# **Resiliency Collab**

# S.Kelly

Final Models: Education (hsg & sc), Health (lbw, pud, mud), and Housing (rent30, median, owned)

To address VIF, dropped the following three IVs from all previous final models: z\_SVI\_RPL\_THEMES\_ALL, z\_ACS\_PER\_CAPITA\_INCOME, z\_pfh\_percent

```
dim(Z_and_Final_Variables_10.28.22)
[1] 3141 129
       glimpse(Z and Final Variables 10.28.22)
Rows: 3,141
Columns: 129
$ FIPS
                                                                                    <int> 1001, 1003, 1005, 1007, 1009, 1011, 1013, 10~
                                                                                    <chr> "al", "al", "al", "al", "al", "al", "al", "a-", "al", "a-", "al", "al", "a-", "al", 
$ State.x
$ county
                                                                                    <chr> "autauga", "baldwin", "barbour", "bibb", "bl~
$ hsg_rate
                                                                                    <dbl> 90.00000, 86.36158, 81.41026, 83.76384, 93.4~
$ sc_percent
                                                                                    <dbl> 62.00997, 67.37162, 34.85765, 44.13735, 53.3~
                                                                                    <dbl> 2.959586, 3.005642, 2.660388, 2.628688, 3.02~
$ rs average
$ ms_average
                                                                                    <dbl> 2.802699, 2.860696, 2.443271, 2.381308, 2.84~
$ pfh percent
                                                                                    <dbl> 20.88299, 17.50913, 29.59180, 19.43972, 21.7~
$ pphd_avgnum
                                                                                    <dbl> 4.743889, 4.224519, 5.430279, 4.591482, 4.86~
                                                                                    <dbl> 4.654031, 4.304056, 5.185594, 4.551699, 4.89~
$ pmhd_avgnum
                                                                                    <dbl> 8.619529, 8.345003, 11.474559, 10.308710, 7.~
$ lbw_percent_lbw
                                                                                    <dbl> 34.7, 26.5, 23.5, 33.5, 30.3, 24.6, 39.5, 31~
$ pi_phy_inact
$ cip_perc
                                                                                    <dbl> 19.3, 13.9, 43.9, 27.8, 18.0, 68.3, 36.3, 26~
$ csph_perc
                                                                                    <dbl> 26.24268, 24.13960, 56.60343, 28.68924, 28.5~
```

```
<dbl> 9.013, 3.656, 8.609, 4.047, 2.495, 5.814, 3.~
$ ACS_PCT_CHILD_DISAB
                            <dbl> 19.139, 9.497, 47.576, 22.275, 1.495, 76.246~
$ ACS_PCT_BLACK
$ ACS_PCT_HISPAN
                            <dbl> 2.768, 4.494, 4.290, 2.428, 9.127, 0.493, 0.~
$ SVI_RPL_THEME1_SOCIECO
                            <dbl> 0.3631, 0.2232, 0.9780, 0.7694, 0.6143, 0.97~
$ SVI RPL THEME2 HH DISB
                            <dbl> 0.5810, 0.1990, 0.9153, 0.1203, 0.3187, 0.44~
                            <dbl> 0.5947, 0.4358, 0.8558, 0.4323, 0.5915, 0.67~
$ SVI_RPL_THEME3_MINO
$ SVI RPL THEME4 HH TRANS
                            <dbl> 0.3741, 0.3359, 0.9889, 0.7189, 0.1741, 0.76~
$ SVI_RPL_THEMES_ALL
                            <dbl> 0.4354, 0.2162, 0.9959, 0.6003, 0.4242, 0.88~
$ ACS_PCT_ENGL_NOT_WELL
                            <dbl> 0.732, 0.477, 1.451, 0.216, 1.366, 0.441, 0.~
$ ACS_PCT_NON_CITIZEN
                            <dbl> 0.969, 1.850, 1.420, 0.870, 2.840, 0.000, 0.~
                            <dbl> 37.8, 42.8, 39.9, 39.9, 40.8, 39.6, 40.7, 39~
$ ACS_MEDIAN_AGE
                            <dbl> 0.1440757, 0.1656779, 0.2300316, 0.1781116, ~
$ food_afford
                            <dbl> 7.2, 8.0, 5.6, 7.8, 8.4, 4.3, 6.6, 6.9, 6.4,~
$ fd_enviro_indx
$ fi_percent
                            <dbl> 13.2, 11.6, 22.0, 14.3, 10.7, 24.8, 20.6, 15~
                            <dbl> 13.010, 7.932, 27.749, 12.924, 9.762, 26.517~
$ ACS_PCT_FOOD_STAMP
                            <dbl> 43.40867, 48.48656, 63.29230, 61.56212, 52.9~
$ childelig_lunch_perc
                            <dbl> 14.663462, 13.566201, 14.583333, 10.496454, ~
$ shp_percent
                            <dbl> 13.403481, 11.725808, 14.059546, 9.886874, 8~
$ shcb_percent
$ ACS_PCT_NO_VEH
                            <dbl> 5.641, 3.441, 9.242, 5.994, 4.155, 11.721, 7~
$ ACS_PCT_RENTER_HH_CHILD
                            <dbl> 40.747, 28.721, 43.373, 30.557, 31.070, 62.6~
$ ACS_PCT_RENT_COST_30PCT
                            <dbl> 53.066, 48.301, 47.601, 46.154, 42.469, 58.5~
                            <dbl> 18.353, 11.680, 29.187, 28.545, 25.217, 33.3~
$ ACS_PCT_MOBILE_HOME
$ ACS_PCT_OWNED_HH
                            <dbl> 74.895, 73.619, 61.398, 75.073, 78.626, 75.5~
                            <dbl> 34.128, 24.981, 24.078, 28.549, 30.765, 26.9~
$ ACS_PCT_OWNER_HH_CHILD
$ ACS_PCT_RENTED_HH
                            <dbl> 25.105, 26.381, 38.602, 24.927, 21.374, 24.4~
                            <dbl> 147900, 189800, 92900, 96500, 124700, 77500,~
$ ACS_MEDIAN_HOME_VALUE
                            <int> 67, 217, 19, 19, 49, 8, 18, 166, 60, 22, 67,~
$ soc_assoc_num
$ aeo_perc_w_acc
                            <dbl> 69.130124, 73.713549, 53.166770, 16.251364, ~
                            <int> 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 1, 2, 1, 2, 1,~
$ dwv_presence
                            <dbl> 1.345, 1.372, 2.841, 4.474, 1.587, 4.378, 1.~
$ ACS_PCT_HH_PUB_ASSIST
                            <int> 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, ~
$ AHRF_TXC_SITE_NO_CNTRL
                            <dbl> 3.629079, 3.615382, 5.171384, 3.971828, 3.51~
$ unemp_perc
$ ACS_GINI_INDEX
                            <dbl> 0.4602, 0.4609, 0.4731, 0.4294, 0.4331, 0.51~
$ ACS_MEDIAN_HH_INCOME
                            <int> 58786, 55962, 34186, 45340, 48695, 32152, 39~
$ ACS PCT WORK NO CAR
                            <dbl> 0.767, 1.219, 4.158, 1.650, 1.121, 5.282, 2.~
                            <int> 29372, 31203, 18461, 20199, 22656, 20346, 20~
$ ACS_PER_CAPITA_INCOME
$ ACS_PCT_BROADBAND
                            <dbl> 78.859, 78.126, 60.396, 66.096, 68.461, 58.8~
                            <dbl> 13.010, 11.431, 23.949, 23.728, 21.350, 27.0~
$ ACS_PCT_NO_PC
                            <dbl> 5.588, 7.245, 10.592, 11.535, 8.553, 13.993,~
$ ACS_PCT_SMARTPHONE
                            <dbl> 8.721686, 11.333404, 12.242792, 10.206253, 1~
$ uninsur_perc
                            <dbl> 2.669154, 3.538763, 2.913534, 2.617801, 4.07~
$ uc_percent
                            <chr> "92.500694444444406", "57.167361111111099", ~
$ pcp_ratio
                            <dbl> 39.56763, 55.95766, 52.24870, 111.60714, 22.~
```

\$ opcp\_rate

```
$ dents_ratio
                            <chr> "128.70902777777701", "84.125694444444406", ~
                            <chr> "178.20902777777701", "43.250694444444399", ~
$ mhp_ratio
$ phs_rate
                            <int> 7108, 4041, 6209, 5961, 4060, 6632, 9203, 65~
$ ms_perc_ann
                            <int> 41, 43, 45, 40, 34, 35, 42, 32, 38, 36, 39, ~
$ AMFAR AMATFAC
                            <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, ~
$ MP PERCPEN
                            <dbl> 44.98, 42.77, 37.25, 49.98, 51.56, 41.15, 21~
$ AHRF RURAL H CLINIC
                            <int> 0, 0, 1, 1, 4, 3, 3, 0, 0, 1, 1, 2, 5, 0, 0,~
                            <int> 1839, 6194, 694, 529, 1719, 286, 645, 3743, ~
$ TeenBirths
                            <dbl> 0.0004710145, 0.0007351987, 0.0003102940, 0.~
$ phys_per_cap
                            <dbl> 0.000000e+00, 7.688353e-05, 3.878675e-05, 0.~
$ mhp_per_cap
                            <dbl> 3.260870e-04, 5.670160e-04, 2.327205e-04, 2.~
$ dents_per_cap
                            <dbl> 0.17560941, -0.33273076, -1.02450160, -0.695~
$ z_hsg_rate
                            <dbl> 0.348003662, 0.801035960, -1.946232079, -1.1~
$ z_sc_percent
                            <dbl> -0.2130832, -0.2088286, -0.2407231, -0.24365~
$ z_rs_average
                            <dbl> -0.5362162, -0.4295601, -1.1972017, -1.31115~
$ z_ms_average
$ z_ACS_PCT_BLACK
                            <dbl> 0.69336041, 0.02990109, 2.65009061, 0.909146~
$ z_ACS_PCT_HISPAN
                            <dbl> -0.470973965, -0.345828201, -0.360619474, -0~
                            <dbl> -0.47437091, -0.95880330, 1.65484620, 0.9325~
$ z_SVI_RPL_THEME1_SOCIECO
                            <dbl> 0.2801763, -1.0427818, 1.4379378, -1.3153388~
$ z_SVI_RPL_THEME2_HH_DISB
$ z SVI RPL THEME3 MINO
                            <dbl> 0.32822699, -0.22165854, 1.23178338, -0.2337~
$ z_SVI_RPL_THEME4_HH_TRANS
                            <dbl> -0.43546688, -0.56774285, 1.69341454, 0.7584~
                            <dbl> -0.22388945, -0.98281156, 1.71669377, 0.3470~
$ z SVI RPL THEMES ALL
$ z_ACS_PCT_ENGL_NOT_WELL
                            <dbl> -0.270050837, -0.421196223, 0.156119876, -0.~
                            <dbl> -0.51019277, -0.26306389, -0.38368298, -0.53~
$ z_ACS_PCT_NON_CITIZEN
$ z_ACS_MEDIAN_AGE
                            <dbl> -0.64439450, 0.27909238, -0.25653001, -0.256~
                            <dbl> -0.439448964, 0.071371779, 1.593128721, 0.36~
$ z_food_afford
                            <dbl> -0.21949409, 0.47886061, -1.61620350, 0.3042~
$ z_fd_enviro_indx
                            <dbl> -0.04477055, -0.44348572, 2.14816286, 0.2293~
$ z_fi_percent
                            <dbl> -0.12543469, -0.89616985, 2.11164002, -0.138~
$ z_ACS_PCT_FOOD_STAMP
$ z_childelig_lunch_perc
                            <dbl> -0.42325470, -0.18342220, 0.51586352, 0.4341~
                            <dbl> 0.17404824, -0.06580777, 0.15653260, -0.7368~
$ z_shp_percent
$ z_shcb_percent
                            <dbl> 0.55598033, 0.08942385, 0.73843031, -0.42197~
$ z_ACS_PCT_NO_VEH
                            <dbl> -0.15863051, -0.65012243, 0.64585240, -0.079~
$ z_ACS_PCT_RENTER_HH_CHILD <dbl> 0.77902931, -0.64319146, 1.08958575, -0.4260~
$ z ACS PCT RENT COST 30PCT <dbl> 0.9236173, 0.4262663, 0.3532032, 0.2021713, ~
                            <dbl> 0.56349590, -0.13039326, 1.69006494, 1.62330~
$ z_ACS_PCT_MOBILE_HOME
$ z_ACS_PCT_OWNED_HH
                            <dbl> 0.4190011, 0.2645905, -1.2142909, 0.4405412,~
$ z_ACS_PCT_OWNER_HH_CHILD
                            <dbl> 1.17618972, -0.35796554, -0.50941871, 0.2404~
$ z_ACS_MEDIAN_HOME_VALUE
                            <dbl> 0.008481818, 0.472893552, -0.601127858, -0.5~
$ z_ACS_PCT_BROADBAND
                            <dbl> 0.66668600, 0.58749438, -1.32801377, -0.7121~
$ z_ACS_PCT_NO_PC
                            <dbl> -0.5158114, -0.7435088, 1.0616311, 1.0297621~
                            <dbl> -0.35156862, 0.20891337, 1.34103963, 1.66001~
$ z_ACS_PCT_SMARTPHONE
$ z_pfh_percent
                            <dbl> 0.62132388, -0.09043965, 2.45857541, 0.31684~
```

```
$ z_pphd_avgnum
                            <dbl> 1.0686813, 0.3317775, 2.0425608, 0.8524406, ~
                            <dbl> 0.8071895, 0.2263430, 1.6894141, 0.6373502, ~
$ z_pmhd_avgnum
$ z_lbw_percent_lbw
                            <dbl> 0.23414587, 0.09957632, 1.63365236, 1.062165~
$ z_pi_phy_inact
                            <dbl> 1.28678114, -0.15283038, -0.67951752, 1.0761~
                            <dbl> -0.20340963, -0.80996824, 2.55980185, 0.7513~
$ z_cip_perc
                            <dbl> -0.57497431, -0.77237114, 2.27471379, -0.345~
$ z_csph_perc
$ z_ACS_PCT_CHILD_DISAB
                            <dbl> 1.9789546, -0.5137625, 1.7909655, -0.3318225~
$ z_phys_per_cap
                            <dbl> -0.12978042, 0.57993866, -0.56154881, 0.0359~
                            <dbl> -0.49269142, 0.32117672, -0.08210541, -0.492~
$ z_mhp_per_cap
$ z_dents_per_cap
                            <dbl> -0.14768020, 0.80656949, -0.51747750, -0.560~
                            <dbl> -0.535429391, -0.027813084, 0.148936505, -0.~
$ z_uninsur_perc
                            <dbl> -0.7572901, -0.6010458, -0.7133819, -0.76651~
$ z_uc_percent
                            <dbl> -0.73164417, -0.46603422, -0.52614007, 0.435~
$ z_opcp_rate
                            <dbl> -0.13945763, 0.27695051, -0.24893807, -0.264~
$ z_TeenBirths
                            <dbl> 1.221509621, -0.443936625, 0.7333333496, 0.59~
$ z_phs_rate
                            <dbl> 0.04485619, 0.30548105, 0.56610592, -0.08545~
$ z_ms_perc_ann
$ z_AMFAR_AMATFAC
                            <dbl> -0.1985903, -0.1985903, -0.1985903, -0.19859~
$ z_MP_PERCPEN
                            <dbl> 1.433688929, 1.274661948, 0.877454284, 1.793~
                            <dbl> -0.6641385, -0.6641385, -0.1888237, -0.18882~
$ z_AHRF_RURAL_H_CLINIC
                            <dbl> -0.33580552, -0.34492510, 0.69109612, -0.107~
$ z unemp perc
$ z_ACS_GINI_INDEX
                            <dbl> 0.40562723, 0.42479806, 0.75891841, -0.43788~
                            <dbl> 0.5266713, 0.3204602, -1.2696432, -0.4551679~
$ z_ACS_MEDIAN_HH_INCOME
$ z_ACS_PCT_WORK_NO_CAR
                            <dbl> -0.505363092, -0.376387589, 0.462238521, -0.~
                            <dbl> 0.35932791, 0.64059481, -1.31675245, -1.0497~
$ z_ACS_PER_CAPITA_INCOME
                            <dbl> -0.115790810, 0.539443880, -0.325465911, -0.~
$ z_soc_assoc_num
                            <dbl> 0.27088719, 0.46709498, -0.41247397, -1.9927~
$ z_aeo_perc_w_acc
                            <dbl> -0.7682178, -0.7682178, -0.7682178, -0.76821~
$ z_dwv_presence
$ z_ACS_PCT_HH_PUB_ASSIST
                            <dbl> -0.5760527, -0.5601563, 0.3047219, 1.2661556~
                            <dbl> -0.1671344, -0.1671344, -0.1671344, -0.16713~
$ z_AHRF_TXC_SITE_NO_CNTRL
```

# Final Education Model

DV: High School Rate

IVs: Demographics, Food/Housing, Technology, Health 1, (DOES NOT INCLUDE health 2), HWCC, Business, Government

```
options(scipen = 999)
z_hsg_levels_1234678 <- lm(formula = z_hsg_rate ~ z_ACS_PCT_BLACK +</pre>
    z_ACS_PCT_HISPAN + z_SVI_RPL_THEME1_SOCIECO + z_SVI_RPL_THEME2_HH_DISB +
    z_SVI_RPL_THEME3_MINO + z_SVI_RPL_THEME4_HH_TRANS + z_ACS_PCT_ENGL_NOT_WELL +
    z_ACS_PCT_NON_CITIZEN + z_ACS_MEDIAN_AGE + z_food_afford +
    z fd enviro indx + z fi percent + z ACS PCT FOOD STAMP +
    z_childelig_lunch_perc + z_shp_percent + z_shcb_percent +
    z ACS PCT NO VEH + z ACS PCT RENTER HH CHILD + z ACS PCT RENT COST 30PCT +
    z_ACS_PCT_MOBILE_HOME + z_ACS_PCT_OWNED_HH + z_ACS_PCT_OWNER_HH_CHILD +
    z ACS MEDIAN HOME VALUE + z ACS PCT BROADBAND + z ACS PCT NO PC +
    z_ACS_PCT_SMARTPHONE + z_phys_per_cap + z_mhp_per_cap + z_dents_per_cap +
    z_uninsur_perc + z_uc_percent + z_opcp_rate + z_TeenBirths +
    z pphd_avgnum + z pmhd_avgnum + z lbw percent lbw + z pi_phy_inact +
    z_cip_perc + z_csph_perc + z_ACS_PCT_CHILD_DISAB + z_unemp_perc +
    z ACS GINI INDEX + z ACS MEDIAN HH INCOME + z ACS PCT WORK NO CAR +
    z_soc_assoc_num + z_aeo_perc_w_acc + z_dwv_presence + z_ACS_PCT_HH_PUB_ASSIST +
    z_AHRF_TXC_SITE_NO_CNTRL, data = Z_and_Final_Variables_10.28.22)
summary(z_hsg_levels_1234678)
```

#### Call:

```
lm(formula = z_hsg_rate ~ z_ACS_PCT_BLACK + z_ACS_PCT_HISPAN +
    z_SVI_RPL_THEME1_SOCIECO + z_SVI_RPL_THEME2_HH_DISB + z_SVI_RPL_THEME3_MINO +
    z_SVI_RPL_THEME4_HH_TRANS + z_ACS_PCT_ENGL_NOT_WELL + z_ACS_PCT_NON_CITIZEN +
    z_ACS_MEDIAN_AGE + z_food_afford + z_fd_enviro_indx + z_fi_percent +
    z_ACS_PCT_FOOD_STAMP + z_childelig_lunch_perc + z_shp_percent +
    z_shcb_percent + z_ACS_PCT_NO_VEH + z_ACS_PCT_RENTER_HH_CHILD +
    z_ACS_PCT_RENT_COST_3OPCT + z_ACS_PCT_MOBILE_HOME + z_ACS_PCT_OWNED_HH +
    z_ACS_PCT_OWNER_HH_CHILD + z_ACS_MEDIAN_HOME_VALUE + z_ACS_PCT_BROADBAND +
    z_ACS_PCT_NO_PC + z_ACS_PCT_SMARTPHONE + z_phys_per_cap +
    z_mhp_per_cap + z_dents_per_cap + z_uninsur_perc + z_uc_percent +
    z_opcp_rate + z_TeenBirths + z_pphd_avgnum + z_pmhd_avgnum +
    z_lbw_percent_lbw + z_pi_phy_inact + z_cip_perc + z_csph_perc +
```

z\_ACS\_PCT\_CHILD\_DISAB + z\_unemp\_perc + z\_ACS\_GINI\_INDEX +
z\_ACS\_MEDIAN\_HH\_INCOME + z\_ACS\_PCT\_WORK\_NO\_CAR + z\_soc\_assoc\_num +
z\_aeo\_perc\_w\_acc + z\_dwv\_presence + z\_ACS\_PCT\_HH\_PUB\_ASSIST +
z\_AHRF\_TXC\_SITE\_NO\_CNTRL, data = Z\_and\_Final\_Variables\_10.28.22)

#### Residuals:

Min 1Q Median 3Q Max -6.0736 -0.3829 0.1047 0.5005 2.2237

OCCITICIONOD.					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	0.079080	0.017903	4.417	${\tt 0.000010419195144}$	***
z_ACS_PCT_BLACK	-0.056832	0.037003	-1.536	0.124697	
z_ACS_PCT_HISPAN	0.030385	0.033100	0.918	0.358717	
z_SVI_RPL_THEME1_SOCIECO	0.148532	0.049923	2.975	0.002955	**
z_SVI_RPL_THEME2_HH_DISB	-0.073186	0.028526	-2.566	0.010359	*
z_SVI_RPL_THEME3_MINO	-0.212499	0.033893	-6.270	$\tt 0.00000000423809$	***
z_SVI_RPL_THEME4_HH_TRANS	-0.121791	0.026213	-4.646	0.000003553222011	***
z_ACS_PCT_ENGL_NOT_WELL	0.084921	0.051575	1.647	0.099778	•
z_ACS_PCT_NON_CITIZEN	0.015747	0.047828	0.329	0.741999	
z_ACS_MEDIAN_AGE	0.159220	0.038758	4.108	0.000041164284073	***
z_food_afford	-0.139488	0.031774	-4.390	0.000011796280202	***
z_fd_enviro_indx	0.098296	0.034269	2.868	0.004160	**
z_fi_percent	0.170410	0.049907	3.415	0.000649	***
z_ACS_PCT_FOOD_STAMP	0.090184	0.042176	2.138	0.032590	*
z_childelig_lunch_perc	-0.221645	0.035687	-6.211	0.000000000614205	***
z_shp_percent	-0.180918	0.035613	-5.080	0.000000404666364	***
z_shcb_percent	0.132581	0.037298	3.555	0.000385	***
z_ACS_PCT_NO_VEH	0.105318	0.056873	1.852	0.064170	
z_ACS_PCT_RENTER_HH_CHILD	0.052475	0.024187	2.170	0.030135	*
z_ACS_PCT_RENT_COST_30PCT	0.013532	0.026123	0.518	0.604481	
z_ACS_PCT_MOBILE_HOME	-0.114869	0.026493	-4.336	0.000015092563372	***
z_ACS_PCT_OWNED_HH	-0.033395	0.034071	-0.980	0.327102	
z_ACS_PCT_OWNER_HH_CHILD	0.128695	0.034327	3.749	0.000181	***
z_ACS_MEDIAN_HOME_VALUE	-0.156575	0.037272	-4.201	0.000027505502431	***
z_ACS_PCT_BROADBAND	0.090783	0.049616	1.830	0.067409	
z_ACS_PCT_NO_PC	0.181280	0.049259	3.680	0.000238	***
z_ACS_PCT_SMARTPHONE	0.076845	0.026091	2.945	0.003257	**
z_phys_per_cap	-0.009151	0.027023	-0.339	0.734909	
z_mhp_per_cap	0.017030	0.024764	0.688	0.491726	
z_dents_per_cap	-0.059618	0.027478	-2.170	0.030127	*
z_uninsur_perc	-0.086799	0.046847	-1.853	0.064024	•
z_uc_percent	0.363729	0.069037	5.269	0.000000149032129	***

```
0.007027
                                     0.022172
                                                0.317
z_opcp_rate
                                                               0.751313
z_TeenBirths
                          0.038864
                                     0.051603
                                                0.753
                                                               0.451440
                                                1.579
z_pphd_avgnum
                          0.093795
                                     0.059394
                                                               0.114415
z_pmhd_avgnum
                                     0.051623 -0.704
                         -0.036368
                                                               0.481191
z_lbw_percent_lbw
                         -0.019361
                                     0.026053 - 0.743
                                                               0.457475
z_pi_phy_inact
                          0.023931
                                     0.023503
                                                1.018
                                                               0.308670
z_cip_perc
                         -0.037167
                                     0.046999
                                               -0.791
                                                               0.429137
z_csph_perc
                         -0.164744
                                     0.032165 -5.122 0.000000325415557 ***
z_ACS_PCT_CHILD_DISAB
                         -0.004463
                                     0.019209 -0.232
                                                               0.816273
z_unemp_perc
                         -0.056345
                                     0.024956 - 2.258
                                                               0.024043 *
z_ACS_GINI_INDEX
                                     0.024667
                                               4.940 0.000000834064601 ***
                          0.121843
z_ACS_MEDIAN_HH_INCOME
                          0.167916
                                     0.052133
                                                3.221
                                                               0.001294 **
                                     0.047995 -2.317
z_ACS_PCT_WORK_NO_CAR
                         -0.111213
                                                               0.020574 *
z_soc_assoc_num
                         -0.062071
                                     0.056858 - 1.092
                                                               0.275076
z_aeo_perc_w_acc
                         -0.077810
                                     0.023457
                                               -3.317
                                                               0.000922 ***
                                               -3.215
z_dwv_presence
                         -0.053564
                                     0.016660
                                                               0.001320 **
z_ACS_PCT_HH_PUB_ASSIST
                         -0.153868
                                     0.020980 -7.334 0.000000000000299 ***
z_AHRF_TXC_SITE_NO_CNTRL
                                     0.015743 -0.444
                         -0.006993
                                                               0.656965
```

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.7914 on 2532 degrees of freedom  $\,$ 

(559 observations deleted due to missingness)

Multiple R-squared: 0.3687, Adjusted R-squared: 0.3565

F-statistic: 30.19 on 49 and 2532 DF, p-value: < 0.00000000000000022

## Final Education Model, High School Rate

### **Confidence Intervals**

```
confint(z_hsg_levels_1234678)
```

```
2.5 % 97.5 % (Intercept) 0.043974625 0.114186011 z_ACS_PCT_BLACK -0.129391485 0.015727714 z_ACS_PCT_HISPAN -0.034521031 0.095291754 z_SVI_RPL_THEME1_SOCIECO 0.050638224 0.246426469 z_SVI_RPL_THEME2_HH_DISB -0.129123404 -0.017248281 z_SVI_RPL_THEME3_MINO -0.278959325 -0.146038601 z_SVI_RPL_THEME4_HH_TRANS -0.173190885 -0.070390135
```

```
z_ACS_PCT_ENGL_NOT_WELL
                          -0.016213728
                                        0.186055030
z_ACS_PCT_NON_CITIZEN
                          -0.078039168
                                        0.109533396
z_ACS_MEDIAN_AGE
                                        0.235220889
                           0.083219885
z_food_afford
                          -0.201793062 -0.077183399
z fd enviro indx
                           0.031099160
                                        0.165493718
z_fi_percent
                           0.072548004
                                        0.268272965
z_ACS_PCT_FOOD_STAMP
                           0.007480800
                                        0.172887773
z_childelig_lunch_perc
                          -0.291622946 -0.151666072
z_shp_percent
                          -0.250751768 -0.111084743
z_shcb_percent
                           0.059443549 0.205719437
z_ACS_PCT_NO_VEH
                          -0.006204523
                                        0.216840246
z_ACS_PCT_RENTER_HH_CHILD
                           0.005046140
                                        0.099904381
z_ACS_PCT_RENT_COST_30PCT -0.037691579
                                        0.064756390
z_ACS_PCT_MOBILE_HOME
                          -0.166820208 -0.062918430
z_ACS_PCT_OWNED_HH
                          -0.100204473
                                        0.033414784
z_ACS_PCT_OWNER_HH_CHILD
                           0.061382789
                                        0.196007960
z_ACS_MEDIAN_HOME_VALUE
                          -0.229661924 -0.083488947
z_ACS_PCT_BROADBAND
                          -0.006508466
                                        0.188075265
z_ACS_PCT_NO_PC
                                        0.277871305
                           0.084688483
z_ACS_PCT_SMARTPHONE
                           0.025682083
                                        0.128007647
z_phys_per_cap
                          -0.062141086
                                        0.043838802
z_mhp_per_cap
                          -0.031530805
                                        0.065590020
z_dents_per_cap
                          -0.113500654 -0.005735722
z_uninsur_perc
                          -0.178660427
                                        0.005063004
                           0.228354532
                                        0.499103137
z_uc_percent
                          -0.036449682
                                        0.050504131
z_opcp_rate
z_TeenBirths
                          -0.062324173
                                        0.140051708
z_pphd_avgnum
                          -0.022670901
                                        0.210260949
z_pmhd_avgnum
                          -0.137595998
                                        0.064859766
                          -0.070448579
                                        0.031727005
z_lbw_percent_lbw
z_pi_phy_inact
                          -0.022155356
                                        0.070016849
                          -0.129327636
                                        0.054994001
z_cip_perc
z_csph_perc
                          -0.227816354 -0.101670789
z_ACS_PCT_CHILD_DISAB
                          -0.042129580 0.033202751
                          -0.105280290 -0.007409159
z unemp perc
z_ACS_GINI_INDEX
                           0.073473486 0.170211572
z ACS MEDIAN HH INCOME
                           0.065687213 0.270144235
z_ACS_PCT_WORK_NO_CAR
                          -0.205326419 -0.017098996
z_soc_assoc_num
                          -0.173565125 0.049422352
                          -0.123806142 -0.031813778
z_aeo_perc_w_acc
                          -0.086232745 -0.020894932
z_dwv_presence
z_ACS_PCT_HH_PUB_ASSIST
                          -0.195008603 -0.112728173
z_AHRF_TXC_SITE_NO_CNTRL
                          -0.037863408 0.023878389
```

# Final Education Model, High School Rate

# VIF

# vif(z\_hsg\_levels\_1234678)

~ ACC DCT DIACK	- ACC DCT UICDAN	R CVI DDI TUEME1 COCTECO
z_ACS_PCT_BLACK 5.986239	2_ACS_FC1_HISFAN 4.790007	z_SVI_RPL_THEME1_SOCIECO 10.209992
z_SVI_RPL_THEME2_HH_DISB		z_SVI_RPL_THEME4_HH_TRANS
3.302636	2_5V1_NFL_THEMES_MINU 4.612389	2.713486
z_ACS_PCT_ENGL_NOT_WELL	z_ACS_PCT_NON_CITIZEN	z_ACS_MEDIAN_AGE
10.980536	9.026072	5.874310
z_food_afford	z_fd_enviro_indx	z_fi_percent
3.959762	2_1d_env110_1ndx 4.316293	9.960199
z_ACS_PCT_FOOD_STAMP	z_childelig_lunch_perc	z_shp_percent
6.748474	2_cnriderig_runch_perc 3.970270	2_snp_percent 4.705439
z_shcb_percent	*	z_ACS_PCT_RENTER_HH_CHILD
5.352030	11.952928	2.230955
z_ACS_PCT_RENT_COST_30PCT	z_ACS_PCT_MOBILE_HOME	z_ACS_PCT_OWNED_HH
2.343245	2.947404	4.357617
z_ACS_PCT_OWNER_HH_CHILD	z_ACS_MEDIAN_HOME_VALUE	z_ACS_PCT_BROADBAND
4.695585	5.535924	10.398107
z_ACS_PCT_NO_PC	z_ACS_PCT_SMARTPHONE	z_phys_per_cap
10.134087	2.812610	2.576760
z_mhp_per_cap	z_dents_per_cap	z_uninsur_perc
2.205391	2.678205	9.032061
z_uc_percent	z_opcp_rate	z_TeenBirths
7.051198	1.743018	11.868977
z_pphd_avgnum	z_pmhd_avgnum	z_lbw_percent_lbw
14.837853	10.959208	2.853103
z_pi_phy_inact	z_cip_perc	z_csph_perc
2.402281	9.385820	4.014187
z_ACS_PCT_CHILD_DISAB	z_unemp_perc	z_ACS_GINI_INDEX
1.382749	2.487257	2.339564
z_ACS_MEDIAN_HH_INCOME	z_ACS_PCT_WORK_NO_CAR	z_soc_assoc_num
11.224234	8.264878	13.412388
z_aeo_perc_w_acc	z_dwv_presence	z_ACS_PCT_HH_PUB_ASSIST
2.078271	1.163771	1.612934
z_AHRF_TXC_SITE_NO_CNTRL		
1.099189		

## Final Education Model

# **DV: Some College**

IVs: Demographics, Food/Housing, Technology, Health 1, Health 2, HWCC, Business, Government

```
z_sc_levels_12345678 <- lm(formula = z_sc_percent ~ z_ACS_PCT_BLACK +</pre>
   z ACS PCT HISPAN + z SVI RPL THEME1 SOCIECO + z SVI RPL THEME2 HH DISB +
   z SVI RPL THEME3 MINO + z SVI RPL THEME4 HH TRANS + z ACS PCT ENGL NOT WELL +
   z_ACS_PCT_NON_CITIZEN + z_ACS_MEDIAN_AGE + z_food_afford +
   z_fd_enviro_indx + z_fi_percent + z_ACS_PCT_FOOD_STAMP +
   z childelig lunch perc + z shp percent + z shcb percent +
   z_ACS_PCT_NO_VEH + z_ACS_PCT_RENTER_HH_CHILD + z_ACS_PCT_RENT_COST_3OPCT +
   z_ACS_PCT_MOBILE_HOME + z_ACS_PCT_OWNED_HH + z_ACS_PCT_OWNER_HH_CHILD +
   z_ACS_MEDIAN_HOME_VALUE + z_ACS_PCT_BROADBAND + z_ACS_PCT_NO_PC +
   z_ACS_PCT_SMARTPHONE + z_phys_per_cap + z_mhp_per_cap + z_dents_per_cap +
   z_uninsur_perc + z_uc_percent + z_opcp_rate + z_TeenBirths +
   z_phs_rate + z_ms_perc_ann + z_AMFAR_AMATFAC + z_MP_PERCPEN +
   z_AHRF_RURAL_H_CLINIC + z_pphd_avgnum + z_pmhd_avgnum + z_lbw_percent_lbw +
   z_pi_phy_inact + z_cip_perc + z_csph_perc + z_ACS_PCT_CHILD_DISAB +
   z_unemp_perc + z_ACS_GINI_INDEX + z_ACS_MEDIAN_HH_INCOME +
   z_ACS_PCT_WORK_NO_CAR + z_soc_assoc_num + z_aeo_perc_w_acc +
   z dwv presence + z ACS PCT HH PUB ASSIST + z AHRF TXC SITE NO CNTRL,
   data = Z_and_Final_Variables_10.28.22)
summary(z_sc_levels_12345678)
```

#### Call:

```
lm(formula = z_sc_percent ~ z_ACS_PCT_BLACK + z_ACS_PCT_HISPAN +
    z_SVI_RPL_THEME1_SOCIECO + z_SVI_RPL_THEME2_HH_DISB + z_SVI_RPL_THEME3_MINO +
    z_SVI_RPL_THEME4_HH_TRANS + z_ACS_PCT_ENGL_NOT_WELL + z_ACS_PCT_NON_CITIZEN +
    z_ACS_MEDIAN_AGE + z_food_afford + z_fd_enviro_indx + z_fi_percent +
    z_ACS_PCT_FOOD_STAMP + z_childelig_lunch_perc + z_shp_percent +
    z_shcb_percent + z_ACS_PCT_NO_VEH + z_ACS_PCT_RENTER_HH_CHILD +
    z_ACS_PCT_RENT_COST_3OPCT + z_ACS_PCT_MOBILE_HOME + z_ACS_PCT_OWNED_HH +
    z_ACS_PCT_OWNER_HH_CHILD + z_ACS_MEDIAN_HOME_VALUE + z_ACS_PCT_BROADBAND +
    z_ACS_PCT_NO_PC + z_ACS_PCT_SMARTPHONE + z_phys_per_cap +
    z_mhp_per_cap + z_dents_per_cap + z_uninsur_perc + z_uc_percent +
    z_opcp_rate + z_TeenBirths + z_phs_rate + z_ms_perc_ann +
    z_AMFAR_AMATFAC + z_MP_PERCPEN + z_AHRF_RURAL_H_CLINIC +
```

z\_pphd\_avgnum + z\_pmhd\_avgnum + z\_lbw\_percent\_lbw + z\_pi\_phy\_inact +
z\_cip\_perc + z\_csph\_perc + z\_ACS\_PCT\_CHILD\_DISAB + z\_unemp\_perc +
z\_ACS\_GINI\_INDEX + z\_ACS\_MEDIAN\_HH\_INCOME + z\_ACS\_PCT\_WORK\_NO\_CAR +
z\_soc\_assoc\_num + z\_aeo\_perc\_w\_acc + z\_dwv\_presence + z\_ACS\_PCT\_HH\_PUB\_ASSIST +
z\_AHRF\_TXC\_SITE\_NO\_CNTRL, data = Z\_and\_Final\_Variables\_10.28.22)

#### Residuals:

Min 1Q Median 3Q Max -2.93975 -0.29737 0.00421 0.30410 2.37554

OOCITICICHOD.					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	-0.028527	0.011193	-2.549	0.010870	*
z_ACS_PCT_BLACK	-0.033258	0.023509	-1.415	0.157272	
z_ACS_PCT_HISPAN	0.055009	0.021822	2.521	0.011771	*
z_SVI_RPL_THEME1_SOCIECO	-0.292260	0.031850	-9.176	< 0.00000000000000000002	***
z_SVI_RPL_THEME2_HH_DISB	0.103086	0.018510	5.569	0.00000002829795	***
z_SVI_RPL_THEME3_MINO	-0.009385	0.021657	-0.433	0.664782	
z_SVI_RPL_THEME4_HH_TRANS	-0.113070	0.017132	-6.600	0.0000000004988	***
z_ACS_PCT_ENGL_NOT_WELL	-0.035731	0.033235	-1.075	0.282437	
z_ACS_PCT_NON_CITIZEN	-0.110942	0.030814	-3.600	0.000324	***
z_ACS_MEDIAN_AGE	-0.098847	0.025109	-3.937	0.00008481136035	***
z_food_afford	0.016316	0.020713	0.788	0.430935	
z_fd_enviro_indx	-0.080712	0.022079	-3.656	0.000262	***
z_fi_percent	0.117635	0.031167	3.774	0.000164	***
z_ACS_PCT_FOOD_STAMP	-0.010705	0.027008	-0.396	0.691869	
z_childelig_lunch_perc	-0.007110	0.022987	-0.309	0.757094	
z_shp_percent	-0.005608	0.025559	-0.219	0.826328	
z_shcb_percent	0.057836	0.024763	2.336	0.019591	*
z_ACS_PCT_NO_VEH	0.043240	0.037969	1.139	0.254879	
z_ACS_PCT_RENTER_HH_CHILD	-0.109777	0.015446	-7.107	0.0000000000153	***
z_ACS_PCT_RENT_COST_30PCT	0.021260	0.016709	1.272	0.203374	
z_ACS_PCT_MOBILE_HOME	-0.028567	0.017327	-1.649	0.099334	
z_ACS_PCT_OWNED_HH	-0.095454	0.022345	-4.272	0.00002009288519	***
z_ACS_PCT_OWNER_HH_CHILD	0.038796	0.022340	1.737	0.082579	
z_ACS_MEDIAN_HOME_VALUE	0.006357	0.024799	0.256	0.797694	
z_ACS_PCT_BROADBAND	-0.032550	0.031788	-1.024	0.305944	
z_ACS_PCT_NO_PC	-0.212218	0.031699	-6.695	0.0000000002650	***
z_ACS_PCT_SMARTPHONE	-0.092291	0.016687	-5.531	0.00000003514662	***
z_phys_per_cap	0.037069	0.017656	2.100	0.035869	*
z_mhp_per_cap	0.040475	0.015811	2.560	0.010527	*
z_dents_per_cap	0.030155	0.017272	1.746	0.080951	
z_uninsur_perc	-0.034841	0.029665	-1.174	0.240320	

```
0.042452 - 3.779
                                                                   0.000161 ***
z_uc_percent
                          -0.160421
z_opcp_rate
                          0.024151
                                     0.014184 1.703
                                                                   0.088756 .
z_TeenBirths
                                     0.033234 -1.675
                                                                   0.094151 .
                          -0.055651
z_phs_rate
                                                0.708
                          0.009163
                                     0.012935
                                                                   0.478767
z ms perc ann
                          0.043874
                                     0.014851
                                                2.954
                                                                   0.003163 **
z_AMFAR_AMATFAC
                          0.006309
                                     0.014217
                                                0.444
                                                                   0.657270
z MP PERCPEN
                          -0.026348
                                     0.011759 - 2.241
                                                                   0.025139 *
z_AHRF_RURAL_H_CLINIC
                          -0.013410
                                     0.010437 -1.285
                                                                   0.198949
                          -0.013447
                                     0.038477 -0.349
                                                                   0.726764
z_pphd_avgnum
z_pmhd_avgnum
                          -0.151292
                                     0.033458 - 4.522
                                                          0.00000641054209 ***
z_lbw_percent_lbw
                          0.036280
                                     0.016829
                                                2.156
                                                                   0.031193 *
z_pi_phy_inact
                          -0.033893
                                     0.015057 - 2.251
                                                                   0.024473 *
                                     0.030340 -2.016
z_cip_perc
                          -0.061174
                                                                   0.043879 *
                          -0.073978
                                     0.020736 - 3.568
                                                                   0.000367 ***
z_csph_perc
z_ACS_PCT_CHILD_DISAB
                          -0.002033
                                     0.012307 -0.165
                                                                   0.868786
                                     0.016232 -0.851
z_unemp_perc
                          -0.013811
                                                                   0.394951
z_ACS_GINI_INDEX
                          0.075269
                                     0.015699
                                               4.795
                                                          0.00000172434171 ***
z_ACS_MEDIAN_HH_INCOME
                          0.062392
                                     0.034214 1.824
                                                                   0.068337 .
z_ACS_PCT_WORK_NO_CAR
                         -0.084914
                                     0.031275 - 2.715
                                                                   0.006671 **
z_soc_assoc_num
                                     0.037027 2.784
                                                                   0.005407 **
                          0.103089
z_aeo_perc_w_acc
                          0.020289
                                     0.015030 1.350
                                                                   0.177163
z_dwv_presence
                          -0.027017
                                     0.010677 - 2.530
                                                                   0.011450 *
                                     0.014391 -2.226
z_ACS_PCT_HH_PUB_ASSIST
                          -0.032037
                                                                  0.026088 *
z_AHRF_TXC_SITE_NO_CNTRL -0.000113
                                                                   0.991049
                                     0.010075 -0.011
```

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5055 on 2538 degrees of freedom

(548 observations deleted due to missingness)

Multiple R-squared: 0.7349, Adjusted R-squared: 0.7293

F-statistic: 130.3 on 54 and 2538 DF, p-value: < 0.00000000000000022

# Final Education Model, Some College

#### **Confidence Intervals**

```
confint(z_sc_levels_12345678)
```

2.5 % 97.5 % (Intercept) -0.050475153 -0.006579393

```
z_ACS_PCT_BLACK
                          -0.079355675 0.012839763
z_ACS_PCT_HISPAN
                           0.012217462 0.097800508
z_SVI_RPL_THEME1_SOCIECO
                          -0.354714623 -0.229804427
z_SVI_RPL_THEME2_HH_DISB
                           0.066788992 0.139382726
z SVI RPL THEME3 MINO
                          -0.051851859
                                        0.033081148
z_SVI_RPL_THEME4_HH_TRANS -0.146663077 -0.079475837
z ACS PCT ENGL NOT WELL
                          -0.100901206 0.029439934
z_ACS_PCT_NON_CITIZEN
                          -0.171364675 -0.050518498
z_ACS_MEDIAN_AGE
                          -0.148083028 -0.049611424
z_food_afford
                          -0.024300489 0.056933021
z_fd_enviro_indx
                          -0.124006983 -0.037417539
z_fi_percent
                           0.056519592
                                        0.178750203
z_ACS_PCT_FOOD_STAMP
                                        0.042255238
                          -0.063665447
z_childelig_lunch_perc
                          -0.052184872
                                        0.037963864
z_shp_percent
                          -0.055726282
                                        0.044509303
z_shcb_percent
                           0.009278126
                                        0.106394950
z_ACS_PCT_NO_VEH
                          -0.031212811
                                        0.117693356
z_ACS_PCT_RENTER_HH_CHILD -0.140064600 -0.079490108
z_ACS_PCT_RENT_COST_30PCT -0.011505562
                                        0.054024753
z ACS PCT MOBILE HOME
                          -0.062543849
                                        0.005409607
z ACS PCT OWNED HH
                          -0.139269698 -0.051638856
z ACS PCT OWNER HH CHILD
                          -0.005010866
                                        0.082602040
z_ACS_MEDIAN_HOME_VALUE
                          -0.042269979
                                        0.054984615
z_ACS_PCT_BROADBAND
                          -0.094883071 0.029782862
z_ACS_PCT_NO_PC
                          -0.274376878 -0.150059353
z_ACS_PCT_SMARTPHONE
                          -0.125011759 -0.059569439
z_phys_per_cap
                           0.002447517
                                        0.071689794
z_mhp_per_cap
                           0.009471114
                                        0.071479919
z_dents_per_cap
                          -0.003713644
                                        0.064024684
                          -0.093011041
                                        0.023329813
z_uninsur_perc
z_uc_percent
                          -0.243664865 -0.077178210
                          -0.003663079 0.051964472
z_opcp_rate
z_TeenBirths
                          -0.120820103 0.009517366
z_phs_rate
                          -0.016201035 0.034526965
                           0.014752796
                                        0.072995767
z_ms_perc_ann
z_AMFAR_AMATFAC
                          -0.021569488 0.034186718
z MP PERCPEN
                          -0.049406298 -0.003288926
z_AHRF_RURAL_H_CLINIC
                          -0.033876083 0.007055484
z_pphd_avgnum
                          -0.088897265 0.062003619
z_pmhd_avgnum
                          -0.216898711 -0.085684632
z_lbw_percent_lbw
                           0.003279994 0.069279984
                          -0.063418999 -0.004367668
z_pi_phy_inact
                          -0.120668802 -0.001679402
z_cip_perc
```

```
z_csph_perc
                         -0.114639926 -0.033316300
z_ACS_PCT_CHILD_DISAB
                         -0.026165315 0.022098776
z_unemp_perc
                         -0.045640551 0.018019164
z_ACS_GINI_INDEX
                         0.044485007 0.106051961
z_ACS_MEDIAN_HH_INCOME
                         -0.004699109 0.129482170
z_ACS_PCT_WORK_NO_CAR
                         -0.146242268 -0.023586429
z_soc_assoc_num
                         0.030482606 0.175695740
                         -0.009182817 0.049760337
z_aeo_perc_w_acc
z_dwv_presence
                         -0.047953662 -0.006081395
z_ACS_PCT_HH_PUB_ASSIST -0.060255507 -0.003818019
z_AHRF_TXC_SITE_NO_CNTRL -0.019869409 0.019643338
```

# Final Education Model, Some College

## **VIF**

```
vif(z_sc_levels_12345678)
```

z_SVI_RPL_THEME1_SOCIECO		z_ACS_PCT_BLACK
10.241988	5.116041	5.984693
${\tt z\_SVI\_RPL\_THEME4\_HH\_TRANS}$	$z_{ t SVI_RPL_THEME3_MINO}$	$z_SVI_RPL_THEME2_HH_DISB$
2.830548	4.634665	3.454238
z_ACS_MEDIAN_AGE	z_ACS_PCT_NON_CITIZEN	$ extstyle{z}_{ extstyle{ACS}\_ extstyle{PCT}_ extstyle{ENGL}_ extstyle{NOT}_ extstyle{WELL}$
6.015478	9.096697	11.175520
${ t z_fi_percent}$	$z_{fd_enviro_indx}$	$z_{food\_afford}$
9.816684	4.392939	4.079734
z_shp_percent	${\tt z\_childelig\_lunch\_perc}$	z_ACS_PCT_FOOD_STAMP
5.127465	4.074120	6.656686
$z\_ACS\_PCT\_RENTER\_HH\_CHILD$	$z\_{ACS\_PCT\_NO\_VEH}$	z_shcb_percent
2.237009	9.502766	5.857526
$z\_{ACS\_PCT\_OWNED\_HH}$	$z\_{ACS\_PCT\_MOBILE\_HOME}$	z_ACS_PCT_RENT_COST_30PCT
4.534235	3.052488	2.370509
z_ACS_PCT_BROADBAND	z_ACS_MEDIAN_HOME_VALUE	z_ACS_PCT_OWNER_HH_CHILD
10.493166	6.015653	4.669415
${ t z\_phys\_per\_cap}$	z_ACS_PCT_SMARTPHONE	z_ACS_PCT_NO_PC
2.658822	2.845675	10.267259
z_uninsur_perc	z_dents_per_cap	${ t z}_{ t mhp\_per\_cap}$
8.954414	2.630188	2.236844
${ t z\_TeenBirths}$	z_opcp_rate	$z\_{\tt uc\_percent}$
12.073355	1.764710	6.819500

```
z_phs_rate
                                                           z_AMFAR_AMATFAC
                                  z_ms_perc_ann
             1.711294
                                        2.180132
                                                                   2.170016
         z_MP_PERCPEN
                          z_AHRF_RURAL_H_CLINIC
                                                             z_pphd_avgnum
                                                                  15.377550
             1.406493
                                        1.184002
                              z_lbw_percent_lbw
        z pmhd avgnum
                                                            z pi phy inact
                                        2.922845
            11.437133
                                                                   2.453453
           z_cip_perc
                                     z_csph_perc
                                                     z_ACS_PCT_CHILD_DISAB
             9.655712
                                        4.150368
                                                                   1.391167
                               z_ACS_GINI_INDEX
         z_unemp_perc
                                                    z ACS MEDIAN HH INCOME
             2.415039
                                        2.322590
                                                                  11.826439
z_ACS_PCT_WORK_NO_CAR
                                 z_soc_assoc_num
                                                          z_aeo_perc_w_acc
             5.668515
                                       13.949884
                                                                   2.105564
       z_dwv_presence
                        z_ACS_PCT_HH_PUB_ASSIST z_AHRF_TXC_SITE_NO_CNTRL
             1.175208
                                        1.528072
                                                                   1.103666
```

# Final Health Model

DV: Low Birth Weight

IVs: Demographics, Health 1, Health 2, Food/Housing, Technology, HWCC, Business, Government

```
z lbw levels 12345678 <- lm(formula = z lbw percent lbw ~ z ACS PCT BLACK +
    z_ACS_PCT_HISPAN + z_SVI_RPL_THEME1_SOCIECO + z_SVI_RPL_THEME2_HH_DISB +
    z SVI RPL THEME3 MINO + z SVI RPL THEME4 HH TRANS + z ACS PCT ENGL NOT WELL +
    z_ACS_PCT_NON_CITIZEN + z_ACS_MEDIAN_AGE + z_phys_per_cap +
    z mhp_per_cap + z_dents_per_cap + z_uninsur_perc + z_uc_percent +
    z_opcp_rate + z_TeenBirths + z_phs_rate + z_ms_perc_ann +
    z_AMFAR_AMATFAC + z_MP_PERCPEN + z_AHRF_RURAL_H_CLINIC +
    z food afford + z fd enviro indx + z fi percent + z ACS PCT FOOD STAMP +
    z_childelig_lunch_perc + z_shp_percent + z_shcb_percent +
    z_ACS_PCT_NO_VEH + z_ACS_PCT_RENTER_HH_CHILD + z_ACS_PCT_RENT_COST_3OPCT +
    z_ACS_PCT_MOBILE_HOME + z_ACS_PCT_OWNED_HH + z_ACS_PCT_OWNER_HH_CHILD +
    z_ACS_MEDIAN_HOME_VALUE + z_ACS_PCT_BROADBAND + z_ACS_PCT_NO_PC +
    z_ACS_PCT_SMARTPHONE + z_pi_phy_inact + z_cip_perc + z_csph_perc +
    z_ACS_PCT_CHILD_DISAB + z_unemp_perc + z_ACS_GINI_INDEX +
    z_ACS_MEDIAN_HH_INCOME + z_ACS_PCT_WORK_NO_CAR + z_soc_assoc_num +
    z_aeo_perc_w_acc + z_dwv_presence + z_ACS_PCT_HH_PUB_ASSIST +
    z AHRF_TXC_SITE NO_CNTRL, data = Z and Final_Variables_10.28.22)
summary(z lbw levels 12345678)
```

#### Call:

```
lm(formula = z_lbw_percent_lbw ~ z_ACS_PCT_BLACK + z_ACS_PCT_HISPAN +
   z_SVI_RPL_THEME1_SOCIECO + z_SVI_RPL_THEME2_HH_DISB + z_SVI_RPL_THEME3_MINO +
   z SVI RPL THEME4 HH TRANS + z ACS PCT ENGL NOT WELL + z ACS PCT NON CITIZEN +
   z_ACS_MEDIAN_AGE + z_phys_per_cap + z_mhp_per_cap + z_dents_per_cap +
   z_uninsur_perc + z_uc_percent + z_opcp_rate + z_TeenBirths +
   z_phs_rate + z_ms_perc_ann + z_AMFAR_AMATFAC + z_MP_PERCPEN +
   z_AHRF_RURAL_H_CLINIC + z_food_afford + z_fd_enviro_indx +
   z_fi_percent + z_ACS_PCT_FOOD_STAMP + z_childelig_lunch_perc +
   z shp_percent + z_shcb_percent + z_ACS_PCT_NO_VEH + z_ACS_PCT_RENTER_HH_CHILD +
   z ACS PCT RENT COST 30PCT + z ACS PCT MOBILE HOME + z ACS PCT OWNED HH +
   z_ACS_PCT_OWNER_HH_CHILD + z_ACS_MEDIAN_HOME_VALUE + z_ACS_PCT_BROADBAND +
   z_ACS_PCT_NO_PC + z_ACS_PCT_SMARTPHONE + z_pi_phy_inact +
   z_cip_perc + z_csph_perc + z_ACS_PCT_CHILD_DISAB + z_unemp_perc +
   z_ACS_GINI_INDEX + z_ACS_MEDIAN_HH_INCOME + z_ACS_PCT_WORK_NO_CAR +
   z_soc_assoc_num + z_aeo_perc_w_acc + z_dwv_presence + z_ACS_PCT_HH_PUB_ASSIST +
   z_AHRF_TXC_SITE_NO_CNTRL, data = Z_and_Final_Variables_10.28.22)
```

#### Residuals:

Min 1Q Median 3Q Max -2.1734 -0.3376 -0.0198 0.3006 5.7704

	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	-0.048694	0.013276	-3.668	0.000250	***
z_ACS_PCT_BLACK	0.524645	0.024692	21.248	< 0.000000000000000000002	***
z_ACS_PCT_HISPAN	0.189184	0.025254	7.491	0.0000000000000936	***
z_SVI_RPL_THEME1_SOCIECO	0.215902	0.036089	5.983	0.0000000025065234	***
z_SVI_RPL_THEME2_HH_DISB	-0.070791	0.021899	-3.233	0.001242	**
z_SVI_RPL_THEME3_MINO	-0.025861	0.025632	-1.009	0.313109	
z_SVI_RPL_THEME4_HH_TRANS	-0.048658	0.020327	-2.394	0.016749	*
z_ACS_PCT_ENGL_NOT_WELL	-0.120313	0.039473	-3.048	0.002328	**
z_ACS_PCT_NON_CITIZEN	-0.100959	0.036602	-2.758	0.005852	**
z_ACS_MEDIAN_AGE	0.081734	0.029796	2.743	0.006129	**
z_phys_per_cap	0.027556	0.020974	1.314	0.189012	
z_mhp_per_cap	-0.018408	0.018783	-0.980	0.327181	
z_dents_per_cap	0.016371	0.020488	0.799	0.424334	
z_uninsur_perc	0.041650	0.035252	1.182	0.237515	
z_uc_percent	-0.170050	0.049649	-3.425	0.000624	***
z_opcp_rate	0.033681	0.016856	1.998	0.045806	*
z_TeenBirths	-0.080532	0.039257	-2.051	0.040327	*
z_phs_rate	0.033858	0.015279	2.216	0.026777	*

```
-6.228
                                                           0.0000000005508395 ***
                           -0.107398
                                       0.017244
z_ms_perc_ann
z_AMFAR_AMATFAC
                           -0.003680
                                       0.016906
                                                 -0.218
                                                                     0.827721
z_MP_PERCPEN
                                       0.013956
                                                 -1.711
                                                                     0.087153 .
                           -0.023882
z_AHRF_RURAL_H_CLINIC
                                                 -2.798
                           -0.034665
                                       0.012391
                                                                     0.005185 **
z food afford
                           -0.002039
                                       0.024615
                                                 -0.083
                                                                     0.933985
z_fd_enviro_indx
                           0.029154
                                       0.026183
                                                   1.113
                                                                     0.265616
z_fi_percent
                            0.027577
                                       0.036315
                                                  0.759
                                                                     0.447688
z_ACS_PCT_FOOD_STAMP
                            0.023437
                                       0.032015
                                                  0.732
                                                                     0.464212
z_childelig_lunch_perc
                            0.062290
                                       0.027200
                                                  2.290
                                                                     0.022100 *
z_shp_percent
                           -0.144696
                                       0.030275
                                                 -4.779
                                                           0.0000018582661953 ***
z_shcb_percent
                            0.025056
                                       0.029335
                                                  0.854
                                                                     0.393107
z_ACS_PCT_NO_VEH
                            0.007635
                                       0.045168
                                                  0.169
                                                                     0.865775
z_ACS_PCT_RENTER_HH_CHILD
                           0.033353
                                       0.018312
                                                  1.821
                                                                     0.068664 .
z_ACS_PCT_RENT_COST_30PCT
                            0.001269
                                       0.019715
                                                  0.064
                                                                     0.948683
z_ACS_PCT_MOBILE_HOME
                            0.061446
                                       0.020561
                                                  2.988
                                                                     0.002831 **
z_ACS_PCT_OWNED_HH
                           -0.027445
                                       0.026465
                                                 -1.037
                                                                     0.299828
z_ACS_PCT_OWNER_HH_CHILD
                            0.029766
                                       0.026522
                                                  1.122
                                                                     0.261836
z_ACS_MEDIAN_HOME_VALUE
                                                                     0.000449 ***
                            0.102732
                                       0.029236
                                                  3.514
z_ACS_PCT_BROADBAND
                                                   1.947
                                                                     0.051641 .
                            0.073548
                                       0.037775
z ACS PCT NO PC
                            0.028853
                                       0.037649
                                                  0.766
                                                                     0.443531
z_ACS_PCT_SMARTPHONE
                            0.016332
                                       0.019822
                                                  0.824
                                                                     0.410065
z_pi_phy_inact
                            0.018463
                                       0.017825
                                                  1.036
                                                                     0.300391
                                       0.035804
z_cip_perc
                            0.115792
                                                  3.234
                                                                     0.001236 **
z_csph_perc
                            0.021468
                                       0.024500
                                                  0.876
                                                                     0.380994
z_ACS_PCT_CHILD_DISAB
                            0.009228
                                                                     0.526347
                                       0.014563
                                                  0.634
                           -0.052960
                                       0.019274
                                                 -2.748
                                                                     0.006043 **
z_unemp_perc
z_ACS_GINI_INDEX
                            0.059845
                                       0.018586
                                                  3.220
                                                                     0.001299 **
z_ACS_MEDIAN_HH_INCOME
                           -0.059676
                                       0.040553
                                                 -1.472
                                                                     0.141261
                                                 -0.335
z_ACS_PCT_WORK_NO_CAR
                           -0.012469
                                       0.037198
                                                                     0.737500
                            0.104186
                                       0.043625
                                                  2.388
                                                                     0.017004 *
z_soc_assoc_num
                                                  3.472
                                                                     0.000525 ***
z_aeo_perc_w_acc
                            0.061850
                                       0.017813
                            0.003610
                                       0.012552
                                                  0.288
                                                                     0.773657
z_dwv_presence
z_ACS_PCT_HH_PUB_ASSIST
                           -0.052191
                                       0.016908
                                                 -3.087
                                                                     0.002046 **
z_AHRF_TXC_SITE_NO_CNTRL
                           0.001394
                                                  0.116
                                       0.011978
                                                                     0.907375
```

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6015 on 2541 degrees of freedom (548 observations deleted due to missingness)

Multiple R-squared: 0.6514, Adjusted R-squared: 0.6444

F-statistic: 93.1 on 51 and 2541 DF, p-value: < 0.00000000000000022

# Final Health Model, Low Birth Weight

# **Confidence Intervals**

```
confint(z_lbw_levels_12345678)
```

	0.5.%	07 F W
(T-+)	2.5 %	97.5 %
(Intercept)	-0.0747273099	
z_ACS_PCT_BLACK	0.4762267904	
z_ACS_PCT_HISPAN	0.1396639013	0.238704972
z_SVI_RPL_THEME1_SOCIECO	0.1451353809	0.286668050
z_SVI_RPL_THEME2_HH_DISB	-0.1137331196	-0.027849004
z_SVI_RPL_THEME3_MINO	-0.0761236694	0.024401490
z_SVI_RPL_THEME4_HH_TRANS	-0.0885171246	-0.008798785
z_ACS_PCT_ENGL_NOT_WELL	-0.1977151878	
z_ACS_PCT_NON_CITIZEN	-0.1727306295	-0.029186405
z_ACS_MEDIAN_AGE	0.0233065545	0.140161934
z_phys_per_cap	-0.0135707331	0.068683631
z_mhp_per_cap	-0.0552397823	0.018424563
z_dents_per_cap	-0.0238034887	0.056545038
z_uninsur_perc	-0.0274754033	0.110776125
z_uc_percent	-0.2674059982	-0.072693345
z_opcp_rate	0.0006280163	0.066734935
z_TeenBirths	-0.1575101153	-0.003553966
z_phs_rate	0.0038983078	0.063818373
z_ms_perc_ann	-0.1412122067	-0.073584005
z_AMFAR_AMATFAC	-0.0368302400	0.029471180
z_MP_PERCPEN	-0.0512470660	0.003483692
z_AHRF_RURAL_H_CLINIC	-0.0589619341	-0.010368904
z_food_afford	-0.0503067361	0.046228520
z_fd_enviro_indx	-0.0221887881	0.080497017
z_fi_percent	-0.0436328277	0.098787730
z_ACS_PCT_FOOD_STAMP	-0.0393423863	0.086215507
z_childelig_lunch_perc	0.0089528322	0.115626714
z_shp_percent	-0.2040619162	-0.085330162
z_shcb_percent	-0.0324661784	0.082577779
z_ACS_PCT_NO_VEH	-0.0809337789	0.096204490
z_ACS_PCT_RENTER_HH_CHILD	-0.0025545321	0.069260700
z_ACS_PCT_RENT_COST_30PCT		0.039928441
z_ACS_PCT_MOBILE_HOME	0.0211276818	0.101763493
z_ACS_PCT_OWNED_HH	-0.0793398049	0.024450573

```
z_ACS_PCT_OWNER_HH_CHILD
                        -0.0222411698 0.081773615
z_ACS_MEDIAN_HOME_VALUE
                          0.0454039108 0.160060449
z_ACS_PCT_BROADBAND
                         -0.0005236999 0.147620504
z_ACS_PCT_NO_PC
                         -0.0449729985 0.102678581
z_ACS_PCT_SMARTPHONE
                         -0.0225377022 0.055201672
                         -0.0164896982 0.053416086
z_pi_phy_inact
z_cip_perc
                         0.0455838608 0.185999901
z_csph_perc
                         -0.0265751814 0.069510780
z_ACS_PCT_CHILD_DISAB
                         z_unemp_perc
                         -0.0907540124 -0.015165933
                         0.0233990317 0.096290467
z_ACS_GINI_INDEX
z_ACS_MEDIAN_HH_INCOME
                         -0.1391952689 0.019843440
z_ACS_PCT_WORK_NO_CAR
                         -0.0854106221 0.060472854
z_soc_assoc_num
                         0.0186410483 0.189731302
z_aeo_perc_w_acc
                         0.0269218466 0.096778855
                         -0.0210023687 0.028222742
z_dwv_presence
z_ACS_PCT_HH_PUB_ASSIST
                         -0.0853469931 -0.019035847
z_AHRF_TXC_SITE_NO_CNTRL
                        -0.0220944910 0.024882122
```

# Final Health Model, Low Birth Weight

## VIF

```
vif(z lbw levels 12345678)
```

z_ACS_PCT_BLACK	z ACS PCT HISPAN	z_SVI_RPL_THEME1_SOCIECO
4.663252	4.839213	9.287257
z_SVI_RPL_THEME2_HH_DISB	z_SVI_RPL_THEME3_MINO	z_SVI_RPL_THEME4_HH_TRANS
3.414800	4.585645	2.814485
z_ACS_PCT_ENGL_NOT_WELL	z_ACS_PCT_NON_CITIZEN	z_ACS_MEDIAN_AGE
11.134251	9.065149	5.983168
z_phys_per_cap	z_mhp_per_cap	z_dents_per_cap
2.650025	2.229612	2.613721
z_uninsur_perc	$z\_uc\_percent$	$z_{ ext{-}}$ opcp_rate
8.930959	6.588213	1.760244
${ t z\_TeenBirths}$	${ t z_phs_rate}$	z_ms_perc_ann
11.897866	1.686395	2.076047
$z\_{\tt AMFAR\_AMATFAC}$	z_MP_PERCPEN	z_AHRF_RURAL_H_CLINIC
2.167244	1.399126	1.178607
${ t z\_food\_afford}$	$z_fd_{enviro_indx}$	${ t z_fi_percent}$

```
4.363467
                 4.069292
                                                                        9.413168
     z_ACS_PCT_FOOD_STAMP
                              z_childelig_lunch_perc
                                                                 z_shp_percent
                 6.606481
                                             4.029176
                                                                        5.081339
                                    z_ACS_PCT_NO_VEH z_ACS_PCT_RENTER_HH_CHILD
           z_shcb_percent
                  5.805484
                                             9.498064
                                                                        2.220787
z_ACS_PCT_RENT_COST_30PCT
                               z_ACS_PCT_MOBILE_HOME
                                                             z_ACS_PCT_OWNED_HH
                  2.330846
                                             3.035794
                                                                        4.492518
                                                            z\_ACS\_PCT\_BROADBAND
 z_ACS_PCT_OWNER_HH_CHILD
                             z_ACS_MEDIAN_HOME_VALUE
                 4.648384
                                             5.905352
                                                                       10.465642
          z_ACS_PCT_NO_PC
                                z_ACS_PCT_SMARTPHONE
                                                                 z_pi_phy_inact
                10.229433
                                                                        2.428456
                                             2.836191
               z_cip_perc
                                         z_csph_perc
                                                          z_ACS_PCT_CHILD_DISAB
                 9.497008
                                             4.092217
                                                                        1.375843
             z_unemp_perc
                                    z_ACS_GINI_INDEX
                                                         z_ACS_MEDIAN_HH_INCOME
                  2.404844
                                             2.299407
                                                                       11.734414
    z_ACS_PCT_WORK_NO_CAR
                                     z_soc_assoc_num
                                                               z_aeo_perc_w_acc
                 5.663575
                                            13.677128
                                                                        2.088850
                             z_ACS_PCT_HH_PUB_ASSIST
                                                       z_AHRF_TXC_SITE_NO_CNTRL
           z_dwv_presence
                  1.147152
                                             1.489934
                                                                        1.101824
```

# **Final Health Model**

**DV: Physically Unhealthy Days** 

IVs: Demographics, Health 1, Health 2, Food/Housing, Technology, HWCC, Business, Government

Note: z\_pfh\_percent was previously excluded from the final physically unhealthy days model

```
z_pphd_levels_12345678 <- lm(formula = z_pphd_avgnum ~ z_ACS_PCT_BLACK +
    z_ACS_PCT_HISPAN + z_SVI_RPL_THEME1_SOCIECO + z_SVI_RPL_THEME2_HH_DISB +
    z_SVI_RPL_THEME3_MINO + z_SVI_RPL_THEME4_HH_TRANS + z_ACS_PCT_ENGL_NOT_WELL +
    z_ACS_PCT_NON_CITIZEN + z_ACS_MEDIAN_AGE + z_phys_per_cap +
    z_mhp_per_cap + z_dents_per_cap + z_uninsur_perc + z_uc_percent +
    z_opcp_rate + z_TeenBirths + z_phs_rate + z_ms_perc_ann +
    z_AMFAR_AMATFAC + z_MP_PERCPEN + z_AHRF_RURAL_H_CLINIC +
    z_food_afford + z_fd_enviro_indx + z_fi_percent + z_ACS_PCT_FOOD_STAMP +
    z_childelig_lunch_perc + z_shp_percent + z_shcb_percent +
    z_ACS_PCT_NO_VEH + z_ACS_PCT_RENTER_HH_CHILD + z_ACS_PCT_RENT_COST_3OPCT +</pre>
```

```
z_ACS_PCT_MOBILE_HOME + z_ACS_PCT_OWNED_HH + z_ACS_PCT_OWNER_HH_CHILD +
z_ACS_MEDIAN_HOME_VALUE + z_ACS_PCT_BROADBAND + z_ACS_PCT_NO_PC +
z_ACS_PCT_SMARTPHONE + z_pi_phy_inact + z_cip_perc + z_csph_perc +
z_ACS_PCT_CHILD_DISAB + z_unemp_perc + z_ACS_GINI_INDEX +
z_ACS_MEDIAN_HH_INCOME + z_ACS_PCT_WORK_NO_CAR + z_soc_assoc_num +
z_aeo_perc_w_acc + z_dwv_presence + z_ACS_PCT_HH_PUB_ASSIST +
z_AHRF_TXC_SITE_NO_CNTRL, data = Z_and_Final_Variables_10.28.22)
summary(z_pphd_levels_12345678)
```

#### Call:

```
lm(formula = z pphd avgnum ~ z_ACS_PCT_BLACK + z_ACS_PCT_HISPAN +
   z SVI_RPL_THEME1_SOCIECO + z SVI_RPL_THEME2_HH_DISB + z SVI_RPL_THEME3_MINO +
   z SVI RPL THEME4 HH TRANS + z ACS PCT ENGL NOT WELL + z ACS PCT NON CITIZEN +
   z_ACS_MEDIAN_AGE + z_phys_per_cap + z_mhp_per_cap + z_dents_per_cap +
   z uninsur perc + z uc percent + z opcp rate + z TeenBirths +
   z_phs_rate + z_ms_perc_ann + z_AMFAR_AMATFAC + z_MP_PERCPEN +
   z_AHRF_RURAL_H_CLINIC + z_food_afford + z_fd_enviro_indx +
   z_fi_percent + z_ACS_PCT_FOOD_STAMP + z_childelig_lunch_perc +
   z_shp_percent + z_shcb_percent + z_ACS_PCT_NO_VEH + z_ACS_PCT_RENTER_HH_CHILD +
   z ACS PCT RENT COST 30PCT + z ACS PCT MOBILE HOME + z ACS PCT OWNED HH +
   z ACS_PCT_OWNER_HH_CHILD + z ACS_MEDIAN_HOME_VALUE + z ACS_PCT_BROADBAND +
   z_ACS_PCT_NO_PC + z_ACS_PCT_SMARTPHONE + z_pi_phy_inact +
   z_cip_perc + z_csph_perc + z_ACS_PCT_CHILD_DISAB + z_unemp_perc +
   z ACS GINI INDEX + z ACS MEDIAN HH INCOME + z ACS PCT WORK NO CAR +
   z_soc_assoc_num + z_aeo_perc_w_acc + z_dwv_presence + z_ACS_PCT_HH_PUB_ASSIST +
   z_AHRF_TXC_SITE_NO_CNTRL, data = Z_and_Final_Variables_10.28.22)
```

# Residuals:

Min 1Q Median 3Q Max -1.93566 -0.32537 -0.00452 0.31120 1.61331

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-0.019041	0.010048	-1.895	0.058196 .
z_ACS_PCT_BLACK	-0.252207	0.018941	-13.315	< 0.000000000000000 ***
z_ACS_PCT_HISPAN	0.027363	0.019306	1.417	0.156510
z_SVI_RPL_THEME1_SOCIECO	0.414899	0.027695	14.981	< 0.0000000000000000 ***
z_SVI_RPL_THEME2_HH_DISB	-0.079699	0.016741	-4.761	0.00000203450029 ***
z_SVI_RPL_THEME3_MINO	-0.089862	0.019784	-4.542	0.00000582398126 ***
z_SVI_RPL_THEME4_HH_TRANS	-0.047280	0.015706	-3.010	0.002636 **

```
z_ACS_PCT_ENGL_NOT_WELL
                           -0.010211
                                       0.030322
                                                  -0.337
                                                                      0.736337
                            0.010800
z_ACS_PCT_NON_CITIZEN
                                       0.028156
                                                   0.384
                                                                      0.701339
z_ACS_MEDIAN_AGE
                           -0.043173
                                       0.022479
                                                 -1.921
                                                                      0.054890 .
z_phys_per_cap
                           -0.002804
                                       0.015211
                                                 -0.184
                                                                      0.853771
z mhp per cap
                            0.011967
                                       0.014556
                                                   0.822
                                                                      0.411071
z_dents_per_cap
                            0.024385
                                       0.015242
                                                   1.600
                                                                      0.109750
z_uninsur_perc
                            0.039114
                                       0.026883
                                                   1.455
                                                                      0.145796
z_uc_percent
                           -0.348035
                                       0.036945
                                                 -9.420 < 0.000000000000000 ***
                            0.007379
                                       0.012662
                                                   0.583
                                                                      0.560113
z_opcp_rate
z_TeenBirths
                           -0.093131
                                       0.030593
                                                 -3.044
                                                                      0.002357 **
                                                   4.739
                                                             0.00000225899248 ***
z_phs_rate
                            0.055513
                                       0.011713
                           -0.115312
                                       0.013193
                                                 -8.740 < 0.000000000000000 ***
z_ms_perc_ann
z_AMFAR_AMATFAC
                           -0.024342
                                       0.013170
                                                  -1.848
                                                                      0.064681 .
                           -0.028002
                                       0.010847
                                                  -2.582
                                                                      0.009890 **
z_MP_PERCPEN
z_AHRF_RURAL_H_CLINIC
                            0.010330
                                       0.009641
                                                   1.071
                                                                      0.284074
                                                                      0.093350 .
z_food_afford
                            0.031118
                                       0.018538
                                                   1.679
z_fd_enviro_indx
                           -0.021676
                                       0.019386
                                                  -1.118
                                                                      0.263626
                            0.300430
                                       0.027346
                                                  10.986 < 0.000000000000000 ***
z_fi_percent
z_ACS_PCT_FOOD_STAMP
                            0.100439
                                       0.024561
                                                   4.089
                                                             0.00004458209892 ***
z_childelig_lunch_perc
                           -0.019336
                                       0.020732
                                                 -0.933
                                                                      0.351062
                                       0.023184
                                                                      0.901851
z_shp_percent
                            0.002859
                                                   0.123
z shcb percent
                                                             0.00003028352196 ***
                           -0.093910
                                       0.022473
                                                  -4.179
z_ACS_PCT_NO_VEH
                           -0.009377
                                       0.034098
                                                 -0.275
                                                                      0.783346
z_ACS_PCT_RENTER_HH_CHILD
                                       0.013846
                                                   3.497
                                                                      0.000479 ***
                           0.048419
z_ACS_PCT_RENT_COST_30PCT
                            0.041279
                                       0.014385
                                                   2.870
                                                                      0.004144 **
z_ACS_PCT_MOBILE_HOME
                           -0.019032
                                       0.015648
                                                 -1.216
                                                                      0.223975
z_ACS_PCT_OWNED_HH
                            0.055316
                                       0.019966
                                                   2.770
                                                                      0.005638 **
z_ACS_PCT_OWNER_HH_CHILD
                            0.014718
                                       0.020171
                                                   0.730
                                                                      0.465660
z_ACS_MEDIAN_HOME_VALUE
                                       0.022509
                                                   4.073
                                                             0.00004785668125 ***
                            0.091673
z_ACS_PCT_BROADBAND
                            0.048963
                                       0.028710
                                                   1.705
                                                                      0.088232 .
z_ACS_PCT_NO_PC
                            0.063807
                                       0.028719
                                                   2.222
                                                                      0.026384 *
z_ACS_PCT_SMARTPHONE
                            0.042062
                                       0.015276
                                                   2.753
                                                                      0.005938 **
z_pi_phy_inact
                            0.069198
                                       0.013737
                                                   5.037
                                                             0.00000050426320 ***
z_cip_perc
                            0.026727
                                       0.027069
                                                   0.987
                                                                      0.323564
                                                   5.938
                                                             0.0000000328129 ***
z csph perc
                            0.109025
                                       0.018362
z_ACS_PCT_CHILD_DISAB
                            0.031452
                                       0.011181
                                                   2.813
                                                                      0.004947 **
                                       0.014924
z_unemp_perc
                            0.021833
                                                   1.463
                                                                      0.143603
z_ACS_GINI_INDEX
                            0.050273
                                       0.014031
                                                   3.583
                                                                      0.000346 ***
z_ACS_MEDIAN_HH_INCOME
                           -0.109164
                                       0.031105
                                                 -3.510
                                                                      0.000457 ***
z_ACS_PCT_WORK_NO_CAR
                            0.041707
                                       0.027852
                                                   1.497
                                                                      0.134393
                            0.117652
                                       0.033985
                                                   3.462
                                                                      0.000545 ***
z_soc_assoc_num
                           -0.025798
                                       0.013554
                                                  -1.903
                                                                      0.057113 .
z_aeo_perc_w_acc
z_dwv_presence
                            0.023080
                                       0.009749
                                                   2.367
                                                                      0.017990 *
```

```
z_ACS_PCT_HH_PUB_ASSIST -0.090405 0.013031 -6.938 0.0000000000000501 ***
z_AHRF_TXC_SITE_NO_CNTRL -0.003146 0.009348 -0.337 0.736489
---
Signif. codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.4696 on 2585 degrees of freedom
  (504 observations deleted due to missingness)
Multiple R-squared: 0.79, Adjusted R-squared: 0.7859
F-statistic: 190.7 on 51 and 2585 DF, p-value: < 0.000000000000000022</pre>
```

# Final Health Model, Physically Unhealthy Days

#### **Confidence Intervals**

```
confint(z_pphd_levels_12345678)
```

```
2.5 %
                                            97.5 %
(Intercept)
                         -0.038743853 0.0006613713
z_ACS_PCT_BLACK
                         -0.289347650 -0.2150658719
z_ACS_PCT_HISPAN
                         -0.010493906 0.0652190738
                          0.360591070 0.4692059339
z_SVI_RPL_THEME1_SOCIECO
z_SVI_RPL_THEME2_HH_DISB -0.112524768 -0.0468723329
z SVI RPL THEME3 MINO
                         -0.128655795 -0.0510676396
z_SVI_RPL_THEME4_HH_TRANS -0.078078214 -0.0164812918
z ACS PCT ENGL NOT WELL
                         -0.069669201 0.0492475440
z_ACS_PCT_NON_CITIZEN
                         -0.044411948 0.0660110991
z_ACS_MEDIAN_AGE
                         -0.087250684 0.0009051744
                         -0.032630916 0.0270232657
z_phys_per_cap
z_mhp_per_cap
                         -0.016575189 0.0405089924
z_dents_per_cap
                         -0.005502650 0.0542736441
z_uninsur_perc
                         -0.013599957 0.0918276129
                         -0.420479245 -0.2755913081
z_uc_percent
                         -0.017449610 0.0322068789
z_opcp_rate
z_TeenBirths
                         -0.153120954 -0.0331420419
                          0.032545519 0.0784811750
z_phs_rate
                         -0.141182091 -0.0894425681
z_ms_perc_ann
z_AMFAR_AMATFAC
                         -0.050167671 0.0014834992
                         -0.049270828 -0.0067324567
z MP PERCPEN
z_AHRF_RURAL_H_CLINIC
                         -0.008575608 0.0292360650
z_food_afford
```

```
-0.059690792 0.0163384835
z_fd_enviro_indx
z_fi_percent
                           0.246806892 0.3540522572
z_ACS_PCT_FOOD_STAMP
                           0.052277148 0.1485998763
z_childelig_lunch_perc
                          -0.059988930 0.0213159702
z shp percent
                          -0.042601334
                                        0.0483201121
z_shcb_percent
                          -0.137976842 -0.0498425855
z ACS PCT NO VEH
                          -0.076238780 0.0574855735
z_ACS_PCT_RENTER_HH_CHILD
                           0.021268412 0.0755699388
z_ACS_PCT_RENT_COST_30PCT
                           0.013071487
                                        0.0694856548
z_ACS_PCT_MOBILE_HOME
                          -0.049715407
                                        0.0116506215
z_ACS_PCT_OWNED_HH
                           0.016164026 0.0944677119
z_ACS_PCT_OWNER_HH_CHILD
                          -0.024834560
                                        0.0542704013
z_ACS_MEDIAN_HOME_VALUE
                           0.047535680
                                        0.1358096410
z_ACS_PCT_BROADBAND
                          -0.007333648
                                        0.1052590354
z_ACS_PCT_NO_PC
                           0.007493052
                                        0.1201215686
                           0.012107295 0.0720166341
z_ACS_PCT_SMARTPHONE
                           0.042261912 0.0961337477
z_pi_phy_inact
z_cip_perc
                          -0.026352615 0.0798057173
                           0.073019160 0.1450304415
z_csph_perc
z_ACS_PCT_CHILD_DISAB
                           0.009526332 0.0533770784
z_unemp_perc
                          -0.007431128 0.0510970891
z ACS GINI INDEX
                           0.022759358 0.0777872185
z_ACS_MEDIAN_HH_INCOME
                          -0.170157627 -0.0481706097
z_ACS_PCT_WORK_NO_CAR
                          -0.012906785 0.0963209493
                           0.051011812 0.1842912202
z_soc_assoc_num
                          -0.052376373
                                        0.0007805739
z_aeo_perc_w_acc
z_dwv_presence
                           0.003962601
                                        0.0421970748
z_ACS_PCT_HH_PUB_ASSIST
                          -0.115956960 -0.0648535453
z_AHRF_TXC_SITE_NO_CNTRL
                          -0.021477177 0.0151849351
```

# Final Health Model, Physically Unhealthy Days

### VIF

```
vif(z_pphd_levels_12345678)
```

```
z_ACS_PCT_BLACK z_ACS_PCT_HISPAN z_SVI_RPL_THEME1_SOCIECO
4.529229 4.726446 9.171810
z_SVI_RPL_THEME2_HH_DISB z_SVI_RPL_THEME3_MINO z_SVI_RPL_THEME4_HH_TRANS
3.342324 4.615735 2.838081
```

z_ACS_PCT_ENGL_NOT_WELL	z_ACS_PCT_NON_CITIZEN	z_ACS_MEDIAN_AGE
10.899941	8.857321	5.891301
z_phys_per_cap	z_mhp_per_cap	z_dents_per_cap
2.454924	2.207193	2.487009
z_uninsur_perc	$z\_{\tt uc\_percent}$	${ t z_{ t opcp\_rate}}$
8.817804	6.618692	1.700850
${ t z\_TeenBirths}$	${ t z_phs_rate}$	z_ms_perc_ann
11.875686	1.669183	2.055610
$z_{\mathtt{AMFAR\_AMATFAC}}$	z_MP_PERCPEN	z_AHRF_RURAL_H_CLINIC
2.159504	1.409142	1.176095
z_food_afford	z_fd_enviro_indx	${ t z_fi_percent}$
3.865361	4.086159	8.926335
z_ACS_PCT_FOOD_STAMP	z_childelig_lunch_perc	z_shp_percent
6.576455	3.949665	5.076091
z_shcb_percent	z_ACS_PCT_NO_VEH	z_ACS_PCT_RENTER_HH_CHILD
5.782730	9.020581	2.170695
z_ACS_PCT_RENT_COST_30PCT	z_ACS_PCT_MOBILE_HOME	z_ACS_PCT_OWNED_HH
2.231458	2.942657	4.282905
z_ACS_PCT_OWNER_HH_CHILD	z_ACS_MEDIAN_HOME_VALUE	z_ACS_PCT_BROADBAND
4.587054	5.801900	10.136963
z_ACS_PCT_NO_PC	z_ACS_PCT_SMARTPHONE	z_pi_phy_inact
9.950410	2.819536	2.386377
z_cip_perc	z_csph_perc	z_ACS_PCT_CHILD_DISAB
9.049575	3.929775	1.387881
z_unemp_perc	z_ACS_GINI_INDEX	z_ACS_MEDIAN_HH_INCOME
2.398661	2.238907	11.451117
z_ACS_PCT_WORK_NO_CAR	z_soc_assoc_num	z_aeo_perc_w_acc
5.307013	13.657631	2.077177
z_dwv_presence	z_ACS_PCT_HH_PUB_ASSIST	z_AHRF_TXC_SITE_NO_CNTRL
1.150918	1.494101	1.101568

## Final Health Model

DV: Mentally Unhealthy Days

IVs: Demographics, Health 1, Health 2, Food/Housing, Technology, HWCC, Business, Government

Note: z\_pfh\_percent was previously excluded from the final mentally unhealthy days model

```
z pmhd_levels_12345678 <- lm(formula = z pmhd_avgnum ~ z ACS_PCT_BLACK +
   z ACS PCT HISPAN + z SVI RPL THEME1 SOCIECO + z SVI RPL THEME2 HH DISB +
   z_SVI_RPL_THEME3_MINO + z_SVI_RPL_THEME4_HH_TRANS + z_ACS_PCT_ENGL_NOT_WELL +
   z_ACS_PCT_NON_CITIZEN + z_ACS_MEDIAN_AGE + z_phys_per_cap +
   z_mhp_per_cap + z_dents_per_cap + z_uninsur_perc + z_uc_percent +
   z_opcp_rate + z_TeenBirths + z_phs_rate + z_ms_perc_ann +
   z_AMFAR_AMATFAC + z_MP_PERCPEN + z_AHRF_RURAL_H_CLINIC +
   z food afford + z fd enviro indx + z fi percent + z ACS PCT FOOD STAMP +
   z_childelig_lunch_perc + z_shp_percent + z_shcb_percent +
   z ACS PCT NO VEH + z ACS PCT RENTER HH CHILD + z ACS PCT RENT COST 30PCT +
   z_ACS_PCT_MOBILE_HOME + z_ACS_PCT_OWNED_HH + z_ACS_PCT_OWNER_HH_CHILD +
   z_ACS_MEDIAN_HOME_VALUE + z_ACS_PCT_BROADBAND + z_ACS_PCT_NO_PC +
   z_ACS_PCT_SMARTPHONE + z_pi_phy_inact + z_cip_perc + z_csph_perc +
   z_ACS_PCT_CHILD_DISAB + z_unemp_perc + z_ACS_GINI_INDEX +
   z ACS MEDIAN HH INCOME + z ACS PCT WORK NO CAR + z soc assoc num +
   z_aeo_perc_w_acc + z_dwv_presence + z_ACS_PCT_HH_PUB_ASSIST +
   z_AHRF_TXC_SITE_NO_CNTRL, data = Z_and_Final_Variables_10.28.22)
summary(z_pmhd_levels_12345678)
```

#### Call:

```
lm(formula = z_pmhd_avgnum ~ z_ACS_PCT_BLACK + z_ACS_PCT_HISPAN +
    z_SVI_RPL_THEME1_SOCIECO + z_SVI_RPL_THEME2_HH_DISB + z_SVI_RPL_THEME3_MINO +
    z_SVI_RPL_THEME4_HH_TRANS + z_ACS_PCT_ENGL_NOT_WELL + z_ACS_PCT_NON_CITIZEN +
    z_ACS_MEDIAN_AGE + z_phys_per_cap + z_mhp_per_cap + z_dents_per_cap +
    z_uninsur_perc + z_uc_percent + z_opcp_rate + z_TeenBirths +
    z_phs_rate + z_ms_perc_ann + z_AMFAR_AMATFAC + z_MP_PERCPEN +
    z_AHRF_RURAL_H_CLINIC + z_food_afford + z_fd_enviro_indx +
    z_fi_percent + z_ACS_PCT_FOOD_STAMP + z_childelig_lunch_perc +
    z_shp_percent + z_shcb_percent + z_ACS_PCT_NO_VEH + z_ACS_PCT_RENTER_HH_CHILD +
    z_ACS_PCT_RENT_COST_3OPCT + z_ACS_PCT_MOBILE_HOME + z_ACS_PCT_OWNED_HH +
```

```
z_ACS_PCT_OWNER_HH_CHILD + z_ACS_MEDIAN_HOME_VALUE + z_ACS_PCT_BROADBAND +
z_ACS_PCT_NO_PC + z_ACS_PCT_SMARTPHONE + z_pi_phy_inact +
z_cip_perc + z_csph_perc + z_ACS_PCT_CHILD_DISAB + z_unemp_perc +
z_ACS_GINI_INDEX + z_ACS_MEDIAN_HH_INCOME + z_ACS_PCT_WORK_NO_CAR +
z_soc_assoc_num + z_aeo_perc_w_acc + z_dwv_presence + z_ACS_PCT_HH_PUB_ASSIST +
z_AHRF_TXC_SITE_NO_CNTRL, data = Z_and_Final_Variables_10.28.22)
```

#### Residuals:

Min 1Q Median 3Q Max -2.23380 -0.36879 0.01596 0.35327 2.15973

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-0.0184687	0.0115845	-1.594	0.111001
z_ACS_PCT_BLACK	-0.2772987	0.0218377	-12.698	< 0.00000000000000000000000000000000000
z_ACS_PCT_HISPAN	-0.0864820	0.0222585	-3.885	0.000105
z_SVI_RPL_THEME1_SOCIECO	0.4924509	0.0319311	15.422	< 0.00000000000000000000000000000000000
z_SVI_RPL_THEME2_HH_DISB	-0.0761964	0.0193008	-3.948	0.0000809661729286
z_SVI_RPL_THEME3_MINO	-0.0483390	0.0228097	-2.119	0.034166
z_SVI_RPL_THEME4_HH_TRANS	-0.0616293	0.0181086	-3.403	0.000676
z_ACS_PCT_ENGL_NOT_WELL	-0.0175062	0.0349597	-0.501	0.616586
z_ACS_PCT_NON_CITIZEN	-0.0107645	0.0324627	-0.332	0.740220
z_ACS_MEDIAN_AGE	-0.0296551	0.0259165	-1.144	0.252623
z_phys_per_cap	0.0188246	0.0175374	1.073	0.283193
z_mhp_per_cap	0.0365979	0.0167819	2.181	0.029288
z_dents_per_cap	-0.0098478	0.0175733	-0.560	0.575267
z_uninsur_perc	0.0058381	0.0309941	0.188	0.850607
z_uc_percent	-0.3300625	0.0425948	-7.749	0.000000000000132
z_opcp_rate	-0.0020289	0.0145982	-0.139	0.889477
z_TeenBirths	-0.1882578	0.0352720	-5.337	0.0000001025264787
z_phs_rate	0.0261710	0.0135044	1.938	0.052737
z_ms_perc_ann	-0.1545506	0.0152106	-10.161	< 0.00000000000000000000000000000000000
z_AMFAR_AMATFAC	-0.0221356	0.0151847	-1.458	0.145028
z_MP_PERCPEN	-0.0408478	0.0125056	-3.266	0.001104
z_AHRF_RURAL_H_CLINIC	0.0015444	0.0111161	0.139	0.889510
z_food_afford	0.0028865	0.0213729	0.135	0.892580
z_fd_enviro_indx	0.0231060	0.0223514	1.034	0.301347
z_fi_percent	0.2874539	0.0315285	9.117	< 0.00000000000000000000000000000000000
z_ACS_PCT_FOOD_STAMP	0.0784956	0.0283174	2.772	0.005611
z_childelig_lunch_perc	0.0446255	0.0239024	1.867	0.062016
z_shp_percent	-0.0003403	0.0267295	-0.013	0.989844
z_shcb_percent	-0.0631787	0.0259101	-2.438	0.014820
z_ACS_PCT_NO_VEH	0.0221794	0.0393129	0.564	0.572684

```
z_ACS_PCT_RENTER_HH_CHILD
                            0.0652621
                                       0.0159638
                                                    4.088
                                                            0.0000448144498579
z_ACS_PCT_RENT_COST_30PCT
                            0.0912382
                                       0.0165849
                                                    5.501
                                                            0.0000000414053286
z_ACS_PCT_MOBILE_HOME
                           -0.0298886
                                       0.0180407
                                                   -1.657
                                                                       0.097695
z_ACS_PCT_OWNED_HH
                                       0.0230201
                                                    4.378
                                                            0.0000124812934878
                            0.1007706
z ACS PCT OWNER HH CHILD
                                                   -1.061
                           -0.0246722
                                       0.0232557
                                                                       0.288829
z_ACS_MEDIAN_HOME_VALUE
                            0.0254936
                                       0.0259512
                                                    0.982
                                                                       0.326011
z ACS PCT BROADBAND
                            0.0712055
                                       0.0331005
                                                    2.151
                                                                       0.031554
z_ACS_PCT_NO_PC
                            0.0171438
                                       0.0331111
                                                    0.518
                                                                       0.604666
z_ACS_PCT_SMARTPHONE
                                       0.0176124
                                                    2.772
                            0.0488184
                                                                       0.005614
z_pi_phy_inact
                            0.0765973
                                       0.0158375
                                                    4.836
                                                            0.0000013993622739
                                                   -2.150
z_cip_perc
                           -0.0671040
                                       0.0312089
                                                                       0.031636
                                                    6.546
                                                            0.000000000709288
z_csph_perc
                            0.1385844
                                       0.0211702
z_ACS_PCT_CHILD_DISAB
                            0.0594626
                                       0.0128914
                                                    4.613
                                                            0.0000041710815168
                                                    1.285
z_unemp_perc
                            0.0221024
                                       0.0172064
                                                                       0.199066
z_ACS_GINI_INDEX
                            0.0634769
                                       0.0161774
                                                    3.924
                                                            0.0000894320071040
z_ACS_MEDIAN_HH_INCOME
                           -0.0540323
                                       0.0358623
                                                  -1.507
                                                                       0.132020
z_ACS_PCT_WORK_NO_CAR
                            0.0459641
                                       0.0321113
                                                    1.431
                                                                       0.152436
                            0.2420900
                                       0.0391821
                                                    6.179
                                                            0.000000007490725
z_soc_assoc_num
                           -0.0046546
                                       0.0156273
                                                  -0.298
                                                                       0.765843
z_aeo_perc_w_acc
z dwv presence
                            0.0692059
                                       0.0112404
                                                    6.157
                                                            0.0000000008573682
z_ACS_PCT_HH_PUB_ASSIST
                                       0.0150236
                           -0.1162973
                                                   -7.741
                                                            0.000000000000140
z_AHRF_TXC_SITE_NO_CNTRL
                                                   -1.391
                           -0.0149920
                                       0.0107781
                                                                       0.164354
```

### (Intercept)

z\_ACS\_PCT\_BLACK \*\*\* z\_ACS\_PCT\_HISPAN \*\*\* z\_SVI\_RPL\_THEME1\_SOCIECO \*\*\* z\_SVI\_RPL\_THEME2\_HH\_DISB \*\*\* z\_SVI\_RPL\_THEME3\_MINO z\_SVI\_RPL\_THEME4\_HH\_TRANS \*\*\* z\_ACS\_PCT\_ENGL\_NOT\_WELL z\_ACS\_PCT\_NON\_CITIZEN z\_ACS\_MEDIAN\_AGE z\_phys\_per\_cap z mhp per cap z\_dents\_per\_cap z\_uninsur\_perc z\_uc\_percent z\_opcp\_rate  $z_TeenBirths$ z\_phs\_rate z\_ms\_perc\_ann \*\*\* z\_AMFAR\_AMATFAC

```
z_MP_PERCPEN
                          **
z_AHRF_RURAL_H_CLINIC
z_food_afford
z_fd_enviro_indx
z_fi_percent
                          ***
z_{ACS_{PCT_{FOOD_{STAMP}}}
z_childelig_lunch_perc
z_shp_percent
z_shcb_percent
z_ACS_PCT_NO_VEH
z_ACS_PCT_RENTER_HH_CHILD ***
z_ACS_PCT_RENT_COST_30PCT ***
z_ACS_PCT_MOBILE_HOME
z_ACS_PCT_OWNED_HH
                          ***
z_ACS_PCT_OWNER_HH_CHILD
z_ACS_MEDIAN_HOME_VALUE
z_ACS_PCT_BROADBAND
z_ACS_PCT_NO_PC
z_ACS_PCT_SMARTPHONE
                          **
z_pi_phy_inact
                          ***
z_cip_perc
z_csph_perc
z_ACS_PCT_CHILD_DISAB
                          ***
z_unemp_perc
z_ACS_GINI_INDEX
                          ***
z_ACS_MEDIAN_HH_INCOME
z_ACS_PCT_WORK_NO_CAR
z_soc_assoc_num
                          ***
z_aeo_perc_w_acc
z_dwv_presence
z_ACS_PCT_HH_PUB_ASSIST
                          ***
z_AHRF_TXC_SITE_NO_CNTRL
Signif. codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1
Residual standard error: 0.5414 on 2585 degrees of freedom
  (504 observations deleted due to missingness)
Multiple R-squared: 0.7187,
                                Adjusted R-squared: 0.7131
F-statistic: 129.5 on 51 and 2585 DF, p-value: < 0.00000000000000022
```

# Final Health Model, Mentally Unhealthy Days

### **Confidence Intervals**

confint(z\_pmhd\_levels\_12345678)

```
2.5 %
                                             97.5 %
(Intercept)
                          -0.041184601 0.004247210
z_ACS_PCT_BLACK
                          -0.320119895 -0.234477552
z_ACS_PCT_HISPAN
                          -0.130128244 -0.042835814
z_SVI_RPL_THEME1_SOCIECO
                           0.429837790 0.555064079
z_SVI_RPL_THEME2_HH_DISB
                          -0.114043032 -0.038349793
z_SVI_RPL_THEME3_MINO
                          -0.093066220 -0.003611826
z_SVI_RPL_THEME4_HH_TRANS -0.097138001 -0.026120521
z_ACS_PCT_ENGL_NOT_WELL
                          -0.086058100 0.051045627
z_ACS_PCT_NON_CITIZEN
                          -0.074420052 0.052890961
z_ACS_MEDIAN_AGE
                          -0.080474264
                                       0.021164044
z_phys_per_cap
                          -0.015564198 0.053213422
z_mhp_per_cap
                           0.003690646 0.069505213
z_dents_per_cap
                          -0.044306980 0.024611427
z_uninsur_perc
                          -0.054937630 0.066613904
z_uc_percent
                          -0.413585972 -0.246539051
z_opcp_rate
                          -0.030654301 0.026596591
z_TeenBirths
                          -0.257421939 -0.119093598
z_phs_rate
                          -0.000309540 0.052651459
z_ms_perc_ann
                          -0.184376878 -0.124724375
z_AMFAR_AMATFAC
                          -0.051910908 0.007639730
z_MP_PERCPEN
                          -0.065369878 -0.016325740
z_AHRF_RURAL_H_CLINIC
                          -0.020252833 0.023341712
z_food_afford
                          -0.039023164 0.044796116
z_fd_enviro_indx
                          -0.020722590 0.066934510
z_fi_percent
                           0.225630255 0.349277595
z_ACS_PCT_FOOD_STAMP
                           0.022968495 0.134022704
z_childelig_lunch_perc
                          -0.002244292 0.091495280
z shp percent
                          -0.052753702 0.052073159
z_shcb_percent
                          -0.113985450 -0.012372048
z_ACS_PCT_NO_VEH
                          -0.054908611 0.099267382
z_ACS_PCT_RENTER_HH_CHILD 0.033958903 0.096565240
z_ACS_PCT_RENT_COST_30PCT
                           0.058717172 0.123759255
z_ACS_PCT_MOBILE_HOME
                          -0.065264231
                                        0.005487043
z_ACS_PCT_OWNED_HH
                           0.055630967 0.145910323
```

```
z_ACS_PCT_OWNER_HH_CHILD -0.070273792 0.020929385
z_ACS_MEDIAN_HOME_VALUE
                          -0.025393629 0.076380844
z_ACS_PCT_BROADBAND
                          0.006299312 0.136111783
z_ACS_PCT_NO_PC
                          -0.047783129 0.082070656
z_ACS_PCT_SMARTPHONE
                          0.014282454 0.083354254
z_pi_phy_inact
                          0.045541790 0.107652718
z_cip_perc
                          -0.128301036 -0.005906978
z_csph_perc
                          0.097072140 0.180096739
z_ACS_PCT_CHILD_DISAB
                          0.034184024 0.084741250
z_unemp_perc
                          -0.011637304 0.055842147
                          0.031754979 0.095198734
z_ACS_GINI_INDEX
z_ACS_MEDIAN_HH_INCOME
                          -0.124354054 0.016289509
z_ACS_PCT_WORK_NO_CAR
                          -0.017002311 0.108930581
z_soc_assoc_num
                          0.165258493  0.318921492
z_aeo_perc_w_acc
                          -0.035297930 0.025988776
                          0.047164851 0.091246858
z_dwv_presence
z_ACS_PCT_HH_PUB_ASSIST
                          -0.145756806 -0.086837697
z_AHRF_TXC_SITE_NO_CNTRL -0.036126605 0.006142567
```

# Final Health Model, Mentally Unhealthy Days

## **VIF**

```
vif(z_pmhd_levels_12345678)
```

AGG DOW DI AGIZ	AGG DOW HIGDAN	GUT DDI WUDWEA GOGTEGO
z_ACS_PCT_BLACK	Z_ACS_PCT_HISPAN	z_SVI_RPL_THEME1_SOCIECO
4.529229	4.726446	9.171810
z_SVI_RPL_THEME2_HH_DISB	z_SVI_RPL_THEME3_MINO	$z_{SVI}_{RPL}_{THEME4}_{HH}_{TRANS}$
3.342324	4.615735	2.838081
z_ACS_PCT_ENGL_NOT_WELL	z_ACS_PCT_NON_CITIZEN	z_ACS_MEDIAN_AGE
10.899941	8.857321	5.891301
z_phys_per_cap	z_mhp_per_cap	z_dents_per_cap
2.454924	2.207193	2.487009
z_uninsur_perc	$z\_uc\_percent$	${\tt z\_opcp\_rate}$
8.817804	6.618692	1.700850
${ t z\_TeenBirths}$	${ t z_phs_rate}$	z_ms_perc_ann
11.875686	1.669183	2.055610
z_AMFAR_AMATFAC	z_MP_PERCPEN	z_AHRF_RURAL_H_CLINIC
2.159504	1.409142	1.176095
${ t z\_food\_afford}$	z_fd_enviro_indx	${ t z_fi_percent}$

```
4.086159
                 3.865361
                                                                        8.926335
     z_ACS_PCT_FOOD_STAMP
                              z_childelig_lunch_perc
                                                                  z_shp_percent
                 6.576455
                                             3.949665
                                                                        5.076091
                                    z_ACS_PCT_NO_VEH z_ACS_PCT_RENTER_HH_CHILD
           z_shcb_percent
                  5.782730
                                             9.020581
                                                                        2.170695
z_ACS_PCT_RENT_COST_30PCT
                               z_ACS_PCT_MOBILE_HOME
                                                             z_ACS_PCT_OWNED_HH
                  2.231458
                                             2.942657
                                                                        4.282905
 z\_ACS\_PCT\_OWNER\_HH\_CHILD
                                                            z_ACS_PCT_BROADBAND
                             z_ACS_MEDIAN_HOME_VALUE
                 4.587054
                                             5.801900
                                                                       10.136963
          z_ACS_PCT_NO_PC
                                z_ACS_PCT_SMARTPHONE
                                                                  z_pi_phy_inact
                 9.950410
                                                                        2.386377
                                             2.819536
               z_cip_perc
                                          z_csph_perc
                                                          z_ACS_PCT_CHILD_DISAB
                 9.049575
                                             3.929775
                                                                        1.387881
                                    z_ACS_GINI_INDEX
                                                         z_ACS_MEDIAN_HH_INCOME
             z_unemp_perc
                  2.398661
                                             2.238907
                                                                       11.451117
    z_ACS_PCT_WORK_NO_CAR
                                     z_soc_assoc_num
                                                               z_aeo_perc_w_acc
                 5.307013
                                            13.657631
                                                                        2.077177
                             z_ACS_PCT_HH_PUB_ASSIST
                                                       z_AHRF_TXC_SITE_NO_CNTRL
           z_dwv_presence
                  1.150918
                                             1.494101
                                                                        1.101568
```

# **Final Housing Model**

DV: Rent 30 Percent

IVs: All IVs except those that serve as the DVs in the housing models – z\_ACS\_PCT\_RENT\_COST\_30PCT, z\_ACS\_MEDIAN\_HOME\_VALUE, z\_ACS\_PCT\_OWNED\_HH – as well as the three problematic VIF IVs

Note: Building final model below (R markdown housing doc had groupings only)

```
z_rent30_levels_12345678 <- lm(formula = z_ACS_PCT_RENT_COST_30PCT ~

z_ACS_PCT_BLACK + z_ACS_PCT_HISPAN + z_SVI_RPL_THEME1_SOCIECO +

z_SVI_RPL_THEME2_HH_DISB + z_SVI_RPL_THEME3_MINO + z_SVI_RPL_THEME4_HH_TRANS +

z_ACS_PCT_ENGL_NOT_WELL + z_ACS_PCT_NON_CITIZEN + z_ACS_MEDIAN_AGE +

z_food_afford + z_fd_enviro_indx + z_fi_percent + z_ACS_PCT_FOOD_STAMP +

z_childelig_lunch_perc + z_shp_percent + z_shcb_percent +

z_ACS_PCT_NO_VEH + z_ACS_PCT_RENTER_HH_CHILD + z_ACS_PCT_MOBILE_HOME +

z_ACS_PCT_OWNER_HH_CHILD + z_ACS_PCT_BROADBAND + z_ACS_PCT_NO_PC +

z_ACS_PCT_SMARTPHONE + z_phys_per_cap + z_mhp_per_cap +

z_dents_per_cap + z_uninsur_perc + z_uc_percent + z_opcp_rate +</pre>
```

```
z_TeenBirths + z_phs_rate + z_ms_perc_ann + z_AMFAR_AMATFAC +
z_MP_PERCPEN + z_AHRF_RURAL_H_CLINIC + z_pphd_avgnum +
z_pmhd_avgnum + z_lbw_percent_lbw + z_pi_phy_inact +
z_cip_perc + z_csph_perc + z_ACS_PCT_CHILD_DISAB + z_unemp_perc +
z_ACS_GINI_INDEX + z_ACS_MEDIAN_HH_INCOME + z_ACS_PCT_WORK_NO_CAR +
z_soc_assoc_num + z_aeo_perc_w_acc + z_dwv_presence +
z_ACS_PCT_HH_PUB_ASSIST + z_AHRF_TXC_SITE_NO_CNTRL, data = Z_and_Final_Variables_1
summary(z_rent30_levels_12345678)
```

#### Call:

```
lm(formula = z_ACS_PCT_RENT_COST_30PCT ~ z_ACS_PCT_BLACK + z_ACS_PCT_HISPAN +
   z_SVI_RPL_THEME1_SOCIECO + z_SVI_RPL_THEME2_HH_DISB + z_SVI_RPL_THEME3_MINO +
   z SVI RPL THEME4 HH TRANS + z ACS PCT ENGL NOT WELL + z ACS PCT NON CITIZEN +
   z_ACS_MEDIAN_AGE + z_food_afford + z_fd_enviro_indx + z_fi_percent +
   z_ACS_PCT_FOOD_STAMP + z_childelig_lunch_perc + z_shp_percent +
   z_shcb_percent + z_ACS_PCT_NO_VEH + z_ACS_PCT_RENTER_HH_CHILD +
   z_ACS_PCT_MOBILE_HOME + z_ACS_PCT_OWNER_HH_CHILD + z_ACS_PCT_BROADBAND +
   z_ACS_PCT_NO_PC + z_ACS_PCT_SMARTPHONE + z_phys_per_cap +
   z_mhp_per_cap + z_dents_per_cap + z_uninsur_perc + z_uc_percent +
   z_opcp_rate + z_TeenBirths + z_phs_rate + z_ms_perc_ann +
   z_AMFAR_AMATFAC + z_MP_PERCPEN + z_AHRF_RURAL_H_CLINIC +
   z_pphd_avgnum + z_pmhd_avgnum + z_lbw_percent_lbw + z_pi_phy_inact +
   z_cip_perc + z_csph_perc + z_ACS_PCT_CHILD_DISAB + z_unemp_perc +
   z_ACS_GINI_INDEX + z_ACS_MEDIAN_HH_INCOME + z_ACS_PCT_WORK_NO_CAR +
   z_soc_assoc_num + z_aeo_perc_w_acc + z_dwv_presence + z_ACS_PCT_HH_PUB_ASSIST +
   z_AHRF_TXC_SITE_NO_CNTRL, data = Z_and_Final_Variables_10.28.22)
```

# Residuals:

Min 1Q Median 3Q Max -2.7759 -0.3224 -0.0082 0.3296 3.1464

	Estimate	Std. Error t	value	Pr(> t )
(Intercept)	0.0304442	0.0135059	2.254	0.024272
z_ACS_PCT_BLACK	0.0760446	0.0282728	2.690	0.007199
z_ACS_PCT_HISPAN	0.0955625	0.0261305	3.657	0.000260
z_SVI_RPL_THEME1_SOCIECO	0.1260471	0.0383736	3.285	0.001035
z_SVI_RPL_THEME2_HH_DISB	0.0244303	0.0222834	1.096	0.273031
z_SVI_RPL_THEME3_MINO	0.0448658	0.0261107	1.718	0.085865
z_SVI_RPL_THEME4_HH_TRANS	0.0167174	0.0206188	0.811	0.417567

z_ACS_PCT_ENGL_NOT_WELL	-0.0713380	0.0400769	-1.780	0.075190
z_ACS_PCT_NON_CITIZEN	-0.0087590	0.0368128	-0.238	0.811951
z_ACS_MEDIAN_AGE	0.1537651	0.0266062	5.779	0.00000008418
z_food_afford	0.0208671	0.0246946	0.845	0.398187
z_fd_enviro_indx	0.0857619	0.0264350	3.244	0.001193
z_fi_percent	0.1163826	0.0374215	3.110	0.001891
z_ACS_PCT_FOOD_STAMP	0.0200051	0.0322925	0.619	0.535644
z_childelig_lunch_perc	-0.0660790	0.0277114	-2.385	0.017173
z_shp_percent	-0.0329631	0.0303272	-1.087	0.277176
z_shcb_percent	0.5351234	0.0272596	19.631	< 0.000000000000000000002
z_ACS_PCT_NO_VEH	-0.0325402	0.0456372	-0.713	0.475900
z_ACS_PCT_RENTER_HH_CHILD	-0.0752704	0.0185053	-4.068	0.000048965562
z_ACS_PCT_MOBILE_HOME	0.0287218	0.0206064	1.394	0.163491
z_ACS_PCT_OWNER_HH_CHILD	0.0887704	0.0261224	3.398	0.000689
z_ACS_PCT_BROADBAND	-0.0105832	0.0383235	-0.276	0.782452
z_ACS_PCT_NO_PC	-0.0652117	0.0382730	-1.704	0.088530
z_ACS_PCT_SMARTPHONE	-0.0474811	0.0201127	-2.361	0.018313
z_phys_per_cap	-0.0178376	0.0212908	-0.838	0.402216
z_mhp_per_cap	-0.0019012	0.0190803	-0.100	0.920635
z_dents_per_cap	0.0010603	0.0207670	0.051	0.959286
z_uninsur_perc	0.0787749	0.0357953	2.201	0.027847
z_uc_percent	-0.1973515	0.0507766	-3.887	0.000104
z_opcp_rate	0.0048505	0.0170068	0.285	0.775508
z_TeenBirths	0.0469696	0.0401179	1.171	0.241792
z_phs_rate	0.0185833	0.0155433	1.196	0.231972
z_ms_perc_ann	0.0369067	0.0178109	2.072	0.038353
z_AMFAR_AMATFAC	-0.0193860	0.0171613	-1.130	0.258737
z_MP_PERCPEN	0.0892277	0.0139091	6.415	0.00000000167
z_AHRF_RURAL_H_CLINIC	-0.0194254	0.0126036	-1.541	0.123377
z_pphd_avgnum	-0.1501856	0.0460315	-3.263	0.001118
z_pmhd_avgnum	0.2577241	0.0397672	6.481	0.00000000109
z_lbw_percent_lbw	-0.0136223	0.0202793	-0.672	0.501812
z_pi_phy_inact	-0.0229085	0.0178510	-1.283	0.199497
z_cip_perc	0.0191771	0.0366304	0.524	0.600653
z_csph_perc	-0.0205144	0.0248811	-0.824	0.409736
z_ACS_PCT_CHILD_DISAB	-0.0009258	0.0148651	-0.062	0.950344
z_unemp_perc	0.0671119	0.0193966	3.460	0.000549
z_ACS_GINI_INDEX	0.0449821	0.0187261	2.402	0.016372
z_ACS_MEDIAN_HH_INCOME	0.0618174	0.0338419	1.827	0.067869
z_ACS_PCT_WORK_NO_CAR	-0.0525746	0.0374238	-1.405	0.160189
z_soc_assoc_num	-0.0665359	0.0446570	-1.490	0.136366
z_aeo_perc_w_acc	0.0115103	0.0181026	0.636	0.524941
z_dwv_presence	0.0031191	0.0128823	0.242	0.808706
<del>-</del>				

```
z_AHRF_TXC_SITE_NO_CNTRL
                            0.0057738
                                                    0.475
                                                                       0.635123
                                       0.0121659
(Intercept)
z_ACS_PCT_BLACK
z_ACS_PCT_HISPAN
z_SVI_RPL_THEME1_SOCIECO
z_SVI_RPL_THEME2_HH_DISB
z_SVI_RPL_THEME3_MINO
z_SVI_RPL_THEME4_HH_TRANS
z_ACS_PCT_ENGL_NOT_WELL
z_ACS_PCT_NON_CITIZEN
z_ACS_MEDIAN_AGE
                           ***
z_food_afford
z_fd_enviro_indx
z_fi_percent
z\_ACS\_PCT\_FOOD\_STAMP
z_childelig_lunch_perc
z_shp_percent
z_shcb_percent
                           ***
z_ACS_PCT_NO_VEH
z_ACS_PCT_RENTER_HH_CHILD ***
z_ACS_PCT_MOBILE_HOME
z_ACS_PCT_OWNER_HH_CHILD
z_ACS_PCT_BROADBAND
z_ACS_PCT_NO_PC
z_ACS_PCT_SMARTPHONE
z_phys_per_cap
z_mhp_per_cap
z_dents_per_cap
z_uninsur_perc
z_uc_percent
z_opcp_rate
z_TeenBirths
z_phs_rate
z_ms_perc_ann
z_AMFAR_AMATFAC
z_MP_PERCPEN
z_AHRF_RURAL_H_CLINIC
z_pphd_avgnum
                           **
z_pmhd_avgnum
                           ***
z_lbw_percent_lbw
```

-0.0009068

0.0173899

-0.052

0.958415

z\_ACS\_PCT\_HH\_PUB\_ASSIST

z\_pi\_phy\_inact

```
z_cip_perc
z_csph_perc
z_ACS_PCT_CHILD_DISAB
z_unemp_perc
                          ***
z ACS GINI INDEX
z_ACS_MEDIAN_HH_INCOME
z_ACS_PCT_WORK_NO_CAR
z_soc_assoc_num
z_aeo_perc_w_acc
z_dwv_presence
z_ACS_PCT_HH_PUB_ASSIST
z_AHRF_TXC_SITE_NO_CNTRL
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
Residual standard error: 0.6109 on 2541 degrees of freedom
  (548 observations deleted due to missingness)
Multiple R-squared: 0.5628,
                                Adjusted R-squared: 0.554
F-statistic: 64.14 on 51 and 2541 DF, p-value: < 0.000000000000000022
```

# Final Housing Model, Rent 30 Percent

### **Confidence Intervals**

```
confint(z_rent30_levels_12345678)
```

```
2.5 %
                                            97.5 %
(Intercept)
                          0.003960535 0.056927948
z_ACS_PCT_BLACK
                          0.020604516 0.131484594
                          0.044323327 0.146801667
z_ACS_PCT_HISPAN
z_SVI_RPL_THEME1_SOCIECO
                          0.050800301 0.201293885
z_SVI_RPL_THEME2_HH_DISB -0.019265196 0.068125873
z_SVI_RPL_THEME3_MINO
                          -0.006334661 0.096066326
z_SVI_RPL_THEME4_HH_TRANS -0.023714050 0.057148754
                         -0.149924646 0.007248593
z_ACS_PCT_ENGL_NOT_WELL
z_ACS_PCT_NON_CITIZEN
                         -0.080945148 0.063427068
z_ACS_MEDIAN_AGE
                          0.101593000 0.205937218
z_food_afford
                         -0.027556487 0.069290640
z_fd_enviro_indx
                         0.033925595 0.137598268
z_fi_percent
                          0.043002895 0.189762253
```

```
z_ACS_PCT_FOOD_STAMP
                          -0.043317081
                                         0.083327331
z_childelig_lunch_perc
                           -0.120418126 -0.011739812
                                         0.026505356
z_shp_percent
                          -0.092431631
z_shcb_percent
                           0.481670136
                                         0.588576690
z ACS PCT NO VEH
                          -0.122030127
                                         0.056949781
z_ACS_PCT_RENTER_HH_CHILD -0.111557402 -0.038983421
z ACS PCT MOBILE HOME
                           -0.011685272
                                         0.069128967
z_ACS_PCT_OWNER_HH_CHILD
                           0.037546975
                                         0.139993755
z_ACS_PCT_BROADBAND
                          -0.085731577
                                         0.064565240
z_ACS_PCT_NO_PC
                          -0.140261167
                                         0.009837718
z_ACS_PCT_SMARTPHONE
                          -0.086920005 -0.008042190
z_phys_per_cap
                          -0.059586746
                                         0.023911454
                                         0.035513207
z_mhp_per_cap
                           -0.039315659
z_dents_per_cap
                          -0.039661766
                                         0.041782292
z_uninsur_perc
                           0.008583941
                                         0.148965871
                          -0.296919278 -0.097783749
z_uc_percent
                          -0.028498052
                                         0.038199002
z_opcp_rate
z_TeenBirths
                           -0.031697382
                                         0.125636679
                          -0.011895570
                                         0.049062090
z_phs_rate
z_ms_perc_ann
                           0.001981260
                                         0.071832076
z_AMFAR_AMATFAC
                          -0.053037646
                                         0.014265616
z MP PERCPEN
                           0.061953503
                                         0.116501996
z_AHRF_RURAL_H_CLINIC
                          -0.044139675
                                         0.005288891
z_pphd_avgnum
                          -0.240448649 -0.059922619
                           0.179744577
                                         0.335703544
z_pmhd_avgnum
z_lbw_percent_lbw
                          -0.053387886
                                         0.026143243
z_pi_phy_inact
                           -0.057912578
                                         0.012095483
z_cip_perc
                          -0.052651471
                                         0.091005575
z_csph_perc
                           -0.069303726
                                         0.028275003
z_ACS_PCT_CHILD_DISAB
                           -0.030074705
                                         0.028223078
z_unemp_perc
                           0.029077114
                                         0.105146678
z_ACS_GINI_INDEX
                           0.008262221
                                         0.081702012
z_ACS_MEDIAN_HH_INCOME
                          -0.004543164
                                         0.128177877
z_ACS_PCT_WORK_NO_CAR
                                         0.020809586
                          -0.125958865
                                         0.021031959
z_soc_assoc_num
                          -0.154103827
z_aeo_perc_w_acc
                          -0.023987026
                                         0.047007555
z_dwv_presence
                          -0.022141892
                                         0.028380054
z_ACS_PCT_HH_PUB_ASSIST
                          -0.035006617
                                         0.033192922
z_AHRF_TXC_SITE_NO_CNTRL
                          -0.018082326
                                         0.029629870
```

# Final Housing Model, Rent 30 Percent

# VIF

# vif(z\_rent30\_levels\_12345678)

z_SVI_RPL_THEME1_SOCIECO	$z\_{ACS\_PCT\_HISPAN}$	z_ACS_PCT_BLACK
10.177011	5.021327	5.925511
z_SVI_RPL_THEME4_HH_TRANS	z_SVI_RPL_THEME3_MINO	z_SVI_RPL_THEME2_HH_DISB
2.806663	4.611789	3.426761
z_ACS_MEDIAN_AGE	z_ACS_PCT_NON_CITIZEN	z_ACS_PCT_ENGL_NOT_WELL
4.623605	8.887527	11.123916
z_fi_percent	z_fd_enviro_indx	z_food_afford
9.687512	4.310718	3.969453
z_shp_percent	z_childelig_lunch_perc	z_ACS_PCT_FOOD_STAMP
4.941838	4.053182	6.514249
z_ACS_PCT_RENTER_HH_CHILD	z_ACS_PCT_NO_VEH	z_shcb_percent
2.198092	9.397861	4.858808
z_ACS_PCT_BROADBAND	z_ACS_PCT_OWNER_HH_CHILD	z_ACS_PCT_MOBILE_HOME
10.440140	4.370375	2.955305
z_phys_per_cap	z_ACS_PCT_SMARTPHONE	z_ACS_PCT_NO_PC
2.646650	2.829915	10.245674
z_uninsur_perc	z_dents_per_cap	z_mhp_per_cap
8.924643	2.602750	2.229786
${ t z}_{ t TeenBirths}$	z_opcp_rate	${ t z\_uc\_percent}$
12.042889	1.736611	6.678624
z_AMFAR_AMATFAC	z_ms_perc_ann	${ t z_phs_rate}$
2.164435	2.146518	1.691537
${ t z_{pphd_avgnum}}$	z_AHRF_RURAL_H_CLINIC	z_MP_PERCPEN
15.065343	1.181918	1.347006
z_pi_phy_inact	z_lbw_percent_lbw	${ t z_{pmhd}avgnum}$
2.360534	2.905281	11.060449
z_ACS_PCT_CHILD_DISAB	z_csph_perc	z_cip_perc
1.389412	4.090339	9.634239
z_ACS_MEDIAN_HH_INCOME	z_ACS_GINI_INDEX	z_unemp_perc
7.920370	2.262225	2.360546
z_aeo_perc_w_acc	z_soc_assoc_num	z_ACS_PCT_WORK_NO_CAR
2.090970	13.890068	5.555895
z_AHRF_TXC_SITE_NO_CNTRL	z_ACS_PCT_HH_PUB_ASSIST	${\tt z\_dwv\_presence}$
1.101585	1.527451	1.171164

## **Final Housing Model**

DV: Median Home Value

IVs: All IVs except those that serve as the DVs in the housing models – z\_ACS\_PCT\_RENT\_COST\_30PCT, z\_ACS\_MEDIAN\_HOME\_VALUE, z\_ACS\_PCT\_OWNED\_HH – as well as the three problematic VIF IVs

Note: Building final model below (R markdown housing doc had groupings only)

```
z median levels 12345678 <- lm(formula = z ACS_MEDIAN_HOME_VALUE ~
   z_ACS_PCT_BLACK + z_ACS_PCT_HISPAN + z_SVI_RPL_THEME1_SOCIECO +
       z SVI RPL THEME2 HH DISB + z SVI RPL THEME3 MINO + z SVI RPL THEME4 HH TRANS +
       z_ACS_PCT_ENGL_NOT_WELL + z_ACS_PCT_NON_CITIZEN + z_ACS_MEDIAN_AGE +
       z_food_afford + z_fd_enviro_indx + z_fi_percent + z_ACS_PCT_FOOD_STAMP +
       z_childelig_lunch_perc + z_shp_percent + z_shcb_percent +
       z_ACS_PCT_NO_VEH + z_ACS_PCT_RENTER_HH_CHILD + z_ACS_PCT_MOBILE_HOME +
       z_ACS_PCT_OWNER_HH_CHILD + z_ACS_PCT_BROADBAND + z_ACS_PCT_NO_PC +
       z_ACS_PCT_SMARTPHONE + z_phys_per_cap + z_mhp_per_cap +
       z_dents_per_cap + z_uninsur_perc + z_uc_percent + z_opcp_rate +
       z_TeenBirths + z_phs_rate + z_ms_perc_ann + z_AMFAR_AMATFAC +
       z_MP_PERCPEN + z_AHRF_RURAL_H_CLINIC + z_pphd_avgnum +
       z_pmhd_avgnum + z_lbw_percent_lbw + z_pi_phy_inact +
       z_cip_perc + z_csph_perc + z_ACS_PCT_CHILD_DISAB + z_unemp_perc +
       z ACS GINI INDEX + z ACS MEDIAN HH INCOME + z ACS PCT WORK NO CAR +
       z_soc_assoc_num + z_aeo_perc_w_acc + z_dwv_presence +
       z_ACS_PCT_HH_PUB_ASSIST + z_AHRF_TXC_SITE_NO_CNTRL, data = Z_and_Final_Variables_1
summary(z_median_levels_12345678)
```

## Call:

```
lm(formula = z_ACS_MEDIAN_HOME_VALUE ~ z_ACS_PCT_BLACK + z_ACS_PCT_HISPAN +
    z_SVI_RPL_THEME1_SOCIECO + z_SVI_RPL_THEME2_HH_DISB + z_SVI_RPL_THEME3_MINO +
    z_SVI_RPL_THEME4_HH_TRANS + z_ACS_PCT_ENGL_NOT_WELL + z_ACS_PCT_NON_CITIZEN +
    z_ACS_MEDIAN_AGE + z_food_afford + z_fd_enviro_indx + z_fi_percent +
    z_ACS_PCT_FOOD_STAMP + z_childelig_lunch_perc + z_shp_percent +
    z_shcb_percent + z_ACS_PCT_NO_VEH + z_ACS_PCT_RENTER_HH_CHILD +
    z_ACS_PCT_MOBILE_HOME + z_ACS_PCT_OWNER_HH_CHILD + z_ACS_PCT_BROADBAND +
    z_ACS_PCT_NO_PC + z_ACS_PCT_SMARTPHONE + z_phys_per_cap +
    z_mhp_per_cap + z_dents_per_cap + z_uninsur_perc + z_uc_percent +
```

```
z_opcp_rate + z_TeenBirths + z_phs_rate + z_ms_perc_ann +
z_AMFAR_AMATFAC + z_MP_PERCPEN + z_AHRF_RURAL_H_CLINIC +
z_pphd_avgnum + z_pmhd_avgnum + z_lbw_percent_lbw + z_pi_phy_inact +
z_cip_perc + z_csph_perc + z_ACS_PCT_CHILD_DISAB + z_unemp_perc +
z_ACS_GINI_INDEX + z_ACS_MEDIAN_HH_INCOME + z_ACS_PCT_WORK_NO_CAR +
z_soc_assoc_num + z_aeo_perc_w_acc + z_dwv_presence + z_ACS_PCT_HH_PUB_ASSIST +
z_AHRF_TXC_SITE_NO_CNTRL, data = Z_and_Final_Variables_10.28.22)
```

#### Residuals:

Min 1Q Median 3Q Max -1.8297 -0.2114 -0.0175 0.1846 4.8194

## Coefficients:

	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	-0.005209	0.009148	-0.569	0.569137	
z_ACS_PCT_BLACK	-0.066656	0.019150	-3.481	0.000508	***
z_ACS_PCT_HISPAN	-0.098758	0.017699	-5.580	0.0000000266093806	***
z_SVI_RPL_THEME1_SOCIECO	0.055317	0.025991	2.128	0.033409	*
z_SVI_RPL_THEME2_HH_DISB	0.032578	0.015093	2.158	0.030986	*
z_SVI_RPL_THEME3_MINO	-0.035284	0.017685	-1.995	0.046136	*
z_SVI_RPL_THEME4_HH_TRANS	0.001771	0.013966	0.127	0.899124	
z_ACS_PCT_ENGL_NOT_WELL	0.046804	0.027145	1.724	0.084787	
z_ACS_PCT_NON_CITIZEN	0.097380	0.024934	3.905	0.0000964827801875	***
z_ACS_MEDIAN_AGE	0.093426	0.018021	5.184	0.0000002339221450	***
z_food_afford	0.106913	0.016726	6.392	0.000000001941817	***
z_fd_enviro_indx	0.085459	0.017905	4.773	0.0000019185501676	***
z_fi_percent	0.072496	0.025346	2.860	0.004268	**
z_ACS_PCT_FOOD_STAMP	-0.112476	0.021872	-5.142	0.0000002919464516	***
z_childelig_lunch_perc	0.017354	0.018769	0.925	0.355279	
z_shp_percent	0.198244	0.020541	9.651	< 0.00000000000000000000000000000000000	***
z_shcb_percent	0.127864	0.018463	6.925	0.000000000054926	***
z_ACS_PCT_NO_VEH	-0.041360	0.030911	-1.338	0.181006	
z_ACS_PCT_RENTER_HH_CHILD	0.019605	0.012534	1.564	0.117911	
z_ACS_PCT_MOBILE_HOME	0.072463	0.013957	5.192	0.0000002247227157	***
z_ACS_PCT_OWNER_HH_CHILD	-0.138509	0.017693	-7.828	0.0000000000000072	***
z_ACS_PCT_BROADBAND	-0.005690	0.025957	-0.219	0.826494	
z_ACS_PCT_NO_PC	-0.042455	0.025923	-1.638	0.101606	
z_ACS_PCT_SMARTPHONE	-0.041037	0.013623	-3.012	0.002617	**
z_phys_per_cap	0.042648	0.014421	2.957	0.003131	**
z_mhp_per_cap	0.035473	0.012923	2.745	0.006097	**
z_dents_per_cap	0.058039	0.014066	4.126	0.0000380616998170	***
z_uninsur_perc	0.048427	0.024245	1.997	0.045889	*
z_uc_percent	-0.215701	0.034392	-6.272	0.0000000004180615	***

```
-0.062641
                                     0.011519 -5.438
                                                         0.0000000589960069 ***
z_opcp_rate
z_TeenBirths
                          0.061680
                                     0.027173
                                                2.270
                                                                  0.023295 *
                         -0.052977
                                     0.010528 -5.032
                                                        0.0000005189899923 ***
z_phs_rate
z_ms_perc_ann
                                     0.012064 -5.817
                                                        0.000000067361730 ***
                         -0.070177
z AMFAR AMATFAC
                          0.019038
                                     0.011624
                                                1.638
                                                                  0.101569
z_MP_PERCPEN
                                     0.009421 -4.368
                                                        0.0000130622617711 ***
                          -0.041147
z_AHRF_RURAL_H_CLINIC
                          0.009819
                                     0.008537
                                               1.150
                                                                  0.250170
z_pphd_avgnum
                          0.192820
                                     0.031178
                                                6.184
                                                        0.000000007238754 ***
                                     0.026935 -5.249
                                                        0.0000001655215549 ***
z_pmhd_avgnum
                         -0.141384
z_lbw_percent_lbw
                          0.048121
                                     0.013736
                                                3.503
                                                                  0.000467 ***
                                     0.012091 -9.383 < 0.0000000000000000 ***
z_pi_phy_inact
                         -0.113445
z_cip_perc
                         -0.055705
                                     0.024811 - 2.245
                                                                  0.024840 *
                                     0.016853 -2.193
z_csph_perc
                          -0.036961
                                                                  0.028385 *
z_ACS_PCT_CHILD_DISAB
                         -0.011486
                                     0.010068 - 1.141
                                                                  0.254053
z_unemp_perc
                         -0.003135
                                     0.013138 -0.239
                                                                  0.811402
                                               7.969
                                                        0.000000000000024 ***
z_ACS_GINI_INDEX
                          0.101071
                                     0.012684
z_ACS_MEDIAN_HH_INCOME
                          0.756550
                                     0.022922 33.006 < 0.0000000000000000 ***
z_ACS_PCT_WORK_NO_CAR
                                     0.025348
                                               6.950
                                                        0.000000000046247 ***
                          0.176169
                                     0.030247 -1.902
z_soc_assoc_num
                         -0.057516
                                                                  0.057343 .
z_aeo_perc_w_acc
                         -0.005642
                                     0.012261 -0.460
                                                                  0.645441
z_dwv_presence
                          0.023889
                                     0.008725
                                               2.738
                                                                  0.006228 **
z_ACS_PCT_HH_PUB_ASSIST
                          -0.001662
                                     0.011779 -0.141
                                                                  0.887815
z_AHRF_TXC_SITE_NO_CNTRL
                          0.017547
                                     0.008240
                                                2.129
                                                                  0.033317 *
```

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.4138 on 2541 degrees of freedom (548 observations deleted due to missingness)

Multiple R-squared: 0.8259, Adjusted R-squared: 0.8224

F-statistic: 236.4 on 51 and 2541 DF, p-value: < 0.00000000000000022

## Final Housing Model, Median Home Value

### **Confidence Intervals**

```
confint(z_median_levels_12345678)
```

2.5 % 97.5 % (Intercept) -0.0231467244 0.0127292292 z\_ACS\_PCT\_BLACK -0.1042068871 -0.0291054553

```
-0.1334628799 -0.0640521235
z_ACS_PCT_HISPAN
z_SVI_RPL_THEME1_SOCIECO
                           0.0043508058
                                          0.1062833062
z_SVI_RPL_THEME2_HH_DISB
                           0.0029817186
                                          0.0621735459
z_SVI_RPL_THEME3_MINO
                           -0.0699636356 -0.0006052727
z SVI RPL THEME4 HH TRANS -0.0256144906
                                          0.0291556037
z_ACS_PCT_ENGL_NOT_WELL
                           -0.0064241736
                                          0.1000325989
z ACS PCT NON CITIZEN
                           0.0484867645
                                          0.1462731326
z_ACS_MEDIAN_AGE
                           0.0580883921
                                          0.1287629470
z_food_afford
                           0.0741148824 0.1397114986
z_fd_enviro_indx
                           0.0503494647
                                          0.1205691673
z_fi_percent
                           0.0227946766
                                          0.1221979063
z_ACS_PCT_FOOD_STAMP
                          -0.1553655148 -0.0695865654
z_childelig_lunch_perc
                                         0.0541587353
                           -0.0194513948
z_shp_percent
                           0.1579642471
                                          0.2385227939
z_shcb_percent
                           0.0916593204
                                          0.1640693998
z_ACS_PCT_NO_VEH
                           -0.1019733812
                                         0.0192535111
z_ACS_PCT_RENTER_HH_CHILD -0.0049730952
                                          0.0441828032
z_ACS_PCT_MOBILE_HOME
                           0.0450946738
                                          0.0998318742
z_ACS_PCT_OWNER_HH_CHILD
                          -0.1732037761 -0.1038143966
z ACS PCT BROADBAND
                           -0.0565900579 0.0452091676
z ACS PCT NO PC
                          -0.0932871766
                                         0.0083779859
z_ACS_PCT_SMARTPHONE
                          -0.0677499487 -0.0143243293
z_phys_per_cap
                           0.0143702544 0.0709253583
z_mhp_per_cap
                           0.0101310502 0.0608142299
z_dents_per_cap
                           0.0304574995
                                         0.0856212894
z_uninsur_perc
                           0.0008847606
                                         0.0959684228
                           -0.2831401429 -0.1482614204
z_uc_percent
z_opcp_rate
                          -0.0852290672 -0.0400537357
z_TeenBirths
                           0.0083975532 0.1149632538
z_phs_rate
                          -0.0736211440 -0.0323332265
                          -0.0938324397 -0.0465209986
z_ms_perc_ann
z_AMFAR_AMATFAC
                           -0.0037546030 0.0418313250
z_MP_PERCPEN
                          -0.0596206479 -0.0226737951
z_AHRF_RURAL_H_CLINIC
                          -0.0069206560 0.0265583618
z pphd avgnum
                           0.1316829104 0.2539570243
z_pmhd_avgnum
                          -0.1942016112 -0.0885672908
z_lbw_percent_lbw
                           0.0211866671 0.0750547899
                          -0.1371544103 -0.0897364642
z_pi_phy_inact
                           -0.1043562215 -0.0070542540
z_cip_perc
                          -0.0700066607 -0.0039145152
z_csph_perc
z\_ACS\_PCT\_CHILD\_DISAB
                          -0.0312294077 0.0082569193
                          -0.0288969966
z_unemp_perc
                                         0.0226265347
z_ACS_GINI_INDEX
                           0.0761994552 0.1259417851
```

```
z_ACS_MEDIAN_HH_INCOME0.71160235040.8014971295z_ACS_PCT_WORK_NO_CAR0.12646381140.2258732000z_soc_assoc_num-0.11682807130.0017951160z_aeo_perc_w_acc-0.02968521110.0184009265z_dwv_presence0.00677876010.0409983469z_ACS_PCT_HH_PUB_ASSIST-0.02475825220.0214347436z_AHRF_TXC_SITE_NO_CNTRL0.00138847710.0337049604
```

# Final Housing Model, Median Home Value

## **VIF**

```
vif(z_median_levels_12345678)
```

z_ACS_PCT_BLACK	z_ACS_PCT_HISPAN	z_SVI_RPL_THEME1_SOCIECO
5.925511	5.021327	10.177011
z_SVI_RPL_THEME2_HH_DISB	z_SVI_RPL_THEME3_MINO	z_SVI_RPL_THEME4_HH_TRANS
3.426761	4.611789	2.806663
z_ACS_PCT_ENGL_NOT_WELL	z_ACS_PCT_NON_CITIZEN	z_ACS_MEDIAN_AGE
11.123916	8.887527	4.623605
${ t z\_food\_afford}$	z_fd_enviro_indx	${ t z}_{ t fi}$ percent
3.969453	4.310718	9.687512
z_ACS_PCT_FOOD_STAMP	z_childelig_lunch_perc	${ t z\_shp\_percent}$
6.514249	4.053182	4.941838
z_shcb_percent	z_ACS_PCT_NO_VEH	z_ACS_PCT_RENTER_HH_CHILD
4.858808	9.397861	2.198092
z_ACS_PCT_MOBILE_HOME	z_ACS_PCT_OWNER_HH_CHILD	z_ACS_PCT_BROADBAND
2.955305	4.370375	10.440140
z_ACS_PCT_NO_PC	z_ACS_PCT_SMARTPHONE	z_phys_per_cap
10.245674	2.829915	2.646650
z_mhp_per_cap	z_dents_per_cap	z_uninsur_perc
2.229786	2.602750	8.924643
${ t z\_uc\_percent}$	z_opcp_rate	${ t z\_TeenBirths}$
6.678624	1.736611	12.042889
${ t z_phs_rate}$	z_ms_perc_ann	$z\_{\tt AMFAR\_AMATFAC}$
1.691537	2.146518	2.164435
z_MP_PERCPEN	z_AHRF_RURAL_H_CLINIC	${ t z_pphd_avgnum}$
1.347006	1.181918	15.065343
${ t z_{pmhd}avgnum}$	z_lbw_percent_lbw	${ t z_{ t pi_phy_inact}}$
11.060449	2.905281	2.360534

```
z_ACS_PCT_CHILD_DISAB
           z_cip_perc
                                    z_csph_perc
            9.634239
                                       4.090339
                                                                 1.389412
                               z_ACS_GINI_INDEX
                                                   z_ACS_MEDIAN_HH_INCOME
         z_unemp_perc
             2.360546
                                       2.262225
                                                                 7.920370
z_ACS_PCT_WORK_NO_CAR
                                z_soc_assoc_num
                                                         z_aeo_perc_w_acc
             5.555895
                                      13.890068
                                                                 2.090970
       z_dwv_presence
                        z_ACS_PCT_HH_PUB_ASSIST z_AHRF_TXC_SITE_NO_CNTRL
             1.171164
                                       1.527451
                                                                  1.101585
```

## **Final Housing Model**

DV: Owned HH

IVs: All IVs except those that serve as the DVs in the housing models – z\_ACS\_PCT\_RENT\_COST\_30PCT, z\_ACS\_MEDIAN\_HOME\_VALUE, z\_ACS\_PCT\_OWNED\_HH – as well as the three problematic VIF IVs

Note: Building final model below (R markdown housing doc had groupings only)

```
z_owned_levels_12345678 <- lm(formula = z_ACS_PCT_OWNED_HH ~</pre>
    z_ACS_PCT_BLACK + z_ACS_PCT_HISPAN + z_SVI_RPL_THEME1_SOCIECO +
        z_SVI_RPL_THEME2_HH_DISB + z_SVI_RPL_THEME3_MINO + z_SVI_RPL_THEME4_HH_TRANS +
        z_ACS_PCT_ENGL_NOT_WELL + z_ACS_PCT_NON_CITIZEN + z_ACS_MEDIAN_AGE +
        z_food_afford + z_fd_enviro_indx + z_fi_percent + z_ACS_PCT_FOOD_STAMP +
        z_childelig_lunch_perc + z_shp_percent + z_shcb_percent +
        z ACS_PCT_NO_VEH + z ACS_PCT_RENTER_HH_CHILD + z ACS_PCT_MOBILE_HOME +
        z_ACS_PCT_OWNER_HH_CHILD + z_ACS_PCT_BROADBAND + z_ACS_PCT_NO_PC +
        z_ACS_PCT_SMARTPHONE + z_phys_per_cap + z_mhp_per_cap +
        z_dents_per_cap + z_uninsur_perc + z_uc_percent + z_opcp_rate +
        z_TeenBirths + z_phs_rate + z_ms_perc_ann + z_AMFAR_AMATFAC +
        z_MP_PERCPEN + z_AHRF_RURAL_H_CLINIC + z_pphd_avgnum +
        z_pmhd_avgnum + z_lbw_percent_lbw + z_pi_phy_inact +
        z_cip_perc + z_csph_perc + z_ACS_PCT_CHILD_DISAB + z_unemp_perc +
        z_ACS_GINI_INDEX + z_ACS_MEDIAN_HH_INCOME + z_ACS_PCT_WORK_NO_CAR +
        z_soc_assoc_num + z_aeo_perc_w_acc + z_dwv_presence +
        z_ACS_PCT_HH_PUB_ASSIST + z_AHRF_TXC_SITE_NO_CNTRL, data = Z_and_Final_Variables_1
summary(z owned levels 12345678)
```

#### Call:

```
lm(formula = z_ACS_PCT_OWNED_HH ~ z_ACS_PCT_BLACK + z_ACS_PCT_HISPAN +
   z_SVI_RPL_THEME1_SOCIECO + z_SVI_RPL_THEME2_HH_DISB + z_SVI_RPL_THEME3_MINO +
   z_SVI_RPL_THEME4_HH_TRANS + z_ACS_PCT_ENGL_NOT_WELL + z_ACS_PCT_NON_CITIZEN +
   z ACS MEDIAN AGE + z food afford + z fd enviro indx + z fi percent +
   z_ACS_PCT_FOOD_STAMP + z_childelig_lunch_perc + z_shp_percent +
   z_shcb_percent + z_ACS_PCT_NO_VEH + z_ACS_PCT_RENTER_HH_CHILD +
   z_ACS_PCT_MOBILE_HOME + z_ACS_PCT_OWNER_HH_CHILD + z_ACS_PCT_BROADBAND +
   z_ACS_PCT_NO_PC + z_ACS_PCT_SMARTPHONE + z_phys_per_cap +
   z_mhp_per_cap + z_dents_per_cap + z_uninsur_perc + z_uc_percent +
   z_opcp_rate + z_TeenBirths + z_phs_rate + z_ms_perc_ann +
   z_AMFAR_AMATFAC + z_MP_PERCPEN + z_AHRF_RURAL_H_CLINIC +
   z_pphd_avgnum + z_pmhd_avgnum + z_lbw_percent_lbw + z_pi_phy_inact +
   z_cip_perc + z_csph_perc + z_ACS_PCT_CHILD_DISAB + z_unemp_perc +
   z_ACS_GINI_INDEX + z_ACS_MEDIAN_HH_INCOME + z_ACS_PCT_WORK_NO_CAR +
   z_soc_assoc_num + z_aeo_perc_w_acc + z_dwv_presence + z_ACS_PCT_HH_PUB_ASSIST +
   z_AHRF_TXC_SITE_NO_CNTRL, data = Z_and_Final_Variables_10.28.22)
```

### Residuals:

Min 1Q Median 3Q Max -3.1631 -0.2688 0.0083 0.2749 2.9689

#### Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	0.0221362	0.0102922	2.151	0.031587
z_ACS_PCT_BLACK	0.0729448	0.0215452	3.386	0.000721
z_ACS_PCT_HISPAN	0.0120797	0.0199127	0.607	0.544148
z_SVI_RPL_THEME1_SOCIECO	0.0388458	0.0292426	1.328	0.184166
z_SVI_RPL_THEME2_HH_DISB	-0.0669697	0.0169811	-3.944	0.0000823729428406
z_SVI_RPL_THEME3_MINO	-0.0301226	0.0198976	-1.514	0.130181
z_SVI_RPL_THEME4_HH_TRANS	-0.0674667	0.0157125	-4.294	0.0000182218099042
z_ACS_PCT_ENGL_NOT_WELL	0.0476469	0.0305405	1.560	0.118856
z_ACS_PCT_NON_CITIZEN	-0.2038171	0.0280531	-7.265	0.000000000004924
z_ACS_MEDIAN_AGE	0.5191228	0.0202752	25.604	< 0.000000000000000000002
z_food_afford	0.0765556	0.0188185	4.068	0.0000488399165073
z_fd_enviro_indx	0.0707522	0.0201447	3.512	0.000452
z_fi_percent	-0.1134648	0.0285170	-3.979	0.0000711865084177
z_ACS_PCT_FOOD_STAMP	-0.0977186	0.0246084	-3.971	0.0000735760410843
z_childelig_lunch_perc	0.0383932	0.0211174	1.818	0.069169
z_shp_percent	-0.0477397	0.0231108	-2.066	0.038959
z_shcb_percent	-0.1569377	0.0207731	-7.555	0.000000000000581
z_ACS_PCT_NO_VEH	-0.1663009	0.0347778	-4.782	0.0000018363988593
z_ACS_PCT_RENTER_HH_CHILD	0.0537183	0.0141019	3.809	0.000143

```
z_ACS_PCT_MOBILE_HOME
                            0.0996930
                                        0.0157031
                                                    6.349
                                                             0.0000000002564725
z_ACS_PCT_OWNER_HH_CHILD
                            0.2345535
                                        0.0199065
                                                   11.783 < 0.0000000000000000
z_ACS_PCT_BROADBAND
                           -0.1007918
                                        0.0292043
                                                   -3.451
                                                                       0.000567
z_ACS_PCT_NO_PC
                            0.0025933
                                                    0.089
                                        0.0291659
                                                                       0.929156
                                                                       0.614143
z ACS PCT SMARTPHONE
                            0.0077283
                                        0.0153268
                                                    0.504
                                                   -2.120
z_phys_per_cap
                           -0.0343945
                                        0.0162246
                                                                       0.034112
z_mhp_per_cap
                            0.0010675
                                        0.0145401
                                                    0.073
                                                                       0.941477
z_dents_per_cap
                           -0.0608700
                                        0.0158255
                                                   -3.846
                                                                       0.000123
                            0.0027327
                                                                       0.920210
z_uninsur_perc
                                        0.0272778
                                                    0.100
z_uc_percent
                            0.0638099
                                        0.0386942
                                                    1.649
                                                                       0.099255
z_opcp_rate
                           -0.0268094
                                        0.0129600
                                                   -2.069
                                                                       0.038682
                            0.0026567
z_TeenBirths
                                        0.0305717
                                                    0.087
                                                                       0.930758
                           -0.0027170
                                        0.0118447
                                                   -0.229
                                                                       0.818590
z_phs_rate
z_ms_perc_ann
                            0.0306605
                                        0.0135728
                                                    2.259
                                                                       0.023970
z_AMFAR_AMATFAC
                            0.0125823
                                        0.0130778
                                                    0.962
                                                                       0.336085
z_MP_PERCPEN
                            0.0934671
                                                    8.818 < 0.00000000000000000
                                        0.0105994
z_AHRF_RURAL_H_CLINIC
                            0.0023588
                                        0.0096045
                                                    0.246
                                                                       0.806015
                           -0.1114473
                                                   -3.177
                                                                       0.001505
z_pphd_avgnum
                                        0.0350782
z_pmhd_avgnum
                            0.1764600
                                        0.0303046
                                                    5.823
                                                             0.000000065125709
z lbw percent lbw
                           -0.0360627
                                        0.0154538
                                                   -2.334
                                                                       0.019695
z_pi_phy_inact
                           -0.0208776
                                        0.0136033
                                                   -1.535
                                                                       0.124972
z_cip_perc
                            0.0284948
                                        0.0279142
                                                    1.021
                                                                       0.307446
                                                             0.0000002862632524
z_csph_perc
                           -0.0975735
                                        0.0189606
                                                   -5.146
                                                    1.555
z_ACS_PCT_CHILD_DISAB
                            0.0176115
                                        0.0113279
                                                                       0.120143
                            0.1070661
                                        0.0147812
                                                    7.243
                                                             0.000000000005773
z_unemp_perc
                                                   -1.494
z_ACS_GINI_INDEX
                           -0.0213195
                                        0.0142702
                                                                       0.135302
z_ACS_MEDIAN_HH_INCOME
                                                    5.886
                                                             0.0000000044872431
                            0.1517857
                                        0.0257892
z_ACS_PCT_WORK_NO_CAR
                           -0.0335379
                                        0.0285187
                                                   -1.176
                                                                       0.239707
                                                   -2.105
z_soc_assoc_num
                           -0.0716367
                                        0.0340308
                                                                       0.035385
                           -0.0521019
                                        0.0137950
                                                   -3.777
                                                                       0.000162
z_aeo_perc_w_acc
                            0.0055487
                                        0.0098170
                                                    0.565
z_dwv_presence
                                                                       0.571975
z_ACS_PCT_HH_PUB_ASSIST
                           -0.0125903
                                        0.0132519
                                                   -0.950
                                                                       0.342165
z_AHRF_TXC_SITE_NO_CNTRL
                           -0.0001441
                                        0.0092710
                                                   -0.016
                                                                       0.987599
(Intercept)
z ACS PCT BLACK
                           ***
z ACS PCT HISPAN
z_SVI_RPL_THEME1_SOCIECO
z_SVI_RPL_THEME2_HH_DISB
z_SVI_RPL_THEME3_MINO
z_SVI_RPL_THEME4_HH_TRANS ***
z_ACS_PCT_ENGL_NOT_WELL
```

\*\*\*

z\_ACS\_PCT\_NON\_CITIZEN

z_ACS_MEDIAN_AGE	***
z_food_afford	***
z_fd_enviro_indx	***
z_fi_percent	***
z_ACS_PCT_FOOD_STAMP	***
z_childelig_lunch_perc	
z_shp_percent	*
z_shcb_percent	***
z_ACS_PCT_NO_VEH	***
${\tt z\_ACS\_PCT\_RENTER\_HH\_CHILD}$	***
z_ACS_PCT_MOBILE_HOME	***
z_ACS_PCT_OWNER_HH_CHILD	***
z_ACS_PCT_BROADBAND	***
z_ACS_PCT_NO_PC	
z_ACS_PCT_SMARTPHONE	
z_phys_per_cap	*
z_mhp_per_cap	
z_dents_per_cap	***
z_uninsur_perc	
z_uc_percent	
z_opcp_rate	*
z_TeenBirths	
z_phs_rate	
z_ms_perc_ann	*
z_AMFAR_AMATFAC	
z_MP_PERCPEN	***
z_AHRF_RURAL_H_CLINIC	
z_pphd_avgnum	**
z_pmhd_avgnum	***
z_lbw_percent_lbw	*
z_pi_phy_inact	
z_cip_perc	
z_csph_perc	***
z_ACS_PCT_CHILD_DISAB	
z_unemp_perc	***
z_ACS_GINI_INDEX	
z_ACS_MEDIAN_HH_INCOME	***
z_ACS_PCT_WORK_NO_CAR	
z_soc_assoc_num	*
z_aeo_perc_w_acc	***
z_dwv_presence	
z_ACS_PCT_HH_PUB_ASSIST	
z_AHRF_TXC_SITE_NO_CNTRL	

---

```
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Residual standard error: 0.4656 on 2541 degrees of freedom

(548 observations deleted due to missingness)

Multiple R-squared: 0.7626, Adjusted R-squared: 0.7579

F-statistic: 160.1 on 51 and 2541 DF, p-value: < 0.00000000000000022

## Final Housing Model, Owned HH

#### **Confidence Intervals**

confint(z\_owned\_levels\_12345678)

```
2.5 %
                                             97.5 %
(Intercept)
                           0.001954360 0.042318088
z_ACS_PCT_BLACK
                           0.030696838 0.115192814
z_ACS_PCT_HISPAN
                          -0.026967013 0.051126433
z_SVI_RPL_THEME1_SOCIECO
                          -0.018495898 0.096187483
z_SVI_RPL_THEME2_HH_DISB
                          -0.100267831 -0.033671614
z_SVI_RPL_THEME3_MINO
                          -0.069139853 0.008894646
z_SVI_RPL_THEME4_HH_TRANS -0.098277398 -0.036656035
z ACS PCT ENGL NOT WELL
                          -0.012239907 0.107533694
z_ACS_PCT_NON_CITIZEN
                          -0.258826353 -0.148807749
z_ACS_MEDIAN_AGE
                           0.479365113 0.558880448
z_food_afford
                           0.039654502 0.113456692
                           0.031250445 0.110254030
z_fd_enviro_indx
z_fi_percent
                          -0.169383646 -0.057545926
z_ACS_PCT_FOOD_STAMP
                          -0.145973221 -0.049464061
z_childelig_lunch_perc
                          -0.003015856 0.079802270
z_shp_percent
                          -0.093057614 -0.002421884
                          -0.197671674 -0.116203715
z_shcb_percent
z_ACS_PCT_NO_VEH
                          -0.234496593 -0.098105257
z_ACS_PCT_RENTER_HH_CHILD 0.026065833 0.081370712
z_ACS_PCT_MOBILE_HOME
                           0.068900822 0.130485177
z_ACS_PCT_OWNER_HH_CHILD
                           0.195518754 0.273588149
                          -0.158058536 -0.043525101
z_ACS_PCT_BROADBAND
z_ACS_PCT_NO_PC
                          -0.054597997 0.059784605
z_ACS_PCT_SMARTPHONE
                         -0.022326091 0.037782615
z_phys_per_cap
                          -0.066209333 -0.002579671
```

```
-0.027444056 0.029579155
z_mhp_per_cap
z_dents_per_cap
                          -0.091902145 -0.029837838
                          -0.050756239 0.056221574
z_uninsur_perc
z_uc_percent
                          -0.012065523 0.139685371
z_opcp_rate
                          -0.052222560 -0.001396182
z_TeenBirths
                          -0.057291406 0.062604749
z_phs_rate
                          -0.025943320 0.020509361
z_ms_perc_ann
                           0.004045659 0.057275355
z_AMFAR_AMATFAC
                          -0.013061886 0.038226450
z_MP_PERCPEN
                           0.072682832 0.114251419
z_AHRF_RURAL_H_CLINIC
                          -0.016474654 0.021192301
z_pphd_avgnum
                          -0.180232074 -0.042662518
                           0.117035914 0.235884182
z_pmhd_avgnum
z_lbw_percent_lbw
                          -0.066366008 -0.005759446
z_pi_phy_inact
                          -0.047552371 0.005797153
z_cip_perc
                          -0.026241989 0.083231620
                          -0.134753337 -0.060393631
z_csph_perc
z_ACS_PCT_CHILD_DISAB
                          -0.004601412 0.039824316
z_unemp_perc
                           0.078081803 0.136050486
z ACS GINI INDEX
                          -0.049301846 0.006662823
z_ACS_MEDIAN_HH_INCOME
                           0.101215816 0.202355660
z_ACS_PCT_WORK_NO_CAR
                          -0.089460241 0.022384409
z_soc_assoc_num
                          -0.138367620 -0.004905690
z_aeo_perc_w_acc
                          -0.079152503 -0.025051202
                          -0.013701343 0.024798821
z_dwv_presence
z_ACS_PCT_HH_PUB_ASSIST
                          -0.038575976 0.013395367
z_AHRF_TXC_SITE_NO_CNTRL -0.018323608 0.018035390
```

## Final Housing Model, Owned HH

## VIF

# vif(z\_owned\_levels\_12345678)

z_SVI_RPL_THEME1_SOCIECO	$z\_ACS\_PCT\_HISPAN$	$z\_ACS\_PCT\_BLACK$
10.177011	5.021327	5.925511
z_SVI_RPL_THEME4_HH_TRANS	z_SVI_RPL_THEME3_MINO	z_SVI_RPL_THEME2_HH_DISB
2.806663	4.611789	3.426761
z_ACS_MEDIAN_AGE	z_ACS_PCT_NON_CITIZEN	$z\_{ACS\_PCT\_ENGL\_NOT\_WELL}$
4.623605	8.887527	11.123916

$z_{food_afford}$	$z_{fd_enviro_indx}$	${ t z_fi_percent}$
3.969453	4.310718	9.687512
$z\_ACS\_PCT\_FOOD\_STAMP$	${ t z\_childelig\_lunch\_perc}$	${ t z\_shp\_percent}$
6.514249	4.053182	4.941838
z_shcb_percent	z_ACS_PCT_NO_VEH	z_ACS_PCT_RENTER_HH_CHILD
4.858808	9.397861	2.198092
z_ACS_PCT_MOBILE_HOME	z_ACS_PCT_OWNER_HH_CHILD	z_ACS_PCT_BROADBAND
2.955305	4.370375	10.440140
z_ACS_PCT_NO_PC	z_ACS_PCT_SMARTPHONE	${ t z\_phys\_per\_cap}$
10.245674	2.829915	2.646650
z_mhp_per_cap	z_dents_per_cap	z_uninsur_perc
2.229786	2.602750	8.924643
z_uc_percent	z_opcp_rate	${ t z}_{ t TeenBirths}$
6.678624	1.736611	12.042889
${ t z_phs_rate}$	z_ms_perc_ann	$z\_{\sf AMFAR\_AMATFAC}$
1.691537	2.146518	2.164435
z_MP_PERCPEN	z_AHRF_RURAL_H_CLINIC	${ t z_pphd_avgnum}$
1.347006	1.181918	15.065343
${ t z}_{ t pmhd}$	z_lbw_percent_lbw	${ t z_{ t pi_phy_inact}}$
11.060449	2.905281	2.360534
z_cip_perc	z_csph_perc	z_ACS_PCT_CHILD_DISAB
9.634239	4.090339	1.389412
z_unemp_perc	z_ACS_GINI_INDEX	z_ACS_MEDIAN_HH_INCOME
2.360546	2.262225	7.920370
z_ACS_PCT_WORK_NO_CAR	z_soc_assoc_num	z_aeo_perc_w_acc
5.555895	13.890068	2.090970
z_dwv_presence	z_ACS_PCT_HH_PUB_ASSIST	z_AHRF_TXC_SITE_NO_CNTRL
1.171164	1.527451	1.101585