

Data Collection During the COVID-19 Pandemic for the Survey of Income and Program Participation

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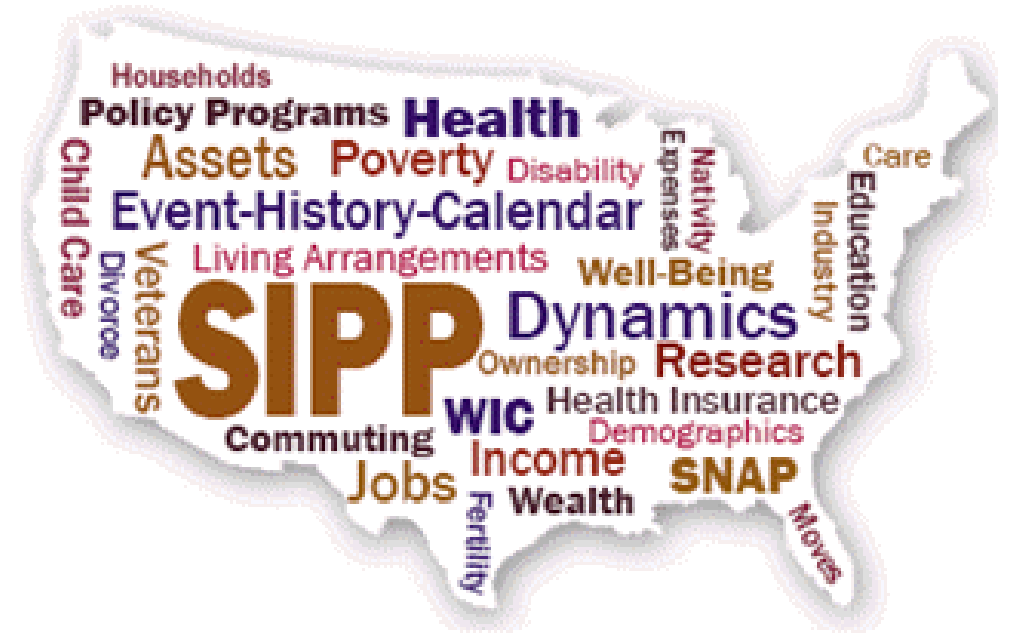
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About the SIPP

- 53,000 Households sampled annually
- Conducted primarily by field interviewers
- Longitudinal panel survey consisting of both new (wave 1) and returning (wave 2+) sample
- Utilizes case prioritization methodologies since 2016



Chief uses of the SIPP:

- Allows for examination of the interaction between tax, transfer, and other government and private policies
- Government policy formulators depend heavily upon SIPP for information on the distribution of income and the success of government assistance programs.

Case Prioritization Methodology

- **Goal:** The primary goal is to ensure that the respondents are representative of the United States population
- SIPP identifies and prioritizes cases that will likely require more days to finish or will likely have a large impact on representation to help achieve a representative sample
- Similarly, SIPP identifies and deprioritizes cases will likely not have a large impact on representation or are unlikely to respond to help free interviewer's time to work on cases that require more time and effort

Case Prioritization Methodology

- Every household has a priority status of High, Medium, or Low with the instructions
 - **High (H):** High priority cases should get first attention each workday. A contact attempt should always be made within a week of a case being marked High Priority. Interviewers are encouraged to work High Priority cases as often as necessary to complete them quickly
 - **Medium (M):** Work Medium Priority cases should be worked in the same manner as they usually would, completing each within a reasonable amount of time and achieving adequate progress throughout the interviewing period
 - **Low (L):** These cases are usually “on temporary hold,” meaning the sponsor does not want these cases to be worked in the field temporarily

Four Classes of SIPP Case Prioritization

- Static Adaptive High Priority
 - Identified before to the start of data collection as being high priority.
 - Priority status rarely changed/Case rarely stopped.
- Dynamic Adaptive High Priority
 - Identified after at least 30 days of data has been collected
 - Cases start as medium priority, but shift to high priority
- Dynamic Adaptive Low Priority
 - Identified after at least 60 days of data has been collected
 - Cases start as medium priority, but shift to low priority
- Dynamic Adaptive Stop Work
 - Identified in the last month of data collection
 - Low priority cases that extremely unlikely to respond are stopped toward the end of data collection

2020 SIPP: Response to the Pandemic

- Interviewers were no longer allowed to make in person attempts after March 19, 2020 (approximately halfway through the 2020 data collection).
- Most wave 2+ had phone numbers provided from prior round of interviews.
- No wave 1 had any phone numbers provided. Contact with sample unit members relied on:
 - Contacting sample unit before they were no longer allowed to make face-to-face interviews after March 19th, 2020 (41 percent were contacted by March 19th)
 - Regional Offices facilitating TLOxp searches for phone information between March 19th, 2020 and April 1st, 2020 (44 percent were contacted by April 1st)
 - Phone numbers obtained from administrative records were pushed to interviewer laptops via a troubleshoot tab on April 1st, 2020. (65 percent were contacted by May 31st)

Change in Prioritization Methodology

- SIPP did not change the underlying prioritization methodology once the data collection mode switched from primarily in-person to primarily by phone
 - If certain cases became more likely to be under-represented in wake of the pandemic, that should manifest in the Representativeness indicator or “R-indicator” (Schouten et. al., 2009) and the methodology should correct itself
- Like the rest of the U.S. Census Bureau, SIPP modified their data collection procedures which could affect the case prioritization results

Analyses of Pandemic Effects on Prioritization

- Interviewing Efforts: *How did the pandemic affect how the field interviewers worked their cases?*
- Prioritization Effects: *Did the prioritization have a different effect on response?*
- Potential Nonresponse Bias: *Did the pandemic lead us believe there is more risk for nonresponse bias?*

Interviewer Efforts

Comparing pandemic effected data collection (Mar 19, 2020-May 31, 2020) to Pre-pandemic reference period (May 21, 2019-Jul 31, 2019)

- Interviewers during in the 2020 post-pandemic period made **+1.0** (± 0.23) more daily attempts per interviewer versus the pre-pandemic reference period
- Households with attempts were geographically more dispersed during the 2020 post-pandemic period (**+41.4** (± 1.0) more miles per day) versus the pre-pandemic reference period.
 - Based on longitude and latitude of the households, not by miles reported.
- Interviewing supervisors continued to make reassignments to try to obtain cases. However, according to their daily workload there have made no significant change to the number of daily reassignments

Estimating Prioritization Effects

$$\text{logit}(P(\text{Resp})) = \beta_0 + \beta_1 \text{Priority} + \mathbf{X}_{Geo} \beta_{Geo} + \mathbf{X}_{Intvwr} \beta_{Intvwr} + \mathbf{X}_{Demo} \beta_{Demo} + \epsilon$$

Geographic variables

- Census Region
- Urban/Rural classification

Interviewer variables

- Number of household on current workload
- Percent of high priority on current workload

Demographic variables

If Returning Sample

- Race
- Person count
- Poverty status
- Age of oldest person
- Marital Status
- Tenure (Rent/Own Property)
- Received WIC, TANF, GA, SNAP, or SSI
- Employment status
- Age of youngest person
- Disability
- Householder is female

Demographic variables

If New Sample

- Percent of block group white only
- Mean number of people in block group
- Mean household income in block group
- Percent of persons 65+ in block group
- Percent of persons who are married in block group
- Percent of persons who rent their property in block group

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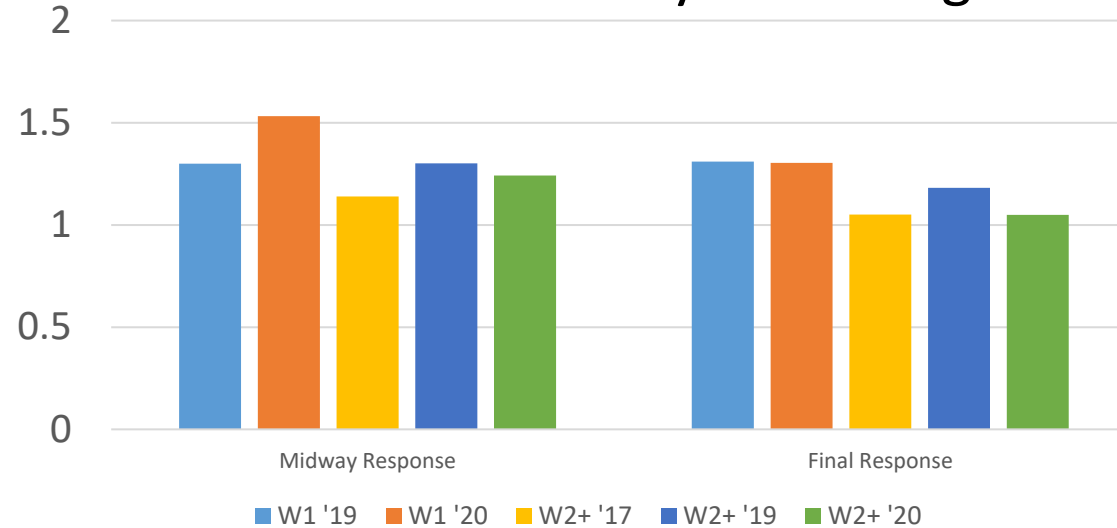
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Static Adaptive Case Prioritization Effect

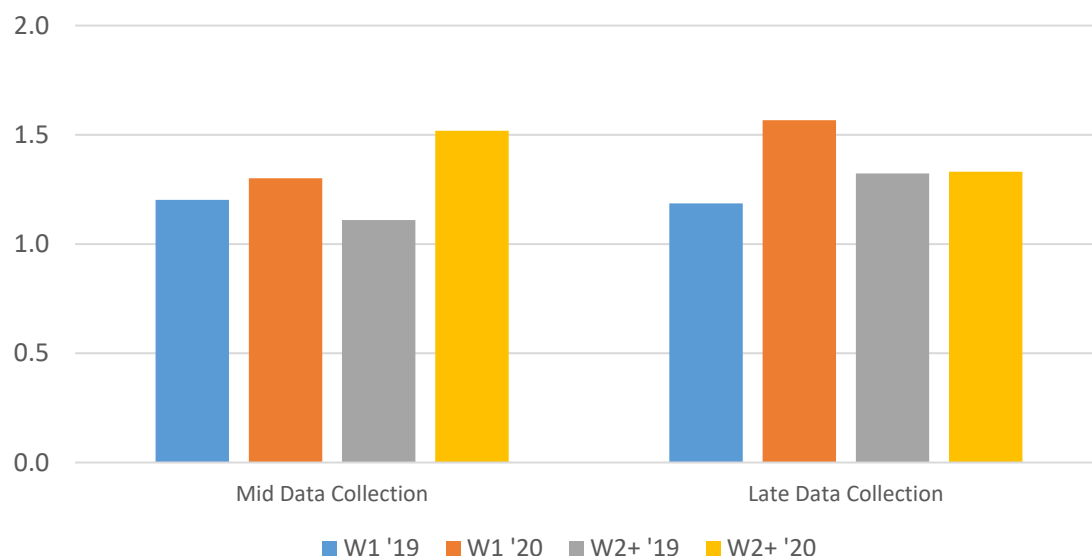
Odds-Ratios of Initial Priority Status High vs. Medium



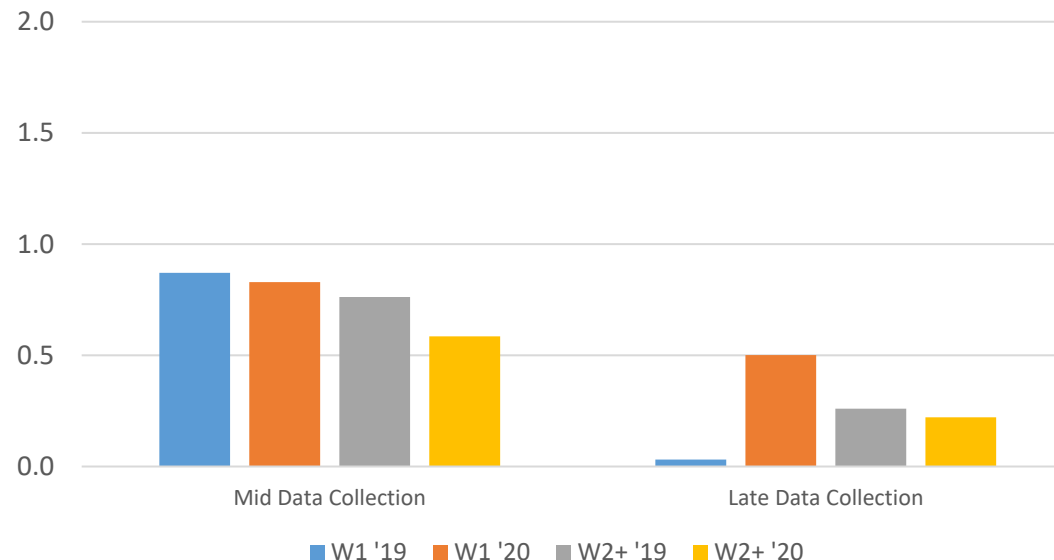
- *Modeling (midway and final) response status with demographic, geographic, interviewer caseload variables, and **initial displayed priority***
- New sample priorities in 2020 had larger effects midway through data collection, but similar effects at the end of data collection
- Returning sample priorities in 2020 had similar effects midway through data collection, but smaller effects on Final Response

Dynamic Adaptive Case Prioritization Effect

Odds-Ratios of Dynamic Priority Status High vs. Medium



Odds-Ratios of Dynamic Priority Status Low vs. Medium



- Modeling **final** response status with **when their priority changed** (mid data collection or late data collection) along with demographic, geographic, interviewer caseload variables
- There were larger effects for 2020 returning sample midway through data collection, but similar effects for the late data collection priority changes
- There were similar effects for 2019 and 2020 new sample midway through data collection, but there were larger effects for 2020 new sample late in data collection
- However, the 2019 and 2020 late data collection are not comparable because of the nature of how cases were stopped in 2019

Nonresponse Analysis

- $\text{logit}(P(\text{Resp})) = \beta_0 + \mathbf{X}_{\text{Demo}}\beta_{\text{Demo}} + \mathbf{X}_{\text{Year}}\beta_{\text{Year}} + \mathbf{X}_{\text{Mode}}\beta_{\text{Mode}} + (\mathbf{X}_{\text{Demo}}\beta_{\text{Demo}} \times \mathbf{X}_{\text{Year}}\beta_{\text{Year}}) + (\mathbf{X}_{\text{Mode}}\beta_{\text{Mode}} \times \mathbf{X}_{\text{Year}}\beta_{\text{Year}}) + \epsilon$
- We used this model to identify household demographic characteristics that were significantly different between the two interview collection years.
- Then used those characteristics to look at only the 2020 year, breaking out by whether they responded before or after the mode shift.
- Data
 - Wave 1: 2020 Wave 3 (CY 2020), 2018 Wave 1 (CY 2018), and 2014 Wave 1(CY 2014)
 - Wave 3: 2018 Wave 3 (CY 2020) and 2014 Wave 3(CY 2016)

*Mode refers to mode of initial contact

Results- Nonresponse

- There is potential for nonresponse bias in the Wave 1 variables
 - Race
 - Home value
 - College
 - Female head of household
 - Multi-unit building
- There is potential for nonresponse bias in the Wave 3 variables
 - Race
 - Hispanic Origin
 - Mover
 - Poverty status
- The table to right shows odds-ratios comparing before and after the mandatory mode-shift change

Odds Ratios For Wave 3 (CY 2020) Response			
Demographic Characteristic	Full Data Collection 2020	Before 3/19 2020	After 3/19 2020
Race: unknown or white+unknown vs. all white household	0.94	1.01	0.92
Hispanic	*0.92	*0.88	0.98
Mover	*0.54	*0.43	*0.80
Poverty status	*0.90	0.98	*0.90

* Indicates statistical significance in respective regression analyses at alpha level of 0.10.
Source: U.S. Census Bureau 2020 Survey of Income and Program Participation

Conclusion

- The ability to reach respondents slowed down overall responses which will have ramifications in standard errors, particularly with new sample
- The case prioritization methodology did not change in wake of the pandemic, but allowing phone interviews led to more attempts per day and the ability to work cases that are geographically further apart
- Though there is evidence that the effect of the prioritization may have changed during the pandemic, there is not enough evidence thus far to conclude that the overall representation is significantly different or that the effect is attributed to the pandemic

Questions??

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