Appendix I. American Muslim Poll 2020 Methodology Report

Prepared by SSRS

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OVERVIEW

SSRS conducted a survey of Muslims, Jews and the general population for the Institute for Social Policy and Understanding from March 17 through April 22, 2020. The study investigated the opinions of Muslims, Jews and the general population regarding politics, important issues facing the country, faith customs, and religious discrimination.

For the survey, SSRS interviewed 801 Muslim respondents, 351 Jewish respondents, and 1,015 general population adult respondents. A total of 2,167 respondents were surveyed. This report details the methodological components of the study: sample design, questionnaire design, programming, field operations, data processing, and weighting. The interviews were completed by phone and on the web. Among Muslim respondents, 360 interviews were completed over the phone and 441 were completed via web panel. All 351 interviews with Jewish respondents were completed by phone. A total of 933 interviews were completed with general population adults via the SSRS probability panel and 82 by phone with non-Internet respondents. Non-Internet respondents are respondents who do not use the Internet and do not have access to the Internet.

SAMPLE DESIGN

The sampling procedures were designed to efficiently reach the target populations of interest. These procedures are listed below:

- SSRS pulled sample prescreened as Muslim households from the years 2013-2020 of its weekly national omnibus survey to recontact for this study.
- SSRS pulled sample prescreened as Jewish households from the years 2017-2020 of its weekly national omnibus survey to recontact for this study.
- SSRS purchased listed sample in both landline and cell phone frames. The landline sample was purchased from Experian and the cell phone sample was purchased from Smart Cell. Experian and Smart Cell are sample providers with specific characteristics flagged for each piece of sample. Experian and Smart Cell provided sample with flags for Muslim households.
- In order to supplement the number of Muslim interviews that were needed, SSRS employed a web panel and completed 441 Muslim interviews via an online survey with sample from a non-probability panel.
- SSRS used sample from their probability-based web panel to administer the general population portion of the survey. These are respondents who participate in the SSRS panel, having been invited either via their completion of the SSRS weekly omnibus (RDD sample) or by mail (ABS

sample). Among the general population sample, we also oversampled Catholics and White Evangelicals in the panel to guarantee we would get at least 200 completes in each religious group in accordance with the design of the study.

- In order to fully represent the general population, SSRS interviewed 82 non-Internet respondents by telephone. SSRS sampled prescreened non-Internet households from the year 2019 of its weekly national omnibus survey to recontact for this study.

In total, 468 interviews were completed via cell phones, 325 via landline phones, and 1,374 via web survey. Table 1 summarizes the total number of interviews by sample type, religious affiliation/general population and sampling frame.

Table 1. Interview Summary

	Muslims	Jews	Gen Pop	Total
Telephone Samples				
Landline Prescreened Muslim	56	0	0	56
Cell Prescreened Muslim	239	1	0	240
Landline Prescreened Jewish	0	144	0	144
Cell Prescreened Jewish	0	200	0	200
Experian Listed Landline	48	5	0	53
Listed Smart Cell	17	1	0	18
Landline Prescreened Non-Internet General Population	0	0	72	72
Cell Prescreened Non-Internet General Population	0	0	10	10
Web Samples				
Web Panel Muslim	441	0	0	441
Web Panel General Population	0	0	933	933
TOTAL	**801**	**351**	**1,015**	**2,167**

QUESTIONNAIRE DESIGN

The questionnaire was developed by the Institute for Social Policy and Understanding in consultation with the SSRS project team. Prior to the field period, SSRS programmed the study into Confirmit for both the phone/Computer Assisted Telephone Interviewing (CATI) and web portions of the study. Extensive checking of the programs was conducted to ensure that skip patterns and sample splits followed the design of the questionnaire. SSRS project directors checked randomly generated data as an additional confirmation of program accuracy.

FIELD PROCEDURES

Pretesting

The 2020 American Muslim Poll pretest took place on March 10-11, 2020. A total of 20 interviews were collected, four with Muslim respondents, five with Jewish respondents, and eleven with general population respondents. Overall, the questionnaire flowed smoothly, and respondents provided thoughtful and reasonable responses to the questions. As a result of the pretest, SSRS recommended a few changes to the instrument that were approved and implemented prior to launch on March 17. ISPU also made changes due to the overall length of the survey and deleted some questions.

Survey Administration

The field period for this study was March 17 through April 22, 2020. CATI interviews were conducted with 793 respondents and 1,374 respondents completed a web survey. Complete dispositions of all call attempts were recorded for CATI respondents.

CATI interviewers received written materials about the survey instrument and formal training for this project. The written materials were provided prior to the beginning of the field period and included an annotated questionnaire that contained information about the goals of the study, as well as, detailed explanations as to why questions were being asked, the meaning and pronunciation of key terms, potential obstacles to be overcome in getting good answers to questions, and respondent problems that could be anticipated ahead of time, as well as strategies for addressing the potential problems. Due to the sensitive nature of some of the questions, interviewers were given specific instructions on how to cope with respondents who seemed agitated or distressed by the questions.

Interviewer training was conducted immediately before the survey was fielded. Call center supervisors and interviewers reviewed each question from the questionnaire. Interviewers were given instructions to help them maximize response rates and ensure accurate data collection.

In order to maximize survey response, SSRS enacted the following procedures during the field period:

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- An average of seven follow-up attempts were made to contact non-responsive numbers (e.g. no answer, busy, answering machine).
- Each non-responsive number was contacted multiple times, varying the times of day, and the days of the week that call-backs were placed using a programmed differential call rule.
- Interviewers explained the purpose of the study and, when asked, stated as accurately as possible the expected length of the interview (approximately 18 minutes).
- Respondents were offered the option of scheduling a call-back at their convenience.
- Specially trained interviewers contacted respondents who had initially refused to participate in the survey and attempted to convert them into completed interviews.

Screening Procedures

The target population for the Muslim and Jewish portion of the study was specified as people who identify their religion as either Muslim or Jewish. For landline respondents, if the person who answered the phone was neither Muslim nor Jewish, we asked if anyone in the household considered him or herself to be a different religion than the respondent and, if so, what religion that would be. If another household member was Jewish or Muslim, we then asked to speak with that person. If no person in the household fit the religion criteria, we terminated the interview. Any cell phone respondent who was not Muslim or Jewish was immediately screened out of the survey since cell phone respondents are considered individual households for the purposes of the selection process.

The target population for the general population portion of the study was specified as all U.S. adults, age 18+. Religion was not a factor for the general population survey, other than the oversamples of Catholic and White Evangelicals discussed above. For those general population completes obtained by phone, qualified respondents also had to not use and not have access to the Internet.

Study Response Rates

The study response rates for the ISPU survey were calculated using AAPOR's Response Rate 3 formula.[1] This percentage divides the number of completed interviews in each sampling frame by the estimated number of eligible respondents in that frame.

Table 2. Study Response Rates

	Study Response Rates
Telephone Samples:	
Listed Sample (Muslim)	8%
Prescreened LL (Muslim and Jewish)	35%[2]
Prescreened Cell (Muslim and Jewish)	27%[2]
Prescreened LL (Non-Internet)	43%[2]

Prescreened Cell (Non-Internet)	16%[2]
Web Samples	
Probability-Based Web Panel (General Population)	56%[2]
Convenience Web Panel (Muslim)	4%[1]

WEIGHTING PROCEDURES

Muslim and Jewish

Survey data were weighted to: 1) adjust for the fact that not all survey respondents were selected with the same probability, and 2) account for non-response across known demographic parameters for the Jewish and Muslim adult populations.

Base Weight

Total Probability of Selection and SSRS Omnibus Weighting (OBW)

The base weight for the prescreened recruits is the original base weight assigned at the time of the original Omnibus interview.

The Omnibus base weight, can be expressed as a function of the size of the landline and cell phone sample frames, the size of the landline and cell phone samples, and the number of adults in each household as follows.[3]

Where if the respondent has a landline phone and otherwise and if the respondent has a cell phone and otherwise.

All cases from the Lucid non-probability web sample were assigned a base weight of 1.

Post Stratification Weighting

Following application of the above base-weight, the full sample was post-stratified and balanced by key demographics such as age, race, gender, region, education, marital status, number of adults in the household, voter registration, and political party identification within the Jewish and Muslim portions of this study, separately, for the Jewish and Muslim U.S. adult population 18 years of age and older. The sample was also adjusted by the distribution of phone usage of the Jewish and/or Muslim population (that is, by the proportion of those who are cell phone only, landline only, and mixed users).

Weighting was accomplished using SPSSINC RAKE, an SPSS extension module that simultaneously balances the distributions of all variables using the GENLOG procedure. The sample was balanced to match estimates of the Jewish and/or Muslim populations determined from two years of data collected through the SSRS Omnibus as well as informed by PEW estimates. This process of weighting was

repeated until the root mean square error for the differences between the sample and the population parameters is zero or near-zero.

The population parameters used for post-stratification were: age (18-29, 30-49, 50-64, 65+), gender, Census region (Northeast, North Central, South, West), education (less than high school, high school graduate, some college, four-year college or more), race/ethnicity (white non-Hispanic or Other non-Hispanic, Black non-Hispanic, Hispanic), marital status (single, married, other), registered voter (yes or no), political affiliation (Republican, Democrat, Independent/Other), number of adults (1, 2, 3 or more), and phone-usage (cell phone only, landline only, both).

To handle missing data among some of the demographic variables we employed a technique called hot decking. Hot deck imputation replaces the missing values of a respondent randomly with another similar respondent without missing data. These are further determined by variables predictive of non-response that are present in the entire file. We used an SPSS macro detailed in 'Goodbye, Listwise Deletion: Presenting Hot Deck Imputation as an Easy and Effective Tool for Handling Missing Data' (Myers, 2011).

Weight truncation ('trimming'): Weights were trimmed to prevent individual interviews from having too much influence on the final results. The Jewish and the Muslim samples were truncated at the 2nd and 98th percentiles. The following tables compare weighted and unweighted sample distribution to target population parameters.

Table 3a. Weight Summary – Jewish Sample

		Parameter	Unweighted	Weighted
Gender	Male	55.5%	57.8%	53.6%
	Female	44.5%	42.2%	46.4%
Age	18-29	25.4%	14.5%	24.5%
	30-49	30.9%	27.6%	28.6%
	50-64	21.8%	25.9%	23.4%
	65+	21.9%	31.9%	23.5%
Education	Less than high school	5.9%	1.4%	4.9%
	High school graduate	19.5%	8.3%	16.0%
	Some college	19.5%	17.7%	20.9%
	College+	55.1%	72.6%	58.2%

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Race/Ethnicity	White/Other	86.4%	97.2%	90.0%
	African American	4.9%	0.3%	1.7%
	Hispanic	8.7%	2.6%	8.4%
Marital status	Single/living with partner	31.8%	29.9%	31.6%
	Married	52.5%	51.9%	51.6%
	Other	15.7%	18.2%	16.8%
Adults in HH	One	20.0%	23.6%	20.0%
	Two	51.9%	52.7%	54.5%
	Three+	28.1%	23.6%	25.5%
Region	Northeast	35.2%	42.2%	36.5%
	North Central	13.8%	8.8%	11.2%
	South	27.7%	28.8%	28.8%
	West	23.3%	20.2%	23.5%
Registered to vote	Not registered	16.8%	3.1%	14.3%
	Registered	83.2%	96.9%	85.7%
Party ID	Republican	16.4%	17.7%	17.6%
	Democrat	45.9%	55.6%	49.1%
	Independent/Other	37.7%	26.8%	33.3%
Phone Status	Cell phone only	46.1%	36.2%	43.4%
	Dual user	50.5%	61.8%	52.9%
	Landline only	3.4%	2.0%	3.6%

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Table 3b. Weight Summary – Muslim Sample

		Parameter	Unweighted	Weighted
Gender	Male	55.1%	66.2%	57.0%
	Female	44.9%	33.8%	43.0%
Age	18-29	40.2%	30.2%	40.7%
	30-49	41.6%	46.6%	40.2%
	50-64	13.0%	14.0%	13.6%
	65+	5.1%	9.2%	5.4%
Education	Less than high school	12.1%	3.5%	9.3%
	High school graduate	31.7%	17.4%	31.8%
	Some college	19.8%	15.1%	20.7%
	College+	36.4%	64.0%	38.2%
Race/Ethnicity	White/Other	62.4%	72.0%	63.4%
	African American	29.1%	19.0%	28.1%
	Hispanic	8.4%	9.0%	8.4%
Marital Status	Single/living with partner	40.1%	30.7%	40.6%
	Married	48.3%	61.2%	49.2%
	Other	11.6%	8.1%	10.2%
Adults in HH	One	17.7%	18.2%	18.6%
	Two	40.9%	48.6%	41.8%
	Three+	41.3%	33.2%	39.6%
Region	Northeast	29.2%	30.8%	27.5%
	North Central	20.1%	17.1%	19.8%

	South	31.8%	34.3%	33.2%
	West	18.9%	17.7%	19.5%
Registered to vote	Not registered	39.5%	17.0%	37.0%
	Registered	60.5%	83.0%	63.0%
Party ID	Republican	11.1%	15.2%	11.6%
	Democrat	43.4%	49.9%	43.4%
	Independent/Other	45.5%	34.8%	45.0%
Phone Status	Cell phone only	62.9%	41.4%	61.3%
	Dual user	32.1%	50.7%	33.4%
	Landline only	1.9%	4.7%	2.0%
	No phone	3.1%	3.1%	3.3%

Effects of Sample Design on Statistical Inference[4]

Post-data collection statistical adjustments require analysis procedures that reflect departures from simple random sampling. SSRS calculates the effects of these design features so that an appropriate adjustment can be incorporated into tests of statistical significance when using these data. The so-called "design effect" or deff represents the loss in statistical efficiency that results from systematic non-response.

SSRS calculates the composite design effect for a sample of size n, with each case having a weight, wi as:

$$deff = \frac{n \sum w^2}{(\sum w)^2}$$

In a wide range of situations, the adjusted standard error of a statistic should be calculated by multiplying the usual formula by the square root of the design effect (√deff). Thus, the formula for computing the 95% confidence interval around a percentage is:

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$$\hat{p} \pm \left(\sqrt{deff} \times 1.96 \sqrt{\frac{\hat{p}(1-\hat{p})}{n}} \right)$$

Where $\hat{p}$ is the sample estimate and n is the unweighted number of sample cases in the group being considered.

The survey's margin of error is the largest 95% confidence interval for any estimated proportion based on the total sample— the one around 50%. For example, the margin of error for the entire Jewish sample is ±7.2 percentage points. This means that in 95 out of every 100 samples drawn using the same methodology, estimated proportions based on the entire sample will be no more than ±7.2 percentage points away from their true values in the population. Table 4 shows design effects and margins of sampling error for the Jewish and Muslim samples.

Table 4. Design Effects and Margins of Sampling Errors

	Number of Interviews	Margin of Error with Design Effect	Design Effect
Muslims	801	+/- 4.8 percentage points	1.90
Jews	351	+/- 7.2 percentage points	1.89

General Population

Total Probability of Selection Weighting

The study was weighted to provide nationally representative and projectable estimates of the adult population 18 years of age and older. The weighting process takes into account the disproportionate probabilities of household and respondent selection due to the number of separate telephone landlines and cellphones answered by respondents and their households, as well as the probability associated with the random selection of an individual household member.

The prescreened Omnibus non-internet respondents were given the original base weight assigned at the time of the original Omnibus interview. The probability panel web respondents were given a base weight of 1.

The Omnibus base weight, can be expressed as a function of the size of the landline and cell phone sample frames, the size of the landline and cell phone samples, and the number of adults in each household as follows.[6]

$$BW_{Omni} = \left((LL \times AD \times S_{LL}/F_{LL}) + (CP \times S_{CELL}/F_{CELL}) - (LL \times AD \times CP \times S_{LL} \times S_{CP}/(F_{LL} \times F_{CP}))\right)^{-1}$$

Where if the respondent has a landline phone and otherwise and if the respondent has a cell phone and otherwise.

Additionally, the base weighting balanced the sample to 9.3% non-internet according to the American Community Survey (ACS) 2018.[7]

Finally, the oversample of Catholic and White Evangelical were included in the base weight. An adjustment was made to balance the samples back to the original distribution without the oversample.

Post Stratification Weighting

The second stage of the weighting balanced the demographic profile of the sample to target population parameters. To handle missing data among some of the demographic variables we employed a technique called hot decking. Hot deck imputation replaces the missing values of a respondent randomly with another similar respondent without missing data. These are further determined by variables predictive of non-response that are present in the entire file. We used an SPSS macro detailed in 'Goodbye, Listwise Deletion: Presenting Hot Deck Imputation as an Easy and Effective Tool for Handling Missing Data' (Myers, 2011).

Weighting was accomplished using SPSSINC RAKE, an SPSS extension module that simultaneously balances the distributions of all variables using the GENLOG procedure. The sample was balanced to match estimates derived from the 2019 Census Bureau's Current Population Survey (CPS)[8]. The population parameters used for post-stratification are: age (18-29, 30-49, 50-64, 65+), gender, Census region (Northeast, North Central, South, West), education (less than high school, high school graduate, some college, four-year college or more); race/ethnicity (white non-Hispanic, Black non-Hispanic, Hispanic, Other non-Hispanic), Phone Usage (Cellphone only, Dual frame, Landline only, No phone),[9] internet use (no internet and internet), and religion (Catholic, White Evangelical, and Other).[10]

Weights were trimmed at the 2nd and 98th percentiles to prevent individual interviews from having too much influence on the final results. The use of these weights in statistical analysis ensures that the demographic characteristics of the sample closely approximate the demographic characteristics of the U.S. adult population. The following table compares unweighted and weighted sample distributions to population parameters.

Table 5. Weight Summary – General Population

		Parameter	Unweighted	Weighted
Gender	Male	48.4%	47.3%	47.9%

	Female	51.6%	52.7%	52.1%
Age	18-29	20.9%	11.6%	20.4%
	30-49	33.2%	34.3%	33.7%
	50-64	24.8%	26.0%	24.7%
	65+	21.1%	28.1%	21.2%
Education	Less than high school	10.6%	2.8%	8.5%
	High school graduate	28.3%	18.6%	28.8%
	Some college	27.8%	32.5%	28.5%
	College+	33.3%	46.1%	34.2%
Race/Ethnicity	White non-Hispanic	63.1%	75.1%	63.5%
	Black non-Hispanic	11.8%	7.9%	11.9%
	Hispanic	16.4%	9.3%	15.8%
	Other	8.6%	7.8%	8.8%
Region	Northeast	17.5%	18.9%	17.6%

	North Central	20.8%	23.9%	20.5%
	South	37.9%	34.3%	37.7%
	West	23.8%	22.9%	24.2%
Internet Use	No Internet	9.3%	8.1%	8.7%
	Internet	90.7%	91.9%	91.3%
Phone Usage	Cell phone only	59.6%	54.8%	59.5%
	Dual user	35.9%	41.1%	36.3%
	Landline only	3.9%	3.5%	3.5%
	No phone	0.6%	0.6%	0.6%
Religion	Other	62.7%	59.4%	62.7%
	Catholic	21.6%	19.9%	21.7%
	White Evangelical	15.7%	20.7%	15.6%

Effects of Sample Design on Statistical Analysis

Post-data collection statistical adjustments require analysis procedures that reflect departures from simple random sampling. SSRS calculates the effects of these design features so that an appropriate adjustment can be incorporated into tests of statistical significance when using these data. The so-called "design

effect" or deff represents the loss in statistical efficiency that results from a disproportionate sample design and systematic non-response. The total sample design effect for this survey is 1.47.

SSRS calculates the composite design effect for a sample of size n, with each case having a weight *w* as:

$$deff = \frac{n\sum w^2}{(\sum w)^2} \text{ }^{11}$$

In a wide range of situations, the adjusted standard error of a statistic should be calculated by multiplying the usual formula by the square root of the design effect $: (\sqrt{deff})$. Thus, the formula for computing the 95% confidence interval around an estimate is:

$$\hat{p} \pm \sqrt{deff} \times 1.96 \sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$$

Where $\hat{p}$ is the sample estimate and n is the unweighted number of sample cases in the group being considered.

The survey's margin of error is the largest 95% confidence interval for any estimated proportion based on the total sample — the one around 50%. For example, the margin of error for the entire sample is ±3.7 percentage points. This means that in 95 out of every 100 samples drawn using the same methodology, estimated proportions based on the entire sample will be no more than 3.7 percentage points away from their true values in the population. Margins of error for subgroups will be larger. It is important to remember that sampling fluctuations are only one possible source of error in a survey estimate. Other sources, such as respondent selection bias, questionnaire wording, and reporting inaccuracy, may contribute additional error of greater or lesser magnitude.

Table 6. Design Effect and Margin of Sampling Error

	Number of Interviews	Margin of Error with Design Effect	Design Effect

General Population	1,015	+/- 3.7 percentage points	1.47

[1] Note that response rates are not possible for convenience web samples as there is not a known initial sample frame, so the study completion rate is provided.

[2] The prescreened sample and probability-base web panel sample response rates are specific to this study and do not take into account the original Omnibus/recruitment response rates, which are typically around 4%.

[3] Buskirk, T. D., & Best, J. (2012). Venn Diagrams, Probability 101 and Sampling Weights Computed for Dual Frame Telephone RDD Designs. Journal of Statistics and Mathematics, 15, 3696-3710.

[4] Margins of error are typically calculated on probability-based samples and are not technically correct for non-probability online samples. We supply them here to provide a general assessment of error ranges that may be associated with the data.

[5] Kish, L. (1992). Weighting for Unequal Pi. Journal of Official Statistics, Vol. 8, No.2, 1992, pp. 183-200.

[6] Buskirk, T. D., & Best, J. (2012). Venn Diagrams, Probability 101 and Sampling Weights Computed for Dual Frame Telephone RDD Designs. Journal of Statistics and Mathematics, 15, 3696-3710.

[7] Steven Ruggles, Sarah Flood, Ronald Goeken, Josiah Grover, Erin Meyer, Jose Pacas and Matthew Sobek. IPUMS USA: Version 10.0 [dataset]. Minneapolis, MN: IPUMS, 2020. https://doi.org/10.18128/D010.V10.0

[8] Sarah Flood, Miriam King, Renae Rodgers, Steven Ruggles and J. Robert Warren. Integrated Public Use Microdata Series, Current Population Survey: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2020. https://doi.org/10.18128/D030.V7.0

[9] National Center for Health Statistics Early Release Program Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July–December 2018

[10] Religion benchmarks were derived from 2 years of data collected through the SSRS Omnibus.

[11] Kish, L. (1992). Weighting for Unequal Pi. Journal of Official Statistics, Vol. 8, No.2, 1992, pp. 183-200.