# From standard model

Originally ran models with race found that it did not contribute. Removed race and reran.

Initial regression model. R showed biggest predictor or involvement in school activities was for private school parents (public is negative). Followed by parents who are also engaged at home (FA).

Call:

lm(formula = FS ~ AGE2015 + hhtotalxx + AGE2015 + pargradex +

ttlhhinc + FA + SSatis + public + sneighbrx + sefuturex,

data = parinv)

Residuals:

Min 1Q Median 3Q Max

-5.7709 -1.0177 0.0583 1.0501 5.4114

Coefficients:

Estimate Std. Error t value Pr(>|t|)

(Intercept) 3.224210 0.116115 27.767 <2e-16 \*\*\*

AGE2015 -0.070933 0.004016 -17.662 <2e-16 \*\*\*

hhtotalxx 0.011937 0.010832 1.102 0.2705

pargradex 0.199829 0.014607 13.680 <2e-16 \*\*\*

ttlhhinc 0.087108 0.005825 14.955 <2e-16 \*\*\*

FA 0.260147 0.008965 29.018 <2e-16 \*\*\*

SSatis -0.054204 0.004512 -12.013 <2e-16 \*\*\*

public -0.768399 0.042936 -17.896 <2e-16 \*\*\*

sneighbrx 0.073768 0.034558 2.135 0.0328 \*

sefuturex 0.125544 0.011685 10.744 <2e-16 \*\*\*

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

Residual standard error: 1.524 on 13513 degrees of freedom

Multiple R-squared: 0.2726, Adjusted R-squared: 0.2721

F-statistic: 562.7 on 9 and 13513 DF, p-value: < 2.2e-16

# GLM POISSON Models

Next, ran a Poisson model (outcome variable is a count)

Call:

glm(formula = FS ~ AGE2015 + hhtotalxx + AGE2015 + pargradex +

ttlhhinc + FA + SSatis + public + sneighbrx + sefuturex,

family = poisson(), data = parinv)

Deviance Residuals:

Min 1Q Median 3Q Max

-3.4397 -0.5443 0.0289 0.5053 2.6498

Coefficients:

Estimate Std. Error z value Pr(>|z|)

(Intercept) 1.095827 0.038737 28.289 <2e-16 \*\*\*

AGE2015 -0.016818 0.001307 -12.866 <2e-16 \*\*\*

hhtotalxx 0.004260 0.003602 1.182 0.237

pargradex 0.051818 0.004926 10.520 <2e-16 \*\*\*

ttlhhinc 0.022283 0.001959 11.372 <2e-16 \*\*\*

FA 0.066241 0.002983 22.208 <2e-16 \*\*\*

SSatis -0.014556 0.001554 -9.367 <2e-16 \*\*\*

public -0.162918 0.012828 -12.700 <2e-16 \*\*\*

sneighbrx 0.015885 0.011133 1.427 0.154

sefuturex 0.035777 0.004083 8.762 <2e-16 \*\*\*

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

(Dispersion parameter for poisson family taken to be 1)

Null deviance: 13187 on 13522 degrees of freedom

Residual deviance: 10243 on 13513 degrees of freedom

AIC: 52140

Number of Fisher Scoring iterations: 4

> exp(coef(posfit))

(Intercept) AGE2015 hhtotalxx pargradex ttlhhinc FA SSatis public sneighbrx sefuturex

2.9916558 0.9833223 1.0042689 1.0531837 1.0225335 1.0684842 0.9855492 0.8496606 1.0160114 1.0364248

In this model, HH size and moving to neighborhood were not significant.

Reran the model without these variables:

Call:

glm(formula = FS ~ AGE2015 + hhtotalxx + AGE2015 + pargradex +

FA + SSatis + public + sefuturex, family = poisson(), data = parinv)

Deviance Residuals:

Min 1Q Median 3Q Max

-3.4012 -0.5457 0.0302 0.5085 2.5432

Coefficients:

Estimate Std. Error z value Pr(>|z|)

(Intercept) 1.109823 0.038552 28.788 < 2e-16 \*\*\*

AGE2015 -0.016110 0.001303 -12.360 < 2e-16 \*\*\*

hhtotalxx 0.009304 0.003545 2.625 0.00868 \*\*

pargradex 0.082963 0.004127 20.101 < 2e-16 \*\*\*

FA 0.064825 0.002970 21.830 < 2e-16 \*\*\*

SSatis -0.015787 0.001546 -10.213 < 2e-16 \*\*\*

public -0.172992 0.012604 -13.725 < 2e-16 \*\*\*

sefuturex 0.039961 0.004052 9.862 < 2e-16 \*\*\*

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

(Dispersion parameter for poisson family taken to be 1)

Null deviance: 13187 on 13522 degrees of freedom

Residual deviance: 10378 on 13515 degrees of freedom

AIC: 52270

The AIC value went up.

Number of Fisher Scoring iterations: 4

> exp(coef(posfit2))

(Intercept) AGE2015 hhtotalxx pargradex FA SSatis public sefuturex

3.0338224 0.9840188 1.0093474 1.0865012 1.0669726 0.9843366 0.8411440 1.0407703

# Variables that we are using:

Age2015= Age of child as of December 31st, 2015

Hhtotalxx= number of people in the household

Pargradex= parent or guardians highest level of education

Ttlhhinc= total household income, categorical

Scpubpri= child is enrolled in a public or private school

Sneighbrx= parent moved to neighborhood for school

Sefuturex=parent’s expectation for child’s future education (not finish HS to graduate school)

RACEETH2- recoded race and ethnicity of child

**FS- count of school activities parent participated in. Comprised of:**

FSSPORTX (attended school or class event, science fair, etc.), FSVOL(volunteered at school), FSMTNG(attended a general school meeting), FSPTMTNG (attended a PTA meeting, FSATCNFN ( gone to a parent teacher conference), FSFUNDRS (participated in fundraising for the school), FSCOMMTE (served on a school committee), FSCOUNSLR (met with the guidance counselor in person).

**FA-count of at home activities**

FOSTORY2X (told child a story past week), focrafts(did arts and crafts past week), fogames (played games with child past week), fobuildx (worked on prokect with child past week), fosport(played sports with child past week), forespon (discussed time management with child past week), fohistx (talked about family history with child past week), folibrayx (took child to library past month, fobookstx (took child to bookstore past month), foconcrtx (took child to concert past month), fomuseumx (took child to museum past month), fozoox (took child to zoo past month), fogroupx (attended event with child past month), fosprtevx (attend athletic event with child past month)

**SSatis- satisfaction with school**

FCSHOOL (satisfaction with school child attends, FCTEACHR (satisfaction with teachers), FCSTDS (satisfaction with academic standards), FCORDER (satisfaction with order and discipline at school), FCSUPPRT (satisfaction with way school interacts with parents