Fragile Families and Child Wellbeing Study has changed its name to The Future of Families and Child Wellbeing Study (FFCWS). Any further reference to FFCWS should kindly observe this name change.

Year 22 Future of Families Survey Weight Adjustment

Seonghun Lee and Andrew Gelman

This memorandum documents the weights creation procedure for the Future of Families and Child Wellbeing Study Wave 7 conducted at Year 22. This memorandum connects closely with previous weighting memorandums (Carlson, 2008, Si and Gelman (2014), Kennedy and Gelman (2018)). At this wave, we create survey weights for primary caregivers (PCG) and young adults (YA) for the national sample, the national sample excluding city X[1], and each city. One change since the previous wave is that some of the young adults are no longer living with their primary caregivers; we take this into account by creating weights for the young adults. The outline of this memo is as follows: first we detail the overall methodology, comparing it to the steps taken to create weights for the previous waves of the survey. We then focus on the finer details of creating survey weights for each of the two core target groups (primary caregivers and young adults), for each of the three target populations (nation, nation excluding city X, and each city).

Overview

The Future of Families and Child Wellbeing Study (FFCWS) is based on a stratified, multistage sample of 4,898 children born in large U.S. cities (population over 200,000) between 1998 and 2000, where births to unmarried mothers were oversampled by a ratio of 3 to 1. This sampling strategy resulted in the inclusion of a large number of Black, Hispanic, and low-income families. Mothers were interviewed shortly after birth, and fathers were interviewed at the hospital or by phone. Follow-up interviews were conducted when children were approximately ages 1, 3, 5, 9, 15, and 22. The FFCWS Study consists of a core survey with mothers, fathers, primary caregivers, and the focal child.

As described by Carlson (2008), the construction of the baseline weights involves calculating the probability of selection for the birth as the sampling unit, followed by nonresponse adjustments related to the mother as a data collection unit. The baseline mother interviews are used as a proxy of the birth, and the final number of eligible responding baseline mother interviews (births) that are part of the core study is 4,789. These eligible baseline respondents are followed up in any future surveys. When some of them become either ineligible, unlocated, or non-responding in any follow-up surveys, the baseline weights serve as the anchor for adjustments for unlocatabiltiy, nonresponse, and unknown eligibility.

Our goal is also to adjust the Year 22 samples to the mother's baseline weights for this year's data to make it representative of the original target population, which is all eligible births occurring in large metropolitan areas of the United States during the study period. We choose to use the adjustment method used by Carlson (2008) for the same reason as Kennedy and Gelman (2018) at Year 15 instead of incorporating the weights in previous waves sequentially at Year 9 as was done by Si and Gelman (2014). We created three sets of weights for both primary caregivers and young adults: individual city-level, national-level with all cities part of the national sample, and national-level excluding City X. The term national refers to all 77 U.S. cities with 1994 populations of 200,000 or more in this memorandum.

[1] As in prior waves, we created a series of weights treating City X, the first city in the study and in which some items were asked differently, like a nonparticipating city, along with Santa Ana and Birmingham. We recommend that, for analyses using data that was not collected for City X, users utilize these weights.

Overall Weighting Procedure

Eligibility of selection

In the mother baseline weights, a case was ineligible if the mother did not speak English or Spanish, the baby was adopted, the baby's father was deceased, the mother was a minor, or the baby was stillborn. In the follow-up weights from Year 1 to 5, a case was ineligible if the child associated with sample birth died or if cases released to the sample were duplicates. Ineligible was defined as cases where the child was deceased or some other ineligible reasons in the Year 9 weights whereas the cases where the child was deceased were only considered ineligible in the Year 15 weights. In the Year 22 weights, families of the primary caregivers and young adults were defined as ineligible if the original focal child died or was adopted by other parents before age 18. The variable for young adult eligibility is different from that for primary caregiver eligibility unlike the last wave because some of the young adults no longer live with their primary caregivers.

Adjusting for non-response

Carlson (2008), Si and Gelman (2014), and Kennedy and Gelman (2018) all adjusted for nonresponse given eligibility using a two stage process. We follow this same approach for the primary caregiver and young adult weights. The two stage process is as follows.

1. First we adjust for unlocatability; that is, we adjust the initial weights for all the eligible located cases upward to account for those of the eligible unlocated cases.
2. Then we adjust for nonresponse among the located; that is, these adjusted weights for the eligible located completes are further adjusted upward to account for those of the eligible located noncompletes.

For each adjustment, Carlson (2008) used a stepwise regression, Si and Gelman (2014) used lasso regression (Friedman, Hastie, and Tibshirani, 2010), and Kennedy and Gelman (2018) used Bayesian logistic regression with a horseshoe prior (Piironen et al., 2017) as the method of variable selection and estimation of propensity score using either location or response as the outcome variable. The variables for both young adult location and response are also different from those for primary caregiver location and response, unlike the last wave where only the response variable was different.

For the Year 22 weights, we use a Bayesian generalized linear model (BGLM) for variable selection and an optimally balanced Gaussian process (Vegetabile, Gillen, and Stern, 2020) to estimate the propensity score. Carnegie and Wu (2019) explored the choice of variable selection procedures using the FFCWS data and recommended BGLM or BART with 1000 trees for variable selection. The optimally balanced Gaussian process is chosen as a flexible propensity score modeling approach because this method develops a metric of covariate imbalance to evaluate the effectiveness of the estimated propensity score to minimize overall covariate imbalance.

Before building the propensity models, we chose the same set of baseline covariates as Kennedy and Gelman (2018) and imputed them using the statistical package *Amelia* (Honaker, King, and Blackwell, 2011), available in R. The variables included in the models are listed in Appendix A.

After estimating propensity scores, adjustment cells are formed to adjust the located cases or the completes upward by classifying respondents and nonrespondents into the cells and upweighting respondents by reciprocal cell response rates (Little, 1986). Si and Gelman (2014) and Kennedy and Gelman (2018) used estimated propensities into deciles to form adjustment cells, but we chose to use five adjustment cells as recommended by Rosenbaum and Rubin (1983) as the most effective bias reduction, after trying both options. Generally, we seek adjustment cells within which the distribution of the outcome is the same for respondents and nonrespondents to minimize the large-sample bias as discussed by Little (1986). Adjustment cells reduce covariate imbalance between respondents and nonrespondents though our main purpose of using the cells is upward adjustments. Reducing the nonresponse bias through minimizing covariate imbalance is also why optimally balanced GP is selected to estimate propensities. Appendix B shows the performance comparison between optimally balanced GP with BGLM and a logistic regression with a horseshoe prior. The plots in Appendix B are for checking if the distribution of the outcome is the same for respondents and nonrespondents given covariates. This is equivalent to checking if the outcome is conditionally independent of the response indicator given covariates (Little, 1986).

Poststratification

Ineligible samples are not included for the nonresponse adjustment, but we bring ineligible weights back for raking while excluding cases without the baseline weights. Following Carlson (2008), who used mother's marital status, education, ethnicity, and age for raking the weights to the baseline totals, we use four demographic variables for calibration weighting classes, and raking is done by using iterative poststratification to match marginal distributions of the survey samples to known population margins within these classes. To construct city-specific weights, the demographic variables are adjusted within individual cities to match the city total counts unlike the national weights. However, some levels of the variables were not filled at the city level due to smaller sample size at this wave, and we collapse some levels of age, education, and ethnicity in the same way as done by Kennedy and Gelman (2018). The same survey design is also used in the same way, namely one stage cluster sampling and nested stratified sampling with the population total computed by using the baseline weight.

Trimming

Following a two-stage upward adjustment, we tend to see extreme survey weights. To handle these outliers, we aim to trim extreme weights and redistribute the trimmed weights evenly across all of the weights. Carlson (2008) trimmed any weights that were more than four standard deviations higher than the mean weight value. Si and Gelman (2014) trimmed extreme weights by setting the 97.5% quantile of the weight distribution after raking for unmarried families as their upper truncation level and 95% quantile for married families as their upper truncation level and then re-raked the weight to match the wave 4 totals. Kennedy and Gelman (2018) used a single criterion of the 97.5% quantile of the weight distribution and renormalized the weights to have the sum weights remain constant as an approach for redistribution of the excess trimmed weight. We follow the same technique used by Kennedy and Gelman (2018) at this wave.

Replicate weights

The general method for variance estimation is to create replicate weights. When computing the variance of estimates arising from the data with a multistage design, a specialized technique needs to be used to account for the complex sample design of the Future of Families study. Carlson (2008) employed the random groups approach, discussed in Chapter 2 of Wolter (1985). Si and Gelman (2014) used jackknife schemes for stratified designs based on the primary sampling unit (PSU) and the stratum structure of the data, with the number of replicates equal to the number of PSUs. Kennedy and Gelman (2018) used the random groups method using 33 random groups for the national replicate weights and 10 random groups for the city replicate weights. We also follow this approach for the replicate weights of both primary caregivers and young adults.

Checks

Both Si and Gelman (2014) and Kennedy and Gelman (2018) performed a number of checks of the validity of the survey weights proposed by Carlson (2008). We followed the same procedure as previous waves to ensure the validity of our work. After a two-stage nonresponse adjustment, we checked if the sum of the weights matched the population total and the sum weight in each city as well as the four demographic variables. We expected the weighted counts in each city to be the same across all 7 waves but the weighted counts in each demographic variable to be reasonably close to other waves. We also checked that individuals in the four cities not included in the national weights do not have national weights, the individuals in city X and these four cities do not have national minus X weights, and the city weights have weights for all cases that are eligible, located, and complete.

Primary Caregiver Weights

Weights for the cases where the primary caregiver completed the primary caregiver survey were named with the following convention. Weights are available for all cases where (a) a baseline mother weight was available and (b) the primary caregiver was eligible, located, and completed the survey.

Table 1: Naming convention for the PCG Year 22/Wave7 weights

Population	Base Weight	Replicate Weight
National	p7natwt	p7natwt_rep1 - p7natwt_rep33
National w/o X	p7natwtx	p7natwtx_rep1 - p7natwtx_rep33
City	p7citywt	p7citywt_rep1 - p7citywt_rep10

National weights

There were 3312 eligible cases with baseline national weights for the Year 22 wave. Of these cases, 2899 were located. Of those located, 1978 completed the primary caregiver interview. Weights were only calculated for cases where the primary caregiver interview is completed. The total population count is 1,131,308 (rounded to the nearest integer), and the number of cases available for raking after bringing ineligible cases back is 2108.

As described above, the first stage of creating the wave 7 weights is to adjust for systematic nonresponse, both in the probability of being located and responding to the survey. To this end, Carlson (2008) used a stepwise regression, which only reports statistically significant covariates and hence can be unstable. Si and Gelman (2014) and Kennedy and Gelman (2018) used regularized regression techniques to reduce. We also used a regularization technique for this stage and used the selected variables to fit propensity models: one for propensity to locate, the other for propensity to respond. Then, weights were computed by taking the inverse of propensity scores and then multiplied by the inverse of the weighted response rate within each adjustment cell for nonresponse adjustment.

Following this adjustment, we then raked to four demographic variables identified in the first wave in the survey by Carlson (2008). These four variables are marital status, education, ethnicity, and age group. The following tables compare the number of completed cases in wave 7 to the population marginal distributions for each of these variables. We estimate the population marginal distribution using the baseline mother weights of these variables.

Table 2: Baseline national population and wave 7 marginal counts for marital status

Marriage Status	Population count	Wave7 Count
Married	680817.7	543
Unmarried	450490.7	1565

Table 3: Baseline national population and wave 7 marginal counts for educational level

Education Level	Population Count	Wave7 Count
<8 grade	113127.7	84
Some HS	211988.0	549
HS or Equiv	338407.2	630
Some College	214318.9	566
College +	253466.6	279

Table 4: Baseline national population and wave 7 marginal counts for ethnicity

Ethnicity	Population Count	Wave7 Count
White, non-Hispanic	430161.42	568
Black, non-Hispanic	254737.60	915
Hispanic	353197.81	542
Other	93211.53	83

Table 5: Baseline national population and wave 7 marginal counts for age group

Age Group	Population Count	Wave7 Count
<18	53450.32	67
18-19	89690.08	312
20-24	283787.41	746
25-29	294845.36	481
30-34	252185.44	302
35-40	128291.17	156
40+	29058.59	44

Following Si and Gelman (2014), we used the *survey* package for raking in R (Lumley, 2004). We coded the complex survey design into the survey object within this package in a similar fashion, using "natpsu" as the primary sampling unit and "natstratum" as the stratum structure. The distribution of the weights is summarized below:

Table 6: Summary of untrimmed national primary caregiver survey weights

Min	1st Quantile	Median	Mean	3rd Quantile	Max
1.485	29.039	114.049	536.674	435.902	15473.130

However, as noted by Si and Gelman (2014), weights calculated in this way typically require trimming due to very extreme weights. As aforementioned, we used the same approach to trimming as Kennedy and Gelman (2018) rather than the Winsorizing method employed by Si and Gelman (2014): trimming and then renormalizing because it appears to be beneficial in reducing bias due to specific features of the data.

Table 7: Summary of trimmed national primary caregiver survey weights

Min	1st Quantile	Median	Mean	3rd Quantile	Max
1.663	32.289	125.715	536.674	479.220	9498.470

Replicate weights were created in the method described above, and the previously described checks were conducted to test the weights.

National weights (excluding city X)

There were 2997 eligible cases with the baseline national (excluding city X) weight for the Year 22 wave. Of these cases, 2637 were located. Of those located, 1778 completed the primary caregiver interview. Weights were only calculated for cases where the primary caregiver interview was completed. The total population count is 1,131,308, and the number of cases available for raking after bringing ineligible cases back is 1897.

After the non-response adjustment done in the same way as in national weights (including city X), we then raked to four demographic variables–marital status, education, ethnicity, and age group. The following tables compare the number of completed cases in wave 7 to the population marginal distributions for each of these variables, where the population is the set of all large cities excluding city X. We estimated the population marginal distribution using the baseline mother weights of these variables.

Table 8: Baseline national population and wave 7 marginal counts for marital status

Marriage Status	Population Count	Wave7 Count
Married	680817.7	490
Unmarried	450490.7	1407

Table 9: Baseline national population and wave 7 marginal counts for educational level

Education Level	Population Count	Wave7 Count
<8 grade	113127.7	64
Some HS	211988.0	490
HS or Equiv	338407.2	582
Some College	214318.9	517
College +	253466.6	244

Table 10: Baseline national population and wave 7 marginal counts for ethnicity

Ethnicity	Population Count	Wave7 Count
White, non-hispanic	430161.42	515
Black, non-hispanic	254737.60	859
Hispanic	353197.81	446
Other	93211.53	77

Table 11: Baseline national population and wave 7 marginal counts for age group

Age Group	Population Count	Wave7 Count
<18	53450.32	67
18-19	89690.08	276
20-24	283787.41	666
25-29	294845.36	433
30-34	252185.44	272
35-40	128291.17	141
40+	29058.59	42

After raking done in the same way as in national weights (including city X), the distribution of the weights is summarized below:

Table 12: Summary of untrimmed national primary caregiver survey natx weights

Min	1st Quantile	Median	Mean	3rd Quantile	Max
1.379	43.697	149.030	596.367	493.762	18128.010

Trimming is done in the same way as in national weights (including city X).

Table 13: Summary of trimmed national primary caregiver survey natx weights

Min	1st Quantile	Median	Mean	3rd Quantile	Max
1.529	48.101	163.682	596.367	538.312	8867.302

Replicate weights were created in the method described above, and the previously described checks conducted to test the weights.

City weights

There were 4599 eligible cases with the baseline city weight for the Year 22 wave. Of these cases, 4018 were located. Of those located, 2744 cases completed the primary caregiver interview. Weights were only calculated for cases where the primary caregiver interview is completed. The total population count is 347,238, and the number of cases available for raking after bringing ineligible cases back is 2934.

After the non-response adjustment done in the same way as in national weights, we then raked to four demographic variables–marital status, education, ethnicity, and age group. Unlike the national weights, we raked to the marginal distributions of these four variables within the cities. This meant that we had finer grain cells to adjust to, which (due to the smaller sample size) led to difficulties with convergence. As a compromise, we pooled some levels of age group, ethnicity, and education to increase the size of the cells within city. Nevertheless, one of the cities had an empty cell in a certain ethnic group this year; hence, the weights within that city were renormalized after raking to match the total city count at baseline.

For data protection reasons, we do not summarize the marginal distributions within city. However in the following tables we compare estimated baseline combined city marginal distributions to the combined city sample distributions in wave 7 for the pooled variables.

Table 14: Baseline population and wave 7 marginal counts for mar ital status

Marriage Status	Population Count	Wave7 Count
Married	181631.8	746
Unmarried	165606.4	2188

Table 15: Baseline population and wave 7 marginal counts for educational level

Education Level	Population Count	Wave7 Count
<8 grade or Some HS	100743.10	919
HS or Equiv	91370.32	750
Some College	80802.88	815
College +	74321.83	450

Table 16: Baseline population and wave 7 marginal counts for ethnicity

Ethnicity	Population Count	Wave7 Count
White, non-Hispanic	99202.47	681
Black, non-Hispanic	121373.28	1446
Other	126662.38	807

Table 17: Baseline population and wave 7 marginal counts for age group

Age Group	Population Count	Wave7 Count
<20	44953.32	503
20-24	88585.14	1048
25-34	166342.71	1104
34+	47356.96	279

After raking done in the same way as in national weights, the distribution of the weights is summarized below:

Table 18: Summary of untrimmed primary caregiver survey city weights

Min	1st Quantile	Median	Mean	3rd Quantile	Max
0.519	17.327	40.036	118.350	90.035	5308.544

Trimming was done in the same way as in national weights.

Table 19: Summary of trimmed primary caregiver survey city weights

Min	1st Quantile	Median	Mean	3rd Quantile	Max
0.623	18.025	41.147	118.350	91.189	4486.822

Replicate weights were created in the method described above, and the previously described checks conducted to test the weights.

Young Adult Weights

Weights for the cases where the young adult completed the survey were named with the following convention. Weights are available for all cases where (a) a baseline mother weight was available and (b) the young adult was eligible, located and completed the survey.

Table 20: Naming convention for the YA Year 22/Wave7 weights

Population	Base Weight	Replicate Weight
National	k7natwt	k7natwt_rep1 - k7natwt_rep33
National w/o X	k7natwtx	k7natwtx_rep1 - k7natwtx_rep33
City	k7citywt	k7citywt_rep1 - k7citywt_rep10

National weights

There were 3314 eligible cases with the baseline national weight for the Year 22 wave. Of these cases, 2830 were located. Of those located, 2166 completed the young adult interview. Weights were only calculated for cases where the young adult interview is completed. The total population count is 1,131,308, and the number of cases available for raking after bringing ineligible cases back is 2294.

After the non-response adjustment done in the same way as in primary caregiver weights, we then raked to four demographic variables–marital status, education, ethnicity, and age group. The following tables compare the number of completed cases in wave 7 to the population marginal distributions for each of these variables. We estimate the population marginal distribution using the baseline mother weights of these variables.

Table 21: Baseline national population and wave 7 marginal counts for marital status

Marriage Status	Population count	Wave7 Count
Married	680817.7	596
Unmarried	450490.7	1698

Table 22: Baseline national population and wave 7 marginal counts for educational level

Education Level	Population Count	Wave7 Count
<8 grade	113127.7	90
Some HS	211988.0	586
HS or Equiv	338407.2	701
Some College	214318.9	606
College +	253466.6	311

Table 23: Baseline national population and wave 7 marginal counts for ethnicity

Ethnicity	Population Count	Wave7 Count
White, non-Hispanic	430161.42	616
Black, non-Hispanic	254737.60	1001
Hispanic	353197.81	589
Other	93211.53	88

Table 24: Baseline national population and wave 7 marginal counts for age group

Age Group	Population Count	Wave7 Count
<18	53450.32	68
18-19	89690.08	337
20-24	283787.41	820
25-29	294845.36	510
30-34	252185.44	333
35-40	128291.17	175
40+	29058.59	51

After raking done in the same way as in primary caregiver weights, the distribution of the weights is summarized below:

Table 25: Summary of untrimmed national young adult survey weights

Min	1st Quantile	Median	Mean	3rd Quantile	Max
1.415	30.908	112.141	493.160	421.981	19487.008

Trimming was done in the same way as in primary caregiver weights.

Table 26: Summary of trimmed national young adult survey weights

Min	1st Quantile	Median	Mean	3rd Quantile	Max
1.592	34.761	125.499	493.160	469.645	7924.393

Replicate weights were created in the method described above, and the previously described checks conducted to test the weights.

National weights (excluding city X)

There were 3000 eligible cases with the baseline national (excluding city X) weight for the Year 22 wave. Of these cases, 2562 were located. Of those located, 1960 completed the young adult interview. Weights were only calculated for cases where the young adult interview was completed. The total population count is 1,131,308, and the number of cases available for raking after bringing ineligible cases back is 2076.

After the non-response adjustment done in the same way as in national weights (including city X), we then raked to four demographic variables–marital status, education, ethnicity, and age group. The following tables compare the number of completed cases in wave 7 to the population marginal distributions for each of these variables, where the population is the set of all large cities excluding city X. We estimate the population marginal distribution using the baseline mother weights of these variables.

Table 27: Baseline national population and wave 7 marginal counts for marital status

Marriage Status	Population count	Wave7 Count
Married	680817.7	542
Unmarried	450490.7	1534

Table 28: Baseline national population and wave 7 marginal counts for educational level

Education Level	Population Count	Wave7 Count
<8 grade	113127.7	71
Some HS	211988.0	533
HS or Equiv	338407.2	645
Some College	214318.9	552
College +	253466.6	275

Table 29: Baseline national population and wave 7 marginal counts for ethnicity

Ethnicity	Population Count	Wave7 Count
White, non-Hispanic	430161.42	560
Black, non-Hispanic	254737.60	942
Hispanic	353197.81	493
Other	93211.53	81

Table 30: Baseline national population and wave 7 marginal counts for age group

Age Group	Population Count	Wave7 Count
<18	53450.32	68
18-19	89690.08	302
20-24	283787.41	737
25-29	294845.36	463
30-34	252185.44	298
35-40	128291.17	158
40+	29058.59	50

After raking done in the same way as in national weights (including city X), the distribution of the weights is summarized below:

Table 31: Summary of untrimmed national young adult survey natx weights

Min	1st Quantile	Median	Mean	3rd Quantile	Max
1.476	38.649	144.571	544.946	470.214	16782.388

Trimming was done in the same way as in national weights (including city X).

Table 32: Summary of trimmed national young adult survey natx weights

Min	1st Quantile	Median	Mean	3rd Quantile	Max
1.661	43.257	162.052	544.946	521.906	7918.623

Replicate weights were created in the method described above, and the previously described checks conducted to test the weights.

City weights

There were 4604 eligible cases with the baseline city weight for the Year 22 wave. Of these cases, 3920 were located. Of those located, 2990 completed the young adult interview. Weights were only calculated for cases where the young adult interview is completed. The total population count is 347,238, and the number of cases available for raking after bringing ineligible cases back is 3175.

After the non-response adjustment done in the same way as in national weights, we then raked to four demographic variables–marital status, education, ethnicity, and age group. Unlike the national weights, we raked to the marginal distributions of these four variables within the cities. The following tables compare estimated baseline combined city marginal distributions to the combined city sample distributions in wave 7 for the pooled variables.

Table 33: Baseline population and wave 7 marginal counts for marital status

Marriage Status	Population count	Wave7 Count
Married	181631.8	814
Unmarried	165606.4	2361

Table 34: Baseline population and wave 7 marginal counts for educational level

Education Level	Population Count	Wave7 Count
<8 grade or Some HS	100743.10	985
HS or Equiv	91370.32	817
Some College	80802.88	875
College +	74321.83	498

Table 35: Baseline population and wave 7 marginal counts for ethnicity

Ethnicity	Population Count	Wave7 Count
White, non-Hispanic	99202.47	734
Black, non-Hispanic	121373.28	1569
Other	126662.38	872

Table 36: Baseline population and wave 7 marginal counts for age group

Age Group	Population Count	Wave7 Count
<20	44953.32	538
20-24	88585.14	1148
25-34	166342.71	1180
34+	47356.96	309

After raking done in the same way as in national weights, the distribution of the weights is summarized below:

Table 37: Summary of untrimmed young adult survey cit weights

Min	1st Quantile	Median	Mean	3rd Quantile	Max
1.146	18.501	37.825	109.345	80.817	5683.096

Trimming was done in the same way as in national weights.

Table 38: Summary of trimmed young adult survey city weights

Min	1st Quantile	Median	Mean	3rd Quantile	Max
1.159	18.983	38.606	109.366	82.089	3952.711

Replicate weights were created in the method described above, and the previously described checks conducted to test the weights.

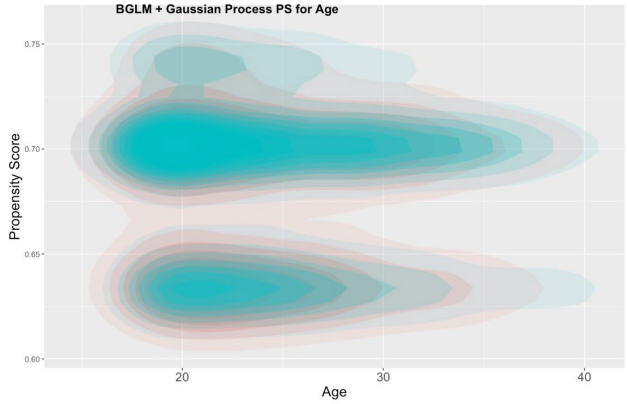
Appendix A

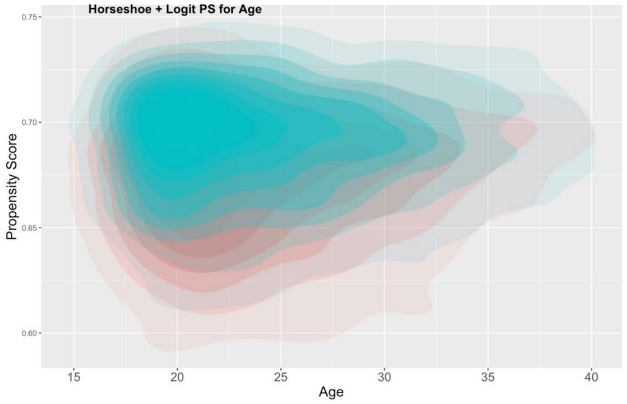
Table 39: Variables included in the propensity model

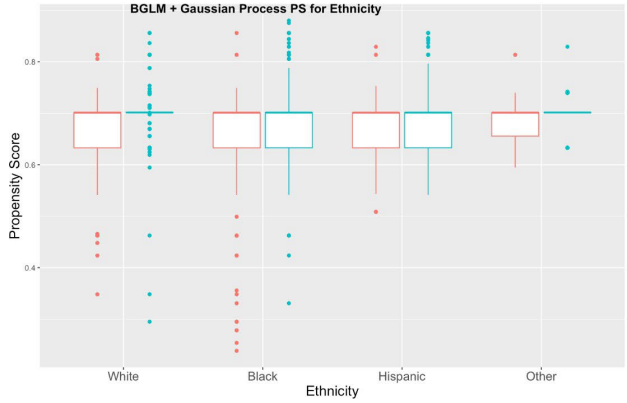
cm1age	m1e3c
m1a4	m1e4a
m1a9	m1e4b
m1a11a	m1e4c
m1a11b	m1f2
m1a11c	m1f3
m1a11d	m1f4
m1a13	m1f5
m1a13a	m1f6
m1a15	m1f7
m1b2	m1g1
m1b3	m1g2
m1b8	m1g3
m1b27	m1g4
m1b28	m1g6
m1d1a	m1h3
m1d1b	m1h3a
m1d1c	m1i1
m1d1d	m1i2a
m1d1e	m1i3
m1d1f	m1i11
m1d2a	m1j3
m1d2b	m1j4
m1d2c	m1j5
m1d2d	labor
m1d2e	child_support
m1d2f	welf
m1e3a	hosp_type

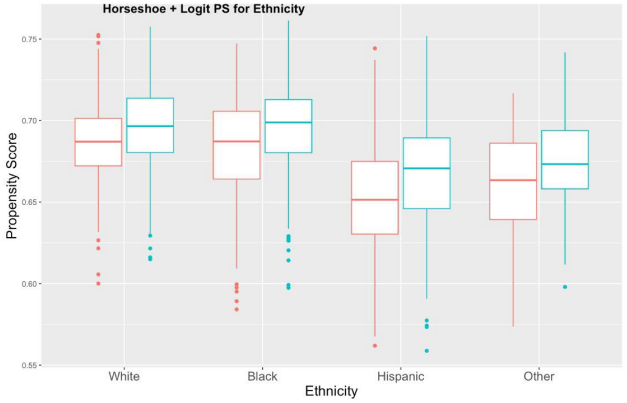
Appendix B

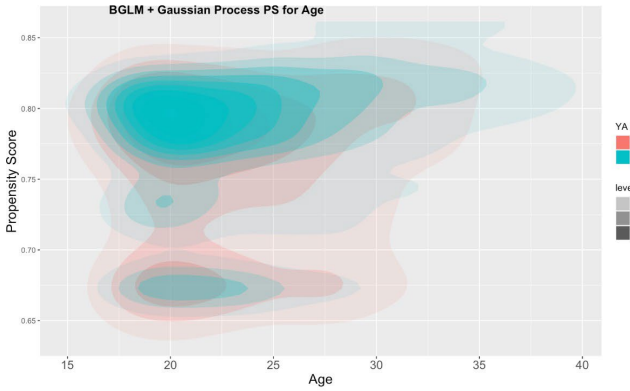
Estimated propensity scores for national weight

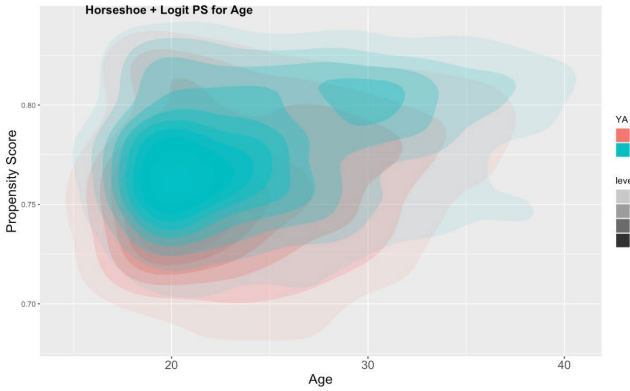


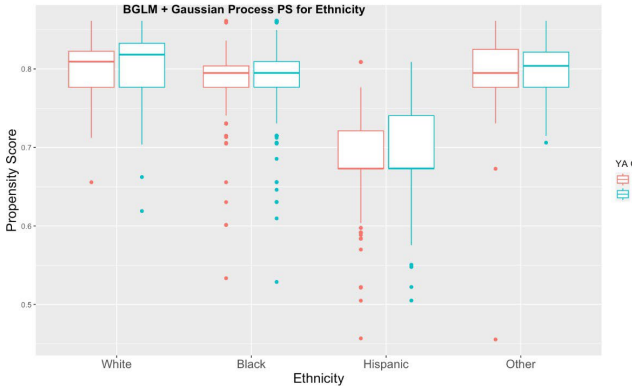


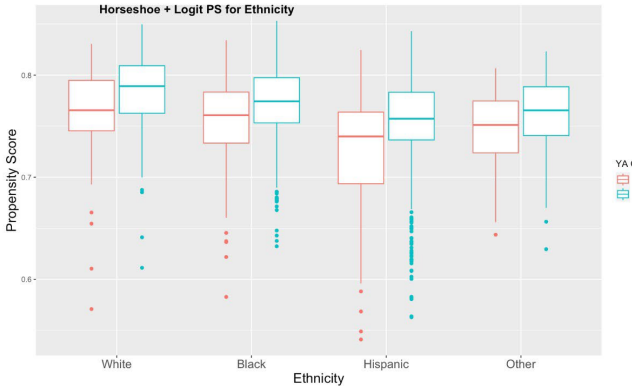












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