The Jewish Federation
OF GREATER SEATTLE

2014 GREATER SEATTLE JEWISH COMMUNITY STUDY

TECHNICAL APPENDICES METHODOLOGY only

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Appendix A: Methodology

Overview

CMJS has developed innovative methods to estimate the size and characteristics of the Greater Seattle Jewish community. As survey techniques have become more refined, the barriers to reaching respondents have become increasingly difficult to overcome. Researchers typically experience limitations in reaching respondents due to the prevalence of cell phones and caller ID/blocking. Low-incidence populations are particularly hard to reach using the traditional method of random digit dialing (RDD) because the likelihood of reaching someone in the target population depends upon the size of that group relative to the population as a whole. To address these barriers, CMJS has utilized a research design that incorporates two innovations:

- Data from an extended sample of email-only respondents
- Estimates of the number of adult Jews by religion (JBR) in the greater Seattle area as calculated by the Steinhardt Social Research Institute (SSRI) based on a synthesis of hundreds of RDD-based surveys

The research design for the Greater Seattle Jewish Study utilizes random sampling from an identified frame, or list, of the known population. Forty organizational membership and mailing lists were collected and combined in order to create a sampling frame from which a primary random sample of households was drawn. Because this primary sample was a random selection from the overall frame, it is assumed to be representative of the entire frame. For that reason, data collected from the random sample was used to estimate overall population characteristics.

To supplement the primary random sample, all remaining households who had an email address were included in a supplementary email-only sample. Information from these households increased the size of populations of interest and allowed for more detailed analysis of the characteristics of the community.

In order to extrapolate the results from this sample to the population as a whole, we adjusted the results to match estimates of the number of adult Jews by religion (JBR) in the Greater Seattle area as calculated by SSRI. Through a statistical process of data synthesis, SSRI combined the results of hundreds of RDD-based surveys conducted by a variety of organizations in order to produce a result that is more reliable than one that can be obtained from any single survey.

The methodology is described as follows:

1. Sampling frame
2. Sample design
3. Survey instrument and data collection
4. Field procedures
5. Developing the population estimate through data synthesis
6. Weighting
7. Analysis
8. Bias and Limitations

Sampling Frame

The 2014 Greater Seattle Jewish Community Study implemented a dual-mode Internet and telephone survey to reach year-round and seasonal residents of the Greater Seattle area. In the absence of an area probability or RDD frame, we began to build a sampling frame from the combined mailing lists of the Jewish Federation of Greater Seattle and other Jewish organizations in the area. The names of the organizations that provided lists are shown in Table A1. We requested lists from over 130 organizations and received lists from 46, of which 40 provided usable data.[1]

Table A1. Composition of strata

Priority	Type	Organization
1	Day school	Jewish Day School of Metropolitan Seattle
		Northwest Yeshiva High School
2	Youth	Camp Solomon Schechter
		The Livnot Project
		PJ Library
		Seattle BBYO
		NCSY
3	Young adult	University of Washington Hillel
		Stroum Jewish Studies Program Advisory Board
		AEPhi Seattle Members
		AEPi Winter Roster 2014
		NCSY Alumni
4	Synagogue	Sephardic Bikur Holim Congregation
		Bet Aleph
		Beth Shalom
		Eitz Or Directory
		Emanuel Congregation
		Kadima Reconstructionist Community
		Temple Beth Or
		Temple De Hirsch Sinai
5	Miscellaneous	Seattle Hadassah
		Seattle J-Street
		Washington State Jewish Historical Society
		SJCS
		Washington State Holocaust Education Resource Center
		Jewish Federation
		Samis Foundation
		Stroum Jewish Community Center
		JT News Subscribers
		Microsoft or Israel List (opt-in)
		Whidbey Island
		Jewish Family Services
		Secular Jewish Circle of Puget Sound
		Seattle Jewish Film Festival
6	Ethnic names	InfoUSA data purchase

In order to find any Jewish-connected households not already known to the organized Jewish community, a list of possible Jewish households was purchased from a commercial data broker, Infogroup, and was added to the sample. This list consisted of over 15,500 Puget Sound households that were identified as likely to include someone who was Hebrew-speaking or Jewish by ethnicity, ethnic group, or religion. These households that appeared on this list and no organizational list – over 12,000 households – represented the "unaffiliated" Jewish community.

The organizational and purchased lists were combined, cleaned, and deduplicated to ensure that no unique household appeared on the list more than once. Households without any mailing address were removed from the sampling frame because they could not be fully identified. Households with mailing addresses outside the five-county Greater Seattle area were retained in the frame in case they were secondary addresses for households that lived in the Greater Seattle area for part of the year. The combined sampling frame consisted of nearly 56,000 households.

Sample Design

The households in the sampling frame were divided into six groupings, called strata, based on expected characteristics of the household inferred from the household's appearance on organizational lists. The composition of the six strata is shown in Table A1. Households that appeared on multiple lists were placed in the lowest-number strata for which they were eligible; for example, a household appearing on a day school list (stratum 1), a synagogue list (stratum 3), and the ethnic Jewish names list (stratum 6) would be assigned to stratum 1.

To achieve geographic diversity in the sample, the households were divided based on the ZIP code of their mailing address. Residents of King County were separated from residents of the other four counties as well as those from outside the area. After subdividing the strata by geography, 12 strata were created.

A primary sample of 6,670 potential respondents was randomly selected from the twelve different strata (Table A2). The sampling rate of each stratum was designed to oversample likely Jewish households and likely households with children in order to maximize the representation of those groups within the final sample.

Following selection of the sample, an email-only supplement was identified. This sample included all households that were not selected into the primary sample and had at least one email address included in one of the lists.

The combination of the primary sample and the email-only supplement is referred to as the "full sample."

Table A2. Sample size by strata

Strata	Frame size	Primary sample	Email-only supplement
King 1	2,600	445	1,496
King 2	3,289	504	2,139
King 3	2,400	357	1,666
King 4	806	278	378
King 5	24,478	1,329	12,079
King 6	6,697	1,399	1,721
Other 1	132	65	31
Other 2	430	214	130
Other 3	269	135	78
Other 4	128	65	35
Other 5	9,019	779	3,111
Other 6	5,384	1,100	1,468
Total	55,632	6,670	24,332

Survey Instrument and Data Collection

The survey instrument was designed in collaboration with a special advisory committee of the Jewish Federation of Greater Seattle. The questions were crafted to minimize potential bias and any burden on respondents. Where possible, questions, language, and definitions were adopted from previously published Jewish community survey questionnaires, allowing for greater confidence in their reliability.

Two modes of data collection were utilized: online and telephone. The online and telephone instruments were identical – when a survey was completed over the phone, the telephone interviewer would fill out the online version.

The questionnaire was divided into two parts, a screener and the survey itself. The screener section was asked of all respondents to determine eligibility. Any household in the sample was considered eligible if it contained at least one adult aged 18 or older who lived in Greater Seattle for at least part of the year and considered him- or herself to be Jewish. A total of 5,211 households completed the screener and of those, 3,153 were screened into the survey. Ninety-five respondents were initially screened into the survey but after inspection of responses were determined to include no Jewish adults or that the adults were Messianic Jews and therefore ineligible for the survey.[2] The final sample consisted of 3,058 households.

Qualifying households proceeded to the main survey, which included sections on basic sociodemographic information, engagement in Jewish life, and perceptions of various aspects of

Jewish communal life in Greater Seattle. In order to minimize the burden on respondents, a series of complex skip patterns ("branching") were created to ensure that respondents were only asked questions that pertained to their specific life situation or experience. Thus, for example, a household that lives in Greater Seattle with no children would not be asked questions about choice of schools, camping, etc. The online survey took between 20-25 minutes to complete. Respondents completing the survey over the telephone usually completed it in about 30 minutes. However, the amount of time required to complete the survey varied for all respondents, regardless of mode of completion, depending on household composition and the degree of detail respondents were willing to offer for open-ended questions.

The survey instrument is presented in the form of a codebook in Appendix B.

Field Procedures

Prenotification letters were mailed to the primary sample of 6,670 households on May 5, 2014. These letters explained the purpose of the survey and provided each household with a unique link to complete the survey independently online. Households for which one or more e-mail addresses were available also received these letters electronically on May 9, 2014. A sample of the prenotification letter is shown in Appendix C.

After one week, households that had not completed the survey were contacted by telephone. The primary goal of telephone contact was to administer the survey over the phone if the respondent was unable or unwilling to complete the survey online, or if the respondent simply preferred to complete the survey over the phone. If the respondent was unwilling to complete the survey over the phone at the time of the call, he or she was asked for a better time to be called again or for an e-mail address to re-send the link to the survey online. Calling began on May 15, 2014, starting with the households for which phone numbers were available. Research assistants searched for additional contact information and added phone numbers to the calling list as they were identified.

Calls were conducted by trained staff at the Survey Research Division of the Social Development Research Group at the University of Washington. Callers were trained by the SRD in the techniques of telephone interviewing and were trained by a member of the CMJS staff in the specifics of this survey. Calling concluded on July 27, 2014. Callers made up to five attempts to reach all households on the primary sample who did not complete the survey online in response to email requests or who did not have email addresses. Callers offered to conduct survey interviews over the telephone or, if requested, to send the household members another unique link to complete the survey online at their convenience. Four additional email reminders were sent for all non-completed surveys on June 2, 11, and 23, as well as July 9, 2014.

Households were contacted repeatedly at different days and times to determine whether available contact information was correct. Households whose available contact information was confirmed to be outdated and those for whom the status was uncertain were searched in online public records databases to find updated information.

The supplementary sample was conducted as an email-only survey that was not accompanied by prenotification letters or phone calls. Email invitations were sent to the 24,332 households in the email supplement on May 29, 2014 with two follow-up reminders. The survey instrument for the email sample was identical to the one used for the primary sample.

Data collection ended on August 26, 2014. In the primary sample, 2,726 households completed the screener; of those, 1,182 were screened into the full survey. The overall response rate was 41% for the primary sample (AAPOR RR2). For the combined primary plus supplemental sample, 5,211 households completed the screener, and of those, 3,156 completed the survey, yielding an overall response rate of 19% (AAPOR RR2).

After data collection concluded, the survey was opened up to the community for anyone to respond if they had not been selected into the original sample. An additional 586 responses were received in the open-access survey. Since these responses could not be weighted and adjusted with the other data, only qualitative data from these surveys have been incorporated impressionistically into this report.

Table A3. Response rate by strata for primary sample (AAPOR RR2)

Strata	Primary sample size	Complete, screened in	Complete, screened out	Response rate
King 1	445	190	34	50%
King 2	504	200	32	46%
King 3	357	152	48	56%
King 4	278	136	8	52%
King 5	1,329	191	287	36%
King 6	1,399	87	461	39%
Other 1	65	14	16	46%
Other 2	214	55	27	38%
Other 3	135	29	23	39%
Other 4	65	36	9	69%
Other 5	779	59	177	30%
Other 6	1,100	33	422	41%
Total	6,670	1,182	1,544	41%

Developing the Population Estimate through Data Synthesis

Since 2005, the Steinhardt Social Research Institute has identified and collected hundreds of data sources, primarily population surveys, that could be used to develop estimates of the Jewish population. These data are used to provide an independent, external reference on the basic demographic profile of the population, including national- and state-level population counts and distributions by age and education. This population profile serves as a point of reference for the community as a whole and for those who conduct targeted surveys of the population and have no frame of reference for evaluating the representativeness of their sample survey. Details of the methods are reported elsewhere.[3]

The data synthesis method demonstrates how an auxiliary data source can be constructed to provide independent, census-like estimates of the size and characteristics of the adult Jewish by religion (JBR) population in the U.S. at the county level.[4] These county-level estimates of the adult JBR population may then be used to generate new post-stratification weights. These new post-stratification weights are then applied to the targeted study of the Greater Seattle Jewish population.

It is important to note that a significant part of this presentation is predicated on the understanding that estimates developed through the SSRI data synthesis approach use hundreds of representative samples of adults in the target area. In comparison, targeted studies, including the Greater Seattle Jewish community study, employ a standard approach among survey research generally. In the latter example, estimates observed in a single survey presume to represent the true population based on a hypothetical—that if the survey were repeated, 95 out of 100 times the survey would yield an estimate within the 95% confidence interval observed in the survey. However, these repeated surveys are never actually done. Rather than rely on the hypothetical, the SSRI data synthesis approach directly estimates what the data look like across actually observed repeated independent samples. The approach is very different than simply pooling or aggregating multiple surveys.[5] One important distinction is that variation in survey level characteristics can be modeled and controlled for across samples.

Summary of Data

The full sample of surveys in the SSRI database currently spans the years 2000 to 2013, with an additional sample of surveys from 1988 to 1992, for a total of 638 independent samples and a total combined sample size of 883,143 respondents, of whom 20,090 identify as Jewish by religion. The present report is based on the most recent data subset to the Pacific census region, from the years 2007 to 2013.[6] This subset consists of 197 samples with a total of 29,009 respondents, and 652 Jewish respondents.

Samples include those conducted as part of a series, such as the General Social Survey (GSS), a National Science Foundation study which has been conducted biennially since 2000,[7] the American National Election Studies, and the survey of Religion and Public Life conducted annually by the Pew Forum on Religion and Public Life. In addition, the sample includes surveys conducted regularly by major news organizations (ABC, CBS, NBC), and a number of

independent studies, such as the Baylor Religion Survey,[8] and the Panel Study on Religion & Ethnicity.[9] Where a single survey may have included multiple sampling methods or frames (e.g., landline versus cellphone), each is treated as a separate independent sample, with unique identifiers to indicate series membership.[10] For surveys that included over-samples, only the representative portion of the samples were included in the analyses unless the over-samples were of groups estimated directly in the population models – for example, age or race – in which case the over-sample contributed only to estimation of that particular group.

A majority of the surveys (80%) were standard RDD telephone surveys. Nineteen percent were cell phone surveys and 1% were in-person interviews, mail or other (e.g., WebTV/PC). Landline surveys account for 75% of the cases, and cell phone surveys account for 21% of the cases. Cell phone surveys are typically included as an additional independent sample collected along with a landline sample. This is done because it improves estimation of particular demographic groups that tend to be under-represented in landline samples, such as younger and less affluent groups.[11] Given the different methods of selection for landline and cell-phone surveys, we treated each as separate independent samples in the analyses.

All of the surveys provide data on those who identify as Jewish by religion (JBR), which is the largest proportion of the Jewish population and therefore serves as the baseline group for generating population estimates. A smaller number of surveys include assessment of religious upbringing or parents' religious/ethnic identification, or non-religious Jewish identification (for instance, "Do you consider yourself Jewish?") in addition to current religious affiliation.[12] Often the religious identification question is asked as "What is your religion? Is it Protestant, Roman Catholic, Jewish, something else, or no religion?" Nearly all include Jewish as one of the discrete options. An increasing number of surveys provide no discrete options and ask simply, "What is your religion, if any?" and record all self-generated responses to the question. Question wording is recorded in order to examine whether there are differences in Jewish population estimates across the surveys. Overall, 10% of surveys asked an open-ended religious identification question while 90% asked closed ended questions. Most of the surveys (84%) specifically included a "no religion" option (none, non-religious, atheist, or agnostic). Recent research has suggested that the inclusion of none as a specific option increases the proportion of those who identify as "no religion."[13] Given that a substantial proportion (up to 20%) of the Jewish population might identify as no religion when asked about religion, this aspect of question wording was also recorded to see if it is also associated with lower estimates of Jewish identification by religion, and if higher proportions identifying as "no religion" is associated with lower estimated proportions of Jewish identification overall.

Modeling

The full post-stratification model specification incorporated estimates from the initial run to specify proposal distributions. These included fixed effects for demographic variables and random effects for survey and state. Covariates in the model include basic demographic variables (age, race, and education). These mirror the categories used in the national data synthesis model. Race was represented by four categories; age as four; education as two. Geographic variables were also included to account for variability in Jewish population density at the Public Use

Microdata Area (PUMA) level. In addition, interaction terms were included for education with age.

Seattle Jewish Population Estimates

Results from the model provide overall population estimates as well as estimates of the distribution of Jews by demographic groupings (age, race, county, etc.). The latter is critical for understanding the characteristics of the population, for evaluating external data, and for providing the basis of weighting for targeted local studies.

The overall estimate of the Greater Seattle adult population who identify as Jewish by religion is 1% (95% CI: .5%-1.7%), corresponding to 32,600 adults (95% CI: 17,600 to 53,300; See Table A4). Distributions varied by age, education, race, and county. For example the proportion of JBR adults who are college educated varies from 44% in Pierce County to 69% in King County. The age distribution is likewise varied by county, from just 15% of JBR adults in King County age 65 or older to 28% of JBR adults 65 or older in Island County group.[14]

Table A4: 2007 to 2013 Greater Seattle population model: Adult Jewish population by religion estimates based to Census Population Estimates Program 2013

	Seattle Adults		Jewish Adults			
	Population	Pct	Percentage of Seattle Adults (CI)	Population	Lower Bound	Upper Bound
Total All Groups	3,130,027		1.04 (0.5,1.7)	32,600	17,600	53,300
Age						
18-29 years	641,308	20.5	0.8 (0.4,1.4)	5,400	2,800	9,200
30-44 years	881,909	28.2	1.0 (0.5, 1.6)	8,700	4,800	14,100
45-64 years	1,093,701	34.9	1.2 (0.6,2.0)	13,200	7,100	21,900
65+ years	513,109	16.4	1.0 (0.5,1.7)	5,300	2,800	8,800
Education						
Non-College	2,074,680	66.3	0.5 (0.3,1.0)	12,300	6,000	21,600
College Grad	1,055,347	33.7	1.9 (1.1,3.1)	20,300	11,500	32,600
Race						
Non-Hisp. White	2,232,344	71.3	1.4 (0.8,2.3)	31,100	16,800	51,000
Non-Hisp. Black	180,023	5.8	0.1 (0.1,0.2)	200	100	400
Hispanic	239,342	7.6	0.1 (0,0.2)	300	100	500
Non-Hisp. Other	478,317	15.3	0.2 (0.1,0.4)	1,000	500	1,800
County						
King	1,589,609	50.8	1.4 (0.9,2.0)	22,100	14,200	31,200
Pierce	612,179	19.6	0.4 (0.1,0.9)	2,400	700	5,500
Snohomish	564,216	18.0	0.9 (0.4,1.7)	5,000	2,000	9,700
Kitsap	197,134	6.3	1.2 (0.3,2.5)	2,300	600	5,000
Island and neighboring counties	166,889	5.3	0.4 (0.1,1.2)	700	130	2,000

Notes: a) Source: ACS 2008-2012, adjusted to PEP 2013.

Weighting

Overview of weighting procedures used

The purpose of developing survey weights for the sample is to adjust the survey data so that they will represent the population from which it was drawn. This is done in two ways: base weights and poststratification weights.

For base weights, the data are adjusted to match the sampling frame by calculating the strata-specific probabilities of selection into the sample and rates of response. By adjusting weights

upwards for respondents from strata in which households were less likely to be selected or to respond, and adjusting weights downward for respondents from strata in which households were more likely to be selected or to respond, the resulting weights adjust the data to match the frame from which it was drawn.

Poststratification, the second phase of weighting, adjusts the data to match known population parameters. In this case, the known parameters that were utilized were the data synthesis estimates of the JBR adult population and their age distribution, as described in the previous section, and the number of children currently enrolled in Jewish day schools. After applying the base weights, the sample is adjusted again to match these parameters.

Because the primary sample was selected randomly from the sample frame, it was treated differently from the full sample, which was not truly random. The primary sample was weighted as described above with the calculation of base weights and poststratification weights. This sample was used to estimate the size of the JNR population as well as the distribution of Jewish denominational affiliation. The full sample was then weighted separately. After applying base weights, poststratification weights were calculated to adjust the full sample to the JBR and age estimates from data synthesis, the number of children in day school, as well as the JNR estimate and denominational affiliation calculated from the primary sample.

Survey respondents provided demographic and religion information for all adults and children in their household. Although base weights applied to the respondents, poststratification weights needed to be calculated for individual adults. Accordingly, after applying base weights, the dataset was converted to an individual-level dataset with one record for each adult (rather than one record per household). The individual adult weights were poststratified to match population parameters of JBR, JNR or not Jewish; age; denominational affiliation; and children in day school. After poststratification, the individual weights were recombined into an adjusted household weight.

At the end of the process, a household-level file was created with one record per household. In this file, each record has up to four weights:

1) hhwt: the weight of the household for the primary sample
2) hhwtfull: the weight of the household for the full sample
3) respwt: the respondent's individual weight for the primary sample
4) respwtfull: the respondent's individual weight for the full sample

For the individual-level file, there is one record for each adult in each household. This record has two weights in addition to those listed for the household file:

1) indwt: the weight of each individual adult for the primary sample (same as respwt for respondents; for adults who are not respondents, respwt=0)
2) indwtfull: the weight of each individual adult for the full sample (same as respwtfull for respondents; for adults who are not respondents, respwtfull=0)

In summary, weighting the sample was conducted in five stages. Each stage is described below.

1. Base weights were calculated on the primary and full (primary plus email supplement) samples based on probability of selection and response.
2. For the primary sample only, household weights were poststratified to match the JBR estimate derived through meta-analysis and the JNR estimate calculated from the sample. The total number of households was estimated.
3. The dataset was converted from a household to an individual file so that separate weights could be calculated for each adult. Individual weights for the primary sample were poststratified to match JBR, JNR, age, and number of children in day school. Estimates of adult Jewish denominations were generated from the primary sample.
4. Individual weights for the full sample were poststratified to match JBR, JNR, age, number of children in day school, and denomination.
5. Adjusted household weights for the primary and full sample were calculated as the mean of the individual weights for all adults in the household. This final set of household weights was poststratified to the total number of households.

Design and base weights

Base weights were calculated separately for the primary sample and the supplemental sample. Base weights are calculated as the product of the design weight (inverse of the probability of selection into the sample) and the nonresponse weight (inverse of the probability of responding after being selected into the sample).

For the primary sample, data were weighted separately for each stratum by the probability of selection into the sample (design weights) and nonresponse. To calculate the design weight, the preliminary frame size was adjusted to account for the presumed ineligibility of a proportion of the households in the sample frame. Ineligible households identified during the data collection period of the survey are those households that are found to be duplicates, deceased, or infirm. The adjusted frame size for each stratum was calculated as:

> Adjusted frame size = Frame size × (Number eligible households ÷ Number selected households)

The design weight for each stratum was calculated as:

> Design weight = Adjusted frame size ÷ Number eligible households

Respondents were those who partially or fully completed the survey. Partial surveys were those in which the screening data were completed. The nonresponse weight for each stratum was calculated as:

> Nonresponse weight = Number eligible households ÷ Number respondent households

The base weight is calculated by multiplying the design weight by the nonresponse weight:

> Base weight = Design weight × Nonresponse weight

To calculate weights for the supplemental sample, it was necessary to account for the fact that the difference between households with email addresses and those without email addresses was non-random. This difference was dependent upon the content of the data that came in from the organizational lists. To address this, all households from the primary random sample that had no email addresses were re-assigned to a non-email primary sample and design weights were calculated following the procedure described above but only for the non-email portion of the sample. Next, all households from the primary random sample that had any email address were combined with the supplementary email sample. Design weights were calculated for this combined email sample following the procedure described above.

This process yielded a base weight for each completed response in the primary sample and a second base weight for each respondent in the primary or supplementary sample.

Poststratification

In order to adjust the sample to account for the known population of Jews in the Greater Seattle area, the process of poststratification was used. The estimate of adult Jews by religion (JBR) was calculated through the SSRI data synthesis as 32,600. (Note that this is the best estimate, but that the range of the actual is estimate is 17,600 to 53,300.)

In order to adjust to the number of JBR adults, the survey data were reviewed based on responses to religion questions for each adult in the household. Each adult received a preliminary designation of Jewish by religion (JBR), Jewish not be religion (JNR), or not Jewish. To develop household weights, a count of the number of adults of each type in each household was calculated. Further, households were classified according to their Jewish composition; JBR households had a least one JBR adult and JNR households had at least one JNR adult but no JBR adults. All households with no JBR or JNR adults were classified as non-Jewish and reclassified as screened out of the sample.

Estimating the JNRs

The next step in estimating the size of the adult Jewish population was to estimate the number of adult JNRs. It was assumed that the majority of JNRs would be part of the unaffiliated Jewish population, which was represented by stratum 6 of our frame. Using the base weight for the primary random sample, we calculated that there were 940 JBRs and 496 JNRs in strata 6 only. The ratio of these numbers was calculated (1.9) in order to estimate the size of the JNR population. Applying this ratio to the estimate of 32,600 JBR adults yielded an estimate of 17,200. Thus, the preliminary Jewish adult population was estimated at

	32,600 JBR
+	17,200 JNR
	49,900 Jewish adults[15]

Poststratifying households to JBR+JNR

In order to adjust households to match the total number of Jewish adults, the weights of the JBR households were adjusted to match the JBR total using Stata's survwgt command. Next, the number of JNRs who resided in JBR households was calculated. This number was subtracted from the expected number of JNRs. Finally, the weights of JNR households were adjusted to account for the remaining JNRs.

The result of this process yielded preliminary poststratification weights on the household level that adjusted the sample to match the expected JBR and JNR counts. Using these weights, the total number of households was estimated.

The process was repeated for the full sample (primary plus email supplement). The full sample was adjusted to match the same JBR and JNR numbers that were calculated from the primary sample.

Developing individual weights

The second stage of the poststratification was conducted on an individual rather than a household level.

The file was converted to an individual-level file with one record created for each adult in the household. The weights of the individual records initially were set at the weights of the household record, resulting in a total weight that added up to the number of individuals rather than the number of households.

The individual records were poststratified to match the JBR and JNR counts. The ages of the JBR adults were adjusted to match the JBR age estimates from meta-analysis. The ages of the JNR and non-Jewish adults were adjusted to match age data from the American Community Survey (ACS) for the five-county area white-only population. [16]

After postestimation of the primary random sample, the proportion of Jewish adults identifying with each Jewish denomination was estimated.

Poststratifying to known number of students in day school

The Seattle Jewish community provided an estimate of 428 children enrolled in Jewish day schools. To use this estimate for individual adult weights, we estimated the number of households that this represented and the number of adults in those households.

DS students total = 428

For households that had any children in day school:

Mean (weighted) DS students per household = 1.7
Mean (weighted) adults per DS household = 2.1

The following formula was used to estimate the number of adults in day school households:

> DS adults = (DS students total ÷ mean DS students per household) × mean adults per DS household

From this calculation we estimated that the 428 students in day school live in households in which 531 adults also live.

The last stage of the poststratification of the primary sample was to adjust the number of adults in households in which there was at least one day school student to match the estimate of adults in day school households, 531.

Poststratifying the full sample

Using a procedure similar to the primary sample, the weights for the individual adult records in the full sample were poststratified to match the counts of JBR, JNR, age, denomination, and day school household.

Calculating final household weights

Final household weights were calculated as the mean of the individual weights for all of the adults in the household. To correct the total weights to match the number of households, household weights were poststratified again to match the number of households calculated prior to poststratification.

Analysis

Analyses were done of households as well as individual Jewish adults and Jewish children who were specifically identified by respondents as being Jewish. All analyses were completed using statistical software Stata, version 13. Analysis of demographic data was based only on the primary random sample with appropriate weights applied. All analyses of attitudinal and behavioral data, as well as all subgroup analysis, were conducted using the full sample with appropriate weights applied. Data about the household in general was calculated using household weights and data about individual adults or respondents only was calculated using individual weights.

Bias and Limitations

Every effort to create a representative sample was made in order to prevent bias or, where bias was unavoidable, to identify and reduce it. Nevertheless, some groups are particularly likely to be underrepresented in the sample. Most significant among these are unaffiliated Jews (including new residents and intermarried families) and young adult Jews. Young adult Jews are also likely

undercounted for other reasons. Young adults in general are notoriously difficult to reach for telephone surveys, in part due to the increasing rate of cell phone only households and in part because they tend to move more frequently than older adults; both conditions render young adults harder to track.

Newcomers who are not known to the community are very likely undercounted, though they may have appeared on the ethnic names list. Interfaith families may also be underrepresented to the extent that they are unaffiliated and reside in households with directory listings that do not fit the selected ethnic name parameters.

[1] These are all the lists that were secured by the time the sample had to be prepared. Although attempts were made to secure additional lists, they were not successful. It is hoped that the diversity of the lists minimized the extent to which members of organizations whose lists were not provided for the study were excluded from the sample. Lists were not used if they did not include sufficient data for identifying and deduplicating households.

[2] Messianic Jews claim Jewish identity, but their claim is typically rejected by the vast majority of the Jewish community. Respondents who identified as Messianic Jews in this study were treated as non-Jews.

[3] Saxe, L., & Tighe, E. (2013). Estimating and understanding the Jewish population in the United States. *Contemporary Jewry, 33*, 43-62; Tighe, E., Livert, D., Barnett, M., & Saxe, L. (2010). Cross-survey analysis to estimate low-incidence religious groups. *Sociological Methods & Research, 39*, 56-82; Tighe, E., Saxe, L., Kadushin, C., Magidin de Kramer, R., Nursahedov, B., Aronson, J., & Cherny, L. (2011). *Estimating the Jewish population of the United States: 2000-2010*. Waltham, MA: Steinhardt Social Research Institute, Brandeis University; Tighe, E., Saxe, L., Magidin de Kramer, R., & Parmer, D. (2013). *American Jewish population estimates: 2012*. Waltham, MA: Steinhardt Social Research Institute, Brandeis University.

[4] Tighe et al., *American Jewish population estimates: 2012*.

[5] cf. Hartman, H., & Sheskin, I.M. (2012). The relationship of Jewish community contexts and Jewish identity: A 22-community study. *Contemporary Jewry, 32*, 237-283.

[6] For a description of search strategies used to identify surveys and inclusion criteria, see Tighe et al., 2010, 2011.

[7] Smith, T.W., Marsden, P.V., & Hout, M. (2011). General Social Survey, 1972-2010 [cumulative file]. ICPSR31521-v1. Storrs, CT, and Ann Arbor, MI: Roper Center for Public Opinion Research, University of Connecticut, and Inter-university Consortium for Political and Social Research [distributors].

[8] Baylor Institute for Studies of Religion. (2007). *The Baylor Religion Survey, Wave II*. Waco, TX: Baylor Institute for Studies of Religion, Baylor University.

[9] Emerson, M.O., Sikkink, D., & James, A.D. (2010). The Panel Study on American Religion and Ethnicity: Background, methods, and selected results. *Journal for the Scientific Study of Religion, 49*, 162-171.

[10] Series identification is included in the dataset to be able to examine differences across surveys that can be accounted for by survey series.

[11] Baker, R., Blumberg, S.J., Brick, J.M., Couper, M.P., Courtright, M., Dennis, J.M., Dillman, D., Frankel, M.R., Garland, P., Groves, R.M., Kennedy, C., Krosnick, J., & Lavrakas, P. (2010). Research synthesis: AAPOR report on online panels. *Public Opinion Quarterly, 74*, 711-781; Biemer, P., & Link, M.W. (2006). Evaluating and modeling early computer bias in RDD surveys. Paper presented at the Second International Conference on Telephone Survey Methodology; Blumberg, S.J., & Luke, J.V. (2014). *Wireless substitution: Early release of estimates from the*

National Health Interview Survey, July-December 2013. National Center for Health Statistics; Lavrakas, P.J., Blumberg, S., Battaglia, M., Boyle, J., Brick, M., Buskirk, T., DiSogra, C., Dutwin, D., Fahimi, M., Fienberg, H., Fleeman, A., Guterbock, T.M., Hall, J., Keeter, S., Kennedy, C., Link, M., Piekarski, L, Shuttles, C.D., Steeh, C., Tompson, T., & ZuWallack, R. (2010). *New considerations for survey researchers when planning and conducting RDD telephone surveys in the U.S. with respondents reached via cell phone numbers*. AAPOR Cell Phone Task Force; Link, M., Battaglia, M.P., Frankel, M., Osborn, L., & Mokdad, A. (2007). Reaching the U.S. cell phone generation: Comparison of cell phone survey results with an ongoing landline telephone survey. *Public Opinion Quarterly, 71*, 814-839; Pew Research Center for the People & the Press. (2006). *National polls not undermined by growing cell-only population*. Washington, DC: Pew Research Center for the People & the Press.

[12] Currently there are too few surveys of representative samples of all U.S. adults that include alternative methods of Jewish identification. Thus, the present analyses focus on the JBR population only.

[13] Putnam, R.D., & Campbell, D.E. (2010). *American grace: How religion divides and unites us*. New York: Simon & Schuster.

[14] Includes Island, Skagit, San Juan, and Whatcom counties.

[15] Preliminary estimates were later readjusted after some households were screened out of the sample after being identified as Messianic Jews or non-Jews.

[16] Although a small proportion of the Jewish population is non-white, the age estimates for the white-only population are assumed to be a closer approximation to the Jewish population. This is a simplifying assumption that is unlikely to affect overall estimates.