28)	(35.71)	(35.99)
With disability certification:				
3,066 diaries; 1,533 individuals				
Total time	1216.68	1317.95	1392.12	1422.06
	(149.80)	(123.51)	(89.41)	(54.55)
# activities	7.68	9.31	10.70	11.15
	(1.92)	(2.40)	(2.94)	(3.08)
Conditional time	168.95	152.37	141.25	138.98
	(53.15)	(51.21)	(49.06)	(49.42)

Table 9. Impact of Disability on Time Use of Non-workers Ages 65+; PolTUS 2013 (N: 14,180 diaries, 7,090 individuals)*

Time Categories:	Top 16	Top 30	Top 47	Top 71
Total time	2.749	-2.931	0.299	1.475
	(5.316)	(4.467)	(3.134)	(1.713)
Adj. R^2	0.078	0.090	0.044	0.032
# activities	-0.272	-0.415	-0.308	-0.315
	(0.061)	(0.086)	(0.103)	(0.110)
Adj. R^2	0.205	0.117	0.125	0.122
Conditional time	8.466	8.773	6.726	6.682
	(1.754)	(1.712)	(1.614)	(1.646)
Adj. R^2	0.182	0.128	0.121	0.117

* Additional controls include: a vector of indicators of individual age, indicators of gender, education, marital status, number of adults, number of children in household, day of the week, if day was a usual day, urban status, and region. Standard errors in parentheses, clustered at household level.

Table 10. Number of Activities Undertaken, Non-working Couples Ages 60+; PolTUS 2013 (N: 1,410 couples; 5,640 dairies)

Time Categories:	Top 16	Top 30	Top 47	Top 71
Man's activities:				
Own disability	-0.108 (0.110)	-0.220 (0.149)	-0.130 (0.172)	-0.157 (0.184)
Partner's disability	0.011 (0.110)	-0.132 (0.149)	-0.087 (0.176)	-0.072 (0.186)
Adj. R^2	0.145	0.088	0.066	0.080
Woman's activities:				
Own disability	-0.373 (0.106)	-0.310 (0.142)	-0.265 (0.186)	-0.333 (0.197)
Partner's disability	0.191 (0.101)	0.101 (0.139)	0.187 (0.176)	0.241 (0.186)
Adj. R^2	0.075	0.079	0.084	0.095
t-test of equality of cross-equation effects	1.18	1.11	1.04	1.13

Notes: Additional controls include: a vector of indicators of individual (own) age, own education, number of adults, number of children in household, day of the week, if day was a usual day, indicator for first of the two diaries, urban status, and region. Standard errors in parentheses, clustered at household level.

Table 11. Replication of Basic Equations for Canada, 2005 and 2010, U.K., 2000 and 2014*

	Canada (N=8,560)		U.K. (N=4,276)	
Descriptive Statistics:	**Female**	**Male**	**Female**	**Male**
Fraction with limit by age:				
16-64	0.089	0.068	0.162	0.133
65-69	0.164	0.157	0.204	0.189
70-74	0.174	0.170	0.266	0.170
75-79	0.270	0.229	0.245	0.187
80+	0.295	0.262	0.258	0.209
# activities by disability/ health status:				
No limit	9.54	10.83	13.17	12.11
Limited	9.52	10.26	12.66	11.98
Regression estimates: (dep. var. # activities)				
Limited	-0.398		-0.077	
	(0.076)		(0.114)	
Adj. R^2	0.161		0.136	
		COUPLES		
N =	1,722		1,229	
	Husband	Wife	Husband	Wife
Limit: Own	-0.499	-0.999	-0.047	-0.564
	(0.154)	(0.163)	(0.228)	(0.204)
Partner's	-0.134	-0.101	-0.125	0.550
	(0.158)	(0.156)	(0.207)	(0.219)
Adj. R^2	0.056	0.072	0.080	0.137
t-test of cross-effects	0.14		2.21	

* The regressions also include vectors of indicators of individual years of age, education, number of children<18, urban location, size of household, marital status, gender, weekend day, year of survey. Standard errors in parentheses below regression coefficients.

Table 12. Replication of Basic Equations for France 1998, Italy 2008-09, Spain 2002

	France (N=2,933)		Italy (N=8,944)		Spain (N=9,491)	
Descriptive Statistics:	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**
Fraction with limit by age:						
16-64	0.424	0.425	0.028	0.029	0.022	0.023
65-69	0.521	0.530	0.087	0.079	0.100	0.072
70-74	0.552	0.531	0.128	0.116	0.108	0.108
75-79	0.616	0.587	0.172	0.145	0.163	0.128
80+	0.660	0.618	0.317	0.283	0.220	0.168
# activities by disability/ health status:						
No limit	10.76	9.92	11.42	10.80	10.99	9.69
Limited	10.31	9.47	8.97	8.76	8.69	7.63
Regression estimates: (dep. var. # activities)						
Limited	-0.324 (0.084)		-1.789 (0.075)		-1.849 (0.078)	
Adj. R^2	0.155		0.191		0.203	
			COUPLES			
N =	1,043		2,674		2,807	
	Husband	Wife	Husband	Wife	Husband	Wife
Limit: Own	-0.452 (0.140)	-0.353 (0.127)	-1.752 (0.149)	-1.453 (0.141)	-1.693 (0.151)	-1.391 (0.145)
Partner's	0.392 (0.140)	0.044 (0.128)	0.277 (0.158)	-0.143 (0.134)	0.474 (0.152)	0.294 (0.143)
Adj. R^2	0.136	0.114	0.152	0.143	0.103	0.084
t-test of cross-effects	1.79		1.96		0.63	

*The regressions also include vectors of indicators of individual years of age, education, number of children<18, urban location, size of household, marital status, gender, weekend day, year of survey. Standard errors in parentheses below regression coefficients.

Table 13. Top 10 Differently Time-Consuming Activities, Disability-None, ATUS 2008-22, PolTUS 2013

ATUS:

Activity:	Difference (minutes/day)	Activity:	Difference (minutes/day)
Lawn, garden, houseplant care	-14.75	TV and movies	46.25
Shopping, exc. groceries, food, gas	-6.76	Sleeping	29.69
Interior cleaning	-5.44	Relaxing, thinking	16.55
Grocery shopping	-3.51	Health-related self-care	11.01
Laundry	-3.25	Sleeplessness	5.45
Walking	-3.13	Health-care services outside home	2.85
Eating and drinking	-3.04	Listening to the radio	1.64
Travel related to shopping	-2.88	Travel related to medical services	1.16
Attending religious services	-2.57	Participation in religious practices	1.06
Insufficient detail in verbatim	-2.32	Playing games	1.04
Total in 10 most different activities	-47.65		116.71

PolTUS:

Activity:	Difference (minutes/day)	Activity:	Difference (minutes/day)
Travel related to social life	-16.38	Sleeping	28.68
Travel related to shopping, services	-11.67	Watching TV, etc.	24.79
Attending mass	-7.58	Passive rest	12.45
Shopping	-7.05	Other personal needs	11.89
Dishwashing (cleaning after meals)	-6.99	Radio and other listening	9.61
Tidying the flat/house	-6.94	Lying down because of illness	5.42
Looking after other's children	-6.84	Personal paid or insured services	4.83
Reading books (including e-books)	-6.25	Crafts and clothing production	4.64
Gardening	-5.06	Conversations, own household	3.57
Preparing meals, snacks, etc.	-3.98	Individual prayer	3.16
Total in 10 most different activities	-78.74		109.04

Table 14. Impact of Disability Status and Income on Variety: U.S., Poland, Canada, UK, France and Spain*

	U.S.[a]	Poland[b]	Canada[c]	U.K.[c]	France[c]	Spain[c]
Data years	2008-22	2013	2005, 2010	2000, 2014	1998	2002
Max {no. activities undertaken}	46	47	55	54	44	52
Mean no. activities	8.49	11.13	10.22	12.64	10.14	10.16
Mobility/physical difficulty (US) Disability (PL, CAN, UK, FR, ES)	-0.846 (0.065)	-0.288 (0.108)	-0.403 (0.077)	-0.100 (0.012)	-0.321 (0.085)	-1.850 (0.078)
Annual family income (000)	0.0031 (0.0006)	0. 0496 (0.0152)	0.0082 (0.0007)	0.0092 (0.0017)	0.0023 (0.0005)	0.0490 (0.0047)
Adj. R^2	0.101	0.120	0.156	0.115	0.155	0.202
N diaries	11,083	12,118[b]	8,560	4,276	2,933	9,491
$-(\alpha_D/\alpha_Y)/Y_{AVE}$	4.95	0.62	0.87	0.61	1.09	3.47

a: Includes vectors of indicators of individual age, and of race/ethnicity, indicators of gender, metropolitan status, weekend, presence of partner, of children, or of other adults in household, and the year of the survey;
b: Includes a vector of indicators of individual age, indicators of gender, marital status, number of children, and of other adults in the household, day of the week, usual day, urban status, region. Two diaries for each individual.
c: Includes vectors of indicators of individual years of age, number of children<18, urban status, size of household, marital status, gender, weekend day, year of survey.
* Two diaries per person in Poland, standard errors, in Poland clustered at the household level.

Appendix Tables

Table A1. Codes and Descriptions of Included Activities, ATUS 2008-22

Code	Description
Top 13 Activities, 10+ minutes by the average respondent	
t010101	Sleeping
t010201	Washing, dressing and grooming oneself
t020101	Interior cleaning
t020102	Laundry
t020501	Lawn, garden, and houseplant care
t060101	Taking class for degree, certification, or licensure
t070104	Shopping, except groceries, food and gas
t110101	Eating and drinking
t120101	Socializing and communicating with others
t120301	Relaxing, thinking
t120303	Television and movies (not religious)
t120307	Playing games
t120312	Reading for personal interest
Next 11 Activities, [5-10) minutes by the average respondent	
t020203	Kitchen and food clean-up
t020902	Household and personal organization and planning
t030101	Physical care for household children
t030103	Playing with household children, not sports
t060301	Research/homework for class for degree, certification, or licensure
t070101	Grocery shopping
t140101	Attending religious services
t180704	Travel related to shopping, except groceries, food, and gas
t181101	Travel related to eating and drinking
t181201	Travel related to socializing and communicating
t500101	Insufficient detail in verbatim
Next 22 Activities, [2-5) minutes by average respondent	
t010102	Sleeplessness
t010301	Health-related self-care
t020301	Interior arrangement, decoration, and repairs
t020601	Care for animals and pets (not veterinary care)
t020602	Walking / exercising / playing with animals
t020701	Vehicle repair and maintenance (by self)
t020904	Household and personal e-mail and messages
t080401	Using health and care services outside the home
t120201	Attending or hosting parties/receptions/ceremonies
t120306	Listening to/playing music (not radio)
t130131	Walking
t130134	Working out, unspecified
t140102	Participation in religious practices
t160101	Telephone calls to/from family members
t160102	Telephone calls to/from friends, neighbors, or acquaintances

Table A1. (…) continued

t180301	Travel related to caring for and helping household children
t180405	Travel related to helping non household adults
t180701	Travel related to grocery shopping
t180703	Travel related to purchasing food (not groceries)
t181301	Travel related to participating in sports/exercise/recreation
t189999	Traveling, n.e.c.*
t500106	Gap/can't remember

Next 28 Activities, [1-2) minutes by the average respondent

t020103	Sewing, repairing, and maintaining textiles
t020104	Storing interior household items, inc. food
t020401	Exterior cleaning
t020402	Exterior repair, improvements, and decoration
t020801	Appliance, tool, and toy set-up, repair, and maintenance (by self)
t020901	Financial management
t020903	Household and personal mail and messages (except e-mail)
t030109	Looking after household children (as a primary activity)
t030110	Attending household children's events
t030112	Picking up/dropping off household children
t040103	Playing with non-household children, not sports
t070103	Purchasing food (not groceries)
t120305	Listening to the radio
t120309	Arts and crafts as a hobby
t120403	Attending movies/film
t120499	Arts and entertainment, n.e.c.*
t130112	Fishing
t130132	Participating in water sports
t130133	Weightlifting/strength training
t159999	Volunteer activities, n.e.c.*
t160199	Telephone calls (to or from), n.e.c.*
t180101	Travel related to personal care
t180209	Travel related to household management
t180601	Travel related to taking class
t180702	Travel related to purchasing gas
t180804	Travel related to using medical services
t181203	Travel related to relaxing and leisure
t181401	Travel related to religious/spiritual practices

Table A2. Means of Control Variables, Percent (Except Age) ATUS 2008-22

	No difficulty	Mobility or Physical difficulty	Other difficulty
N=	**7,445**	**2,782**	**961**
Age	76.5	78.8	78.3
High school graduate	39.0	38.7	35.5
Some college	21.2	19.9	19.6
College	14.9	11.2	14.5
Advance degree	11.4	7.0	12.7
White nonhispanic	80.8	76.9	85.5
Black nonhispanic	9.7	14.0	5.8
Asian nonhispanic	2.5	1.3	2.2
Hispanic	6.2	6.7	5.4
Female	59.0	65.7	44.0
Partnered	58.6	35.5	57.5
Metropolitan area	81.3	80.9	76.7
Child in house	4.0	2.8	3.2
Nonspouse adult in house	18.3	23.4	17.9

Table A3. Parameter Estimates, Control Variables in Table 3, ATUS 2008-22, 46 Activities[a]

	Total time	# activities	Conditional time
High school	-6.391	0.400	-10.525
	(4.203)	(0.080)	(2.026)
Some college	-29.015	0.791	-21.634
	(4.728)	(0.090)	(2.279)
College	-52.900	0.856	-27.737
	(5.230)	(0.100)	(2.521)
Advanced degree	-64.127	1.132	-34.997
	(5.659)	(0.108)	(2.728)
White non-Hispanic	-4.908	0.779	-27.442
	(14.282)	(0.273)	(6.884)
Black non-Hispanic	18.906	0.032	-9.432
	(14.829)	(0.284)	(7.148)
Asian non-Hispanic	18.047	0.838	-28.365
	(16.960)	(0.324)	(8.175)
Hispanic	6.587	0.329	-16.845
	(15.280)	(0.292)	(7.365)
Female	-17.079	1.348	-34.250
	(2.916)	(0.056)	(1.406)
Partnered	-11.746	-0.150	-0.404
	(2.987)	(0.057)	(1.440)
Metropolitan location	3.347	0.188	-3.163
	(3.543)	(0.068)	(1.708)
Child in house	7.946	-0.104	6.165
	(7.801)	(0.149)	(3.760)
Nonspouse adults present	4.815	-0.480	12.628
	(3.761)	(0.072)	(1.813)
Weekend	26.437	-0.600	17.467
	(3.029)	(0.058)	(1.460)

[a] Also included are the variables included in Table 3 and a vector of 11 age indicators.

Table A4. Impact of Disability Status on Time Use among Non-workers Ages 70+, Excluding Sleep/sleeplessness and TV-watching, ATUS 2008-2022 (N=11,188)[a]

	Time Categories			
	Top 11	**Top 22**	**Top 43**	**Top 71**
Total time				
Mobility/physical difficulty	-21.84	-35.26	-34.19	-40.96
	(4.20)	(4.51)	(4.72)	(4.90)
Other difficulty	7.41	10.63	9.63	7.18
	(5.93)	(6.36)	(6.65)	(6.91)
Adj. R^2	0.039	0.051	0.055	0.062
# of activities				
Mobility/physical difficulty	-0.383	-0.698	-0.839	-1.035
	(0.034)	(0.050)	(0.065)	(0.078)
Other difficulty	0.024	0.015	0.070	0.042
	(0.047)	(0.070)	(0.092)	(0.110)
Adj. R^2	0.098	0.102	0.110	0.109
Conditional time				
Mobility/physical difficulty	2.24	3.49	4.94	5.31
	(1.29)	(1.22)	(1.21)	(1.23)
Other difficulty	3.36	3.56	3.54	2.87
	(1.83)	(1.72)	(1.71)	(1.73)
Adj. R^2	0.012	0.014	0.018	0.017

[a] The regressions all include: Vectors of indicators of individual age, education, and race/ethnicity, indicators of gender, of metropolitan status, dairy day (weekend), presence of partner, of children, or of other adults in the household

Table A5. Most Common Activities, Polish Time Use Survey 2013 (two days)

Code:	Description:
Top 16 Activities, 10+ minutes by the average respondent	
11	Sleeping
821	Watching TV (also reading teletext), programs on video, DVD, etc.
21	Eating and drinking
31	Washing yourself, getting dressed
311	Preparing meals, snacks and drinks, baking, making preserves
512	Social meetings with someone and hosting guests (friends and family)
321	Tidying the flat/house
361	Shopping
531	Passive rest
312	Washing the dishes (cleaning the table after meals)
611	Walks and hikes
722	Obtaining information using a computer, the Internet
812	Reading books (including e-books)
936	Commuting related to shopping and services
381	Caring for and looking after children
211	School lessons / university classes
Next 14 Activities, [5-10) minutes by the average respondent	
950	Commuting (travel) related to social life
341	Gardening
383	Reading, playing and talking with children
4321	Attending mass
519	Other activities related to contact with other people
811	Reading journals and magazines, also in electronic form
511	Conversations with members of your own household
344	Walks with the dog and other domestic pets.
831	Listening to the radio: music, news, etc. recordings, audiobooks
940	Commuting (travel) related to work in the organization,
324	Cleaning and organizational activities related to the household
212	Doing homework, studying (alone or with others)
723	Communicating by means of a computer
733	Computer games (including TV games)
Next 17 Activities, [2-5) minutes by the average respondent	
331	Washing / Laundry
323	Activities related to heating and supplying the HH with water
514	Phone calls, also SMS (with family, relatives, friends).
424	Looking after children from another household
332	Ironing, mangle
322	Cleaning the yard, garden, pavement near the house, removing snow
731	Individual games and plays, crosswords, playing with toys and pets
4324	Individual prayer, reading the Holy Scripture
980	Travel related to the temporary change of place of stay
920	Commuting to/from school/univ., related to educ. in free time
363	Personal paid or insured services
513	Celebrations
995	Filling a time budget diary

Table A5. (…) continued:

621	Hunting, fishing, picking berries, mushrooms and herbs
6131	Cycling
615	Gymnastics
39	Other activities related to personal needs

Next 24 Activities, [1-2) minutes by the average respondent

352	Repairs, minor renovations in the apartment
9602	Commuting / traveling on foot related to sport and recreation
342	Breeding of domestic animals
9401	Commuting/traveling on foot related to informal assist. to other HHs
938	Commuting (travel) related to the care of a child
343	Caring for domestic pets
939	Commuting (travel) related to running a household,
382	Learning with children
732	Party games
711	Art classes
521	Cinema
729	Other types of computer and Internet use
333	Crafts and clothing production
720	Using the computer, the Internet
391	Caring for adult members of HH chronically ill or disabled
12	Lying down because of illness
616	Water sports
362	Commercial/Trade and administrative services
354	Repairs, vehicle maintenance
221	Study during free time
960	Commuting (travel) connected with recreation,
371	Household management
3211	Cleaning the basement, attic, garage and other utility rooms
614	Ball games and related games

Table A6. Parameter Estimates of Control Variables in Table 9, PolTUS 2013, 47 Activities

	Total time	# activities	Conditional time
Disability status	0.299	-0.308	6.726
	(3.134)	(0.103)	(1.614)
Female	10.081	1.058	-13.194
	(2.622)	(0.079)	(1.183)
Marital status: married	3.707	0.194	-3.584
	(6.126)	(0.180)	(2.562)
Marital status: widowed	3.912	0.435	-4.781
	(5.109)	(0.139)	(1.951)
Education: vocational	-8.891	0.240	-3.584
	(3.296)	(0.111)	(1.562)
Education: secondary	-2.516	0.219	-2.632
	(3.577)	(0.143)	(2.217)
Education: tertiary-BA	-18.652	1.115	-14.509
	(5.120)	(0.156)	(1.794)
Education: tertiary-Master+	-22.093	0.921	-12.935
	(5.146)	(0.146)	(2.036)
# adults in HH = 2	-4.601	-0.309	5.389
	(4.043)	(0.146)	(2.031)
# adults in HH = 3	0.172	-0.874	14.874
	(5.388)	(0.187)	(3.001)
# adults in HH = 4	4.989	-0.775	13.982
	(6.971)	(0.300)	(4.827)
# adults in HH = 5	6.651	-1.274	14.399
	(11.524)	(0.332)	(4.780)
# adults in HH = 6	13.146	-1.717	23.184
	(17.150)	(0.739)	(12.457)
# adults in HH = 7+	41.635	-1.714	18.067
	(9.391)	(0.305)	(5.579)
# children in HH = 1	-3.005	0.057	-1.211
	(7.560)	(0.312)	(4.664)
# children in HH = 2+	-11.398	0.359	-7.178
	(10.632)	(0.318)	(4.884)
Was the day a usual day: No	-35.464	-0.330	0.356
	(5.632)	(0.130)	(1.663)
Diary number = 2	-2.033	-0.098	1.269
	(1.753)	(0.043)	(0.609)
Adj.R^2	0.0438	0.1250	0.1212

[a] Also included are vectors of individual years of age, indicators for day of the week, urban status, and "province."