Resiliency Collab

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Updated 11-9-23; Change made: removed *z_uc_percent* from all final models in this document

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

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glimpse(Z_and_Final_Variables_10.28.22)
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```
Rows: 3,141
Columns: 129
$ FIPS                <int> 1001, 1003, 1005, 1007, 1009, 1011, 1013, 10~
$ State.x             <chr> "al", "al", "al", "al", "al", "al", "al", "a~
$ 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~
$ rs_average          <dbl> 2.959586, 3.005642, 2.660388, 2.628688, 3.02~
$ 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~
$ pmhd_avgnum         <dbl> 4.654031, 4.304056, 5.185594, 4.551699, 4.89~
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$ lbw_percent_lbw          <dbl> 8.619529, 8.345003, 11.474559, 10.308710, 7.~
$ pi_phy_inact             <dbl> 34.7, 26.5, 23.5, 33.5, 30.3, 24.6, 39.5, 31~
$ 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~
$ ACS_PCT_CHILD_DISAB      <dbl> 9.013, 3.656, 8.609, 4.047, 2.495, 5.814, 3.~
$ ACS_PCT_BLACK            <dbl> 19.139, 9.497, 47.576, 22.275, 1.495, 76.246~
$ 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~
$ SVI_RPL_THEME3_MINO      <dbl> 0.5947, 0.4358, 0.8558, 0.4323, 0.5915, 0.67~
$ 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.~
$ ACS_MEDIAN_AGE           <dbl> 37.8, 42.8, 39.9, 39.9, 40.8, 39.6, 40.7, 39~
$ food_afford              <dbl> 0.1440757, 0.1656779, 0.2300316, 0.1781116, ~
$ fd_enviro_indx           <dbl> 7.2, 8.0, 5.6, 7.8, 8.4, 4.3, 6.6, 6.9, 6.4,~
$ fi_percent               <dbl> 13.2, 11.6, 22.0, 14.3, 10.7, 24.8, 20.6, 15~
$ ACS_PCT_FOOD_STAMP       <dbl> 13.010, 7.932, 27.749, 12.924, 9.762, 26.517~
$ childelig_lunch_perc     <dbl> 43.40867, 48.48656, 63.29230, 61.56212, 52.9~
$ shp_percent              <dbl> 14.663462, 13.566201, 14.583333, 10.496454, ~
$ shcb_percent             <dbl> 13.403481, 11.725808, 14.059546, 9.886874, 8~
$ 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~
$ ACS_PCT_MOBILE_HOME      <dbl> 18.353, 11.680, 29.187, 28.545, 25.217, 33.3~
$ ACS_PCT_OWNED_HH         <dbl> 74.895, 73.619, 61.398, 75.073, 78.626, 75.5~
$ ACS_PCT_OWNER_HH_CHILD   <dbl> 34.128, 24.981, 24.078, 28.549, 30.765, 26.9~
$ ACS_PCT_RENTED_HH        <dbl> 25.105, 26.381, 38.602, 24.927, 21.374, 24.4~
$ ACS_MEDIAN_HOME_VALUE    <dbl> 147900, 189800, 92900, 96500, 124700, 77500,~
$ soc_assoc_num            <int> 67, 217, 19, 19, 49, 8, 18, 166, 60, 22, 67,~
$ aeo_perc_w_acc           <dbl> 69.130124, 73.713549, 53.166770, 16.251364, ~
$ dwv_presence             <int> 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 1, 2, 1, 2, 1,~
$ ACS_PCT_HH_PUB_ASSIST    <dbl> 1.345, 1.372, 2.841, 4.474, 1.587, 4.378, 1.~
$ AHRF_TXC_SITE_NO_CNTRL   <int> 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0,~
$ unemp_perc               <dbl> 3.629079, 3.615382, 5.171384, 3.971828, 3.51~
$ 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.~
$ ACS_PER_CAPITA_INCOME    <int> 29372, 31203, 18461, 20199, 22656, 20346, 20~
$ ACS_PCT_BROADBAND        <dbl> 78.859, 78.126, 60.396, 66.096, 68.461, 58.8~
$ ACS_PCT_NO_PC            <dbl> 13.010, 11.431, 23.949, 23.728, 21.350, 27.0~
$ ACS_PCT_SMARTPHONE       <dbl> 5.588, 7.245, 10.592, 11.535, 8.553, 13.993,~
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$ uninsur_perc            <dbl> 8.721686, 11.333404, 12.242792, 10.206253, 1~
$ uc_percent              <dbl> 2.669154, 3.538763, 2.913534, 2.617801, 4.07~
$ pcp_ratio               <chr> "92.500694444444406", "57.167361111111099", ~
$ opcp_rate               <dbl> 39.56763, 55.95766, 52.24870, 111.60714, 22.~
$ dents_ratio             <chr> "128.70902777777701", "84.125694444444406", ~
$ mhp_ratio               <chr> "178.20902777777701", "43.250694444444399", ~
$ 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, 0, 1, 0, 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,~
$ TeenBirths              <int> 1839, 6194, 694, 529, 1719, 286, 645, 3743, ~
$ phys_per_cap            <dbl> 0.0004710145, 0.0007351987, 0.0003102940, 0.~
$ mhp_per_cap             <dbl> 0.000000e+00, 7.688353e-05, 3.878675e-05, 0.~
$ dents_per_cap           <dbl> 3.260870e-04, 5.670160e-04, 2.327205e-04, 2.~
$ z_hsg_rate              <dbl> 0.17560941, -0.33273076, -1.02450160, -0.695~
$ z_sc_percent            <dbl> 0.348003662, 0.801035960, -1.946232079, -1.1~
$ z_rs_average            <dbl> -0.2130832, -0.2088286, -0.2407231, -0.24365~
$ z_ms_average            <dbl> -0.5362162, -0.4295601, -1.1972017, -1.31115~
$ 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~
$ z_SVI_RPL_THEME1_SOCIECO <dbl> -0.47437091, -0.95880330, 1.65484620, 0.9325~
$ z_SVI_RPL_THEME2_HH_DISB <dbl> 0.2801763, -1.0427818, 1.4379378, -1.3153388~
$ 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~
$ z_SVI_RPL_THEMES_ALL    <dbl> -0.22388945, -0.98281156, 1.71669377, 0.3470~
$ z_ACS_PCT_ENGL_NOT_WELL <dbl> -0.270050837, -0.421196223, 0.156119876, -0.~
$ z_ACS_PCT_NON_CITIZEN   <dbl> -0.51019277, -0.26306389, -0.38368298, -0.53~
$ z_ACS_MEDIAN_AGE        <dbl> -0.64439450, 0.27909238, -0.25653001, -0.256~
$ z_food_afford           <dbl> -0.439448964, 0.071371779, 1.593128721, 0.36~
$ z_fd_enviro_indx        <dbl> -0.21949409, 0.47886061, -1.61620350, 0.3042~
$ z_fi_percent            <dbl> -0.04477055, -0.44348572, 2.14816286, 0.2293~
$ z_ACS_PCT_FOOD_STAMP    <dbl> -0.12543469, -0.89616985, 2.11164002, -0.138~
$ z_childelig_lunch_perc  <dbl> -0.42325470, -0.18342220, 0.51586352, 0.4341~
$ z_shp_percent           <dbl> 0.17404824, -0.06580777, 0.15653260, -0.7368~
$ 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, ~
$ z_ACS_PCT_MOBILE_HOME   <dbl> 0.56349590, -0.13039326, 1.69006494, 1.62330~
$ 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~
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$ 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~
$ z_ACS_PCT_SMARTPHONE     <dbl> -0.35156862, 0.20891337, 1.34103963, 1.66001~
$ z_pfh_percent            <dbl> 0.62132388, -0.09043965, 2.45857541, 0.31684~
$ z_pphd_avgnum            <dbl> 1.0686813, 0.3317775, 2.0425608, 0.8524406, ~
$ z_pmhd_avgnum            <dbl> 0.8071895, 0.2263430, 1.6894141, 0.6373502, ~
$ 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~
$ z_cip_perc               <dbl> -0.20340963, -0.80996824, 2.55980185, 0.7513~
$ z_csph_perc              <dbl> -0.57497431, -0.77237114, 2.27471379, -0.345~
$ 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~
$ z_mhp_per_cap            <dbl> -0.49269142, 0.32117672, -0.08210541, -0.492~
$ z_dents_per_cap          <dbl> -0.14768020, 0.80656949, -0.51747750, -0.560~
$ z_uninsur_perc           <dbl> -0.535429391, -0.027813084, 0.148936505, -0.~
$ z_uc_percent             <dbl> -0.7572901, -0.6010458, -0.7133819, -0.76651~
$ z_opcp_rate              <dbl> -0.73164417, -0.46603422, -0.52614007, 0.435~
$ z_TeenBirths             <dbl> -0.13945763, 0.27695051, -0.24893807, -0.264~
$ z_phs_rate               <dbl> 1.221509621, -0.443936625, 0.733333496, 0.59~
$ z_ms_perc_ann            <dbl> 0.04485619, 0.30548105, 0.56610592, -0.08545~
$ z_AMFAR_AMATFAC          <dbl> -0.1985903, -0.1985903, -0.1985903, -0.19859~
$ z_MP_PERCPEN             <dbl> 1.433688929, 1.274661948, 0.877454284, 1.793~
$ z_AHRF_RURAL_H_CLINIC    <dbl> -0.6641385, -0.6641385, -0.1888237, -0.18882~
$ z_unemp_perc             <dbl> -0.33580552, -0.34492510, 0.69109612, -0.107~
$ z_ACS_GINI_INDEX         <dbl> 0.40562723, 0.42479806, 0.75891841, -0.43788~
$ z_ACS_MEDIAN_HH_INCOME   <dbl> 0.5266713, 0.3204602, -1.2696432, -0.4551679~
$ z_ACS_PCT_WORK_NO_CAR    <dbl> -0.505363092, -0.376387589, 0.462238521, -0.~
$ z_ACS_PER_CAPITA_INCOME  <dbl> 0.35932791, 0.64059481, -1.31675245, -1.0497~
$ z_soc_assoc_num          <dbl> -0.115790810, 0.539443880, -0.325465911, -0.~
$ z_aeo_perc_w_acc         <dbl> 0.27088719, 0.46709498, -0.41247397, -1.9927~
$ z_dwv_presence           <dbl> -0.7682178, -0.7682178, -0.7682178, -0.76821~
$ z_ACS_PCT_HH_PUB_ASSIST  <dbl> -0.5760527, -0.5601563, 0.3047219, 1.2661556~
$ z_AHRF_TXC_SITE_NO_CNTRL <dbl> -0.1671344, -0.1671344, -0.1671344, -0.16713~
```

Final Education Model

DV: High School Rate

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

```r
options(scipen = 999)
z_hsg_levels_1234678 <- 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_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_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_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_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 +
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    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
-6.1624 -0.4039  0.1006  0.4962  2.2552
```

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)	
(Intercept)	0.038989	0.016291	2.393	0.016767	*
z_ACS_PCT_BLACK	-0.109460	0.035817	-3.056	0.002266	**
z_ACS_PCT_HISPAN	0.049930	0.033065	1.510	0.131155	
z_SVI_RPL_THEME1_SOCIECO	0.131932	0.050086	2.634	0.008487	**
z_SVI_RPL_THEME2_HH_DISB	-0.075848	0.028672	-2.645	0.008211	**
z_SVI_RPL_THEME3_MINO	-0.218108	0.034054	-6.405	0.000000000179000	***
z_SVI_RPL_THEME4_HH_TRANS	-0.114172	0.026311	-4.339	0.000014847557157	***
z_ACS_PCT_ENGL_NOT_WELL	0.090994	0.051834	1.755	0.079297	.
z_ACS_PCT_NON_CITIZEN	0.006890	0.048050	0.143	0.885999	
z_ACS_MEDIAN_AGE	0.162348	0.038958	4.167	0.000031855707848	***
z_food_afford	-0.159519	0.031711	-5.030	0.000000523968445	***
z_fd_enviro_indx	0.096439	0.034447	2.800	0.005155	**
z_fi_percent	0.227368	0.048979	4.642	0.000003623125339	***
z_ACS_PCT_FOOD_STAMP	0.076444	0.042317	1.806	0.070968	.
z_childelig_lunch_perc	-0.238530	0.035730	-6.676	0.000000000030078	***
z_shp_percent	-0.205602	0.035489	-5.793	0.000000007754332	***
z_shcb_percent	0.150163	0.037344	4.021	0.000059636015433	***
z_ACS_PCT_NO_VEH	0.106919	0.057172	1.870	0.061581	.
z_ACS_PCT_RENTER_HH_CHILD	0.054512	0.024312	2.242	0.025034	*
z_ACS_PCT_RENT_COST_30PCT	0.001496	0.026160	0.057	0.954386	
z_ACS_PCT_MOBILE_HOME	-0.123976	0.026576	-4.665	0.000003247913718	***
z_ACS_PCT_OWNED_HH	-0.028625	0.034238	-0.836	0.403211	
z_ACS_PCT_OWNER_HH_CHILD	0.120223	0.034470	3.488	0.000495	***
z_ACS_MEDIAN_HOME_VALUE	-0.175175	0.037300	-4.696	0.000002789286199	***
z_ACS_PCT_BROADBAND	0.082626	0.049853	1.657	0.097565	.
z_ACS_PCT_NO_PC	0.190193	0.049489	3.843	0.000124	***
z_ACS_PCT_SMARTPHONE	0.066262	0.026151	2.534	0.011343	*
z_phys_per_cap	-0.016094	0.027133	-0.593	0.553132	
z_mhp_per_cap	0.010158	0.024860	0.409	0.682872	
z_dents_per_cap	-0.066894	0.027588	-2.425	0.015390	*
z_uninsur_perc	0.113939	0.027401	4.158	0.000033133829964	***
z_opcp_rate	0.012506	0.022264	0.562	0.574373	

```
z_TeenBirths             0.044486   0.051864   0.858          0.391112
z_pphd_avgnum            0.061489   0.059388   1.035          0.300590
z_pmhd_avgnum           -0.031857   0.051888  -0.614          0.539299
z_lbw_percent_lbw       -0.022846   0.026182  -0.873          0.382975
z_pi_phy_inact           0.018308   0.023602   0.776          0.438008
z_cip_perc              -0.026297   0.047201  -0.557          0.577484
z_csph_perc             -0.170747   0.032314  -5.284 0.000000137200971 ***
z_ACS_PCT_CHILD_DISAB   -0.007354   0.019302  -0.381          0.703230
z_unemp_perc            -0.057462   0.025086  -2.291          0.022069 *
z_ACS_GINI_INDEX         0.125613   0.024786   5.068 0.000000431384101 ***
z_ACS_MEDIAN_HH_INCOME   0.205996   0.051902   3.969 0.000074201321087 ***
z_ACS_PCT_WORK_NO_CAR   -0.087461   0.048035  -1.821          0.068756 .
z_soc_assoc_num         -0.071500   0.057130  -1.252          0.210850
z_aeo_perc_w_acc        -0.093954   0.023378  -4.019 0.000060182021096 ***
z_dwv_presence          -0.053485   0.016748  -3.194          0.001423 **
z_ACS_PCT_HH_PUB_ASSIST -0.157276   0.021081  -7.461 0.000000000000118 ***
z_AHRF_TXC_SITE_NO_CNTRL -0.008033  0.015825  -0.508          0.611783
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.7956 on 2533 degrees of freedom
  (559 observations deleted due to missingness)
Multiple R-squared:  0.3618,    Adjusted R-squared:  0.3497
F-statistic: 29.92 on 48 and 2533 DF,  p-value: < 0.00000000000000022
```

Final Education Model, High School Rate

Confidence Intervals

```
  confint(z_hsg_levels_1234678)
```

```
                              2.5 %          97.5 %
(Intercept)                0.007044919   0.070933256
z_ACS_PCT_BLACK           -0.179694088  -0.039226453
z_ACS_PCT_HISPAN          -0.014907294   0.114767211
z_SVI_RPL_THEME1_SOCIECO   0.033718331   0.230145584
z_SVI_RPL_THEME2_HH_DISB  -0.132071430  -0.019624605
z_SVI_RPL_THEME3_MINO     -0.284885944  -0.151330954
z_SVI_RPL_THEME4_HH_TRANS -0.165764592  -0.062579656
z_ACS_PCT_ENGL_NOT_WELL   -0.010647533   0.192635958
```

```
z_ACS_PCT_NON_CITIZEN       -0.087332437  0.101111716
z_ACS_MEDIAN_AGE             0.085956092  0.238739898
z_food_afford               -0.221701696 -0.097335554
z_fd_enviro_indx             0.028891178  0.163986562
z_fi_percent                 0.131325886  0.323410234
z_ACS_PCT_FOOD_STAMP        -0.006536311  0.159423810
z_childelig_lunch_perc      -0.308593197 -0.168467584
z_shp_percent               -0.275193461 -0.136010954
z_shcb_percent               0.076934248  0.223391015
z_ACS_PCT_NO_VEH            -0.005189665  0.219026881
z_ACS_PCT_RENTER_HH_CHILD    0.006839241  0.102185004
z_ACS_PCT_RENT_COST_30PCT   -0.049800074  0.052793016
z_ACS_PCT_MOBILE_HOME       -0.176089081 -0.071862479
z_ACS_PCT_OWNED_HH          -0.095762428  0.038513283
z_ACS_PCT_OWNER_HH_CHILD     0.052630224  0.187816013
z_ACS_MEDIAN_HOME_VALUE     -0.248315748 -0.102033323
z_ACS_PCT_BROADBAND         -0.015131056  0.180382450
z_ACS_PCT_NO_PC              0.093149613  0.287235548
z_ACS_PCT_SMARTPHONE         0.014981922  0.117541222
z_phys_per_cap              -0.069299881  0.037111544
z_mhp_per_cap               -0.038590722  0.058906217
z_dents_per_cap             -0.120991596 -0.012795856
z_uninsur_perc               0.060209307  0.167669473
z_opcp_rate                 -0.031152146  0.056163547
z_TeenBirths                -0.057213317  0.146185155
z_pphd_avgnum               -0.054964686  0.177943032
z_pmhd_avgnum               -0.133604072  0.069890210
z_lbw_percent_lbw           -0.074186239  0.028494484
z_pi_phy_inact              -0.027973434  0.064588736
z_cip_perc                  -0.118854513  0.066259517
z_csph_perc                 -0.234112682 -0.107382204
z_ACS_PCT_CHILD_DISAB       -0.045203308  0.030494965
z_unemp_perc                -0.106653587 -0.008270433
z_ACS_GINI_INDEX             0.077009232  0.174215995
z_ACS_MEDIAN_HH_INCOME       0.104221024  0.307770283
z_ACS_PCT_WORK_NO_CAR       -0.181652538  0.006729910
z_soc_assoc_num             -0.183525970  0.040525112
z_aeo_perc_w_acc            -0.139796221 -0.048111686
z_dwv_presence              -0.086325966 -0.020643987
z_ACS_PCT_HH_PUB_ASSIST     -0.198613214 -0.115938650
z_AHRF_TXC_SITE_NO_CNTRL    -0.039063688  0.022998478
```

Final Education Model, High School Rate

VIF

```
vif(z_hsg_levels_1234678)
```

z_ACS_PCT_BLACK	z_ACS_PCT_HISPAN	z_SVI_RPL_THEME1_SOCIECO
5.550003	4.729844	10.169323
z_SVI_RPL_THEME2_HH_DISB	z_SVI_RPL_THEME3_MINO	z_SVI_RPL_THEME4_HH_TRANS
3.301600	4.607838	2.705228
z_ACS_PCT_ENGL_NOT_WELL	z_ACS_PCT_NON_CITIZEN	z_ACS_MEDIAN_AGE
10.975051	9.014920	5.872932
z_food_afford	z_fd_enviro_indx	z_fi_percent
3.903070	4.315837	9.492835
z_ACS_PCT_FOOD_STAMP	z_childelig_lunch_perc	z_shp_percent
6.722670	3.938247	4.624003
z_shcb_percent	z_ACS_PCT_NO_VEH	z_ACS_PCT_RENTER_HH_CHILD
5.309191	11.952587	2.230385
z_ACS_PCT_RENT_COST_30PCT	z_ACS_PCT_MOBILE_HOME	z_ACS_PCT_OWNED_HH
2.325325	2.934859	4.354540
z_ACS_PCT_OWNER_HH_CHILD	z_ACS_MEDIAN_HOME_VALUE	z_ACS_PCT_BROADBAND
4.685281	5.486263	10.387980
z_ACS_PCT_NO_PC	z_ACS_PCT_SMARTPHONE	z_phys_per_cap
10.122135	2.795939	2.570632
z_mhp_per_cap	z_dents_per_cap	z_uninsur_perc
2.199273	2.671441	3.057660
z_opcp_rate	z_TeenBirths	z_pphd_avgnum
1.739184	11.863902	14.679709
z_pmhd_avgnum	z_lbw_percent_lbw	z_pi_phy_inact
10.956193	2.851263	2.397327
z_cip_perc	z_csph_perc	z_ACS_PCT_CHILD_DISAB
9.367736	4.009148	1.381621
z_unemp_perc	z_ACS_GINI_INDEX	z_ACS_MEDIAN_HH_INCOME
2.487077	2.337595	11.008498
z_ACS_PCT_WORK_NO_CAR	z_soc_assoc_num	z_aeo_perc_w_acc
8.191962	13.399100	2.042806
z_dwv_presence	z_ACS_PCT_HH_PUB_ASSIST	z_AHRF_TXC_SITE_NO_CNTRL
1.163770	1.611402	1.099016

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 +
    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_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_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_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
-2.85106 -0.29295  0.00335  0.30749  2.26382

Coefficients:
                          Estimate Std. Error t value            Pr(>|t|)
(Intercept)             -0.0122457  0.0103573  -1.182            0.237184
z_ACS_PCT_BLACK         -0.0139395  0.0230058  -0.606            0.544626
z_ACS_PCT_HISPAN         0.0491703  0.0218245   2.253            0.024345
z_SVI_RPL_THEME1_SOCIECO -0.2845185 0.0318673  -8.928 < 0.0000000000000002
z_SVI_RPL_THEME2_HH_DISB  0.1038926 0.0185574   5.598      0.00000002395203
z_SVI_RPL_THEME3_MINO   -0.0068265  0.0217026  -0.315            0.753131
z_SVI_RPL_THEME4_HH_TRANS -0.1159797 0.0171591 -6.759      0.00000000001717
z_ACS_PCT_ENGL_NOT_WELL -0.0366364  0.0333210  -1.099            0.271654
z_ACS_PCT_NON_CITIZEN   -0.1076403  0.0308820  -3.486            0.000499
z_ACS_MEDIAN_AGE        -0.0992579  0.0251741  -3.943      0.00008269649114
z_food_afford            0.0261038  0.0206044   1.267            0.205306
z_fd_enviro_indx        -0.0783259  0.0221276  -3.540            0.000408
z_fi_percent             0.1030220  0.0310069   3.323            0.000905
z_ACS_PCT_FOOD_STAMP    -0.0071957  0.0270627  -0.266            0.790344
z_childelig_lunch_perc   0.0021064  0.0229165   0.092            0.926773
z_shp_percent            0.0018867  0.0255481   0.074            0.941137
z_shcb_percent           0.0524530  0.0247869   2.116            0.034428
z_ACS_PCT_NO_VEH         0.0447484  0.0380659   1.176            0.239885
z_ACS_PCT_RENTER_HH_CHILD -0.1099010 0.0154859 -7.097      0.00000000000165
z_ACS_PCT_RENT_COST_30PCT 0.0259122 0.0167074   1.551            0.121039
z_ACS_PCT_MOBILE_HOME   -0.0232529  0.0173151  -1.343            0.179415
z_ACS_PCT_OWNED_HH      -0.0972732  0.0223977  -4.343      0.00001460675140
z_ACS_PCT_OWNER_HH_CHILD  0.0444424 0.0223482   1.989            0.046849
z_ACS_MEDIAN_HOME_VALUE  0.0169261  0.0247046   0.685            0.493318
z_ACS_PCT_BROADBAND     -0.0284667  0.0318526  -0.894            0.371567
z_ACS_PCT_NO_PC         -0.2158527  0.0317673  -6.795      0.00000000001346
z_ACS_PCT_SMARTPHONE    -0.0876522  0.0166851  -5.253      0.00000016177751
z_phys_per_cap           0.0430038  0.0176317   2.439            0.014796
z_mhp_per_cap            0.0437755  0.0158284   2.766            0.005722
z_dents_per_cap          0.0320659  0.0173100   1.852            0.064077
z_uninsur_perc          -0.1245034  0.0178524  -6.974      0.00000000000391
z_opcp_rate              0.0192625  0.0141620   1.360            0.173902
```

```
z_TeenBirths               -0.0595263  0.0333050  -1.787          0.074007
z_phs_rate                  0.0083461  0.0129669   0.644          0.519862
z_ms_perc_ann               0.0492736  0.0148208   3.325          0.000898
z_AMFAR_AMATFAC             0.0060937  0.0142540   0.428          0.669045
z_MP_PERCPEN               -0.0262629  0.0117899  -2.228          0.025997
z_AHRF_RURAL_H_CLINIC      -0.0118295  0.0104558  -1.131          0.258003
z_pphd_avgnum               0.0002214  0.0384071   0.006          0.995401
z_pmhd_avgnum              -0.1509790  0.0335449  -4.501  0.00000707499175
z_lbw_percent_lbw           0.0390470  0.0168570   2.316          0.020617
z_pi_phy_inact             -0.0320739  0.0150888  -2.126          0.033627
z_cip_perc                 -0.0644794  0.0304071  -2.121          0.034058
z_csph_perc                -0.0707384  0.0207727  -3.405          0.000671
z_ACS_PCT_CHILD_DISAB      -0.0005311  0.0123323  -0.043          0.965654
z_unemp_perc               -0.0160308  0.0162640  -0.986          0.324392
z_ACS_GINI_INDEX            0.0691570  0.0156559   4.417  0.00001041254530
z_ACS_MEDIAN_HH_INCOME      0.0461205  0.0340309   1.355          0.175457
z_ACS_PCT_WORK_NO_CAR      -0.0979883  0.0311646  -3.144          0.001685
z_soc_assoc_num             0.1086358  0.0370947   2.929          0.003435
z_aeo_perc_w_acc            0.0282726  0.0149193   1.895          0.058201
z_dwv_presence             -0.0266643  0.0107043  -2.491          0.012802
z_ACS_PCT_HH_PUB_ASSIST    -0.0291771  0.0144083  -2.025          0.042970
z_AHRF_TXC_SITE_NO_CNTRL    0.0002854  0.0101009   0.028          0.977460

(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_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_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: 0.5068 on 2539 degrees of freedom
  (548 observations deleted due to missingness)
Multiple R-squared:  0.7334,    Adjusted R-squared:  0.7278
F-statistic: 131.8 on 53 and 2539 DF,  p-value: < 0.00000000000000022
```

Final Education Model, Some College

Confidence Intervals

```
confint(z_sc_levels_12345678)
```

```
                                2.5 %          97.5 %
(Intercept)                -0.0325552922   0.0080637986
z_ACS_PCT_BLACK            -0.0590516187   0.0311725383
z_ACS_PCT_HISPAN            0.0063747196   0.0919659415
z_SVI_RPL_THEME1_SOCIECO   -0.3470070989  -0.2220299670
z_SVI_RPL_THEME2_HH_DISB    0.0675033276   0.1402818114
z_SVI_RPL_THEME3_MINO      -0.0493831069   0.0357300818
z_SVI_RPL_THEME4_HH_TRANS  -0.1496270153  -0.0823324024
z_ACS_PCT_ENGL_NOT_WELL    -0.1019754946   0.0287026536
z_ACS_PCT_NON_CITIZEN      -0.1681968759  -0.0470837919
z_ACS_MEDIAN_AGE           -0.1486217849  -0.0498939310
z_food_afford              -0.0142993702   0.0665070610
z_fd_enviro_indx           -0.1217159673  -0.0349358967
z_fi_percent                0.0422205638   0.1638234903
z_ACS_PCT_FOOD_STAMP       -0.0602630017   0.0458715149
z_childelig_lunch_perc     -0.0428306162   0.0470433230
z_shp_percent              -0.0482104829   0.0519838217
z_shcb_percent              0.0038484102   0.1010576069
z_ACS_PCT_NO_VEH           -0.0298950515   0.1193917608
z_ACS_PCT_RENTER_HH_CHILD  -0.1402672898  -0.0795347344
z_ACS_PCT_RENT_COST_30PCT  -0.0068492354   0.0586736250
z_ACS_PCT_MOBILE_HOME      -0.0572060051   0.0107001636
z_ACS_PCT_OWNED_HH         -0.1411928723  -0.0533535563
z_ACS_PCT_OWNER_HH_CHILD    0.0006198911   0.0882648873
z_ACS_MEDIAN_HOME_VALUE    -0.0315171015   0.0653693795
z_ACS_PCT_BROADBAND        -0.0909263015   0.0339929785
z_ACS_PCT_NO_PC            -0.2781451528  -0.1535603412
z_ACS_PCT_SMARTPHONE       -0.1203699878  -0.0549344985
z_phys_per_cap              0.0084298873   0.0775777731
z_mhp_per_cap               0.0127375755   0.0748134324
z_dents_per_cap            -0.0018771840   0.0660089576
z_uninsur_perc             -0.1595101585  -0.0894966174
z_opcp_rate                -0.0085077568   0.0470326627
z_TeenBirths               -0.1248341634   0.0057814856
z_phs_rate                 -0.0170806011   0.0337727807
```

```
z_ms_perc_ann              0.0202115202   0.0783357188
z_AMFAR_AMATFAC           -0.0218569742   0.0340444008
z_MP_PERCPEN              -0.0493817213  -0.0031439905
z_AHRF_RURAL_H_CLINIC     -0.0323322024   0.0086732860
z_pphd_avgnum             -0.0750911468   0.0755339088
z_pmhd_avgnum             -0.2167571536  -0.0852007902
z_lbw_percent_lbw          0.0059921379   0.0721018344
z_pi_phy_inact            -0.0616615146  -0.0024862380
z_cip_perc                -0.1241046870  -0.0048541108
z_csph_perc               -0.1114715970  -0.0300052930
z_ACS_PCT_CHILD_DISAB     -0.0247135215   0.0236513681
z_unemp_perc              -0.0479229266   0.0158612268
z_ACS_GINI_INDEX           0.0384573575   0.0998566781
z_ACS_MEDIAN_HH_INCOME    -0.0206105628   0.1128515964
z_ACS_PCT_WORK_NO_CAR     -0.1590990630  -0.0368776329
z_soc_assoc_num            0.0358968430   0.1813747891
z_aeo_perc_w_acc          -0.0009825612   0.0575277370
z_dwv_presence            -0.0476542886  -0.0056742747
z_ACS_PCT_HH_PUB_ASSIST   -0.0574304391  -0.0009238415
z_AHRF_TXC_SITE_NO_CNTRL  -0.0195214653   0.0200923061
```

Final Education Model, Some College

VIF

```
vif(z_sc_levels_12345678)
```

```
            z_ACS_PCT_BLACK        z_ACS_PCT_HISPAN   z_SVI_RPL_THEME1_SOCIECO
                   5.701684               5.090395                  10.199622
 z_SVI_RPL_THEME2_HH_DISB    z_SVI_RPL_THEME3_MINO   z_SVI_RPL_THEME4_HH_TRANS
                   3.453778               4.630134                   2.824828
   z_ACS_PCT_ENGL_NOT_WELL     z_ACS_PCT_NON_CITIZEN         z_ACS_MEDIAN_AGE
                  11.174939               9.089385                   6.015366
             z_food_afford          z_fd_enviro_indx               z_fi_percent
                   4.015945               4.389346                   9.665569
        z_ACS_PCT_FOOD_STAMP   z_childelig_lunch_perc            z_shp_percent
                   6.648816               4.028251                   5.096586
             z_shcb_percent        z_ACS_PCT_NO_VEH  z_ACS_PCT_RENTER_HH_CHILD
                   5.838139               9.501717                   2.236999
   z_ACS_PCT_RENT_COST_30PCT    z_ACS_PCT_MOBILE_HOME          z_ACS_PCT_OWNED_HH
```

2.357639	3.032381	4.532131
z_ACS_PCT_OWNER_HH_CHILD	z_ACS_MEDIAN_HOME_VALUE	z_ACS_PCT_BROADBAND
4.648523	5.939138	10.481040
z_ACS_PCT_NO_PC	z_ACS_PCT_SMARTPHONE	z_phys_per_cap
10.257806	2.830278	2.637781
z_mhp_per_cap	z_dents_per_cap	z_uninsur_perc
2.230021	2.627935	3.226051
z_opcp_rate	z_TeenBirths	z_phs_rate
1.750033	12.061861	1.710816
z_ms_perc_ann	z_AMFAR_AMATFAC	z_MP_PERCPEN
2.159953	2.169981	1.406487
z_AHRF_RURAL_H_CLINIC	z_pphd_avgnum	z_pmhd_avgnum
1.182100	15.241668	11.437063
z_lbw_percent_lbw	z_pi_phy_inact	z_cip_perc
2.917312	2.450944	9.647688
z_csph_perc	z_ACS_PCT_CHILD_DISAB	z_unemp_perc
4.143274	1.389716	2.411875
z_ACS_GINI_INDEX	z_ACS_MEDIAN_HH_INCOME	z_ACS_PCT_WORK_NO_CAR
2.297941	11.639141	5.599149
z_soc_assoc_num	z_aeo_perc_w_acc	z_dwv_presence
13.927963	2.063958	1.175118
z_ACS_PCT_HH_PUB_ASSIST	z_AHRF_TXC_SITE_NO_CNTRL	
1.523847	1.103545	

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_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_hsg_rate +
        z_sc_percent + z_ms_average + 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_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_hsg_rate + z_sc_percent + z_ms_average +
    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
-1.9345 -0.3255 -0.0042 0.3003 5.6023

Coefficients:
                           Estimate Std. Error t value   Pr(>|t|)
(Intercept)   -0.0310063 0.0139461 -2.223   0.026305
z_ACS_PCT_BLACK   0.5238175 0.0257331 20.356 < 0.0000000000000002
z_ACS_PCT_HISPAN   0.1804883 0.0290618   6.211   0.000000000638
z_SVI_RPL_THEME1_SOCIECO 0.2157126 0.0386477   5.582   0.000000027015
z_SVI_RPL_THEME2_HH_DISB -0.0549413 0.0223315 -2.460   0.013966

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z_SVI_RPL_THEME3_MINO	-0.0148179	0.0272048	-0.545	0.586034
z_SVI_RPL_THEME4_HH_TRANS	-0.0398093	0.0214498	-1.856	0.063608
z_ACS_PCT_ENGL_NOT_WELL	-0.0974837	0.0425612	-2.290	0.022097
z_ACS_PCT_NON_CITIZEN	-0.1119286	0.0388379	-2.882	0.003994
z_ACS_MEDIAN_AGE	0.0790154	0.0312393	2.529	0.011502
z_phys_per_cap	-0.0143519	0.0219716	-0.653	0.513698
z_mhp_per_cap	-0.0063903	0.0192444	-0.332	0.739878
z_dents_per_cap	-0.0182030	0.0219065	-0.831	0.406104
z_uninsur_perc	-0.0700900	0.0231771	-3.024	0.002525
z_opcp_rate	0.0384044	0.0171468	2.240	0.025215
z_TeenBirths	-0.1221969	0.0435286	-2.807	0.005044
z_phs_rate	0.0171174	0.0157688	1.086	0.277818
z_ms_perc_ann	-0.0974542	0.0180532	-5.398	0.000000075138
z_AMFAR_AMATFAC	0.0009442	0.0187797	0.050	0.959907
z_MP_PERCPEN	-0.0293813	0.0146680	-2.003	0.045300
z_AHRF_RURAL_H_CLINIC	-0.0247553	0.0128695	-1.924	0.054547
z_food_afford	0.0189356	0.0250063	0.757	0.448997
z_fd_enviro_indx	0.0781308	0.0281845	2.772	0.005620
z_fi_percent	0.0644151	0.0386126	1.668	0.095421
z_ACS_PCT_FOOD_STAMP	-0.0050251	0.0340219	-0.148	0.882592
z_childelig_lunch_perc	0.0792071	0.0277211	2.857	0.004316
z_shp_percent	-0.1052765	0.0330901	-3.182	0.001487
z_shcb_percent	-0.0225510	0.0314314	-0.717	0.473167
z_ACS_PCT_NO_VEH	-0.0297292	0.0481264	-0.618	0.536821
z_ACS_PCT_RENTER_HH_CHILD	0.0383695	0.0190726	2.012	0.044376
z_ACS_PCT_RENT_COST_30PCT	0.0155643	0.0203617	0.764	0.444724
z_ACS_PCT_MOBILE_HOME	0.0750554	0.0213585	3.514	0.000451
z_ACS_PCT_OWNED_HH	-0.0509645	0.0277664	-1.835	0.066581
z_ACS_PCT_OWNER_HH_CHILD	0.0489581	0.0276649	1.770	0.076929
z_ACS_MEDIAN_HOME_VALUE	0.1918997	0.0339140	5.658	0.000000017426
z_hsg_rate	-0.0127461	0.0165037	-0.772	0.440016
z_sc_percent	0.0333741	0.0244040	1.368	0.171597
z_ms_average	0.0194754	0.0284700	0.684	0.494009
z_ACS_PCT_BROADBAND	0.0719622	0.0383704	1.875	0.060872
z_ACS_PCT_NO_PC	0.0170514	0.0388142	0.439	0.660484
z_ACS_PCT_SMARTPHONE	0.0329200	0.0203630	1.617	0.106106
z_pi_phy_inact	0.0251359	0.0183290	1.371	0.170410
z_cip_perc	0.0922826	0.0372713	2.476	0.013368
z_csph_perc	0.0587476	0.0261663	2.245	0.024864
z_ACS_PCT_CHILD_DISAB	0.0246146	0.0148470	1.658	0.097495
z_unemp_perc	-0.0395660	0.0217675	-1.818	0.069262
z_ACS_GINI_INDEX	0.0786706	0.0195042	4.034	0.000056964837
z_ACS_MEDIAN_HH_INCOME	-0.1296201	0.0457920	-2.831	0.004691

```
z_ACS_PCT_WORK_NO_CAR       0.0111137  0.0402440    0.276              0.782455
z_soc_assoc_num             0.1365282  0.0488383    2.796              0.005230
z_aeo_perc_w_acc            0.0843076  0.0181612    4.642       0.000003666317
z_dwv_presence             -0.0055584  0.0132929   -0.418              0.675882
z_ACS_PCT_HH_PUB_ASSIST    -0.0242361  0.0175381   -1.382              0.167151
z_AHRF_TXC_SITE_NO_CNTRL    0.0142023  0.0137759    1.031              0.302685

(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_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_hsg_rate
```

```
z_sc_percent
z_ms_average
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 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5587 on 2046 degrees of freedom
  (1041 observations deleted due to missingness)
Multiple R-squared:  0.703, Adjusted R-squared:  0.6953
F-statistic: 91.38 on 53 and 2046 DF,  p-value: < 0.00000000000000022
```

Final Health Model, Low Birth Weight

Confidence Intervals

```
confint(z_lbw_levels_12345678)
```

```
                              2.5 %        97.5 %
(Intercept)              -0.0583563988 -0.0036561792
z_ACS_PCT_BLACK           0.4733516776  0.5742833354
z_ACS_PCT_HISPAN          0.1234945253  0.2374820078
z_SVI_RPL_THEME1_SOCIECO  0.1399196567  0.2915055199
z_SVI_RPL_THEME2_HH_DISB -0.0987362480 -0.0111463979
z_SVI_RPL_THEME3_MINO    -0.0681698633  0.0385341215
z_SVI_RPL_THEME4_HH_TRANS -0.0818751235  0.0022564666
```

z_ACS_PCT_ENGL_NOT_WELL	-0.1809515213	-0.0140158221
z_ACS_PCT_NON_CITIZEN	-0.1880946122	-0.0357626666
z_ACS_MEDIAN_AGE	0.0177512699	0.1402794783
z_phys_per_cap	-0.0574409193	0.0287370429
z_mhp_per_cap	-0.0441309620	0.0313503608
z_dents_per_cap	-0.0611644021	0.0247583734
z_uninsur_perc	-0.1155431423	-0.0246368296
z_opcp_rate	0.0047773646	0.0720314343
z_TeenBirths	-0.2075619030	-0.0368318862
z_phs_rate	-0.0138072247	0.0480420886
z_ms_perc_ann	-0.1328587948	-0.0620495921
z_AMFAR_AMATFAC	-0.0358850766	0.0377734403
z_MP_PERCPEN	-0.0581470726	-0.0006154303
z_AHRF_RURAL_H_CLINIC	-0.0499938964	0.0004832954
z_food_afford	-0.0301048940	0.0679761324
z_fd_enviro_indx	0.0228574518	0.1334040853
z_fi_percent	-0.0113089697	0.1401392425
z_ACS_PCT_FOOD_STAMP	-0.0717463582	0.0616960799
z_childelig_lunch_perc	0.0248426015	0.1335715540
z_shp_percent	-0.1701702479	-0.0403828337
z_shcb_percent	-0.0841918480	0.0390897884
z_ACS_PCT_NO_VEH	-0.1241110419	0.0646526669
z_ACS_PCT_RENTER_HH_CHILD	0.0009657322	0.0757732063
z_ACS_PCT_RENT_COST_30PCT	-0.0243675759	0.0554960762
z_ACS_PCT_MOBILE_HOME	0.0331686816	0.1169422149
z_ACS_PCT_OWNED_HH	-0.1054178055	0.0034888925
z_ACS_PCT_OWNER_HH_CHILD	-0.0052961545	0.1032124086
z_ACS_MEDIAN_HOME_VALUE	0.1253902178	0.2584092817
z_hsg_rate	-0.0451118200	0.0196196802
z_sc_percent	-0.0144851193	0.0812333851
z_ms_average	-0.0363577665	0.0753086045
z_ACS_PCT_BROADBAND	-0.0032868909	0.1472113072
z_ACS_PCT_NO_PC	-0.0590680313	0.0931708675
z_ACS_PCT_SMARTPHONE	-0.0070143010	0.0728543192
z_pi_phy_inact	-0.0108096190	0.0610814496
z_cip_perc	0.0191889922	0.1653761593
z_csph_perc	0.0074321957	0.1100630448
z_ACS_PCT_CHILD_DISAB	-0.0045022344	0.0537314368
z_unemp_perc	-0.0822547384	0.0031227624
z_ACS_GINI_INDEX	0.0404204464	0.1169208470
z_ACS_MEDIAN_HH_INCOME	-0.2194238383	-0.0398162823
z_ACS_PCT_WORK_NO_CAR	-0.0678098210	0.0900372249
z_soc_assoc_num	0.0407503127	0.2323061035

```
z_aeo_perc_w_acc            0.0486911678   0.1199240475
z_dwv_presence             -0.0316275264   0.0205106557
z_ACS_PCT_HH_PUB_ASSIST    -0.0586305263   0.0101583480
z_AHRF_TXC_SITE_NO_CNTRL   -0.0128139304   0.0412185191
```

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
5.204762	5.646757	10.069330
z_SVI_RPL_THEME2_HH_DISB	z_SVI_RPL_THEME3_MINO	z_SVI_RPL_THEME4_HH_TRANS
3.244733	4.674124	2.928507
z_ACS_PCT_ENGL_NOT_WELL	z_ACS_PCT_NON_CITIZEN	z_ACS_MEDIAN_AGE
11.358367	9.086415	5.859135
z_phys_per_cap	z_mhp_per_cap	z_dents_per_cap
2.669305	2.035167	2.552410
z_uninsur_perc	z_opcp_rate	z_TeenBirths
3.776683	1.764509	14.142540
z_phs_rate	z_ms_perc_ann	z_AMFAR_AMATFAC
1.625194	2.087021	1.843538
z_MP_PERCPEN	z_AHRF_RURAL_H_CLINIC	z_food_afford
1.364713	1.191067	4.027414
z_fd_enviro_indx	z_fi_percent	z_ACS_PCT_FOOD_STAMP
4.500221	10.092589	6.957477
z_childelig_lunch_perc	z_shp_percent	z_shcb_percent
3.965020	4.621172	5.413153
z_ACS_PCT_NO_VEH	z_ACS_PCT_RENTER_HH_CHILD	z_ACS_PCT_RENT_COST_30PCT
6.794969	2.243260	2.207635
z_ACS_PCT_MOBILE_HOME	z_ACS_PCT_OWNED_HH	z_ACS_PCT_OWNER_HH_CHILD
3.213678	4.351180	4.665365
z_ACS_MEDIAN_HOME_VALUE	z_hsg_rate	z_sc_percent
5.287235	1.552927	3.724264
z_ms_average	z_ACS_PCT_BROADBAND	z_ACS_PCT_NO_PC
1.823623	10.031991	10.211242
z_ACS_PCT_SMARTPHONE	z_pi_phy_inact	z_cip_perc
2.830685	2.298646	9.790947
z_csph_perc	z_ACS_PCT_CHILD_DISAB	z_unemp_perc

```
               4.433590                       1.356489                       2.532096
        z_ACS_GINI_INDEX      z_ACS_MEDIAN_HH_INCOME        z_ACS_PCT_WORK_NO_CAR
               2.461399                      12.576611                       3.134864
          z_soc_assoc_num              z_aeo_perc_w_acc                z_dwv_presence
              15.530391                       2.021037                       1.158855
   z_ACS_PCT_HH_PUB_ASSIST     z_AHRF_TXC_SITE_NO_CNTRL
               1.469942                       1.067150
```

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

```r
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_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_hsg_rate +
    z_sc_percent + z_ms_average + 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_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_hsg_rate + z_sc_percent + z_ms_average +
      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
-2.00236 -0.32864 -0.00775  0.31641  1.60462
```

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	0.0008552	0.0114716	0.075	0.940578
z_ACS_PCT_BLACK	-0.2217511	0.0211517	-10.484	< 0.0000000000000002
z_ACS_PCT_HISPAN	0.0750832	0.0237992	3.155	0.001629
z_SVI_RPL_THEME1_SOCIECO	0.3936245	0.0318187	12.371	< 0.0000000000000002
z_SVI_RPL_THEME2_HH_DISB	-0.0612571	0.0183572	-3.337	0.000862
z_SVI_RPL_THEME3_MINO	-0.0555249	0.0223820	-2.481	0.013189
z_SVI_RPL_THEME4_HH_TRANS	-0.0638446	0.0176308	-3.621	0.000300
z_ACS_PCT_ENGL_NOT_WELL	-0.0583703	0.0349359	-1.671	0.094917
z_ACS_PCT_NON_CITIZEN	0.0194067	0.0318935	0.608	0.542934
z_ACS_MEDIAN_AGE	-0.0412983	0.0255324	-1.617	0.105927
z_phys_per_cap	-0.0188852	0.0180447	-1.047	0.295416
z_mhp_per_cap	0.0295987	0.0158709	1.865	0.062329
z_dents_per_cap	0.0179548	0.0179135	1.002	0.316314
z_uninsur_perc	-0.2156248	0.0190370	-11.327	< 0.0000000000000002
z_opcp_rate	0.0018580	0.0139250	0.133	0.893866
z_TeenBirths	-0.1556454	0.0359154	-4.334	0.000015371448
z_phs_rate	0.0453255	0.0129080	3.511	0.000455
z_ms_perc_ann	-0.0826374	0.0148163	-5.577	0.000000027625
z_AMFAR_AMATFAC	-0.0214539	0.0155037	-1.384	0.166573
z_MP_PERCPEN	-0.0360308	0.0120995	-2.978	0.002937

```
z_AHRF_RURAL_H_CLINIC         0.0262276  0.0106205   2.470                 0.013610
z_food_afford                 0.0711553  0.0205983   3.454                 0.000563
z_fd_enviro_indx             -0.0382478  0.0228010  -1.677                 0.093605
z_fi_percent                  0.3324346  0.0316752  10.495 < 0.0000000000000002
z_ACS_PCT_FOOD_STAMP          0.0634318  0.0279883   2.266                 0.023532
z_childelig_lunch_perc        0.0141789  0.0228330   0.621                 0.534680
z_shp_percent                 0.0254136  0.0271901   0.935                 0.350072
z_shcb_percent               -0.0758173  0.0258091  -2.938                 0.003344
z_ACS_PCT_NO_VEH             -0.0915949  0.0396415  -2.311                 0.020955
z_ACS_PCT_RENTER_HH_CHILD     0.0283988  0.0156526   1.814                 0.069775
z_ACS_PCT_RENT_COST_30PCT     0.0500486  0.0166845   3.000                 0.002735
z_ACS_PCT_MOBILE_HOME        -0.0069529  0.0175006  -0.397                 0.691193
z_ACS_PCT_OWNED_HH            0.0440581  0.0227709   1.935                 0.053147
z_ACS_PCT_OWNER_HH_CHILD      0.0748603  0.0226800   3.301                 0.000981
z_ACS_MEDIAN_HOME_VALUE       0.1728816  0.0278972   6.197          0.000000000693
z_hsg_rate                    0.0142849  0.0135855   1.051                 0.293163
z_sc_percent                 -0.1145480  0.0201054  -5.697          0.000000013919
z_ms_average                  0.0452487  0.0233067   1.941                 0.052341
z_ACS_PCT_BROADBAND           0.0293238  0.0315651   0.929                 0.353002
z_ACS_PCT_NO_PC               0.0117312  0.0319918   0.367                 0.713885
z_ACS_PCT_SMARTPHONE          0.0483823  0.0167812   2.883                 0.003978
z_pi_phy_inact                0.0773588  0.0150828   5.129          0.000000318714
z_cip_perc                    0.0431387  0.0305480   1.412                 0.158053
z_csph_perc                   0.1341367  0.0211892   6.330          0.000000000299
z_ACS_PCT_CHILD_DISAB         0.0441226  0.0122028   3.616                 0.000307
z_unemp_perc                 -0.0201844  0.0179477  -1.125                 0.260879
z_ACS_GINI_INDEX              0.0349385  0.0159923   2.185                 0.029023
z_ACS_MEDIAN_HH_INCOME       -0.1798973  0.0376770  -4.775          0.000001926498
z_ACS_PCT_WORK_NO_CAR         0.0971910  0.0331750   2.930                 0.003431
z_soc_assoc_num               0.1912012  0.0402847   4.746          0.000002214964
z_aeo_perc_w_acc              0.0056424  0.0149096   0.378                 0.705143
z_dwv_presence               -0.0040723  0.0109476  -0.372                 0.709942
z_ACS_PCT_HH_PUB_ASSIST      -0.0817875  0.0144361  -5.665          0.000000016723
z_AHRF_TXC_SITE_NO_CNTRL      0.0062317  0.0113746   0.548                 0.583850

(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_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_hsg_rate
z_sc_percent              ***
z_ms_average              .
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 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


Residual standard error: 0.4614 on 2056 degrees of freedom
  (1031 observations deleted due to missingness)
Multiple R-squared:  0.7919,    Adjusted R-squared:  0.7865
F-statistic: 147.6 on 53 and 2056 DF,  p-value: < 0.00000000000000022
```

Final Health Model, Physically Unhealthy Days

Confidence Intervals

```
confint(z_pphd_levels_12345678)
```

```
                              2.5 %        97.5 %
(Intercept)              -0.0216419150   0.023352394
z_ACS_PCT_BLACK          -0.2632321064  -0.180270116
z_ACS_PCT_HISPAN          0.0284102037   0.121756294
z_SVI_RPL_THEME1_SOCIECO  0.3312242012   0.456024796
z_SVI_RPL_THEME2_HH_DISB -0.0972577174  -0.025256452
z_SVI_RPL_THEME3_MINO    -0.0994187186  -0.011631022
z_SVI_RPL_THEME4_HH_TRANS -0.0984207455  -0.029268549
z_ACS_PCT_ENGL_NOT_WELL  -0.1268837949   0.010143136
z_ACS_PCT_NON_CITIZEN    -0.0431403072   0.081953713
z_ACS_MEDIAN_AGE         -0.0913704781   0.008773831
z_phys_per_cap           -0.0542729034   0.016502541
z_mhp_per_cap            -0.0015260364   0.060723475
z_dents_per_cap          -0.0171757084   0.053085283
z_uninsur_perc           -0.2529586975  -0.178290978
z_opcp_rate              -0.0254505505   0.029166588
z_TeenBirths             -0.2260797147  -0.085211096
z_phs_rate                0.0200114407   0.070639640
z_ms_perc_ann            -0.1116939796  -0.053580854
z_AMFAR_AMATFAC          -0.0518585523   0.008950770
z_MP_PERCPEN             -0.0597594289  -0.012302239
z_AHRF_RURAL_H_CLINIC     0.0053995038   0.047055649
z_food_afford             0.0307596155   0.111550952
```

```
z_fd_enviro_indx          -0.0829633346   0.006467748
z_fi_percent               0.2703158221   0.394553409
z_ACS_PCT_FOOD_STAMP       0.0085434386   0.118320132
z_childelig_lunch_perc    -0.0305993176   0.058957129
z_shp_percent             -0.0279094932   0.078736673
z_shcb_percent            -0.1264321349  -0.025202534
z_ACS_PCT_NO_VEH          -0.1693366327  -0.013853115
z_ACS_PCT_RENTER_HH_CHILD -0.0022978875   0.059095405
z_ACS_PCT_RENT_COST_30PCT  0.0173282173   0.082768932
z_ACS_PCT_MOBILE_HOME     -0.0412736761   0.027367930
z_ACS_PCT_OWNED_HH        -0.0005983389   0.088714618
z_ACS_PCT_OWNER_HH_CHILD   0.0303821784   0.119338442
z_ACS_MEDIAN_HOME_VALUE    0.1181718268   0.227591370
z_hsg_rate                -0.0123579478   0.040927706
z_sc_percent              -0.1539771954  -0.075118895
z_ms_average              -0.0004585636   0.090955976
z_ACS_PCT_BROADBAND       -0.0325792207   0.091226721
z_ACS_PCT_NO_PC           -0.0510084620   0.074470875
z_ACS_PCT_SMARTPHONE       0.0154724332   0.081292200
z_pi_phy_inact             0.0477796335   0.106937873
z_cip_perc                -0.0167694687   0.103046877
z_csph_perc                0.0925821464   0.175691224
z_ACS_PCT_CHILD_DISAB      0.0201914613   0.068053665
z_unemp_perc              -0.0553819891   0.015013111
z_ACS_GINI_INDEX           0.0035756977   0.066301248
z_ACS_MEDIAN_HH_INCOME    -0.2537863931  -0.106008179
z_ACS_PCT_WORK_NO_CAR      0.0321308306   0.162251183
z_soc_assoc_num            0.1121981710   0.270204239
z_aeo_perc_w_acc          -0.0235971025   0.034881889
z_dwv_presence            -0.0255418529   0.017397166
z_ACS_PCT_HH_PUB_ASSIST   -0.1100984337  -0.053476666
z_AHRF_TXC_SITE_NO_CNTRL  -0.0160753595   0.028538704
```

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
```

```
                    5.166667                  5.623222               10.058347
      z_SVI_RPL_THEME2_HH_DISB     z_SVI_RPL_THEME3_MINO z_SVI_RPL_THEME4_HH_TRANS
                    3.229620                  4.676239                2.922073
       z_ACS_PCT_ENGL_NOT_WELL     z_ACS_PCT_NON_CITIZEN         z_ACS_MEDIAN_AGE
                   11.258363                  9.000358                5.812537
                z_phys_per_cap             z_mhp_per_cap          z_dents_per_cap
                    2.652940                  2.032507                2.537275
                z_uninsur_perc               z_opcp_rate             z_TeenBirths
                    3.817659                  1.745315               14.125893
                   z_phs_rate             z_ms_perc_ann           z_AMFAR_AMATFAC
                    1.610396                  2.079399                1.843019
                 z_MP_PERCPEN       z_AHRF_RURAL_H_CLINIC            z_food_afford
                    1.365273                  1.190754                4.012510
              z_fd_enviro_indx              z_fi_percent       z_ACS_PCT_FOOD_STAMP
                    4.382179                 10.000291                6.940803
        z_childelig_lunch_perc             z_shp_percent            z_shcb_percent
                    3.970444                  4.613982                5.412932
             z_ACS_PCT_NO_VEH z_ACS_PCT_RENTER_HH_CHILD z_ACS_PCT_RENT_COST_30PCT
                    6.796836                  2.239238                2.216555
          z_ACS_PCT_MOBILE_HOME       z_ACS_PCT_OWNED_HH z_ACS_PCT_OWNER_HH_CHILD
                    3.191409                  4.308851                4.638690
          z_ACS_MEDIAN_HOME_VALUE             z_hsg_rate             z_sc_percent
                    5.264591                  1.555950                3.722402
                 z_ms_average         z_ACS_PCT_BROADBAND            z_ACS_PCT_NO_PC
                    1.805690                 10.046592               10.242924
           z_ACS_PCT_SMARTPHONE             z_pi_phy_inact             z_cip_perc
                    2.826175                  2.287555                9.677283
                  z_csph_perc      z_ACS_PCT_CHILD_DISAB             z_unemp_perc
                    4.306115                  1.367938                2.532185
               z_ACS_GINI_INDEX     z_ACS_MEDIAN_HH_INCOME     z_ACS_PCT_WORK_NO_CAR
                    2.452253                 12.521929                3.136443
                z_soc_assoc_num           z_aeo_perc_w_acc           z_dwv_presence
                   15.508347                  2.019423                1.157841
       z_ACS_PCT_HH_PUB_ASSIST   z_AHRF_TXC_SITE_NO_CNTRL
                    1.468522                  1.067117
```

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_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_hsg_rate +
    z_sc_percent + z_ms_average + 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_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_hsg_rate + z_sc_percent + z_ms_average +
    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
-1.90553	-0.35461	0.00938	0.35106	1.73286

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)	
(Intercept)	-0.019823	0.013036	-1.521	0.128492	
z_ACS_PCT_BLACK	-0.222539	0.024035	-9.259	< 0.0000000000000002	***
z_ACS_PCT_HISPAN	-0.025508	0.027044	-0.943	0.345678	
z_SVI_RPL_THEME1_SOCIECO	0.448308	0.036157	12.399	< 0.0000000000000002	***
z_SVI_RPL_THEME2_HH_DISB	-0.057910	0.020860	-2.776	0.005550	**
z_SVI_RPL_THEME3_MINO	-0.023119	0.025433	-0.909	0.363446	
z_SVI_RPL_THEME4_HH_TRANS	-0.091094	0.020034	-4.547	0.000005761616084	***
z_ACS_PCT_ENGL_NOT_WELL	-0.070981	0.039699	-1.788	0.073923	.
z_ACS_PCT_NON_CITIZEN	-0.014555	0.036242	-0.402	0.688016	
z_ACS_MEDIAN_AGE	-0.041244	0.029013	-1.422	0.155303	
z_phys_per_cap	0.012039	0.020505	0.587	0.557186	
z_mhp_per_cap	0.048701	0.018035	2.700	0.006982	**
z_dents_per_cap	-0.013235	0.020356	-0.650	0.515636	
z_uninsur_perc	-0.230892	0.021632	-10.673	< 0.0000000000000002	***
z_opcp_rate	-0.007469	0.015823	-0.472	0.636968	
z_TeenBirths	-0.259213	0.040812	-6.351	0.000000000261852	***
z_phs_rate	0.020465	0.014668	1.395	0.163104	
z_ms_perc_ann	-0.121616	0.016836	-7.223	0.000000000000711	***
z_AMFAR_AMATFAC	-0.001493	0.017617	-0.085	0.932458	
z_MP_PERCPEN	-0.064891	0.013749	-4.720	0.000002521748382	***
z_AHRF_RURAL_H_CLINIC	0.016238	0.012068	1.345	0.178616	
z_food_afford	0.044650	0.023406	1.908	0.056581	.
z_fd_enviro_indx	0.002736	0.025910	0.106	0.915897	
z_fi_percent	0.309739	0.035993	8.605	< 0.0000000000000002	***
z_ACS_PCT_FOOD_STAMP	0.020034	0.031804	0.630	0.528815	
z_childelig_lunch_perc	0.083425	0.025946	3.215	0.001323	**
z_shp_percent	0.020504	0.030897	0.664	0.507015	
z_shcb_percent	-0.048913	0.029328	-1.668	0.095504	.
z_ACS_PCT_NO_VEH	-0.077754	0.045046	-1.726	0.084476	.

```
z_ACS_PCT_RENTER_HH_CHILD   0.049279   0.017787    2.771           0.005646 **
z_ACS_PCT_RENT_COST_30PCT   0.116227   0.018959    6.130   0.000000001047944 ***
z_ACS_PCT_MOBILE_HOME      -0.013399   0.019886   -0.674           0.500538
z_ACS_PCT_OWNED_HH          0.086002   0.025875    3.324           0.000904 ***
z_ACS_PCT_OWNER_HH_CHILD    0.044726   0.025772    1.735           0.082813 .
z_ACS_MEDIAN_HOME_VALUE     0.120649   0.031700    3.806           0.000145 ***
z_hsg_rate                  0.024893   0.015438    1.613           0.107004
z_sc_percent               -0.159377   0.022846   -6.976   0.000000000004079 ***
z_ms_average                0.059186   0.026484    2.235           0.025540 *
z_ACS_PCT_BROADBAND         0.056826   0.035868    1.584           0.113282
z_ACS_PCT_NO_PC            -0.021501   0.036353   -0.591           0.554291
z_ACS_PCT_SMARTPHONE        0.065266   0.019069    3.423           0.000632 ***
z_pi_phy_inact              0.094501   0.017139    5.514   0.000000039537810 ***
z_cip_perc                 -0.068229   0.034713   -1.966           0.049485 *
z_csph_perc                 0.154251   0.024078    6.406   0.000000000184279 ***
z_ACS_PCT_CHILD_DISAB       0.070194   0.013866    5.062   0.000000451398805 ***
z_unemp_perc               -0.013294   0.020395   -0.652           0.514569
z_ACS_GINI_INDEX            0.057320   0.018173    3.154           0.001633 **
z_ACS_MEDIAN_HH_INCOME     -0.140390   0.042814   -3.279           0.001059 **
z_ACS_PCT_WORK_NO_CAR       0.144297   0.037698    3.828           0.000133 ***
z_soc_assoc_num             0.327650   0.045777    7.158   0.000000000001138 ***
z_aeo_perc_w_acc            0.039070   0.016942    2.306           0.021207 *
z_dwv_presence              0.039326   0.012440    3.161           0.001594 **
z_ACS_PCT_HH_PUB_ASSIST    -0.105821   0.016404   -6.451   0.000000000138284 ***
z_AHRF_TXC_SITE_NO_CNTRL   -0.005805   0.012925   -0.449           0.653401
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5243 on 2056 degrees of freedom
  (1031 observations deleted due to missingness)
Multiple R-squared:  0.7282,    Adjusted R-squared:  0.7212
F-statistic: 103.9 on 53 and 2056 DF,  p-value: < 0.00000000000000022
```

Final Health Model, Mentally Unhealthy Days

Confidence Intervals

```
confint(z_pmhd_levels_12345678)
```

```
                            2.5 %          97.5 %
```

```
(Intercept)                    -0.045387167  0.0057412254
z_ACS_PCT_BLACK                -0.269674848 -0.1754026314
z_ACS_PCT_HISPAN               -0.078544270  0.0275277133
z_SVI_RPL_THEME1_SOCIECO        0.377400499  0.5192151855
z_SVI_RPL_THEME2_HH_DISB       -0.098819065 -0.0170018514
z_SVI_RPL_THEME3_MINO          -0.072997396  0.0267584155
z_SVI_RPL_THEME4_HH_TRANS      -0.130383813 -0.0518040831
z_ACS_PCT_ENGL_NOT_WELL        -0.148835293  0.0068725491
z_ACS_PCT_NON_CITIZEN          -0.085628869  0.0565192468
z_ACS_MEDIAN_AGE               -0.098142946  0.0156540581
z_phys_per_cap                 -0.028173385  0.0522508910
z_mhp_per_cap                   0.013333406  0.0840694064
z_dents_per_cap                -0.053155075  0.0266846126
z_uninsur_perc                 -0.273315828 -0.1884686419
z_opcp_rate                    -0.038500396  0.0235627086
z_TeenBirths                   -0.339249268 -0.1791759990
z_phs_rate                     -0.008300659  0.0492296947
z_ms_perc_ann                  -0.154633907 -0.0885982072
z_AMFAR_AMATFAC                -0.036043041  0.0330564290
z_MP_PERCPEN                   -0.091854149 -0.0379271104
z_AHRF_RURAL_H_CLINIC          -0.007429657  0.0399054797
z_food_afford                  -0.001252395  0.0905532412
z_fd_enviro_indx               -0.048075156  0.0535480849
z_fi_percent                    0.239151729  0.3803266534
z_ACS_PCT_FOOD_STAMP           -0.042337268  0.0824053054
z_childelig_lunch_perc          0.032542197  0.1343078934
z_shp_percent                  -0.040089124  0.0810961364
z_shcb_percent                 -0.106428429  0.0086018259
z_ACS_PCT_NO_VEH               -0.166094802  0.0105858178
z_ACS_PCT_RENTER_HH_CHILD       0.014397823  0.0841608761
z_ACS_PCT_RENT_COST_30PCT       0.079046261  0.1534085223
z_ACS_PCT_MOBILE_HOME          -0.052398551  0.0256009805
z_ACS_PCT_OWNED_HH              0.035257285  0.1367462969
z_ACS_PCT_OWNER_HH_CHILD       -0.005816250  0.0952674402
z_ACS_MEDIAN_HOME_VALUE         0.058480912  0.1828176450
z_hsg_rate                     -0.005381679  0.0551684198
z_sc_percent                   -0.204181850 -0.1145727809
z_ms_average                    0.007247162  0.1111242659
z_ACS_PCT_BROADBAND            -0.013516332  0.1271681003
z_ACS_PCT_NO_PC                -0.092793723  0.0497922396
z_ACS_PCT_SMARTPHONE            0.027869668  0.1026626581
z_pi_phy_inact                  0.060889346  0.1281126410
z_cip_perc                     -0.136304791 -0.0001538571
```

```
z_csph_perc                 0.107030879   0.2014702355
z_ACS_PCT_CHILD_DISAB       0.043000499   0.0973877671
z_unemp_perc               -0.053290255   0.0267018240
z_ACS_GINI_INDEX            0.021681524   0.0929584621
z_ACS_MEDIAN_HH_INCOME     -0.224352323  -0.0564274727
z_ACS_PCT_WORK_NO_CAR       0.070366776   0.2182264646
z_soc_assoc_num             0.237876795   0.4174238643
z_aeo_perc_w_acc            0.005844019   0.0722954643
z_dwv_presence              0.014929327   0.0637222313
z_ACS_PCT_HH_PUB_ASSIST    -0.137991137  -0.0736501113
z_AHRF_TXC_SITE_NO_CNTRL   -0.031153036   0.0195432724
```

Final Health Model, Mentally Unhealthy Days

VIF

```
vif(z_pmhd_levels_12345678)
```

```
        z_ACS_PCT_BLACK           z_ACS_PCT_HISPAN  z_SVI_RPL_THEME1_SOCIECO
               5.166667                  5.623222                 10.058347
z_SVI_RPL_THEME2_HH_DISB   z_SVI_RPL_THEME3_MINO  z_SVI_RPL_THEME4_HH_TRANS
               3.229620                  4.676239                  2.922073
z_ACS_PCT_ENGL_NOT_WELL     z_ACS_PCT_NON_CITIZEN          z_ACS_MEDIAN_AGE
              11.258363                  9.000358                  5.812537
           z_phys_per_cap             z_mhp_per_cap             z_dents_per_cap
               2.652940                  2.032507                  2.537275
           z_uninsur_perc               z_opcp_rate                z_TeenBirths
               3.817659                  1.745315                 14.125893
               z_phs_rate              z_ms_perc_ann             z_AMFAR_AMATFAC
               1.610396                  2.079399                  1.843019
             z_MP_PERCPEN       z_AHRF_RURAL_H_CLINIC             z_food_afford
               1.365273                  1.190754                  4.012510
           z_fd_enviro_indx             z_fi_percent        z_ACS_PCT_FOOD_STAMP
               4.382179                 10.000291                  6.940803
      z_childelig_lunch_perc            z_shp_percent              z_shcb_percent
               3.970444                  4.613982                  5.412932
            z_ACS_PCT_NO_VEH z_ACS_PCT_RENTER_HH_CHILD z_ACS_PCT_RENT_COST_30PCT
               6.796836                  2.239238                  2.216555
        z_ACS_PCT_MOBILE_HOME          z_ACS_PCT_OWNED_HH  z_ACS_PCT_OWNER_HH_CHILD
               3.191409                  4.308851                  4.638690
```

```
         z_ACS_MEDIAN_HOME_VALUE                      z_hsg_rate                   z_sc_percent
                        5.264591                        1.555950                       3.722402
                      z_ms_average              z_ACS_PCT_BROADBAND                 z_ACS_PCT_NO_PC
                        1.805690                       10.046592                      10.242924
              z_ACS_PCT_SMARTPHONE                  z_pi_phy_inact                     z_cip_perc
                        2.826175                        2.287555                       9.677283
                      z_csph_perc            z_ACS_PCT_CHILD_DISAB                   z_unemp_perc
                        4.306115                        1.367938                       2.532185
                  z_ACS_GINI_INDEX          z_ACS_MEDIAN_HH_INCOME            z_ACS_PCT_WORK_NO_CAR
                        2.452253                       12.521929                       3.136443
                   z_soc_assoc_num                 z_aeo_perc_w_acc                 z_dwv_presence
                       15.508347                        2.019423                       1.157841
          z_ACS_PCT_HH_PUB_ASSIST        z_AHRF_TXC_SITE_NO_CNTRL
                        1.468522                        1.067117
```

Final Housing Model

DV: Rent 30 Percent

IVs: Excludes those IVs that serve as DVs in the housing models –
z_ACS_PCT_RENT_COST_30PCT, z_ACS_MEDIAN_HOME_VALUE,
z_ACS_PCT_OWNED_HH – and the three problematic VIF IVs

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

```r
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_hsg_rate + z_sc_percent +
        z_ms_average + 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_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_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_hsg_rate +
    z_sc_percent + z_ms_average + 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_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
-2.61205 -0.32104 -0.01022 0.33045 2.39240

Coefficients:
                            Estimate Std. Error t value   Pr(>|t|)
(Intercept)   0.0634775 0.0151507   4.190   0.000029114740572
z_ACS_PCT_BLACK   0.0850443 0.0316003   2.691   0.007176
z_ACS_PCT_HISPAN   0.0892575 0.0317405   2.812   0.004969
z_SVI_RPL_THEME1_SOCIECO   0.1672430 0.0436883   3.828   0.000133
z_SVI_RPL_THEME2_HH_DISB   0.0208099 0.0243607   0.854   0.393071
z_SVI_RPL_THEME3_MINO   0.0321488 0.0296246   1.085   0.277958
z_SVI_RPL_THEME4_HH_TRANS 0.0181896 0.0233766   0.778   0.436593
z_ACS_PCT_ENGL_NOT_WELL   -0.0709814 0.0462351 -1.535   0.124882
z_ACS_PCT_NON_CITIZEN   0.0128255 0.0421306   0.304   0.760838
z_ACS_MEDIAN_AGE   0.1435051 0.0302076   4.751   0.000002168811639
z_food_afford   0.0401879 0.0269062   1.494   0.135426
```

| | | | | |
|---|---|---|---|---|
| z_fd_enviro_indx | 0.0724168 | 0.0305405 | 2.371 | 0.017824 |
| z_fi_percent | 0.0906098 | 0.0428741 | 2.113 | 0.034688 |
| z_ACS_PCT_FOOD_STAMP | 0.0327260 | 0.0368850 | 0.887 | 0.375051 |
| z_childelig_lunch_perc | -0.0699269 | 0.0303345 | -2.305 | 0.021255 |
| z_shp_percent | -0.0064647 | 0.0355122 | -0.182 | 0.855568 |
| z_shcb_percent | 0.4946232 | 0.0316043 | 15.651 | < 0.0000000000000002 |
| z_ACS_PCT_NO_VEH | -0.0190672 | 0.0522907 | -0.365 | 0.715419 |
| z_ACS_PCT_RENTER_HH_CHILD | -0.0707809 | 0.0207291 | -3.415 | 0.000651 |
| z_ACS_PCT_MOBILE_HOME | 0.0338950 | 0.0230214 | 1.472 | 0.141086 |
| z_ACS_PCT_OWNER_HH_CHILD | 0.0649468 | 0.0293773 | 2.211 | 0.027161 |
| z_hsg_rate | -0.0173625 | 0.0179246 | -0.969 | 0.332839 |
| z_sc_percent | 0.0122776 | 0.0268400 | 0.457 | 0.647405 |
| z_ms_average | 0.0223870 | 0.0310309 | 0.721 | 0.470719 |
| z_ACS_PCT_BROADBAND | -0.0104095 | 0.0417463 | -0.249 | 0.803114 |
| z_ACS_PCT_NO_PC | -0.0550672 | 0.0422570 | -1.303 | 0.192671 |
| z_ACS_PCT_SMARTPHONE | -0.0089155 | 0.0222339 | -0.401 | 0.688470 |
| z_phys_per_cap | -0.0053883 | 0.0238972 | -0.225 | 0.821630 |
| z_mhp_per_cap | -0.0008910 | 0.0209854 | -0.042 | 0.966139 |
| z_dents_per_cap | 0.0083166 | 0.0237873 | 0.350 | 0.726656 |
| z_uninsur_perc | -0.0326863 | 0.0260254 | -1.256 | 0.209283 |
| z_opcp_rate | -0.0013752 | 0.0185753 | -0.074 | 0.940992 |
| z_TeenBirths | 0.0860599 | 0.0477309 | 1.803 | 0.071532 |
| z_phs_rate | 0.0014116 | 0.0171092 | 0.083 | 0.934251 |
| z_ms_perc_ann | 0.0479604 | 0.0198976 | 2.410 | 0.016024 |
| z_AMFAR_AMATFAC | -0.0408843 | 0.0204414 | -2.000 | 0.045625 |
| z_MP_PERCPEN | 0.0915085 | 0.0157470 | 5.811 | 0.000000007179159 |
| z_AHRF_RURAL_H_CLINIC | -0.0117605 | 0.0140515 | -0.837 | 0.402713 |
| z_pphd_avgnum | -0.2048996 | 0.0520697 | -3.935 | 0.000085938371464 |
| z_pmhd_avgnum | 0.3281055 | 0.0456817 | 7.182 | 0.000000000000955 |
| z_lbw_percent_lbw | -0.0022047 | 0.0241185 | -0.091 | 0.927173 |
| z_pi_phy_inact | -0.0089236 | 0.0198469 | -0.450 | 0.653030 |
| z_cip_perc | 0.0009244 | 0.0409520 | 0.023 | 0.981992 |
| z_csph_perc | -0.0053194 | 0.0286164 | -0.186 | 0.852552 |
| z_ACS_PCT_CHILD_DISAB | -0.0152067 | 0.0162776 | -0.934 | 0.350306 |
| z_unemp_perc | 0.0525697 | 0.0233716 | 2.249 | 0.024599 |
| z_ACS_GINI_INDEX | 0.0696119 | 0.0210598 | 3.305 | 0.000965 |
| z_ACS_MEDIAN_HH_INCOME | 0.1084796 | 0.0401767 | 2.700 | 0.006990 |
| z_ACS_PCT_WORK_NO_CAR | -0.1124557 | 0.0438279 | -2.566 | 0.010363 |
| z_soc_assoc_num | -0.1070175 | 0.0536439 | -1.995 | 0.046180 |
| z_aeo_perc_w_acc | 0.0304725 | 0.0198603 | 1.534 | 0.125100 |
| z_dwv_presence | -0.0011466 | 0.0145886 | -0.079 | 0.937362 |
| z_ACS_PCT_HH_PUB_ASSIST | 0.0089650 | 0.0192917 | 0.465 | 0.642192 |
| z_AHRF_TXC_SITE_NO_CNTRL | 0.0218731 | 0.0150073 | 1.457 | 0.145132 |

```
(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_hsg_rate
z_sc_percent
z_ms_average
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_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: 0.6085 on 2046 degrees of freedom
  (1041 observations deleted due to missingness)
Multiple R-squared:  0.5442,    Adjusted R-squared:  0.5324
F-statistic:  46.1 on 53 and 2046 DF,  p-value: < 0.00000000000000022
```

Final Housing Model, Rent 30 Percent

Confidence Intervals

```
confint(z_rent30_levels_12345678)
```

```
                               2.5 %        97.5 %
(Intercept)              0.033765065   0.0931898844
z_ACS_PCT_BLACK          0.023072171   0.1470164032
z_ACS_PCT_HISPAN         0.027010359   0.1515046434
z_SVI_RPL_THEME1_SOCIECO  0.081564777   0.2529211544
z_SVI_RPL_THEME2_HH_DISB  -0.026964402  0.0685842927
z_SVI_RPL_THEME3_MINO    -0.025948691   0.0902463363
z_SVI_RPL_THEME4_HH_TRANS -0.027654855  0.0640340826
z_ACS_PCT_ENGL_NOT_WELL  -0.161654165   0.0196913173
z_ACS_PCT_NON_CITIZEN    -0.069797910   0.0954488343
z_ACS_MEDIAN_AGE          0.084264192   0.2027460531
z_food_afford            -0.012578398   0.0929542263
z_fd_enviro_indx          0.012523211   0.1323104801
z_fi_percent              0.006528467   0.1746912143
```

```
z_ACS_PCT_FOOD_STAMP        -0.039609957   0.1050620214
z_childelig_lunch_perc      -0.129416529  -0.0104372446
z_shp_percent               -0.076108453   0.0631790347
z_shcb_percent               0.432643339   0.5566030850
z_ACS_PCT_NO_VEH            -0.121615669   0.0834813498
z_ACS_PCT_RENTER_HH_CHILD   -0.111433148  -0.0301286452
z_ACS_PCT_MOBILE_HOME       -0.011252775   0.0790427921
z_ACS_PCT_OWNER_HH_CHILD     0.007334252   0.1225593000
z_hsg_rate                  -0.052514859   0.0177898551
z_sc_percent                -0.040358885   0.0649141474
z_ms_average                -0.038468438   0.0832425150
z_ACS_PCT_BROADBAND         -0.092279188   0.0714601617
z_ACS_PCT_NO_PC             -0.137938497   0.0278041196
z_ACS_PCT_SMARTPHONE        -0.052519013   0.0346879203
z_phys_per_cap              -0.052253693   0.0414771023
z_mhp_per_cap               -0.042045844   0.0402639221
z_dents_per_cap             -0.038333151   0.0549663778
z_uninsur_perc              -0.083725394   0.0183528787
z_opcp_rate                 -0.037803666   0.0350533376
z_TeenBirths                -0.007546433   0.1796661449
z_phs_rate                  -0.032141549   0.0349648242
z_ms_perc_ann                0.008938720   0.0869821153
z_AMFAR_AMATFAC             -0.080972487  -0.0007960728
z_MP_PERCPEN                 0.060626568   0.1223904005
z_AHRF_RURAL_H_CLINIC       -0.039317161   0.0157961592
z_pphd_avgnum               -0.307014782  -0.1027844151
z_pmhd_avgnum                0.238518068   0.4176929108
z_lbw_percent_lbw           -0.049504190   0.0450946995
z_pi_phy_inact              -0.047845825   0.0299985880
z_cip_perc                  -0.079387520   0.0812363998
z_csph_perc                 -0.061439667   0.0508008858
z_ACS_PCT_CHILD_DISAB       -0.047129230   0.0167157502
z_unemp_perc                 0.006735152   0.0984042433
z_ACS_GINI_INDEX             0.028310901   0.1109128429
z_ACS_MEDIAN_HH_INCOME       0.029688156   0.1872711061
z_ACS_PCT_WORK_NO_CAR       -0.198407729  -0.0265037579
z_soc_assoc_num             -0.212219766  -0.0018151528
z_aeo_perc_w_acc            -0.008476025   0.0694210884
z_dwv_presence              -0.029756650   0.0274634573
z_ACS_PCT_HH_PUB_ASSIST     -0.028868447   0.0467983710
z_AHRF_TXC_SITE_NO_CNTRL    -0.007558031   0.0513042468
```

Final Housing Model, Rent 30 Percent

VIF

```
vif(z_rent30_levels_12345678)
```

z_ACS_PCT_BLACK	z_ACS_PCT_HISPAN	z_SVI_RPL_THEME1_SOCIECO
6.617087	5.678737	10.848054
z_SVI_RPL_THEME2_HH_DISB	z_SVI_RPL_THEME3_MINO	z_SVI_RPL_THEME4_HH_TRANS
3.255285	4.672854	2.932446
z_ACS_PCT_ENGL_NOT_WELL	z_ACS_PCT_NON_CITIZEN	z_ACS_MEDIAN_AGE
11.300537	9.014560	4.618843
z_food_afford	z_fd_enviro_indx	z_fi_percent
3.930953	4.454841	10.490640
z_ACS_PCT_FOOD_STAMP	z_childelig_lunch_perc	z_shp_percent
6.894468	4.002818	4.487240
z_shcb_percent	z_ACS_PCT_NO_VEH	z_ACS_PCT_RENTER_HH_CHILD
4.614058	6.762968	2.234019
z_ACS_PCT_MOBILE_HOME	z_ACS_PCT_OWNER_HH_CHILD	z_hsg_rate
3.147674	4.435264	1.544389
z_sc_percent	z_ms_average	z_ACS_PCT_BROADBAND
3.797966	1.826491	10.011491
z_ACS_PCT_NO_PC	z_ACS_PCT_SMARTPHONE	z_phys_per_cap
10.203844	2.845178	2.662186
z_mhp_per_cap	z_dents_per_cap	z_uninsur_perc
2.040290	2.537236	4.014738
z_opcp_rate	z_TeenBirths	z_phs_rate
1.745812	14.336588	1.612988
z_ms_perc_ann	z_AMFAR_AMATFAC	z_MP_PERCPEN
2.137410	1.841483	1.326063
z_AHRF_RURAL_H_CLINIC	z_pphd_avgnum	z_pmhd_avgnum
1.197090	15.330232	11.629834
z_lbw_percent_lbw	z_pi_phy_inact	z_cip_perc
3.378691	2.272193	9.965400
z_csph_perc	z_ACS_PCT_CHILD_DISAB	z_unemp_perc
4.470617	1.374642	2.460976
z_ACS_GINI_INDEX	z_ACS_MEDIAN_HH_INCOME	z_ACS_PCT_WORK_NO_CAR
2.419375	8.162082	3.134626
z_soc_assoc_num	z_aeo_perc_w_acc	z_dwv_presence
15.796848	2.037624	1.176746
z_ACS_PCT_HH_PUB_ASSIST	z_AHRF_TXC_SITE_NO_CNTRL	

1.499488   1.067723

Final Housing Model

DV: Median Home Value

**IVs: Excludes those IVs that serve as DVs in the housing models –
z_ACS_PCT_RENT_COST_30PCT, z_ACS_MEDIAN_HOME_VALUE,
z_ACS_PCT_OWNED_HH – and 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_hsg_rate + z_sc_percent +
        z_ms_average + 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_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_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_hsg_rate +
z_sc_percent + z_ms_average + 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_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
-1.5882	-0.1911	-0.0162	0.1616	4.7427

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	0.0205573	0.0091298	2.252	0.024449
z_ACS_PCT_BLACK	-0.0552582	0.0190423	-2.902	0.003749
z_ACS_PCT_HISPAN	-0.1563598	0.0191268	-8.175	0.000000000000000513
z_SVI_RPL_THEME1_SOCIECO	0.0831557	0.0263265	3.159	0.001608
z_SVI_RPL_THEME2_HH_DISB	0.0105915	0.0146797	0.722	0.470680
z_SVI_RPL_THEME3_MINO	-0.0234613	0.0178517	-1.314	0.188916
z_SVI_RPL_THEME4_HH_TRANS	0.0202066	0.0140867	1.434	0.151598
z_ACS_PCT_ENGL_NOT_WELL	0.0953577	0.0278612	3.423	0.000632
z_ACS_PCT_NON_CITIZEN	0.0413921	0.0253878	1.630	0.103173
z_ACS_MEDIAN_AGE	0.0808796	0.0182031	4.443	0.000009337056031529
z_food_afford	0.1029185	0.0162136	6.348	0.000000000268475970
z_fd_enviro_indx	0.0825227	0.0184036	4.484	0.000007729548364656
z_fi_percent	-0.0368511	0.0258358	-1.426	0.153918
z_ACS_PCT_FOOD_STAMP	-0.0750331	0.0222268	-3.376	0.000750
z_childelig_lunch_perc	-0.0415856	0.0182795	-2.275	0.023010
z_shp_percent	0.1826408	0.0213996	8.535	< 0.0000000000000002
z_shcb_percent	0.1357122	0.0190447	7.126	0.000000000001426015
z_ACS_PCT_NO_VEH	-0.0020535	0.0315103	-0.065	0.948045
z_ACS_PCT_RENTER_HH_CHILD	0.0004107	0.0124913	0.033	0.973775
z_ACS_PCT_MOBILE_HOME	0.0456876	0.0138726	3.293	0.001007
z_ACS_PCT_OWNER_HH_CHILD	-0.1274344	0.0177027	-7.199	0.000000000000850592
z_hsg_rate	-0.0396405	0.0108013	-3.670	0.000249
z_sc_percent	0.0312035	0.0161737	1.929	0.053835
z_ms_average	-0.0125102	0.0186992	-0.669	0.503556
z_ACS_PCT_BROADBAND	-0.0187975	0.0251562	-0.747	0.455010

```
z_ACS_PCT_NO_PC               -0.0401814  0.0254640  -1.578               0.114727
z_ACS_PCT_SMARTPHONE          -0.0227111  0.0133981  -1.695               0.090210
z_phys_per_cap                 0.0492928  0.0144004   3.423               0.000632
z_mhp_per_cap                  0.0199465  0.0126457   1.577               0.114874
z_dents_per_cap                0.0539585  0.0143342   3.764               0.000172
z_uninsur_perc                -0.0011783  0.0156829  -0.075               0.940117
z_opcp_rate                   -0.0551716  0.0111935  -4.929 0.000000893382776353
z_TeenBirths                   0.1080525  0.0287626   3.757               0.000177
z_phs_rate                    -0.0599844  0.0103100  -5.818 0.000000006891570523
z_ms_perc_ann                 -0.0470970  0.0119903  -3.928 0.000088520064468772
z_AMFAR_AMATFAC               -0.0080376  0.0123180  -0.653               0.514148
z_MP_PERCPEN                  -0.0413712  0.0094891  -4.360 0.000013661298427865
z_AHRF_RURAL_H_CLINIC          0.0046667  0.0084674   0.551               0.581602
z_pphd_avgnum                  0.1732833  0.0313771   5.523 0.000000037654987211
z_pmhd_avgnum                 -0.0879387  0.0275277  -3.195               0.001422
z_lbw_percent_lbw              0.0806578  0.0145338   5.550 0.000000032338188990
z_pi_phy_inact                -0.0789544  0.0119597  -6.602 0.000000000051634484
z_cip_perc                    -0.0430715  0.0246776  -1.745               0.081071
z_csph_perc                   -0.0142657  0.0172442  -0.827               0.408177
z_ACS_PCT_CHILD_DISAB         -0.0071628  0.0098089  -0.730               0.465327
z_unemp_perc                   0.0469404  0.0140837   3.333               0.000875
z_ACS_GINI_INDEX               0.0909046  0.0126906   7.163 0.000000000001095399
z_ACS_MEDIAN_HH_INCOME         0.7733736  0.0242104  31.944 < 0.0000000000000002
z_ACS_PCT_WORK_NO_CAR          0.0716796  0.0264106   2.714               0.006702
z_soc_assoc_num               -0.1022204  0.0323257  -3.162               0.001589
z_aeo_perc_w_acc               0.0021472  0.0119678   0.179               0.857629
z_dwv_presence                 0.0248132  0.0087911   2.823               0.004810
z_ACS_PCT_HH_PUB_ASSIST       -0.0044370  0.0116251  -0.382               0.702741
z_AHRF_TXC_SITE_NO_CNTRL       0.0009338  0.0090434   0.103               0.917771

(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_hsg_rate                  ***
z_sc_percent                .
z_ms_average
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_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: 0.3667 on 2046 degrees of freedom
  (1041 observations deleted due to missingness)
Multiple R-squared:  0.8083,    Adjusted R-squared:  0.8033
F-statistic: 162.8 on 53 and 2046 DF,  p-value: < 0.00000000000000022
```

Final Housing Model, Median Home Value

Confidence Intervals

```
confint(z_median_levels_12345678)
```

```
                                2.5 %        97.5 %
(Intercept)                0.0026526468   0.038461940
z_ACS_PCT_BLACK           -0.0926024972  -0.017913917
z_ACS_PCT_HISPAN          -0.1938698211  -0.118849780
z_SVI_RPL_THEME1_SOCIECO   0.0315261887   0.134785246
z_SVI_RPL_THEME2_HH_DISB  -0.0181972279   0.039380250
z_SVI_RPL_THEME3_MINO     -0.0584707711   0.011548152
z_SVI_RPL_THEME4_HH_TRANS -0.0074191890   0.047832406
z_ACS_PCT_ENGL_NOT_WELL    0.0407184731   0.149996948
z_ACS_PCT_NON_CITIZEN     -0.0083965637   0.091180839
z_ACS_MEDIAN_AGE           0.0451811527   0.116578118
z_food_afford              0.0711215713   0.134715349
z_fd_enviro_indx           0.0464309108   0.118614513
z_fi_percent              -0.0875183834   0.013816198
z_ACS_PCT_FOOD_STAMP      -0.1186226239  -0.031443539
z_childelig_lunch_perc    -0.0774339484  -0.005737237
z_shp_percent              0.1406735725   0.224607972
z_shcb_percent             0.0983632652   0.173061194
z_ACS_PCT_NO_VEH          -0.0638490681   0.059742041
z_ACS_PCT_RENTER_HH_CHILD -0.0240862923   0.024907661
z_ACS_PCT_MOBILE_HOME      0.0184816435   0.072893596
z_ACS_PCT_OWNER_HH_CHILD  -0.1621516190  -0.092717204
z_hsg_rate                -0.0608232336  -0.018457734
z_sc_percent              -0.0005151835   0.062922164
z_ms_average              -0.0491815906   0.024161220
z_ACS_PCT_BROADBAND       -0.0681320445   0.030537005
z_ACS_PCT_NO_PC           -0.0901195318   0.009756683
z_ACS_PCT_SMARTPHONE      -0.0489864607   0.003564287
```

```
z_phys_per_cap              0.0210517816   0.077533797
z_mhp_per_cap              -0.0048533390   0.044746384
z_dents_per_cap             0.0258474590   0.082069594
z_uninsur_perc             -0.0319343878   0.029577803
z_opcp_rate                -0.0771233360  -0.033219832
z_TeenBirths                0.0516455174   0.164459494
z_phs_rate                 -0.0802034561  -0.039765271
z_ms_perc_ann              -0.0706113764  -0.023582561
z_AMFAR_AMATFAC            -0.0321946388   0.016119530
z_MP_PERCPEN               -0.0599805591  -0.022761780
z_AHRF_RURAL_H_CLINIC      -0.0119389371   0.021272254
z_pphd_avgnum               0.1117488340   0.234817700
z_pmhd_avgnum              -0.1419238828  -0.033953432
z_lbw_percent_lbw           0.0521552149   0.109160343
z_pi_phy_inact             -0.1024088288  -0.055499920
z_cip_perc                 -0.0914673472   0.005324350
z_csph_perc                -0.0480836744   0.019552289
z_ACS_PCT_CHILD_DISAB      -0.0263992722   0.012073603
z_unemp_perc                0.0193205982   0.074560234
z_ACS_GINI_INDEX            0.0660167550   0.115792542
z_ACS_MEDIAN_HH_INCOME      0.7258939615   0.820853175
z_ACS_PCT_WORK_NO_CAR       0.0198851110   0.123474147
z_soc_assoc_num            -0.1656151327  -0.038825676
z_aeo_perc_w_acc           -0.0213231281   0.025617538
z_dwv_presence              0.0075728579   0.042053596
z_ACS_PCT_HH_PUB_ASSIST    -0.0272353827   0.018361311
z_AHRF_TXC_SITE_NO_CNTRL   -0.0168013840   0.018668923
```

Final Housing Model, Median Home Value

VIF

```r
vif(z_median_levels_12345678)
```

```
            z_ACS_PCT_BLACK         z_ACS_PCT_HISPAN  z_SVI_RPL_THEME1_SOCIECO
                   6.617087                 5.678737                 10.848054
    z_SVI_RPL_THEME2_HH_DISB   z_SVI_RPL_THEME3_MINO  z_SVI_RPL_THEME4_HH_TRANS
                   3.255285                 4.672854                  2.932446
      z_ACS_PCT_ENGL_NOT_WELL    z_ACS_PCT_NON_CITIZEN         z_ACS_MEDIAN_AGE
                  11.300537                 9.014560                  4.618843
```

z_food_afford	z_fd_enviro_indx	z_fi_percent
3.930953	4.454841	10.490640
z_ACS_PCT_FOOD_STAMP	z_childelig_lunch_perc	z_shp_percent
6.894468	4.002818	4.487240
z_shcb_percent	z_ACS_PCT_NO_VEH	z_ACS_PCT_RENTER_HH_CHILD
4.614058	6.762968	2.234019
z_ACS_PCT_MOBILE_HOME	z_ACS_PCT_OWNER_HH_CHILD	z_hsg_rate
3.147674	4.435264	1.544389
z_sc_percent	z_ms_average	z_ACS_PCT_BROADBAND
3.797966	1.826491	10.011491
z_ACS_PCT_NO_PC	z_ACS_PCT_SMARTPHONE	z_phys_per_cap
10.203844	2.845178	2.662186
z_mhp_per_cap	z_dents_per_cap	z_uninsur_perc
2.040290	2.537236	4.014738
z_opcp_rate	z_TeenBirths	z_phs_rate
1.745812	14.336588	1.612988
z_ms_perc_ann	z_AMFAR_AMATFAC	z_MP_PERCPEN
2.137410	1.841483	1.326063
z_AHRF_RURAL_H_CLINIC	z_pphd_avgnum	z_pmhd_avgnum
1.197090	15.330232	11.629834
z_lbw_percent_lbw	z_pi_phy_inact	z_cip_perc
3.378691	2.272193	9.965400
z_csph_perc	z_ACS_PCT_CHILD_DISAB	z_unemp_perc
4.470617	1.374642	2.460976
z_ACS_GINI_INDEX	z_ACS_MEDIAN_HH_INCOME	z_ACS_PCT_WORK_NO_CAR
2.419375	8.162082	3.134626
z_soc_assoc_num	z_aeo_perc_w_acc	z_dwv_presence
15.796848	2.037624	1.176746
z_ACS_PCT_HH_PUB_ASSIST	z_AHRF_TXC_SITE_NO_CNTRL	
1.499488	1.067723	

Final Housing Model

DV: Owned HH

**IVs: Excludes those IVs that serve as DVs in the housing models –
z_ACS_PCT_RENT_COST_30PCT, z_ACS_MEDIAN_HOME_VALUE,
z_ACS_PCT_OWNED_HH – and 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 ~
    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_hsg_rate + z_sc_percent +
        z_ms_average + 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_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_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_hsg_rate +
    z_sc_percent + z_ms_average + 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_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
-3.09261	-0.26440	0.00572	0.26931	2.54129

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	0.0170689	0.0114171	1.495	0.135060
z_ACS_PCT_BLACK	0.1062425	0.0238129	4.462	0.0000085788776787
z_ACS_PCT_HISPAN	0.0146576	0.0239186	0.613	0.540069
z_SVI_RPL_THEME1_SOCIECO	-0.0001166	0.0329221	-0.004	0.997174
z_SVI_RPL_THEME2_HH_DISB	-0.0473741	0.0183574	-2.581	0.009930
z_SVI_RPL_THEME3_MINO	-0.0522032	0.0223241	-2.338	0.019461
z_SVI_RPL_THEME4_HH_TRANS	-0.0704581	0.0176159	-4.000	0.0000656778059172
z_ACS_PCT_ENGL_NOT_WELL	0.0239609	0.0348412	0.688	0.491708
z_ACS_PCT_NON_CITIZEN	-0.1627818	0.0317482	-5.127	0.0000003216674114
z_ACS_MEDIAN_AGE	0.4997983	0.0227635	21.956	< 0.0000000000000002
z_food_afford	0.0746773	0.0202756	3.683	0.000236
z_fd_enviro_indx	0.0782151	0.0230143	3.399	0.000690
z_fi_percent	-0.1178065	0.0323085	-3.646	0.000273
z_ACS_PCT_FOOD_STAMP	-0.0853635	0.0277953	-3.071	0.002160
z_childelig_lunch_perc	0.0248833	0.0228590	1.089	0.276478
z_shp_percent	-0.0458002	0.0267608	-1.711	0.087146
z_shcb_percent	-0.1794150	0.0238159	-7.533	0.0000000000000737
z_ACS_PCT_NO_VEH	-0.1478266	0.0394045	-3.752	0.000181
z_ACS_PCT_RENTER_HH_CHILD	0.0374358	0.0156207	2.397	0.016640
z_ACS_PCT_MOBILE_HOME	0.1051456	0.0173482	6.061	0.0000000016071172
z_ACS_PCT_OWNER_HH_CHILD	0.2135818	0.0221378	9.648	< 0.0000000000000002
z_hsg_rate	0.0024084	0.0135074	0.178	0.858505
z_sc_percent	-0.0701211	0.0202257	-3.467	0.000537
z_ms_average	-0.0091083	0.0233839	-0.390	0.696938
z_ACS_PCT_BROADBAND	-0.0886101	0.0314586	-2.817	0.004898
z_ACS_PCT_NO_PC	-0.0224239	0.0318435	-0.704	0.481395
z_ACS_PCT_SMARTPHONE	0.0104244	0.0167547	0.622	0.533897
z_phys_per_cap	-0.0411714	0.0180081	-2.286	0.022340

```
z_mhp_per_cap              -0.0091951  0.0158139  -0.581              0.560997
z_dents_per_cap            -0.0577171  0.0179253  -3.220              0.001303
z_uninsur_perc              0.0341920  0.0196119   1.743              0.081409
z_opcp_rate                -0.0153681  0.0139977  -1.098              0.272377
z_TeenBirths                0.0287423  0.0359685   0.799              0.424326
z_phs_rate                 -0.0064982  0.0128929  -0.504              0.614304
z_ms_perc_ann               0.0201514  0.0149942   1.344              0.179114
z_AMFAR_AMATFAC             0.0246337  0.0154040   1.599              0.109936
z_MP_PERCPEN                0.0878368  0.0118665   7.402  0.0000000000001947
z_AHRF_RURAL_H_CLINIC       0.0094364  0.0105887   0.891              0.372941
z_pphd_avgnum              -0.1259255  0.0392380  -3.209              0.001351
z_pmhd_avgnum               0.1726144  0.0344242   5.014  0.0000005780197096
z_lbw_percent_lbw          -0.0610057  0.0181749  -3.357              0.000804
z_pi_phy_inact             -0.0323566  0.0149560  -2.163              0.030621
z_cip_perc                  0.0085608  0.0308601   0.277              0.781497
z_csph_perc                -0.0907540  0.0215644  -4.209  0.0000268165064369
z_ACS_PCT_CHILD_DISAB       0.0144882  0.0122663   1.181              0.237684
z_unemp_perc                0.1127462  0.0176120   6.402  0.0000000001900581
z_ACS_GINI_INDEX           -0.0022493  0.0158700  -0.142              0.887304
z_ACS_MEDIAN_HH_INCOME      0.1469115  0.0302758   4.852  0.0000013117196703
z_ACS_PCT_WORK_NO_CAR      -0.0432136  0.0330273  -1.308              0.190878
z_soc_assoc_num            -0.1090091  0.0404243  -2.697              0.007062
z_aeo_perc_w_acc           -0.0492961  0.0149661  -3.294              0.001005
z_dwv_presence              0.0001132  0.0109935   0.010              0.991789
z_ACS_PCT_HH_PUB_ASSIST    -0.0042859  0.0145376  -0.295              0.768168
z_AHRF_TXC_SITE_NO_CNTRL    0.0126248  0.0113090   1.116              0.264403

(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_hsg_rate
z_sc_percent               ***
z_ms_average
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_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: 0.4586 on 2046 degrees of freedom
  (1041 observations deleted due to missingness)
```

```
Multiple R-squared:  0.7558,    Adjusted R-squared:  0.7495
F-statistic: 119.5 on 53 and 2046 DF,  p-value: < 0.00000000000000022
```

Final Housing Model, Owned HH

Confidence Intervals

```
confint(z_owned_levels_12345678)
```

```
                                    2.5 %        97.5 %
(Intercept)                    -0.005321409   0.039459174
z_ACS_PCT_BLACK                 0.059542314   0.152942597
z_ACS_PCT_HISPAN               -0.032249774   0.061565010
z_SVI_RPL_THEME1_SOCIECO       -0.064680883   0.064447629
z_SVI_RPL_THEME2_HH_DISB       -0.083375274  -0.011372931
z_SVI_RPL_THEME3_MINO          -0.095983536  -0.008422797
z_SVI_RPL_THEME4_HH_TRANS      -0.105004955  -0.035911197
z_ACS_PCT_ENGL_NOT_WELL        -0.044367043   0.092288929
z_ACS_PCT_NON_CITIZEN          -0.225044017  -0.100519524
z_ACS_MEDIAN_AGE                0.455156268   0.544440289
z_food_afford                   0.034914376   0.114440280
z_fd_enviro_indx                0.033081259   0.123348993
z_fi_percent                   -0.181167466  -0.054445569
z_ACS_PCT_FOOD_STAMP           -0.139873522  -0.030853493
z_childelig_lunch_perc         -0.019946099   0.069712764
z_shp_percent                  -0.098281445   0.006681009
z_shcb_percent                 -0.226120951  -0.132708977
z_ACS_PCT_NO_VEH               -0.225103821  -0.070549476
z_ACS_PCT_RENTER_HH_CHILD       0.006801637   0.068070027
z_ACS_PCT_MOBILE_HOME           0.071123751   0.139167510
z_ACS_PCT_OWNER_HH_CHILD        0.170166922   0.256996716
z_hsg_rate                     -0.024081293   0.028898020
z_sc_percent                   -0.109786224  -0.030455940
z_ms_average                   -0.054966981   0.036750377
z_ACS_PCT_BROADBAND            -0.150304418  -0.026915847
z_ACS_PCT_NO_PC                -0.084872965   0.040025201
z_ACS_PCT_SMARTPHONE           -0.022433777   0.043282490
z_phys_per_cap                 -0.076487637  -0.005855203
z_mhp_per_cap                  -0.040208040   0.021817884
z_dents_per_cap                -0.092870858  -0.022563412
```

```
z_uninsur_perc              -0.004269378   0.072653439
z_opcp_rate                 -0.042819459   0.012083174
z_TeenBirths                -0.041796277   0.099280944
z_phs_rate                  -0.031782816   0.018786332
z_ms_perc_ann               -0.009254062   0.049556865
z_AMFAR_AMATFAC             -0.005575467   0.054842833
z_MP_PERCPEN                 0.064565179   0.111108366
z_AHRF_RURAL_H_CLINIC       -0.011329414   0.030202165
z_pphd_avgnum               -0.202876109  -0.048974845
z_pmhd_avgnum                0.105104297   0.240124546
z_lbw_percent_lbw           -0.096648987  -0.025362386
z_pi_phy_inact              -0.061687094  -0.003026113
z_cip_perc                  -0.051959689   0.069081197
z_csph_perc                 -0.133044437  -0.048463660
z_ACS_PCT_CHILD_DISAB       -0.009567501   0.038543970
z_unemp_perc                 0.078206845   0.147285647
z_ACS_GINI_INDEX            -0.033372363   0.028873734
z_ACS_MEDIAN_HH_INCOME       0.087536832   0.206286143
z_ACS_PCT_WORK_NO_CAR       -0.107984135   0.021557026
z_soc_assoc_num             -0.188286055  -0.029732082
z_aeo_perc_w_acc            -0.078646435  -0.019945741
z_dwv_presence              -0.021446436   0.021672749
z_ACS_PCT_HH_PUB_ASSIST     -0.032795859   0.024224158
z_AHRF_TXC_SITE_NO_CNTRL    -0.009553519   0.034803151
```

Final Housing Model, Owned HH

VIF

```r
vif(z_owned_levels_12345678)
```

```
          z_ACS_PCT_BLACK          z_ACS_PCT_HISPAN  z_SVI_RPL_THEME1_SOCIECO
                 6.617087                  5.678737                 10.848054
  z_SVI_RPL_THEME2_HH_DISB     z_SVI_RPL_THEME3_MINO  z_SVI_RPL_THEME4_HH_TRANS
                 3.255285                  4.672854                  2.932446
   z_ACS_PCT_ENGL_NOT_WELL      z_ACS_PCT_NON_CITIZEN            z_ACS_MEDIAN_AGE
                11.300537                  9.014560                  4.618843
             z_food_afford            z_fd_enviro_indx                z_fi_percent
                 3.930953                  4.454841                 10.490640
       z_ACS_PCT_FOOD_STAMP     z_childelig_lunch_perc               z_shp_percent
```

6.894468	4.002818	4.487240
z_shcb_percent	z_ACS_PCT_NO_VEH	z_ACS_PCT_RENTER_HH_CHILD
4.614058	6.762968	2.234019
z_ACS_PCT_MOBILE_HOME	z_ACS_PCT_OWNER_HH_CHILD	z_hsg_rate
3.147674	4.435264	1.544389
z_sc_percent	z_ms_average	z_ACS_PCT_BROADBAND
3.797966	1.826491	10.011491
z_ACS_PCT_NO_PC	z_ACS_PCT_SMARTPHONE	z_phys_per_cap
10.203844	2.845178	2.662186
z_mhp_per_cap	z_dents_per_cap	z_uninsur_perc
2.040290	2.537236	4.014738
z_opcp_rate	z_TeenBirths	z_phs_rate
1.745812	14.336588	1.612988
z_ms_perc_ann	z_AMFAR_AMATFAC	z_MP_PERCPEN
2.137410	1.841483	1.326063
z_AHRF_RURAL_H_CLINIC	z_pphd_avgnum	z_pmhd_avgnum
1.197090	15.330232	11.629834
z_lbw_percent_lbw	z_pi_phy_inact	z_cip_perc
3.378691	2.272193	9.965400
z_csph_perc	z_ACS_PCT_CHILD_DISAB	z_unemp_perc
4.470617	1.374642	2.460976
z_ACS_GINI_INDEX	z_ACS_MEDIAN_HH_INCOME	z_ACS_PCT_WORK_NO_CAR
2.419375	8.162082	3.134626
z_soc_assoc_num	z_aeo_perc_w_acc	z_dwv_presence
15.796848	2.037624	1.176746
z_ACS_PCT_HH_PUB_ASSIST	z_AHRF_TXC_SITE_NO_CNTRL	
1.499488	1.067723	