DMACS Wave 20 Methodology
Data Collection Period: June - August 2024

Overview

The Detroit Metro Area Communities Study (DMACS) is a panel survey of Detroit residents aged 18 and older. The original panel of respondents was drawn from an address-based probability sample of all occupied Detroit households in 2016 and has since been refreshed through additional address-based sampling annually. Between June 18, 2024 and August 19, 2024, we invited 3,012 previously enrolled panelists and 4,000 invitations to a randomly selected address-based refreshment sample of Detroit households to participate in a self-administered online or interviewer-administered telephone survey. A total of 2,450 Detroit residents completed the survey, yielding an overall response rate of 36.7% (using AAPOR Response Rate 1); 69.8% for existing panelists and 10.0% for new panelists.

Panel Information

Panelists were first recruited to the DMACS study in 2016 (Wave 1) from a simple random sample of Detroit household addresses. The panel was refreshed in 2018 (Wave 3) using a stratified two-stage cluster sample which oversampled census block groups that were at least 70% Hispanic (according to the 2016 5-year ACS estimates). In 2019 (Wave 6) the panel was refreshed using a stratified two-stage cluster sample which oversampled households from each of Detroit's 10 Strategic Neighborhood Fund (SNF) neighborhoods. In 2021 (Wave 12) the panel was refreshed using an oversample of households in Census block groups that were at least 70% Hispanic (according to the 2018 5-year ACS estimates) as well as an oversample of households that were located within Detroit's SNF neighborhoods. In Wave 15, 17 and 20, we oversampled Census Block groups whose populations were at least 50% Hispanic.

Panelists have the option to complete the survey online or over the phone in either English or Spanish. Panelists are able to unenroll from the panel at any time. If a panelist does not participate in at least one of the surveys from Wave 15 through 18, they may be retired from the panel. To encourage participation from groups with lower response propensity, male panelists with less than a college degree were offered a higher survey incentive of $40, compared to other panelists who were offered an incentive of $25.

Questionnaire development, programming and testing

The questionnaire was developed by the DMACS team. The instrument was programmed and tested by DMACS staff members on mobile and desktop devices to identify issues with question language and ensure the accuracy of skip-pattern logic, randomizations, and other programming issues. The questionnaire was programmed in Qualtrics by DMACS staff and translated into Spanish by CETRA Language Solutions. Respondents were able to select between taking the survey in English or Spanish.

Recruitment and data collection protocol

Surveys were self-administered online or were interviewer-administered via telephone between June 18, 2024 and August 19, 2024. All respondents who completed the survey received an incentive (e.g. check or gift card) via mail from the University of Michigan.

Mail recruitment: All households were sent invitation letters and reminder postcards providing information regarding the survey, a unique access code to complete the survey online, a phone number to call to complete the survey with an interviewer, and information regarding post-paid incentives.

Email and text recruitment: Existing panel respondents were contacted by email and/or text, with the message including a clickable individualized URL link. Up to four emails and/or texts were sent over the course of the data collection period.

Survey administration: On June 18, as part of a soft launch, invitations were sent by email and/or text to 100 established panelists who had completed previous DMACS surveys early in the field period. The full launch occurred during June 19 - July 11, 2024; all remaining established panelists and new invitees were sent a letter invitation, and those who had previously provided email or texting contact information were sent an invitation via email and/or text.

Data Quality Checks

Responses were reviewed to identify participants who skipped more than 30% of applicable questions; surveys with greater than 30% missing data were excluded from the dataset. Additionally, responses were reviewed to ensure that no one person was utilizing unique access codes from more than one sampled address. As a result of the review, three respondents were dropped from the dataset prior to weighting and analysis.

Data Cleaning and Variable Construction

Some survey questions allowed respondents to provide open-ended responses in addition to (or instead of) selecting one or more of the response options on the questionnaire. For example, in a question about reasons for unemployment—"Did any of the following contribute to your not working?"— respondents were given 6 possible reasons for unemployment and asked to indicate whether each one applied to them. They were also given an option of selecting "Other" as a reason for unemployment, in which case they were provided a text box to explain their response. In such cases, we reviewed open-ended responses to determine whether they should be classified under one of the response options given in the question, and when appropriate we recoded these responses. There were also some instances in which respondents indicated that they had mistakenly selected the "Other" category, in which case the "Other" response was recoded to "skipped" in the case of mono-select questions or "No" in the case of multi-select questions.

Weighting

DMACS staff constructed sample weights using a two-stage process that accounts for multiple stages of sampling and nonresponse that occur at different points in the survey process. The weights are intended to be used as cross-sectional weights, with post-stratification roughly accounting for the unequal selection probabilities. In the first stage, post-stratification was used to account for the differential selection probabilities based on sample strata and unequal response rates across strata. The sample was calibrated to match the estimated population aged 18 and older in each sampling strata. In the second stage, to correct for sources of representation error (e.g., coverage error, sampling error, and nonresponse error) during initial recruitment and gradual panel attrition, raking was applied to adjust the weights to match Detroit's estimated distributions on gender, age, race, education, and income based on the U.S. Census Bureau's 2022 American Community Survey 1-year estimate (ACS)[1]. The margin of sampling error accounting for the effect of weights (for a proportion of .5) is +/- 2.83 percentage points at the 95% confidence level.

Creating weighted estimates

The dataset includes weights (*weights*). As mentioned in the Panel Information section, during annual refreshment, additional households are sampled and invited to participate in DMACS surveys. During Wave 3 and Wave 6 refreshment a two-stage cluster design was used to facilitate data collection by field canvassers who visited invited households to answer questions about the study and often facilitated data collection, creating a possible clustering effect in the panel. However, this clustering may be ignored in variance estimation because only a part of the sample has the clustering effect from W3 and W6, and after several waves of attrition the number of cases in each cluster is generally small. For more information, please refer to "DMACS Panel Description" documentation.

Disposition and Response Rate

Final dispositions are reported in Table 1. Responses with less than 50% of all applicable questions answered were considered break-offs, responses with 50% - 70% of applicable questions answered were considered partial, and responses with more than 70% of applicable questions answered were considered complete. The overall response rate to the Wave 20 DMACS survey was 36.7% calculated using AAPOR Response Rate 1 (Table 2); 69.8% for existing panelists and 10.0% for new panelists.

[1] Valliant, R., Dever, J. A., & Kreuter, F. (2018). *Practical tools for designing and weighting survey samples* (2nd ed). New York: Springer.

Table 1. Dispositions and Response Rates

Final Dispositions	AAPOR code	Established Panelists	New Panelists	Total
Completed interview	1.01	2016	351	2367
Partial responses that met threshold for completion	1.1	64	19	83
Partials that did not meet threshold for completion	1.2	9	1	10
Logged onto survey; broke off	2.12	9	21	30
Never logged on (implicit refusal)	2.11	882	3305	4187
Explicit refusal	2.11	0	1	1
Completed interview but was removed for data quality	2.9	0	0	0
Deceased	2.31	2	1	3
No contact (mail, email, and phone number contact attempts failed)	2.2	0	N/A	0
Vacant unit (mail to unnamed persons)	4.6	0	154	154
Screened out (participant lived outside of Detroit)	4.1	22	N/A	22
Screened out (address was not a residence)	4.5	N/A	N/A	N/A
Ineligible Other	4.9	8	147	155
Total invited to survey		3012	4000	**7012**

Table 2. Response Rate Calculation

Disposition	Category	Established Panelists	New Panelists	Total
Completed interviews	I	2080	370	2450
Partial interviews	P	9	1	10
Refusals	R	891	3327	4218
Non-contact	NC	0	0	0
Other	O	0	0	0
Unknown household	UH	0	0	0
Unknown other	UO	0	0	0
Not eligible	NE	32	302	334
Total		**3012**	**4000**	**7012**
AAPOR RR1 = I/(I + P) + (R+ NC + O) + (UH + UO)		**69.8%**	**10.0%**	**36.7%**