## EXPLORATORY ANALYSIS OF MESA COUNTY PUBLIC HEALTH

By Kurtis Bulock

#### **OBSERVATIONS**

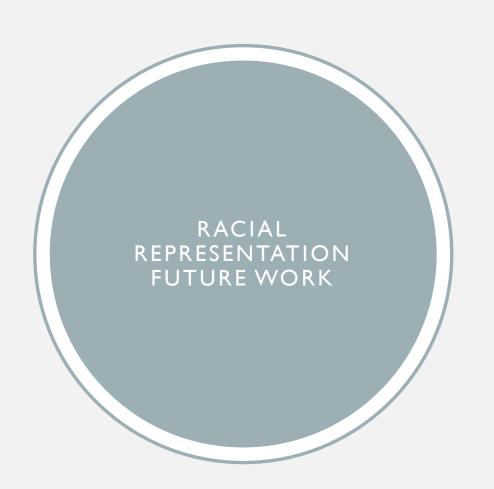
- Representation of Race Survey vs. County.
- 2. Loneliness vs. Social Conflict:
  - All ages
  - Children
- 3. Household Income vs. Household Danger.
- 4. Household Income vs. Social Conflict.

- Future Work
  - Possible continued observations.
  - How this information can be used for future action.

#### RACIAL REPRESENTATION (SINGLE RACE)

- Native American/Alaska
   Natives overrepresented
- Other races are nearly accurately represented

Race	Survey Representation	County Representation
Asian	0.742%	1.036%
Black/African American	1.372%	0.948%
Native American/Alaska Native	5.193%	1.534%
Native Hawaiian/Other Pacific Islander	0.297%	0.137%
White	92.40%	93.94%



- Educate the public on minorities in the community.
- How does the diversity of CMU compare to the rest of the County?
- How does diversity in Mesa County compare to other Colorado counties?

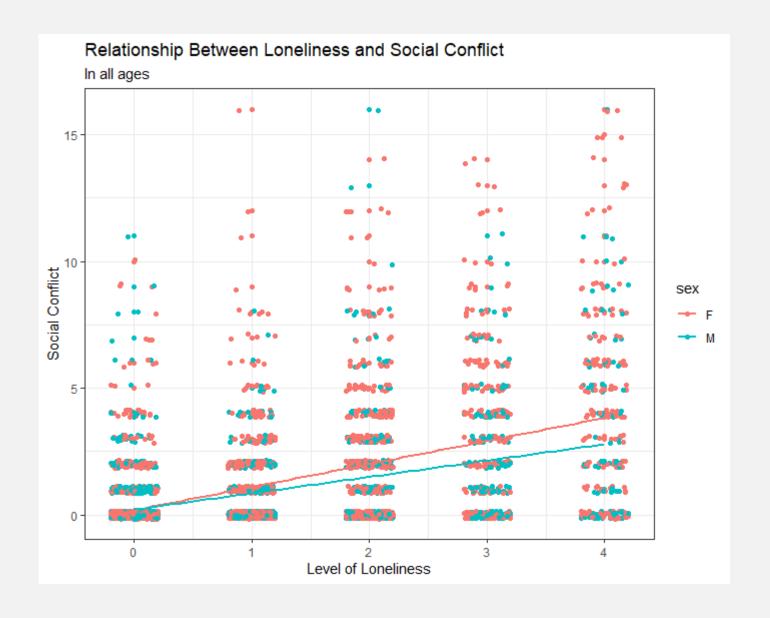
#### LONELINESS AND SOCIAL CONFLICT

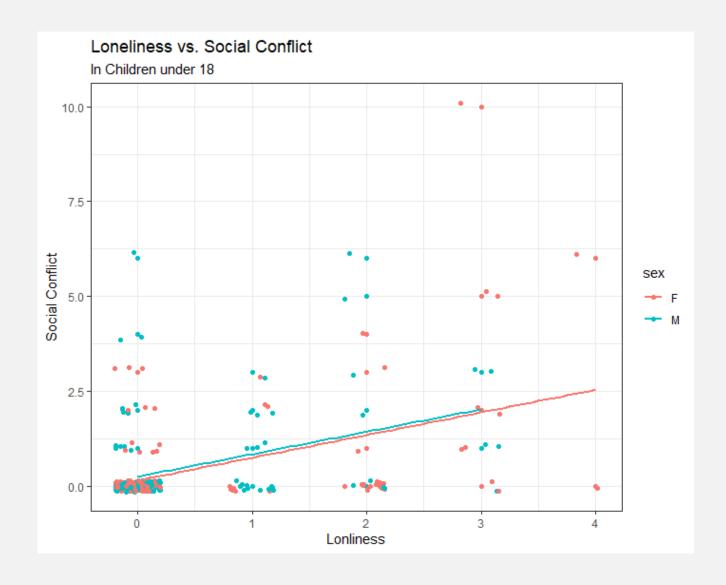
- Loneliness is reported by <u>Supplemental Need Family &</u> <u>Community Support Question.</u>
- Loneliness is measured on the following scale:
  - [0] NEVER
  - [I] RARELY
  - [2] SOMETIMES
  - [3] FAIRLY OFTEN
  - [4] ALWAYS

- Social Conflict is measured out of a total of 16 by adding all the <u>Core</u> <u>Need Safety Questions: 1-4.</u>
- CN\_SF\_I-4 are measured by the following scale:
  - [0] NEVER
  - [I] RARELY
  - [2] SOMETIMES
  - [3] FAIRLY OFTEN
  - [4] FREQUENTLY

#### LONELINESS AND SOCIAL CONFLICT

- Higher social conflict correlates with a higher feeling of loneliness
- Reporting higher loneliness in women





# SOCIAL CONFLICT IN CHILDREN

- Similar trend in children
- Data pool much smaller



- Loneliness impact on mental health.
- Better recognize social conflict's affect on mental health.
- Can machine learning techniques be applied to accurately predict loneliness in individuals?

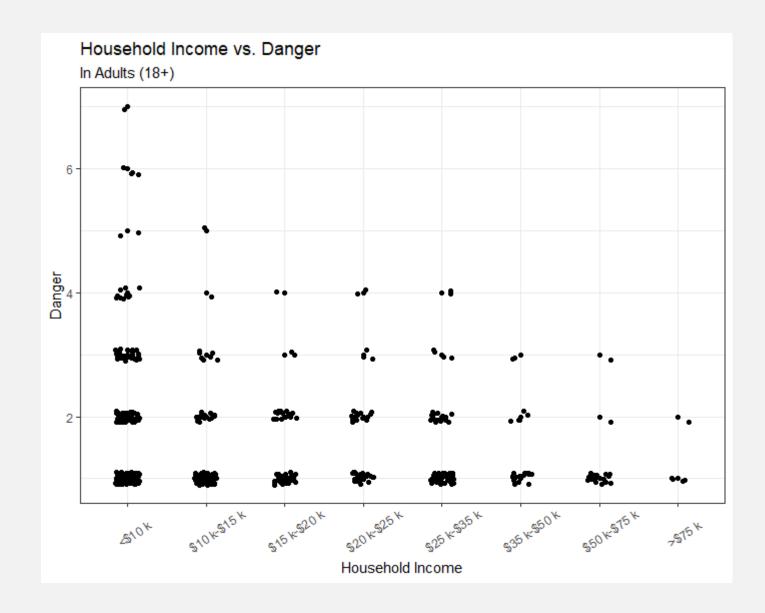
### HOUSEHOLD INCOME AND HOUSEHOLD DANGERS

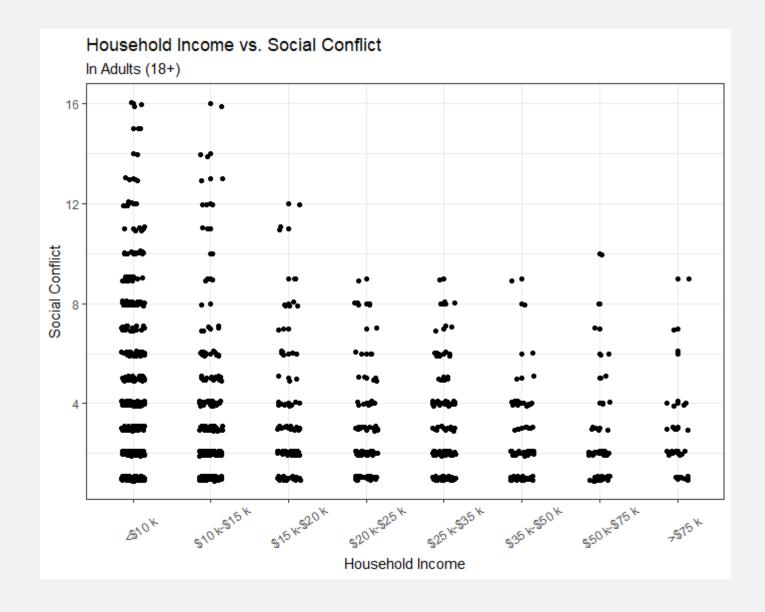
- Income reported by <u>Tell Me About</u> Yourself: Question 6
  - LESS\_THN\_IOK;
  - MORE\_THN\_IO\_LESS\_THEN\_I5K
  - MORE\_THN\_15\_LESS\_THEN\_20K
  - MORE\_THN\_20\_LESS\_THEN\_25K
  - MORE\_THN\_25\_LESS\_THEN\_35K
  - MORE\_THN\_35\_LESS\_THEN\_50K
  - MORE\_THN\_50\_LESS\_THEN\_75K
  - MORE\_THN\_75K

- Household Danger measured by <u>Core Need Living</u> Situation: Question 2
- Do you have problems with...? [0] No, [1] Yes, [7] Total
  - Bug Infestation
  - Mold
  - Lead Paint
  - Inadequate Heat
  - Oven (not Working)
  - Smoke Detector (not Working)
  - Water Leaks

#### HOUSEHOLD INCOME AND HOUSEHOLD DANGERS

- Less Income = More Danger
- Intuitive conclusion





## HOUSEHOLD INCOME AND SOCIAL CONFLICT

- Less significant correlation
- Plateaus after \$20k



- Income can be a factor in overall individual health. (Food/Transportation/Housing)
- Identify low income populations to better employ social services

#### TOOLS / RESOURCES

- Tools
  - R/Rstudio
    - Ggplot2
    - Tidyverse
    - Dplyr
    - Knitr
  - Excel

#### Resources

- Interview\_data.csv (Raw Data)
- Interview\_data\_dict.csv (Data Dictionary)
- Accountable Health Communities Model Screening Tool.docx (Survey)
- www.Census.gov (Mesa County Population estimates)

#### RMARKDOWN / GITHUB

- Similar presentation written Rmarkdown for reproducibility
- Download or view all code at https://github.com/kurtisbu/Mesa-County-Data

#### THANK YOU

• QUESTIONS?

