MICHIGAN STATE UNIVERSITY | Institute for Public Policy and Social Research
State of the State Survey

Methodological Report:

Michigan State University

State of the State Survey 1-78

Longitudinal Data

June, 2020

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The State of the State Survey (SOSS) is administered by the Institute for Public Policy and Social Research of Michigan State University.

For the benefit of sponsors, consumers, and users of SOSS data, we have prepared this guide to the purpose, design, methods, and content of the survey.

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1. Purpose of Survey

SOSS is a public opinion survey of the adult citizens of Michigan, conducted three to four times each year since October, 1994. It employs Computer Assisted Telephone Interviewing (CATI) technology to interview a stratified random sample of Michigan adults. Originally based only on household landline telephones, SOSS began including cell phones in Round 62 (Summer 2012). SOSS is a product of the Institute for Public Policy and Social Research in collaboration with the Office for Survey Research at Michigan State University.

Although dozens of surveys are conducted in Michigan every year, SOSS is the only one designed to provide a regular systematic monitoring of the public mood in the state. SOSS has five principal objectives:

1. To provide information about citizen opinions on critical issues
2. To provide data for scientific and policy research by MSU faculty
3. To provide useful information for programs and offices at MSU
4. To develop survey methods
5. To provide opportunities for student training and research

2. Calendar

People's experiences and the overall public mood change not only from year to year but also with the seasons. It is important to establish baselines for understanding what is a "normal" seasonal fluctuation and what is a more permanent change. For this reason, SOSS is typically conducted at regular quarterly intervals. Roughly one-fourth of the questions are repeated in each quarterly round.

3. Structure of the Questionnaire

The questionnaires for each round of the survey are designed by a different set of principal investigators, consisting of faculty, students, and staff at MSU and other higher education institutions, as well as researchers and staff at non-profits and other organizations and businesses. Each survey instrument consists of three main components: a demographic core, a non-demographic core, and client questions.

The demographic core contains questions on the social background and status of the respondents (age, sex, education, employment status, type of community, marital status, number of children, size of household, income, ethnic identity, etc.). This block of questions is repeated in each round, though more detailed questions on some of the dimensions (e.g., the number and ages of children) might be included in certain rounds based on client needs.

The non-demographic core contains additional questions that are repeated in every round of the survey in order to gauge broad shifts in the economic, social, and political orientations and status of the population. These include questions about consumer confidence, self-identification on a

liberal-conservative scale, partisan identification, assessments of presidential performance and gubernatorial performance, and other issues.

Together the demographic and non-demographic core of the questionnaire take an average of about 7 minutes of interviewing time to complete. The remainder of the interview typically lasts around 13 minutes, so that on average each interviews takes about 20 minutes of the respondent's time.

The Winter round each year includes questions on the most important problem that respondents want the governor and legislature to address. It also includes an assessment of respondents' trust in federal, state, and local governments to make right decisions.

A word of caution is in order on the use of the data. Because of the inclusion of question-order and question-wording experiments, the codebook for the survey, containing the weighted frequency distribution of responses, may be difficult to interpret and must be used carefully. Occasionally, alternative variants of questions will be combined into composite measures in the final data that are distributed, but the original questions also remain in the codebook and data set. It is the responsibility of the data users and analysts, not of SOSS, to assure that the appropriate variants of questions are used in analyses and reports. A copy of the CATI interview program with the logic and skip patterns (indicated by "[goto ...]" commands and "[if ...]" commands) accompanies the codebook to help clarify the paths particular respondents would take through the interview.

4. Management and Organization

SOSS and OSR staff are responsible for the technical work of programming the CATI survey instrument, training and supervising interviewers, selection and administration of the sample, coding and weighting of data, and preparation of the final data set and documentation. In addition, SOSS and OSR staff work with and advise the principal investigators and other researchers in the design of the sample and the survey instrument. Final approval of the survey and sample design rests with the principal investigators and SOSS Director.

In the summer of 2007, IPPSR Director Dr. Douglas Roberts named Dr. Charles Ballard (Department of Economics) as the overall Director of the SOSS program, replacing Dr. Brian Silver (Department of Political Science) who had served as the SOSS Director since its beginning in 1994. OSR staff responsible for SOSS include Dr. Larry Hembroff, Survey Director and Methodologist, and Director of Survey Operations Linda Stork (SOSS 46 to present). Beginning in SOSS 63, Grey Pierce became Project Manager of SOSS. OSR Staff were responsible for SOSS prior to this point, with Karen Clark as Programmer and Project Manager through SOSS 60, and Paul Burton for SOSS 61 and 62. Ms. Kathy Cusick was the Operations Director during SOSS 3 through 37 and Ms. Jody Dougherty was Operations Director during SOSS 39 through 45. For each round of the survey, a small working group of principal investigators is responsible for the design of the instrument for that round, subject to final approval by the SOSS Director, SOSS Project Manager, and OSR staff. The working groups consist primarily of "principal investigators" for the given round who have sponsored and funded the survey and will conduct the major initial analyses of the data, provide public briefings, and

have priority in analyzing the data for publication for the six-month period following the end of the field period for that round (more on data access below).

5. Dissemination of Results

Each round of the survey has an identified set of principal investigators who have priority in access to the data for that round. The principal investigators have exclusive right to prepare scientific papers for publication from the data for that survey for a period of six months after the end of the field date.

Six months after completion of data collection, the survey data are made available on an unrestricted basis to the public via the State of the State Survey's website (http://ippsr.msu.edu/soss/).

6. Sample Design

The referent population is the non-institutionalized, English-speaking adult population of Michigan age 18 and over. Since the survey was conducted by telephone, only persons who lived in households that had landline telephones or individuals who have a cell phone had a chance of being interviewed.

Sampling. Until SOSS-35, all respondents were derived only from random-digit dial samples. Beginning with SOSS-35, a change was made in the sampling strategy for the State of the State Surveys. The overall intent of the change was to reduce costs, increase response rates, and shorten the field period needed to complete each survey. The revised strategy is similar to that used on the University of Michigan's Survey of Consumer Attitudes. One portion of the sample of interviews is derived from a new random-digit-dial sample of phone numbers in the state, while another portion of the sample of completed interviews (usually 30-40% of the sample) is derived from re-interviews of individuals who had been interviewed two rounds earlier and who had agreed to be re-contacted. Roughly 80-90% of all respondents in each round of SOSS agree to be re-contacted. Re-interviewing individuals who constituted a representative random sample of the state's adults should still constitutes a representative random sample several months later, if adjustments for any non-response are made.

Having a portion of each round of SOSS derived from re-interviews with individuals from a previous round enables a part of the SOSS sample to constitute a panel, so that change can be measured at the individual level from quarter to quarter – a distinct benefit.

In SOSS 63 and earlier, the sampling design for the State of the State Survey was a stratified sample based on regions of the state, with the regions sampled somewhat disproportionate to the actual sizes of the populations within each region. The purpose of the stratification was to assure a sufficient minimum number of respondents from each of the strata to permit detailed analysis by clients. Beginning in SOSS 64, over- and under-sampling by region was discontinued, and a random sample of the entire state has been used since that point. This change was made to reduce design effects.

Because of the rapidly growing percentage of adults who have opted not to have a landline for their household, but depend instead on their cell phones, SOSS began to include a sample of cell phone users in SOSS 62. SOSS 65 was the first survey to include a cell phone recall sample. By SOSS 66, approximately half of all respondents were reached via cell phone. By SOSS 76, approximately two-thirds of all respondents were reached via cell phone.

Ordinarily, the initial sample of randomly generated telephone numbers (landline or cell phone) is purchased from Survey Sampling, Inc. (SSI). SSI begins the process of generating phone numbers with the list of all working area code and phone number exchange combinations. In the case of this study, the universe was constrained to include only those telephone numbers that are active in the state of Michigan. From within this list of possible phone numbers, SSI eliminates those banks of numbers represented by the 4-digit suffix that are known to be unused or are known to be used only by institutions. Landline and cell phone banks of numbers are separated and sampled independently. To improve the efficiency of the landline calling, this sampling frame is separated into two strata: one comprised of all landline phone numbers that are listed in phone directories, and the other comprised of all landline phone numbers that are not listed in directories but which are members of banks in which at least one phone number is listed. We then request that SSI over-sample phone numbers from the listed stratum.

SSI screens the landline phone numbers generated. The resulting sample is then checked against SSI's database of business phone numbers and checked for known disconnected numbers. Ordinarily, these numbers are removed from the sample and not called.

The cell phone numbers are similarly stratified into those that have recent billing activity (i.e., active) and those that do not (i.e., inactive). Only active phone numbers are called.

Sample Weights. Because of the split-sample approach, we have weighted each segment regarding selection probabilities, and then combined them into a single file. The combined data file is then weighted to be representative of the state as a whole. The details for weighting each segment are provided below.

Because of the stratification (i.e., listed vs. not-listed phone number strata, landline vs. cell phone) and the unequal sampling rates across the strata, it is necessary to use "weights" to correct for unequal probabilities of selection. Weights can also be used to adjust the marginals on selected demographics in the sample to match the corresponding marginals in the adult population of the state to correct for differential response rates.

As indicated above, the initial landline frame was stratified into listed numbers and not-listed numbers in 1+ banks, and then listed numbers were over-sampled. Other information from SSI indicates that 65% of households with phones have listed numbers. An initial weight, listwt, was constructed to adjust representation of listed and unlisted numbers in the data file, so that listed numbers comprised only 65% of all data records.

To make generalizations about individuals' views and behaviors, it is necessary to ensure that each respondent in a survey sample has an equal probability of selection, or is represented in the data set as having had an equal probability of being selected. However, since households with multiple phone lines have more chances of being selected into the sample than those with only

one phone line, this source of unequal chances has to be adjusted for in analyzing the data. Consequently, the SOSS interview included a question asking respondents how many separate phone numbers the household has. In the event of item non-response, the number of phone lines was assumed to be one. Each case was then weighted by the reciprocal of the number of phone numbers, and then adjusted so that the total number of cases matched the actual number of completed interviews. In the data set, this weight is named PHWT.

Similarly, an adult in a two-adult household would have half the chance of being selected to be interviewed as would the only adult in a single-adult household. This, too, requires adjustment to correct for unequal probabilities of selection. The interview included a question as to the number of persons 18 years of age or older living in the household. In the event of item non-response, the household was assumed to have only one adult. Each case was then weighted by the inverse of its probability of selection within the household, i.e., by the number of adults in the household.

In the cell phone segment, respondents were asked whether they also have a landline phone at their household (i.e., an overlapping dual frame design). Respondents were weighted by the reciprocal of the number of landline plus cell phone numbers they have. Furthermore, the cell phone was assumed to belong to the individual rather than the household, so the person answering the phone, if eligible, was the respondent.

These weights were then also adjusted so that the total number of weighted cases matched the actual number of completed interviews. In the data set, this weight is named ADLTWT.

At this point, the separate sample segments (i.e., landline and cell phone) were merged, and the adjustment made so that the proportion of cases that were cell phone-only matched the estimated proportion for Michigan.

Non-response adjustments were made subsequently using an iterative proportional fit method (i.e., raking). These adjustments were intended primarily to correct for differential non-response based on age, gender, and race within the adult population of the state. It is common for some groups of individuals to be more difficult to reach, or more likely to refuse to participate, in RDD surveys. For making generalizations about the population from which the sample was drawn, the accuracy of the results can be distorted by these non-response patterns. Consequently, it is common to weight cases in the sample to adjust for non-response. This is accomplished by weighting each case so that cases of each type appear in the sample proportionately to their representation in the general population.

For the State of the State Survey, cases are weighted so that the proportions of whites, African Americans, and other racial group respondents in the sample matched the proportions each of these groups in the adult population in the state. In the data set, this weighting factor is named REGNRACE. Furthermore, cases were additionally weighted so that the proportion of male cases and female cases falling into each of the following age groups matched the statewide proportions: 18-29 years old, 30-39, 40-49, 50-59, 60-69, 70-79, and 80 or older. In the data set, this weighting factor is named SEXAGEWT. Since rounding and missing data sometimes result in the weighted number of cases differing slightly from the actual number, SEXAGEWT is adjusted slightly with ADJWT to ensure that the number of cases for each region in the weighted data set is the same as the actual number of interviews completed. Detroit continues to be a

separate stratum to this point, but a new variable MSUEREGN was constructed to fold Detroit proportionately into the Southeast region within that variable. A new weighting variable (MSUEWT) was constructed to represent Detroit proportionately correctly within the southeast MSUEREGN.

Finally, each case was weighted so that the proportion of cases from each region in the total sample matched the proportion of adults from the corresponding region in the state's population. The weighting factor for this post-stratification weighting in the data set is named STATEWT.

Once the sample was weighted by STATEWT, it was compared against the distribution of gender, race, and age, and against the regional distribution of Michigan residents 18 and older. A second iteration of weighting was conducted in some rounds to bring all distributions within approximately 1% of the actual values. The final weighting factor is named STATEWT.

It is important to note that these weight factors were constructed sequentially and build on the earlier steps. Thus, SEXAGEWT weights cases adjusting for the number of phone lines, the number of adults in the household, the landline vs. cell phone proportions, the race category proportions within the state, and the gender x age category proportions within state. STATEWT weights cases by all of those adjustments implied by SEXAGEWT <u>and</u> adjusts the proportions of cases across regions. **For developing statewide results**, the user should use the data weighted by STATEWT. **For comparing the results among regions** -- if Detroit is to be separate -- the user should use the data weighted by ADJWT. **To compare directly the original MSUE regions**, the data should be weighted by MSUEWT.

In SOSS 63 and earlier, weighting for race, gender, and age were conducted within-region. Beginning in SOSS 64, demographic weighting began using statewide estimates. This change simplifies the weighting process without having a noticeable impact on final case weights, and parallels the shift from regional sampling to statewide sampling.

Regions are defined as follows:

1. Upper Peninsula: Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Ontonagon, Mackinac, Marquette, Menominee, Schoolcraft

2. Northern Lower Peninsula: Alcona, Alpena, Antrim, Benzie, Charlevoix, Cheboygan, Crawford, Emmet, Grand Traverse, Iosco, Kalkaska, Leelanau, Missaukee, Montmorency, Ogemaw, Oscoda, Otsego, Presque Isle, Roscommon, Wexford

3. West Central: Allegan, Barry, Ionia, Kent, Lake, Manistee, Mason, Mecosta, Montcalm, Muskegon, Newaygo, Oceana, Osceola, Ottawa

4. East Central: Arenac, Bay, Clare, Clinton, Gladwin, Gratiot, Huron, Isabella, Midland, Saginaw, Sanilac, Shiawassee, Tuscola

5. Southwest: Berrien, Branch, Calhoun, Cass, Eaton, Hillsdale, Ingham, Jackson, Kalamazoo, St. Joseph, Van Buren

6. Southeast: Genesee, Lapeer, Lenawee, Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, Wayne [excluding Detroit]

7. Detroit

Sampling Error. The sampling error can be estimated for each region and for the state as a whole at the 95% confidence level as follows:

$$\text{Confidence Interval} = \pm 1.96\sqrt{((P \times Q)/(n-1))}$$

where n is the number of cases within the region or the total sample, P is the proportion of cases giving a particular response, and Q is 1-P. While this may vary from question to question depending on the pattern of answers, the largest margin of error would occur when P is .5 and Q is .5. Beginning in SOSS 64, Design Effects (e.g., from landlines vs. cell phone, listed vs. unlisted, and across regions) are factored into margin of error calculations.

7. Field Procedures

CATI System. Interviews were conducted using the Computer Assisted Telephone Interviewing system (CATI) of IPPSR's Office for Survey Research (OSR). OSR uses the Computer Assisted Survey Execution System (CASES, version 5.5) software for its CATI system. CASES was developed by the University of California–Berkeley, the U.S. Census Bureau, and the U.S. Department of Agriculture. In a CATI system, the completed interview is scripted and then programmed so that, when executed from a computer workstation, the questions or instructions are presented to the interviewer on the computer screen, in order. The program then indicates what numeric codes or text the interviewer is allowed to enter as responses to each of the questions. When entered, the responses are stored directly into the data set for the study.

The CASES software enables the interview to be fully programmable. The software integrates both closed-ended questions and open-ended questions. The software allows interviewers to record notes along with responses to closed questions. By default, the software moves directly from one item to the next in the sequence, unless specific program commands are inserted to direct the execution path elsewhere. Different skip commands can be associated with separate responses to the same questions. For example, the interview can be directed to a separate battery of follow-up questions if the respondent answers "<1> YES" to a question on smoking cigarettes, and to an entirely different series of questions if the respondent answers "<5> NO." Commands can also be inserted between questions to direct the interview to a particular battery of questions, based on the combination of responses to two or more previously answered questions. These programming features minimize the opportunities for many errors, since inappropriate questions will not be asked and, as a result, appreciably less editing is necessary after the interview.

Interviewers and Interviewer Training. New interviewers received approximately 15 hours of training, including a shift of practice interviewing. Each interviewer trainee received a training manual with instructions on techniques and procedures, copies of all relevant forms, and descriptions of operations. The OSR telephone interviewing training package was developed using "General Interviewing Techniques: A Self-Instructional Workbook for Telephone and

Personal Interviewer Training", by P. J. Guenzel, T. R. Berckmans, and C. F. Cannell (1983) of the Survey Research Center, Institute for Social Research, University of Michigan.

Experienced interviewers received approximately two hours of study-specific training to acquaint them with the study protocols, the interview instrument, and the objectives of the various questions. New interviewers were also given this information as a part of their training.

Field Period and Respondent Selection in Household. Interviewing typically lasts 8-10 weeks. Randomly selected telephone numbers for which a directory listing was available were sent an advance letter roughly one week prior to the time at which an initial call attempt to contact the household would be made.

In the portion of the sample that involved re-interviewing respondents from the previous SOSS, interviewers asked to speak with that person when they contacted the household. When interviewers successfully contacted a household in the new RDD portion of the sample, the study procedures required them to randomly select an adult from among those residing in the household to be the respondent. The Trohldal-Carter technique was used as the mechanism for choosing a respondent within each household.

Telephone numbers were called across times of the day and days of the week. If no contact had been made with someone at the number after a minimum of nine call attempts, the call schedule for that case was reviewed by a supervisor to see that it had been tried across a variety of time periods. If it had not, the supervisor would re-release the number for additional calling in time periods that had not been tried. If, after additional calls were made, still no contact was made, the number was retired as a non-working number. If the review of the case indicated that it had been tried at various times and days, the supervisor might finalize the case as non-working, or might release it for up to six additional tries. In the case contact was established, the number would continue to be tried until a total of 12 attempts were made or the interview was completed, the interview was refused, or the case was determined to be ineligible or incapable.

8. Funding

The following organizations and units on campus have provided support for SOSS:

External Organizations
- Area Agencies on Aging Association of Michigan
- Aspen Institute
- Center for Healthcare Research and Transformation
- Center for Michigan
- Community Foundation for Southeastern Michigan
- Council of Michigan Foundations
- Department of Military Veteran Affairs
- Florida State University, Dept. of Political Science
- Michigan Association of School Boards
- Michigan Association of Secondary School Principals
- Michigan College Access Network

- Michigan Economic Development Corporation
- Michigan Environmental Council
- Michigan Immigrant Rights Center
- Michigan Nonprofit Association
- Michigan Primary Care Association
- Michigan Public Health Institute
- Michigan's Children
- Midwestern State University, Dept. of Political Science
- Muhlenberg College
- Nonprofit Michigan Project
- Planned Giving Roundtable of Southeast Michigan
- State of Michigan
- State of Michigan, Department of Information Technology, Bureau of Strategic Policy
- State of Michigan, Governor's Advisor on Homeland Security
- The Center for Michigan
- Tufts University, Dept. of Political Science
- United Way of Michigan
- University of Michigan
- University of Michigan, Gerald R. Ford School of Public Policy
- University of Michigan, Life Sciences and Society Program, School of Public Health
- Urban Core Mayors of Michigan
- W.K. Kellogg Foundation

Michigan State University
- Agricultural Experiment Station
- Applied Public Policy Research Grants Initiative
- Broad College of Business
- C. S. Mott Group for Sustainable Food Systems
- Center for Anti-Counterfeiting and Product Protection
- Center for Community and Economic Development
- Center for Economic Analysis
- Center for Ethics and Humanities in the Life Sciences
- Center for Health Care Studies
- Center for Health Promotion and Disease Prevention
- Center for Latin American and Caribbean Studies
- College of Communication Arts & Sciences
- College of Education
- College of Engineering
- College of Human Ecology
- College of Human Medicine
- College of Nursing
- College of Osteopathic Medicine
- College of Social Science
- Department of Accounting and Information Systems

- Department of Advertising, Public Relations, and Retailing
- Department of Agricultural, Food, and Resource Economics
- Department of Anthropology
- Department of Civil and Environmental Engineering
- Department of Community, Agriculture, Recreation, and Resource Studies
- Department of Community Sustainability
- Department of Economics
- Department of Educational Administration
- Department of Environmental Science and Policy
- Department of Family and Child Ecology
- Department of Family Medicine
- Department of Fisheries and Wildlife
- Department of Food Science and Human Nutrition
- Department of Forestry
- Department of Geography, Environment, and Spatial Sciences
- Department of Geological Sciences
- Department of Human Development and Family Studies
- Department of Kinesiology
- Department of Media and Information
- Department of Political Science
- Department of Psychology
- Department of Radiology
- Department of Sociology
- Education Policy Institute
- Global Urban Studies Program
- Institute for Children Youth and Families
- Institute for Health Care Studies
- Institute for Health Policy
- Institute for Public Policy and Social Research
- International Studies and Programs
- James Madison College
- Julian Samora Research Institute
- Land Policy Institute
- Landscape Architecture Program
- Legislative Leadership Program
- Lyman Briggs College
- Managed Care Institute
- Master of Environmental Design Program
- MSU Extension
- Office of Government Affairs
- Office for Inclusion and Intercultural Initiatives
- Office of the Provost
- Office of the Vice President for Research and Graduate Studies
- Office of the Vice Provost for University Outreach and Engagement

- School of Criminal Justice
- School of Journalism
- School of Labor and Industrial Relations
- School of Nursing
- School of Planning, Design, and Construction
- School of Social Work
- University Relations
- Urban Affairs Program
- Urban and Regional Planning Program