IPUMS
Working Papers

Navigating COVID-19 Disruptions in U.S. Time Diary Data

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Abstract

The American Time Use Survey (ATUS) is the premier dataset in the U.S. for understanding how Americans allocate their time across the multiple domains of daily life and is ideal for comparing time use during the COVID period and prior to the onset of the COVID-19 pandemic. However, data collection was paused in March 2020 and resumed in May 2020. This paper investigates the impact of this data collection pause and the partial-year sample weights on sample characteristics and time use outcomes. Our recommendation to researchers is to use full-year 2003-2019 data for trend analyses and the COVID-period 2020 data to focus on the impact of the COVID-19 pandemic on changes in time use. Based on several analyses, we conclude that there are multiple options for addressing the gap in 2020 data collection given the robustness of the sample and time use estimates to this omission. Comparing the full year of 2019 data and the May to December 2020 data, our time use analyses indicate that time spent in leisure, telephone calls, and household production increased during the pandemic, while time spent volunteering, traveling, religious activities, and shopping decreased significantly.

Keywords: Time Use; Surveys; COVID-19

Navigating COVID-19 Disruptions in U.S. Time Diary Data

The COVID-19 pandemic disrupted daily routines for nearly all individuals in the United States. The quick spread of the virus created a massive public health crisis, resulting in severely taxed health care systems, policies enacted to curb the spread of infection, and a massive number of deaths. The widespread impacts of the COVID-19 pandemic on daily life are unparalleled in the 21st century, affecting where individuals spend their time, who they are with, and what they do. Examples of disruptions in the rhythms of daily life include distance learning for school children, historic levels of unemployment in the U.S., the quick expansion of remote work, and limited social contact beyond one's household outside of paid work. Inability to interact with non-coresidential family members who provided care for children, and loss of family members who provided care, may have increased parents' time caring for children and reduced time available for other tasks. The long-run implications of the COVID-19 pandemic, including changes in time use, will be the focus of scientific inquiry for years to come.

The ways time is allocated both reflect and reproduce social stratification (Vagni 2020). Understanding the short- and long-term impacts of the COVID-19 pandemic on population-level time use is critically important to advance knowledge about levels, trends, and disparities in economic stability, health, and well-being in the U.S. Numerous data collections were enacted during the pandemic to understand the impacts of COVID-19 on population well-being, including dimensions related to how people spend their time. These data have been used to more fully understand broad changes in time use in response to the pandemic across countries (Cellini et al. 2020; Craig & Churchill 2021a; Gershuny et al. 2021; Giurge 2021; Sullivan et al. 2021); the gendered implications for housework, care work, and leisure (Ruppaner et al. 2021; Craig & Churchill 2021b); and parental time with children (Census Bureau 2021). Pandemic-period data

collections can reveal sociodemographic differences in time use during the pandemic but pre-and post-pandemic *change* in how Americans spend their time is best understood in the context of recent patterns of time allocation. To understand change, we must have a baseline for comparison using comparable data collected before the pandemic and during the pandemic. Additionally, comparable data collected before and during the pandemic is necessary to reveal how the pandemic has affected pre-existing disparities and inequities across population subgroups in the U.S.

The American Time Use Survey (ATUS) is the premier dataset in the U.S. for understanding how Americans allocate their time across the multiple domains of daily life (e.g., work, family, health) and is ideal for comparing time use during the pandemic with time use prior to the onset of the COVID-19 pandemic. These data have been collected annually from 2003 to 2019 and through all months of the year. They were also collected in 2020, though data collection was paused between March 18, 2020 and May 09, 2020 (BLS 2021c).

The COVID-related disruption in ATUS data collection created an unfortunate gap in the availability of nationally representative population-level data on how individuals spend their time during the COVID-19 pandemic. It also presents numerous challenges for analysts of ATUS microdata. The primary decisions researchers using the 2020 ATUS data must make are 1) whether they should combine the pre-COVID data and the COVID-period data from 2020 and 2) how to make comparisons of ATUS 2020 data with ATUS data collected through all months of the year (e.g., across entire years). It is not possible to produce annual estimates of time use in the U.S. for 2020 given the pause in data collection (Bureau of Labor Statistics 2021a). The Bureau of Labor Statistics (BLS) published estimates comparing the May to December 2019 and 2020 periods (Bureau of Labor Statistics 2021a). BLS also created and delivered a set of weights

for the 2020 data that are representative of days when data were collected, which included

January 1 to March 17, 2020 and May 10 to December 31, 2020 (TU20FWGT in original BLS

data and WT20 in IPUMS Time Use). These weights are also provided for 2019. No parallel

weights are provided for 2003-2018. BLS recommends using the existing weights provided

(TU20FWGT for 2020, TUFINLWGT for 2006-2019, and TU06FWGT for 2003-2005 in

original BLS data and WT20 for 2020 and WT06 for 2003-2019 in IPUMS Time Use) but makes

no explicit recommendation about how to handle 2020 data collected before and during the

pandemic (BLS 2021b), though the news release featuring changes in time use between 2019 and

2020 focuses exclusively on the May to December periods (BLS 2021b). This leads to some

ambiguity for analysts of ATUS data.

Restricting analyses that include 2020 to only the May 10 to December 31 period in

previous years limits comparability of new findings with previous research using full-year ATUS

data and reproducibility of research using ATUS data moving forward. For example, trend

analyses of parental time investments in child care using the partial year 2020 data would not

fully account for seasonal variation in children's time in school. Analyses of outdoor physical

activity that exclude the January to March period would miss cold-weather months and/or rainy

seasons in much of the U.S. We undertake analyses of the ATUS sample and time use data to

empirically assess the implications of using a full year of ATUS data when they are available in

conjunction with the partial year of 2020 data. Moreover, we empirically assess the implications

of using full-year ATUS data with partial year 2020 data to estimate the impact of COVID-19 on

broad time-use categories. Our work provides researchers with information on 1) comparisons of

characteristics of the 2020 ATUS sample with the 2019 ATUS sample, which was not affected

by the COVID-19 pandemic; 2) comparisons of time use across various subsets of the 2019

ATUS sample to inform how much variation might be expected in a non-pandemic year of

ATUS data; 3) guidance on how to use 2020 data to analyze trends in time use by making

comparisons with 2019 ATUS data; and 4) estimates of the impact of COVID-19 on broad

categories of time use.

Background
Sample Composition

Data collection for the 2020 ATUS spanned January 1 to March 17 and May 10 to December 31,

2020. Days between March 18 and May 9 are not represented in the 2020 ATUS data because of

the pandemic-driven pause in data collection. The BLS has cautioned users about the limitations

of using the 2020 ATUS to generate estimates about annual time use (Bureau of Labor Statistics

2021a). With data collected throughout the calendar year, seasonal variation in work, school, and

time spent outdoors or with others, for example, due to factors such as weather, school calendars,

holidays, is averaged across time-specific contexts. The disrupted data collection results in an

incomplete set of days in 2020, which means that annual estimates cannot be generated.

Researchers need clear, empirically based guidance on how to properly use this partial year of

data with previous full years of data.

In addition to the 2020 data collection pause, the pandemic may have also impacted the

sampling as a result of non-response to the ATUS. The Current Population Survey (CPS), which

is the sampling frame for the ATUS, was impacted by the pandemic. CPS response rates were

lower during the pandemic, and individuals from higher-income households were more likely to

respond than those from lower-income households, which has implications for statistics

generated using the data (Rothbaum & Bee 2021). It is therefore necessary to evaluate the extent

to which the ATUS sample might have been affected by the COVID-19 pandemic.

Differences within the 2020 ATUS sample and between the 2020 sample and previous years of ATUS data would undermine the utility of the ATUS to inform impacts of the pandemic on time use. BLS-provided probability weights account for over- and under-sampling of demographic groups via their stratified random sampling and survey non-response; BLS has delivered a weight for use with the 2019 and 2020 data that is appropriate for use with the partial-year data collection in 2020 (Bureau of Labor Statistics 2021b). As such, establishing the representativeness and comparability of the 2020 ATUS pandemic-period subsample is our first priority. Our expectation is that the 2020 ATUS pandemic period sample is sufficiently representative given the lack of attention to this issue in the 2020 ATUS User's Guide from BLS.

To address this issue, we compare the demographic characteristics of the 2020 pre-pandemic period (January 1 to March 17) and pandemic period (May 10 to December 31) respondents and make parallel comparisons for the same periods in 2019 as well as comparisons across years of period-specific sample characteristics. For 2019, we use different weighting approaches: specifically no weight, WT06, and WT20 to the full sample and subsamples. For 2020, we compare the data with no weight and WT20 applied. These within year comparisons enable us to determine whether the types of people who responded to the ATUS were different in the two parts of the year. To the extent that there are differences in the sample, they will likely reflect the income differences observed in the CPS (Rosenbaum & Bee 2021). Across year comparisons of the 2019 and 2020 sample composition during the pandemic period and during the pre-pandemic period enable us to identify changes from 2019 for the 2020 ATUS subsample that responded during the pandemic. We will compare demographic characteristics of the subsamples across years for the two periods. Together these within year and across year analyses of the 2019 and 2020 pre-pandemic and pandemic period ATUS subsamples enable us to assess

whether researchers should be concerned about the 2020 ATUS pandemic-period subsample and whether additional adjustments or cautions about the comparisons to the 2020 ATUS are in order.

Time Use

Anecdotal evidence along with evidence from non-representative studies indicate that people in the United States changed their behavior during the COVID-19 pandemic compared to the pre-pandemic period (Giurge 2021; Nagata et al. 2022; Ruppaner et al. 2021; Yan et al. 2021). This evidence is timely and likely reflects reality, but lacks data over time, consistent data collection modes, and population representativeness that are required to accurately depict population-level behavioral changes during the COVID-19 pandemic. This, however, is a key strength of the ATUS.

The primary problem for the research community in using the 2020 ATUS involves how to use the partial year data collection in conjunction with previously collected ATUS data to make inferences about behavioral change. What should be done with the pre-pandemic 2020 data? What diary days from 2003 to 2019 should be used in comparisons with 2020 data? What weights can be used in 2020, 2019, and earlier? Our purpose is to provide guidance for researchers who want to use these data to understand population-level behavioral impacts of the COVID-19 pandemic. We examine population-level changes in broad time use activities to illustrate implications of different approaches to comparing 2020 data with 2003-2019 data.

There are several considerations regarding which diary days to analyze for researchers who want to examine changes in behavior between pre- and during-COVID-19 behavior. The options include 1) using full-year 2019 data and all of the partial year 2020 data, meaning data collected January 1 to March 17 along with data collected May 10 to December 31; 2) using

partial-year 2019 diary days that correspond with partial-year 2020 diary days; 3) using only May to December diary days from 2019 and 2020; 4) using full-year 2019 data and only May to December diary days from 2020. A related consideration is about weights. A full-year weight exists for 2019 but not for 2020 due to the pause in data collection. However, BLS did provide a weight with both the 2019 and 2020 data that represents the days diaries were collected in 2020. Despite dairies being collected throughout the year in 2019, this additional weight on the 2019 data is only calculated for individuals who responded between January 1 to March 17 and May 10 to December 31, 2019; ATUS interviews conducted between March 18 and May 9 do not receive a weight. This weight enables comparisons between 2019 and 2020 ATUS data. Nonetheless, questions remain about which diary days should be used when making 2019 and 2020 comparisons as well as which weight to use for the 2019 data. To inform these questions, we make both within and across year comparisons.

We need to understand the extent to which time use during the January to March and May to December periods is different in 2019. We expect differences in 2020, but how much difference do we see in a year where there was no massive public health crisis? Answering this question is a first step toward informing whether researchers should limit non-pandemic years of ATUS data to the May to December period. Some change across months may be expected due to seasonal effects with January to March constituting winter in most parts of the United States and May to December including summer, fall, and a bit of winter.

We also need to understand how much change in time use is expected across years. To inform this analysis, we will compare January to March across 2019 and 2020, May to December across 2019 and 2020, and all the days from January to March and May to December across 2019 and 2020. The January to March comparison provides a baseline for the change in time use

that occurred across years for these months. We expect little change across 2019 and 2020 for the January to March period because social change is slow. By contrast, we fully expect some change in time use between the May to December days during pre-pandemic and pandemic periods. We also expect differences between all the available data in 2020 and the same days of data in 2019, though they should be attenuated compared to the May to December specific comparisons due to the inclusion of pre-pandemic data in 2020.

Following comparisons of subsets of the ATUS within and across years, we must also assess whether full years of previous data can be compared to the pandemic-period ATUS data covering May to December of 2020 or whether the previous years of ATUS data – that were collected without interruption – should be restricted to the May to December pandemic period during comparisons with the 2020 ATUS. This is a practical decision that every researcher will likely need to make if they want to analyze 2020 ATUS data with any data collected between 2003 and 2018. Researchers have several options for comparing 2019 and 2020 data because of the weights BLS created weights for 2019 that parallel those available for the partial-year 2020 ATUS. But similarly constructed weights are not available for 2003-2018 ATUS data nor is it clear that they need to be created to enable comparisons of 2003-2018 data with 2020.

Evaluating whether to include partial or full years of pre-2020 ATUS when making comparisons with 2020 data depends on both the researcher's question and the extent to which comparing a full year of data with a partial year of data is problematic. The latter is our concern here – specifically, evaluating whether it is appropriate to use a full year of ATUS data for comparisons with partial-year 2020 data. This analysis is possible because the ATUS includes weights for the full-year and partial-year data in 2019, and the full weights are comparable to all previous year weights in the data.

We might expect different results if we compared a full to a partial year of data versus if we compared two partial years of data. Some possible reasons are as follows. First, there are a different number of weekends and weekdays in the full versus partial year data. This is potentially problematic because weekend and weekday time use look different due largely to a disproportionate amount of paid work performed on weekdays. The full-year weights are calibrated to represent the number of person-days in the year and reflect the number of weekend and weekdays. By contrast, the partial-year weights reflect the number of weekend and weekdays during the partial-year data collection. Second, seasonality – for example children being out of school for summer or impacts of warmer/cooler temperatures on population time use – may play a role. These seasonal effects may muddy interpretation of changes due to COVID to the extent that they result in changes that occur throughout the year in the absence of a global pandemic.

We make comparisons of time use between full-year 2019 and partial-year 2020 ATUS data with partial-year 2019 and partial-year 2020 ATUS data to assess the impact of restricting cases in 2019 to include only those from May to December versus using the full year of data. If we see coefficients from both comparisons that are similar in magnitude and statistical significance across the comparisons, this increases our confidence that there is little risk in using full years of data in the 2003 to 2019 period for comparisons to the 2020 pandemic period (May to December). However, if the magnitude of differences between the full-year and partial-year 2019 to partial-year 2020 analyses is large, that would raise concerns about making comparisons between full years of ATUS data (2003-2019) and the 2020 partial-year pandemic data

Data and Methods
The ATUS is the only ongoing federally funded data collection on the way Americans spend their time. It has been fielded annually since 2003 and has been the primary source of

information on a wide range of daily activities and interactions. The ATUS is unique in

collecting information about all activities engaged in for a 24 hour period, including time in

unpaid work (housework, child and elder care, volunteering) and health-related activities (e.g.,

sleeping, exercising, and seeking and receiving medical care). ATUS data also provide

information about where people spend their time and with whom they spend time.

The ATUS is the largest nationally representative time use data set collected in the U.S.,

with around 12,000 persons surveyed annually. ATUS respondents are randomly selected from

households in the Current Population Survey (CPS). Respondents are selected 2-5 months

following their completion of the CPS survey (which is given over eight months across two

years). The survey information collected as a part of the CPS in the final month is included with

the ATUS data, in addition to additional demographic and economic questions asked at the time

of the ATUS. The resulting rich survey data on demographic, socioeconomic, and household

characteristics are available for all ATUS respondents.

We obtained ATUS data for our analyses (2019 and 2020) from IPUMS Time Use

(www.atusdata.org; Hofferth et al 2020). As stated earlier, the main limitation of the 2020 data is

that they do not include diaries between March 18 and May 9 due to a pause in data collection as

a result of the COVID-19 pandemic. Therefore, it is not possible to generate full-year estimates

using the 2020 ATUS (Bureau of Labor Statistics 2021b) or know how Americans were

spending their time during the data collection pause in 2020. Our contribution is to use the 2019

data to investigate the implications of the 2020 partial-year sample for sample characteristics and

time use. This comparison is possible because the 2019 data span the entire year and include

both full-year weights and weights for the subset of cases whose diaries were collected on the

same dates as those available in the 2020 ATUS (January 1 to March 17, 2020 and May 10 to

December 31, 2020).

We use 2019 and 2020 ATUS data to compare ATUS sample characteristics and time

use. For these analyses, we identify four subsamples using the date of the interview (DATE in

IPUMS ATUS and TUDIARYDATE in ATUS data from BLS):

- January 1 to December 31: full year of ATUS data. Note this set of days is not available

  in 2020 due to the data collection pause.

- January 1 to March 17 and May 10 to December 31: pre-pandemic (January 1 to March

  17) and pandemic (May 10 to December 31) periods corresponding to the 2020 ATUS

  data collection. This set of days omits people in 2019 who completed time diaries

  between March 19 and May 9.

- January 1 to March 17: pre-pandemic period respondents. Diaries on this set of days were

  completed before the 2020 ATUS data collection pause. Note that despite having full-

  year data in 2019, we also identify this sample in 2019 for comparisons to 2020.

- May 10 to December 31: pandemic-period respondents. Diaries on this set of days were

  completed after the 2020 ATUS data collection pause. Note that despite having full-year

  data in 2019, we also identify this set of days in 2019 for comparisons to 2020.

We use t-tests to compare sample characteristics and time use of our four subsamples of

ATUS respondents within 2019 and 2020. We also estimate OLS models and present differences

in time use within and across years adjusted for demographic and socioeconomic characteristics.

An additional set of across year OLS models focuses on multiple comparisons between 2019 and

2020 using different subsamples of the data to illustrate the sensitivity of results to different

specifications.

Results
Sample

In Table 1, we present weighted and unweighted sample characteristics by four subsamples in 2019 and three subsamples in 2020. We present all 2019 subsamples unweighted, weighted using WT06 (the full-year weight), and weighted using WT20 (the partial-year weight). For 2020, we present the subsamples unweighted and weighted with WT20.

Our results show few statistically significant differences across the 2019 subsamples. This indicates that during a typical year without a global pandemic, the characteristics of ATUS respondents who complete diaries during different parts of the year are similar. We find small differences across different weighting strategies in the distribution of education and household size. Using both the full-year and partial-year weights in 2019, we find a higher share of ATUS respondents with a high school degree or some college among those who completed diaries between May 10 to December 31 compared to January 1 to March 17. Similarly, applying WT20, a larger share of 2019 ATUS respondents from May 10 to December 31 compared to January 1 to March 17 lived in households with only one adult.

The 2020 subsamples are also quite similar to one another. There are more differences between the January 1 to March 17 and May 10 to December 31 respondents in 2020 in the unweighted analyses compared to the analyses using WT20. The only difference between these two 2020 subsamples that remains after applying weights is in the share of employed respondents, which was lower in the May 10 to December 31 period compared to the January 1 to March 17 period. Given the high unemployment rates during the COVID-19 pandemic, this difference is expected.

We compare the May 10 to December 31 subsample across years unweighted and weighted using WT20. The unweighted sample characteristics show that the 2020 pandemic-

period subsample compared to the same May 10 to December 31 days in 2019 has fewer

employed respondents, differences in living arrangements (a higher share of respondents living

with a larger number of adults and a higher share with children), and more individuals living in

higher income compared to lower income households. Only employment and income differences

remain in the weighted comparisons.

When we compare the May 10 to December 31, 2020 subsample (using WT20) with the

full year of 2019 data (using WT06), we find similar differences in employment and income as

we see in the May 10 to December 31 subsample comparisons. In addition, the May 10 to

December 31, 2020 subsample is more likely to include respondents whose living arrangements

include more adults.

The results presented in Table 1 show that the sample characteristics, especially the

weighted sample characteristics, of the various 2019 and 2020 ATUS samples are remarkably

similar. The significant differences that occur when using the pandemic-period 2020 sample are

in characteristics likely impacted by the COVID pandemic (employment and income). These

results suggest differences in time use outcomes from the pandemic-period 2020 to the various

2019 samples and the early 2020 sample will not be driven primarily by differences in sample-

level characteristics.

Time Use

Unadjusted Differences with Year

In Table 2, we present weighted and unweighted daily minutes spent in broad activity categories

for all subsamples in 2019 and 2020. These results indicate the kinds of seasonal effects in time

use that occur in 2019, which was a typical year, and serve as our baseline for what we would

expect in 2020 in the absence of a pandemic. Unweighted and weighted means are largely

similar within 2019 samples. In 2019, there are consistently lower amounts of time in

educational activities during May 10 to December 31 compared to January 1 to March 17. A

reasonable explanation is that May through December include summer months when most

children are out of school. Additionally, ATUS respondents spend more time in household

activities, which include lawn care and outdoor household maintenance; sports, exercise, and

recreation; and travel in May to December versus January to March. These differences likely

reflect individuals spending more time outdoors during warm weather. We observe differences in

these activities, as well as several others discussed in more detail in the next section, when we

compare the same months in 2020 periods.

Adjusted Differences within Year

In Table 3 we present unweighted and weighted comparisons of daily minutes spent in broad

activities adjusting for characteristics in Table 1. The focus of our comparison is within year

(2019 and 2020) differences in time use between January 1 to March 17 and May 10 to

December 31. The regression coefficients indicate the differences between May 10 to December

31 compared with January 1 to March 17. We assume that the 2019 results are what we would

have expected to see in 2020 if not for the COVID-19 pandemic. Net of controls, we find in 2019

more time spent in household activities regardless of weight used and more time spent making

consumer purchases in May to December compared to January to March under each

specification. The difference in household activities is also present in 2020 when WT20 is

applied, but there is no significant difference in consumer purchases in 2020. Other significant

differences comparing the May to December 2020 period with the January to March 2020 period

include increased time spent in household service activities and socializing, relaxing, and leisure;

and decreased time in sports, exercise, and recreation; traveling; and work and work-related activities.

Adjusted Differences across Years

In Table 4, we make weighted (using WT20) and unweighted comparisons between 2019 and 2020 for the January to March and May to December periods. In January to March 2020 compared with January to March 2019, we see small decreases in eating and drinking and traveling; differences between telephone calls and religious and spiritual activities are marginally significant. In May to December 2020 compared with May to December 2019, we see an increase in time spent in household activities, telephone calls, and socializing, relaxing, and leisure and decreases in consumer purchases, religious and spiritual activities, traveling, and volunteer activities in both weighted and unweighted models. All else equal, we would expect the differences across years to be fairly similar in magnitude regardless of the set of months (e.g., January to March or May to December) we are analyzing. The 2019 and 2020 differences in religious and spiritual activities are similar for the January to March and May to December periods. However, the rest of the 2019-2020 differences we observe are much larger in magnitude during May to December than during January to March. This pattern provides evidence that the COVID-19 pandemic has impacted average population-level time use.

Full year and partial year time use comparisons

To evaluate the impact of using a full year versus a partial year of data, we estimated the time spent in broad activity categories comparing the 2020 May 10 to December 31 pandemic period to the full 2019 data and the May to Dec 2019 period (as well as additional specifications for reference purposes). We used WT06 to weight the full year 2019 data, because it is the appropriate weight to generate full-year estimates for 2019 and earlier years of ATUS, and we

used WT20 to weight the May to December 2019 and 2020 data.[1] We select this pair of years

because 2019 had no interruptions in data collection and the availability of the partial-year

weight (WT20). The latter weight allows for comparisons of the 2020 May to December

pandemic period with both full and partial subsets of the 2019 data. Table 5 shows these

estimates of the pandemic effect on broad activity categories. The final two columns of Table 5

show that results are robust to comparing pandemic-period data (May to December 2020) with

the same partial year in 2019 or with the full year of 2019 data. The results show that, after

controlling for individual, household and diary day characteristics, the pandemic was associated,

on average, with 12.5 minutes more housework, 3.5 minutes more time spent on the phone, and

28 more minutes of leisure time, which includes television watching, per day. The pandemic

period was also associated with daily reductions of time spent in consumer purchases (4.8

minutes), religious activities (1.9 minutes), traveling (26 minutes), and volunteering (2.9 min).

Figure 1 illustrates differences between the 2020 pandemic period (May to December) and the

full year of 2019 data graphically. These results are similar to results produced by BLS using the

May to December sample from 2019 (Bureau of Labor Statistics 2021a).

Discussion

The availability of population-representative time use data prior to and during the COVID-19

pandemic is a national treasure. The ATUS is an unparalleled resource for researchers seeking to

understand the COVID-19 pandemic's impact on levels, trends, and disparities in American's

time use, which has implications for health and well-being. But a 2020 pause in data collection

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[1] We also performed these analyses with the full year 2018 data and 2019 data, and with the full year 2018 and the partial year (May 17 to December 31) subsample with and without the WT06 weights (and WT20 in 2019). This replication showed that, weighted or unweighted, using a full year of data or a partial year of data made no meaningful difference in the magnitude of differences between 2018 and 2019 or the statistical significance. Results available upon request from authors.

raises questions for analysts about *how* to properly use these data to understand change due to the COVID-19 pandemic. In this paper, we conducted in-depth analyses of 2020 ATUS data and present results that will help analysts choose how to proceed with research using these data.

To recap the issue, ATUS data have been collected annually between 2003 and 2019 and data would have been collected throughout 2020 if not for the COVID-19 pandemic. Because of the COVID-19 pandemic, there was a pause in ATUS data collection pause between March 18 and May 9, 2020. The gap in data collection, availability of COVID-period data for only part of 2020, and concerns with non-response in the Current Population Survey, which is the ATUS sampling frame, raise several questions about whether to use the 2020 data collected prior to the pandemic, how to make comparisons between 2020 and previous years of data, and a more practical consideration of what weights to use for comparisons of 2020 with earlier years of data.

We conduct a thorough analysis of the 2020 ATUS sample. We make comparisons between the 2020 pre-pandemic data (collected January 1 to March 17) and the pandemic data (collected May 10 to December 31), the same days in 2019, and comparisons across years. The differences we observe within years are limited, with differences in 2020 consistent with other statistics about how the COVID-19 pandemic affected living arrangements, income, and employment. We conclude that researchers need not be concerned about the quality and coverage of the ATUS sample across the 2020 period.

Our analyses of time use within 2019 and 2020 and between 2019 and 2020 indicate variation within 2020 is larger than what we would expect based on the same comparisons in 2019. The differences we observe in 2020 compared to 2019 correspond to what we would expect during COVID-19 lockdown periods. In the latter part of 2020, we find increases in time spent obtaining household services done by someone else (e.g., cleaning, home repairs) and in

leisure along with decreases in sports, exercise, and recreation; traveling; and paid work activities. Compared to what we would expect based on time use in 2019, we observe more time in leisure in May to December 2020 compared to January to March 2020 and less time in travel and consumer purchases (results available upon request).

A key question we sought to address in this paper is which data from 2003-2019 should be used in comparisons with the 2020 pandemic period. Given the similarity of results based on comparisons across different periods and weighting schemes, we recommend that researchers who want to understand how the COVID-19 pandemic impacted time use compare the May to December 2020 data with full-year data from 2003-2019 using available weights (WT06 in IPUMS Time Use) as appropriate for their research question. The results we show in Figure 1 are similar to the estimates that BLS produced using the May to December periods of 2019 and 2020. The primary advantage of using the full year of ATUS data when they exist includes comparability with the extant research using full years of ATUS data.

Our recommendation for the 2020 data is to use only the May to December data if the goal is to focus on changes in time use between the pre-pandemic and COVID-19 pandemic periods. Using all of the 2020 data attenuates the size of coefficients compared to restricting to the May to December 2020 period, but all results are in the same direction and still achieve statistical significance. As analysts ponder what to do with the 2020 data into the future, when the focus may be less on the pandemic and more on change over time more generally, they may decide that using the full year of 2020 data is more appropriate.

The results from this paper show that during the early pandemic-period in 2020, Americans were spending more time at home and less time away from home, increasing the motivation for individuals to tackle home improvement projects during a period when competing

priorities were limited. And despite a recession, Americans were spending more time in leisure again as a replacement for activities that they did prior to the pandemic, which for many Americans included traveling to work and shopping. That said, aggregate patterns like these mask the nuanced differences likely experienced by different segments of the population. For example, there were sharp divides along demographic and socioeconomic lines among essential workers and those who could perform their work at home and the parents who were suddenly juggling paid work with children's distance learning. The likely uneven consequences of the pandemic are ripe for investigation. The analyses conducted in this paper provide analysts of ATUS data with a blueprint for navigating the partial-year 2020 data and making comparisons with ATUS data collected between 2003 and 2019.

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Table 1. Comparisons of ATUS sample characteristics within and across 2019 and 2020 using various weights

| | 2019 | | | | | | | | | | | | | | 2020 | | | | | | | |
| | Unweighted | | | | | WT06 | | | | | WT20 | | | | Unweighted | | | | WT20 | | | |
Characteristic	Jan 1-Dec 31	Jan 1-Mar 17 + May 10-Dec 31	Jan 1-Mar 17	May 10-Dec 31	sig	Jan 1-Dec 31	Jan 1-Mar 17 + May 10-Dec 31	Jan 1-Mar 17	May 10-Dec 31	sig	Jan 1-Dec 31	Jan 1-Mar 17	May 10-Dec 31	sig	Jan 1-Dec 31	Jan 1-Mar 17	May 10-Dec 31	sig	Jan 1-Dec 31	Jan 1-Mar 17	May 10-Dec 31	sig
White, non-Hispanic	0.80	0.80	0.79	0.81		0.80	0.80	0.80	0.80		0.80	0.80	0.80		0.81	0.80	0.81		0.80	0.79	0.80	
Black, non-Hispanic	0.13	0.13	0.14	0.13		0.13	0.12	0.12	0.13		0.13	0.12	0.13		0.12	0.12	0.12	D	0.13	0.12	0.13	
Other Race, non-Hispanic	0.07	0.07	0.07	0.07		0.07	0.08	0.08	0.07		0.07	0.08	0.07		0.07	0.08	0.07		0.08	0.08	0.07	
Hispanic	0.14	0.14	0.14	0.14		0.17	0.17	0.17	0.17		0.17	0.17	0.17		0.14	0.16	0.14	A	0.17	0.17	0.17	
Employed	0.61	0.60	0.60	0.60		0.63	0.63	0.62	0.63		0.63	0.62	0.63		0.58	0.60	0.57	ACD	0.60	0.65	0.59	ACD
One adult	0.32	0.32	0.32	0.32		0.18	0.19	0.17	0.19		0.19	0.17	0.19	A	0.31	0.32	0.30	CD	0.19	0.18	0.19	
Two adults	0.53	0.53	0.53	0.53		0.55	0.55	0.57	0.55		0.55	0.57	0.55		0.54	0.53	0.54		0.53	0.55	0.52	D
Three or more adults	0.15	0.15	0.14	0.15		0.27	0.26	0.26	0.26		0.26	0.26	0.26		0.16	0.15	0.16	CD	0.28	0.28	0.29	D
Less than $25,000	0.19	0.19	0.19	0.19		0.16	0.16	0.16	0.16		0.16	0.16	0.16		0.16	0.17	0.16	ACD	0.13	0.13	0.13	CD
$25,000-$49,999	0.23	0.23	0.23	0.23		0.22	0.22	0.21	0.22		0.22	0.21	0.22		0.22	0.23	0.22		0.21	0.22	0.21	
$50,000-$74,999	0.18	0.18	0.19	0.18		0.19	0.19	0.19	0.19		0.19	0.19	0.19		0.19	0.18	0.19		0.19	0.19	0.18	
$75,000-$149,999	0.26	0.26	0.26	0.27		0.28	0.28	0.30	0.28		0.28	0.30	0.28		0.28	0.27	0.28	D	0.30	0.31	0.30	CD
$150,000 or more	0.13	0.14	0.14	0.14		0.14	0.14	0.14	0.15		0.14	0.14	0.15		0.15	0.15	0.15	CD	0.17	0.16	0.17	CD
Married	0.49	0.49	0.48	0.49		0.51	0.50	0.51	0.50		0.51	0.51	0.50		0.50	0.49	0.51	D	0.51	0.52	0.50	
Cohabiting	0.04	0.04	0.05	0.04		0.06	0.06	0.07	0.05		0.06	0.07	0.05		0.04	0.04	0.04		0.05	0.06	0.05	
Single	0.47	0.47	0.48	0.47		0.44	0.44	0.42	0.44		0.44	0.43	0.44		0.46	0.47	0.46		0.44	0.43	0.44	
Female	0.54	0.54	0.53	0.54		0.52	0.52	0.51	0.52		0.52	0.52	0.52		0.54	0.55	0.54		0.52	0.52	0.52	
Less than High School	0.11	0.11	0.12	0.10		0.14	0.15	0.17	0.14		0.15	0.16	0.14		0.10	0.09	0.10		0.14	0.13	0.14	
High School or Some College	0.50	0.50	0.48	0.50		0.52	0.51	0.48	0.52	A	0.51	0.48	0.52	A	0.49	0.50	0.49		0.50	0.50	0.50	
College Degree	0.40	0.40	0.40	0.39		0.34	0.34	0.36	0.34		0.34	0.36	0.34		0.41	0.41	0.41		0.36	0.37	0.36	
No children <18	0.70	0.71	0.70	0.71		0.74	0.75	0.74	0.75		0.74	0.75	0.74		0.72	0.71	0.73	CD	0.75	0.74	0.75	
One child <18	0.12	0.12	0.13	0.12		0.11	0.11	0.12	0.10		0.11	0.12	0.11		0.11	0.11	0.11	D	0.10	0.10	0.10	
Two children <18	0.12	0.12	0.11	0.12		0.09	0.09	0.09	0.10		0.09	0.09	0.10		0.12	0.12	0.12		0.10	0.11	0.10	
Three or more children <18	0.06	0.06	0.06	0.06		0.05	0.05	0.05	0.06		0.06	0.05	0.06		0.06	0.06	0.05	CD	0.05	0.06	0.05	
Weekday (Monday-Friday)	0.49	0.49	0.49	0.49		0.72	0.71	0.71	0.71		0.71	0.71	0.71		0.50	0.50	0.50		0.72	0.71	0.72	
15-29	0.14	0.14	0.13	0.14		0.25	0.25	0.24	0.25		0.25	0.25	0.25		0.14	0.13	0.14		0.24	0.24	0.24	
30-39	0.17	0.17	0.17	0.17		0.16	0.16	0.17	0.16		0.16	0.16	0.16		0.17	0.19	0.17		0.17	0.17	0.17	
40-49	0.16	0.16	0.17	0.16		0.15	0.15	0.16	0.15		0.15	0.15	0.15		0.16	0.16	0.15		0.15	0.15	0.15	
50-59	0.16	0.16	0.17	0.16		0.16	0.16	0.16	0.16		0.16	0.16	0.16		0.16	0.15	0.16		0.16	0.16	0.16	
60-69	0.18	0.18	0.18	0.18		0.14	0.15	0.14	0.15		0.14	0.14	0.14		0.18	0.18	0.18		0.15	0.15	0.15	
70-79	0.13	0.13	0.12	0.13		0.09	0.10	0.09	0.10		0.09	0.09	0.10		0.13	0.12	0.14		0.10	0.09	0.10	
80+	0.06	0.06	0.06	0.06		0.04	0.04	0.04	0.04		0.04	0.04	0.04		0.06	0.06	0.06		0.04	0.05	0.04	

Notes:

A The sig column indicates that within year and weight specification the January 1-March 17 subsample is different than the May 10-December 31 subsample.

B The sig column indicates that within year and weight specification the May 10-December 31 subsample is different than the January-December full year sample.

C The sig column indicates that within weight specification the May 10-December 31 subsample is different in 2019 and 2020.

D The sig column indicates that for the given weight specification the May 10-December 31 2020 subsample is different than the January-December 2019 full year sample. Note that the 2019 weight for this analysis is WT06.

Table 2. ATUS average time use in 2019 and 2020 using various weights

| | 2019 | | | | | | | | | | | |
| | Unweighted | | | | WT06 | | | | WT20 | | | |
	Jan 1-Dec 31	Jan 1-Mar 17 + May 10-Dec 31	Jan 1-Mar 17	May 10-Dec 31	Jan 1-Dec 31	Jan 1-Mar 17 + May 10-Dec 31	Jan 1-Mar 17	May 10-Dec 31	Jan 1-Dec 31	Jan 1-Mar 17 + May 10-Dec 31	Jan 1-Mar 17	May 10-Dec 31
Caring for and helping household members	28.7	28.6	28.6	28.6	24.5	24.4	23.9	24.6	24.6	24.6	23.9	24.8
Caring for and helping non-household members	9.2	8.9	8.3	9.1	8.0	8.0	7.7	8.1	8.1	8.1	8.0	8.1
Educational activities	11.8	11.6	16.1	10.0 *	26.0	25.8	34.4	23.0 *	25.5	25.5	34.6	22.6 *
Eating and drinking	64.8	65.0	64.4	65.2	63.8	64.1	65.1	63.7	64.0	64.0	65.3	63.6
Government services and civic obligations	0.2	0.2	0.4	0.2	0.3	0.2	0.4	0.2	0.2	0.2	0.4	0.2
Household activities	122.1	122.7	117.3	124.7 *	106.9	107.5	99.3	110.1 *	107.2	107.2	99.6	109.7 *
Household services	0.9	1.0	0.7	1.1	0.9	0.9	0.7	0.9	0.9	0.9	0.7	0.9
Personal care	580.9	580.5	584.7	579.0	576.3	576.6	576.2	576.7	576.5	576.5	577.4	576.2
Telephone calls	7.1	7.2	8.2	6.9	6.6	6.7	7.2	6.6	6.7	6.7	7.2	6.6
Professional and personal care services	4.9	4.9	4.9	4.8	5.3	5.4	5.7	5.3	5.4	5.4	5.9	5.3
Consumer purchases	23.7	23.5	22.2	24.0	21.0	20.7	18.9	21.4	20.8	20.8	19.4	21.3
Religious and spiritual activities	12.2	12.5	12.9	12.3	8.2	8.2	9.8	7.7	8.2	8.2	9.8	7.7
Socializing, relaxing, and leisure	308.8	310.7	315.5	309.0	278.2	279.9	281.4	279.5	279.6	279.6	282.4	278.7
Sports, exercise, and recreation	19.4	19.3	15.1	20.9 *	20.1	20.0	16.1	21.3 *	19.8	19.8	16.0	21.0
Traveling	70.3	69.7	65.4	71.2 *	72.7	71.7	68.3	72.9	72.1	72.1	68.1	73.4 *
Volunteer activities	8.9	8.8	9.2	8.7	7.5	7.4	6.9	7.6	7.4	7.4	6.9	7.6
Working and Work-related Activities	151.7	150.0	150.2	150.0	200.0	198.5	202.9	197.0	199.1	199.1	199.4	199.0

Notes:

*The sig column indicates that within weight specification the May 10-December 31 subsample is different in 2019 and 2020.

Table 2 (continued). ATUS average time use in 2019 and 2020 using various weights

	2020						
Unweighted				WT20			
Jan 1-Dec 31	Jan 1-Mar 17 + May 10-Dec 31	Jan 1-Mar 17	May 10-Dec 31	Jan 1-Dec 31	Jan 1-Mar 17 + May 10-Dec 31	Jan 1-Mar 17	May 10-Dec 31
	28.3	30.1	27.8		25.9	26.7	25.6
	8.7	7.4	9.1		7.9	5.9	8.5 *
	11.4	14.8	10.4 *		24.8	31.5	22.7
	65.4	62.3	66.4 *		63.2	60.7	64.0 *
	0.2	0.3	0.2		0.2	0.2	0.2
	137.1	119.1	142.8 *		118.4	103.0	123.5 *
	0.9	0.7	1.0		0.8	0.5	0.9 *
	586.0	591.6	584.2 *		581.1	583.4	580.4
	9.7	7.1	10.5 *		9.1	5.5	10.2 *
	4.8	6.3	4.4 *		5.6	7.2	5.1
	19.7	21.6	19.1 *		17.4	19.5	16.7 *
	8.6	10.6	7.9 *		6.1	7.4	5.7 *
	324.4	308.8	329.4 *		303.2	284.5	309.2 *
	21.9	17.7	23.2 *		21.0	16.6	22.4 *
	49.3	60.2	45.9 *		51.1	63.1	47.2 *
	6.2	9.2	5.2 *		5.4	6.9	5.0
	144.4	157.9	140.1 *		186.9	203.7	181.4 *

Table 3. Adjusted differences in average time use in May to December versus January to March 2019 and 2020 using various weights

	2019			2020	
	Unweighted	WT06	WT20	Unweighted	WT20
	May 10-Dec 31 vs Jan 1-Mar 17	May 10-Dec 31 vs Jan 1-Mar 17	May 10-Dec 31 vs Jan 1-Mar 17	May 10-Dec 31 vs Jan 1-Mar 17	May 10-Dec 31 vs Jan 1-Mar 17
Caring for and helping household members	-4.0	-2.9	-2.3	0.3	0.2
	(4.0)	(4.4)	(4.1)	(3.6)	(4.1)
Caring for and helping non-household members	1.4	0.4	0.3	0.9	1.7
	(2.1)	(2.2)	(2.3)	(1.8)	(2.3)
Educational activities	-5.2	-3.1	-3.5	-3.7	-17.2
	(4.7)	(9.9)	(10.0)	(4.1)	(10.6)
Eating and drinking	-1.1	-2.9	-2.6	1.3	0.0
	(2.9)	(3.8)	(3.8)	(2.6)	(3.4)
Government services and civic obligations	-0.5	-0.5	-0.5	-0.4	-0.2
	(0.5)	(0.5)	(0.5)	(0.4)	(0.3)
Household activities	4.7	14.0+	14.1+	13.6	19.4*
	(7.2)	(8.0)	(8.0)	(8.4)	(9.0)
Household services	0.4	0.8	0.8	0.9	0.7*
	(0.8)	(0.7)	(0.7)	(0.6)	(0.3)
Personal care	1.7	12.6	11.0	-3.3	5.8
	(7.8)	(9.7)	(9.6)	(8.0)	(8.8)
Telephone calls	-2.1	-3.4	-3.3	3.8+	4.4
	(1.4)	(2.1)	(2.1)	(2.0)	(3.0)
Professional and personal care services	-0.7	-0.1	-0.6	1.5	2.0
	(1.7)	(2.1)	(2.2)	(1.6)	(1.7)
Consumer purchases	6.2*	8.7**	8.6**	3.1	-1.8
	(3.0)	(2.9)	(2.9)	(2.4)	(3.0)
Religious and spiritual activities	1.5	0.2	0.0	-1.8	-1.2
	(2.5)	(2.9)	(2.9)	(1.9)	(1.7)
Socializing, relaxing, and leisure	-0.9	-2.2	-4.0	34.2**	39.2**
	(11.1)	(15.0)	(15.1)	(11.5)	(13.8)
Sports, exercise, and recreation	1.2	-0.1	0.1	-8.2**	-9.7**
	(2.5)	(3.3)	(3.2)	(2.6)	(3.6)
Traveling	-1.1	-3.9	-3.4	-9.5*	-12.1*
	(4.3)	(5.5)	(5.3)	(4.2)	(5.6)
Volunteer activities	-2.6	0.1	0.1	-7.9**	-3.0
	(2.6)	(2.6)	(2.5)	(2.9)	(2.5)
Working and Work-related Activities	-0.9	-20.4	-17.6	-25.7*	-29.4*
	(10.2)	(14.7)	(14.5)	(10.5)	(15.0)

Note: coefficients show differences between January-March (reference) and May-December time use during specified years.

Table 4. Adjusted ATUS average time use in January to March 2020 and May to December 2020 compared to the same periods in 2019 using various weights

	Unweighted	WT20	Unweighted	WT20
	Jan 1-Mar 17 2020 vs Jan 1-Mar 17 2019	Jan 1-Mar 17 2020 vs Jan 1-Mar 17 2019	May 10-Dec 31 2020 vs May 10-Dec 31 2019	May 10-Dec 31 2020 vs May 10-Dec 31 2019
Caring for and helping household members	0.6 (2.2)	2.3 (2.6)	-0.1 (1.2)	0.6 (1.3)
Caring for and helping non-household members	-1.1 (1.4)	-2.0 (1.6)	-0.2 (0.8)	0.3 (1.0)
Educational activities	-0.7 (2.2)	0.3 (5.2)	-0.9 (1.1)	-2.3 (3.0)
Eating and drinking	-2.7+ (1.5)	-4.6* (2.0)	0.5 (0.9)	-0.3 (1.0)
Government services and civic obligations	-0.1 (0.2)	-0.2 (0.2)	0.0 (0.1)	-0.0 (0.1)
Household activities	0.4 (4.0)	4.5 (4.5)	16.9*** (2.5)	12.2*** (2.8)
Household services	0.0 (0.3)	-0.3 (0.3)	-0.1 (0.2)	-0.0 (0.2)
Personal care	8.4+ (4.3)	8.0 (5.3)	5.3* (2.4)	3.1 (3.2)
Telephone calls	-1.1 (0.9)	-1.5+ (0.9)	3.5*** (0.6)	3.3*** (0.8)
Professional and personal care services	1.2 (0.9)	1.4 (1.2)	-0.5 (0.5)	-0.4 (0.6)
Consumer purchases	-0.8 (1.4)	-0.0 (1.6)	-4.6*** (0.8)	-4.8*** (1.0)
Religious and spiritual activities	-1.9 (1.3)	-2.2+ (1.3)	-4.0*** (0.7)	-2.0*** (0.6)
Socializing, relaxing, and leisure	-2.3 (6.0)	8.3 (7.7)	19.5*** (3.5)	27.9*** (4.6)
Sports, exercise, and recreation	2.7+ (1.5)	0.9 (2.4)	1.2 (1.1)	0.1 (1.6)
Traveling	-6.2** (2.2)	-6.3* (2.7)	-25.2*** (1.4)	-26.2*** (2.0)
Volunteer activities	-0.1 (1.5)	-0.4 (1.2)	-3.7*** (0.7)	-2.9*** (0.8)
Working and Work-related Activities	5.4 (5.6)	-6.5 (8.2)	-5.4 (3.3)	-6.6 (4.6)

Note: coefficients show differences between 2020 and 2019 (reference) time use during specified months.

Table 5. Adjusted ATUS average time use in 2020 compared to 2019 using various weights

	WT20	WT06 in 2019 and WT20 in 2020	WT20	WT06 in 2019 and WT20 in 2020
	Jan 1-Mar 17 + May 10-Dec31 2019 vs Jan 1-Mar 17 + May 10- Dec 31 2020	Jan 1-Dec 31 2019 vs Jan 1-Mar 17 + May 10-Dec 31 2020	May 10-Dec 31 2019 vs May 10-Dec 31 2020	Jan 1-Dec 31 2019 vs May 10-Dec 31 2020
Caring for and helping household members	0.9	0.8	0.6	0.4
	(1.2)	(1.2)	(1.3)	(1.3)
Caring for and helping non-household members	-0.3	-0.4	0.3	0.1
	(0.9)	(0.8)	(1.0)	(1.0)
Educational activities	-1.9	-1.8	-2.3	-2.4
	(2.6)	(2.5)	(3.0)	(2.9)
Eating and drinking	-1.4	-1.4	-0.3	-0.4
	(0.9)	(0.9)	(1.0)	(1.0)
Government services and civic obligations	-0.1	-0.1	-0.0	-0.0
	(0.1)	(0.1)	(0.1)	(0.1)
Household activities	10.1***	10.5***	12.2***	12.5***
	(2.4)	(2.3)	(2.8)	(2.8)
Household services	-0.1	-0.0	-0.0	0.0
	(0.2)	(0.2)	(0.2)	(0.2)
Personal care	4.6+	4.0	3.1	2.5
	(2.7)	(2.7)	(3.2)	(3.1)
Telephone calls	2.2**	2.3***	3.3***	3.5***
	(0.7)	(0.7)	(0.8)	(0.8)
Professional and personal care services	0.0	-0.0	-0.4	-0.3
	(0.6)	(0.6)	(0.6)	(0.6)
Consumer purchases	-3.6***	-3.7***	-4.8***	-4.8***
	(0.9)	(0.8)	(1.0)	(1.0)
Religious and spiritual activities	-2.1***	-1.9***	-2.0***	-1.9***
	(0.5)	(0.5)	(0.6)	(0.6)
Socializing, relaxing, and leisure	23.3***	23.6***	27.9***	28.3***
	(4.0)	(3.9)	(4.6)	(4.5)
Sports, exercise, and recreation	0.4	-0.2	0.1	-0.4
	(1.3)	(1.3)	(1.6)	(1.6)
Traveling	-21.3***	-21.3***	-26.2***	-26.1***
	(1.6)	(1.6)	(2.0)	(1.9)
Volunteer activities	-2.2***	-2.2***	-2.9***	-2.9***
	(0.7)	(0.7)	(0.8)	(0.8)
Working and Work-related Activities	-6.6	-6.2	-6.6	-5.8
	(4.0)	(4.0)	(4.6)	(4.5)

Note: coefficients show differences between 2020 and 2019 (reference) time use during specified months.

Figure 1. Predicted Time Use in 2019 and 2020

Legend:
- January-December, 2019
- May10-December 31, 2020

Category	January-December, 2019	May10-December 31, 2020
Telephone calls	6.9	10.3
Volunteer activities	8.3	5.7
Religious and spiritual activities	11.2	9.0
Consumer purchases	23.8	19.1
Traveling	71.0	44.9
Household activities	123.0	137.3
Socializing, relaxing, and leisure	306.3	335.7