MIMACS Grand Rapids Wave 1
Methodology
Data Collection Period: January - March, 2024

Overview

The Michigan Metro Area Communities Study (MIMACS) is designed to provide a reliable source for timely and relevant public opinion data in select Michigan communities by using state-of-the-art scientific methods to obtain the most representative insights available. MIMACS builds off the successful deployment of the Detroit Metro Area Communities Study (DMACS), a representative panel survey of adult residents of the city of Detroit that has regularly conducted surveys since 2016 (for more information, see detroitsurvey.umich.edu). MIMACS engages with community partners to solicit input on questionnaires and to help interpret results and disseminate them to the community.

Between January - March, 2024, we conducted our first survey in Grand Rapids. The sample was drawn from an address-based probability sample of all occupied Grand Rapids households. We sent 7,500 survey invitations to a randomly selected address-based refreshment sample of Grand Rapids households. A total of 1,379 residents aged 18 and older completed the survey, yielding an overall response rate of 19.2% (using AAPOR Response Rate 1)

Sample design

The target population for this study was Grand Rapids residents over the age of 18 selected from a stratified random address-based sample. Sample was constructed by Marketing Systems Group (MSG). MSG is a licensee of the Computerized Delivery Sequence (CDS) file and receives a raw data feed each month. The CDS file is a snapshot of the Address Management System (AMS) database, which is the USPS master address database providing nearly 100% coverage of all residential addresses in the country. Every address in the CDS file is Delivery Point Verified (DPV) and is deliverable. The CDS file in its "raw" form contains very few data items suitable for designing complex samples. By applying a series of enhancements to the CDS file, MSG evolves this database of mail delivery addresses each month into an address-based sampling frame capable of accommodating multiple layers of stratification or clustering when selecting probability-based samples.

In addition, MSG leverages various commercial data sources to append many ancillary data items to each address for use in complex surveys that require detailed information for stratification purposes or additional modes of contact.

MSG created a disproportionate address-based sample by leveraging demographic data available from commercial databases. The following 3 distinct strata we created:

1. All records with a Hispanic Surname or Hispanic Ethnic Group Code
2. All records with an African American Ethnic Group Code
3. All remaining records within the geographic footprint

Questionnaire development, programming and testing

The questionnaire was developed by the MIMACS Principal Investigators in partnership with the National Institutes of Health's Community Engagement Alliance (CEAL) Against COVID-19 Disparities team. The instrument was programmed in Qualtrics and tested by MIMACS staff members on desktop and mobile devices to detect issues with question language and ensure the accuracy of skip-pattern logic, randomizations, and other programming issues. The questionnaire was translated into Spanish by CETRA Language Solutions. Respondents were able to choose to take the survey in English or Spanish on the first screen of the survey.

Recruitment and data collection protocol

Surveys were self-administered online or interviewer-administered via telephone between January and March, 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: Between January 16 - February 9, 2024, all households were sent invitation letters 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. On February 13, households who have not yet completed the survey were sent a reminder postcard.

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, one respondent was 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 moving — "In the **past 30 days**, how often have you used each of the following to get from place to place? For each, please select 'Daily', 'A few times a week', 'A few times a month', or 'Never.' If the type of transportation is not available to you, please select 'Not available to me.'"— respondents were given 7 types of transportation and asked to indicate whether each one applied to them. They were also given an option of selecting "Using other form(s) of transportation", 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. The raw data for these questions is maintained in the dataset with the prefix “r_”. For instance, the variable labeled *transport_mode_borrowcar_gr1* contains responses that have been cleaned based on participants’ responses to the open-ended question *transport_mode_others_text_gr1* which asks a participant why they selected “other" in the previous question while the variable r*_transport_mode_borrowcar_gr1* contains the raw data.

Weighting

Weights were constructed after the sample had been selected, the survey had been fielded, and study data had been collected, cleaned, and finalized. Design weights were constructed by calculating the inverse of the household selection probability for each sample and the within-household selection probability based on participant-reported household data. Weights were calibrated to adjust for any survey nonresponse as well as any noncoverage or under and oversampling resulting from the study specific sample design. Raking was applied to adjust the weights to match Grand Rapids’ 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 +/- 3.3 percentage points at the 95% confidence level.

Table 1. Number of households selected in each stratum

Grand Rapids	**ABS Universe Count**	**Invited**
Stratum 1-Hispanic Surnames or Ethnic Group 13	7,629	1,395
Stratum 2-African American Ethnic Groups 01 or 02	4,766	654
Stratum 3-All Other	69,603	5451
Total	81,998	7,500

Disposition and Response Rate

Final dispositions are reported in Table 2. 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 MIMACS Grand Rapids Wave 1 survey was 19.2% calculated using AAPOR Response Rate 1 (Table 3).

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

Table 2. Dispositions

Final Dispositions	AAPOR code	Total
Completed interview	1.01	1359
Partial responses that met threshold for completion	1.1	20
Partials that did not meet threshold for completion	1.2	11
Logged onto survey; broke off	2.12	62
Never logged on (implicit refusal)	2.11	5732
Explicit refusal	2.11	6
Completed interview but was removed for data quality	2.9	0
Deceased	2.31	0
No contact (mail, email, and phone number contact attempts failed)	2.2	0
Vacant unit (mail to unnamed persons)	4.6	199
Screened out (participant lived outside of Area)	4.1	0
Screened out (address was not a residence)	4.5	N/A
Ineligible Other	4.9	111
Total invited to survey		**7500**

Table 3. Response Rate Calculation

Disposition	Category	Total
Completed interviews	I	1379
Partial interviews	P	11
Refusals	R	5800
Non-contact	NC	0
Other	O	0
Unknown household	UH	0
Unknown other	UO	0
Not eligible	NE	310
Total		**7500**
AAPOR RR1 = I/(I + P) + (R+ NC + O) + (UH + UO)		**19.18%**