EXPLORATORY ANALYSIS OF MESA COUNTY PUBLIC HEALTH

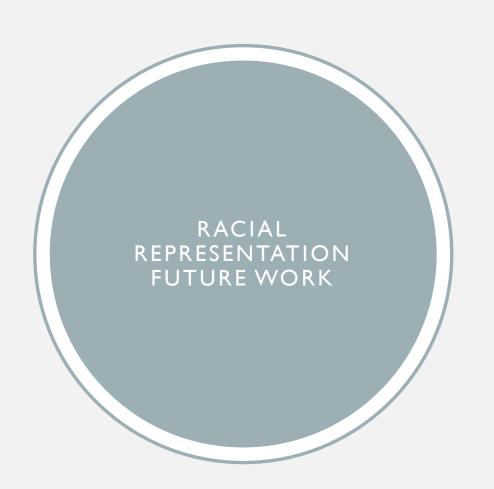By Kurtis Bulock

OBSERVATIONS

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

County population data from https://www.census.gov/data/tables/time-series/demo/popest/2010s-counties-detail.html

RACIAL REPRESENTATION FUTURE WORK

- 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?
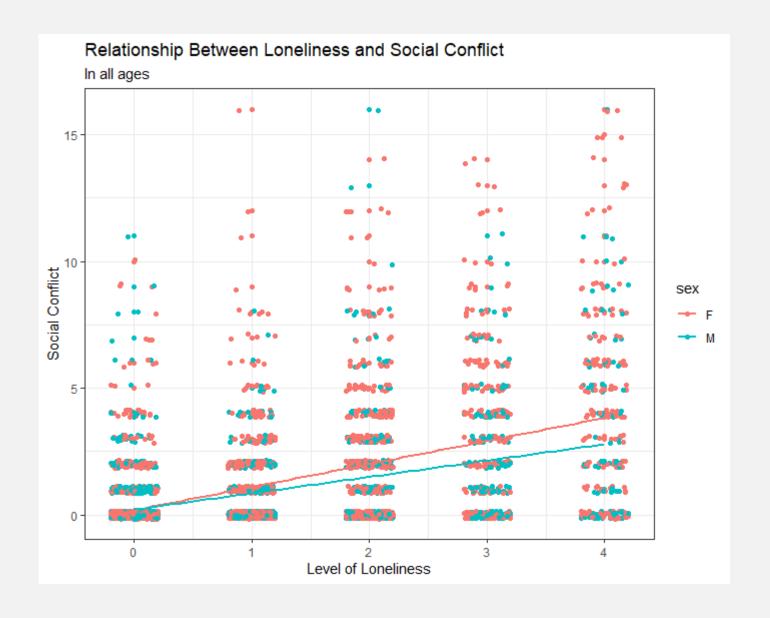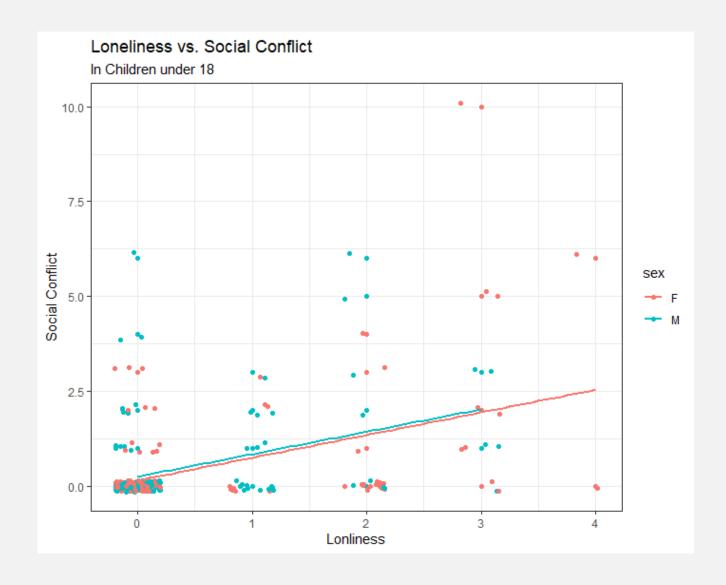
LONELINESS AND SOCIAL CONFLICT

- Loneliness is reported by Supplemental Need Family & Community Support Question.

- Loneliness is measured on the following scale:

  - *[0] NEVER*

  - *[1] RARELY*

  - *[2] SOMETIMES*

  - *[3] FAIRLY OFTEN*

  - *[4] ALWAYS*

- Social Conflict is measured out of a total of 16 by adding all of the Core Need Safety Questions: 1-4.

- CN_SF_1-4 are measured by the following scale:

  - *[0] NEVER*

  - *[1] 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

LONELINESS AND SOCIAL CONFLICT IN CHILDREN

- Similar trend in children
- Data pool much smaller

LONELINESS AND SOCIAL CONFLICT FUTURE WORK

- 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?
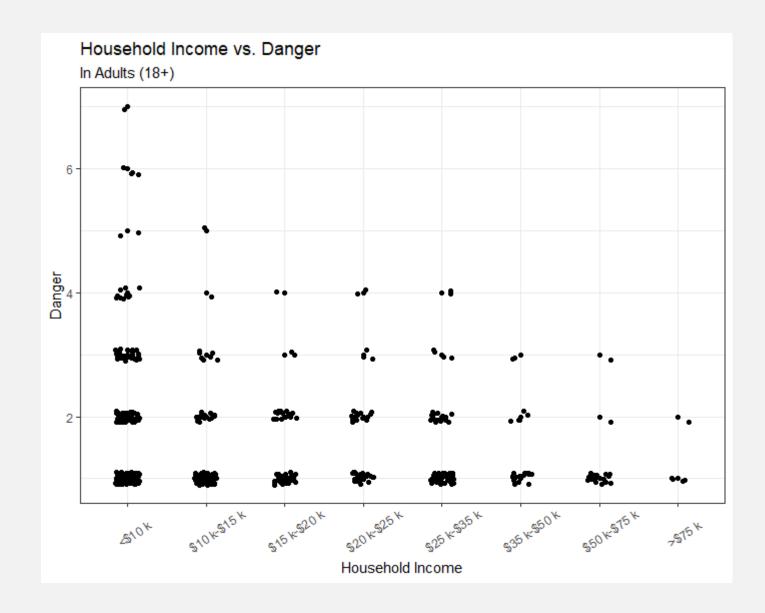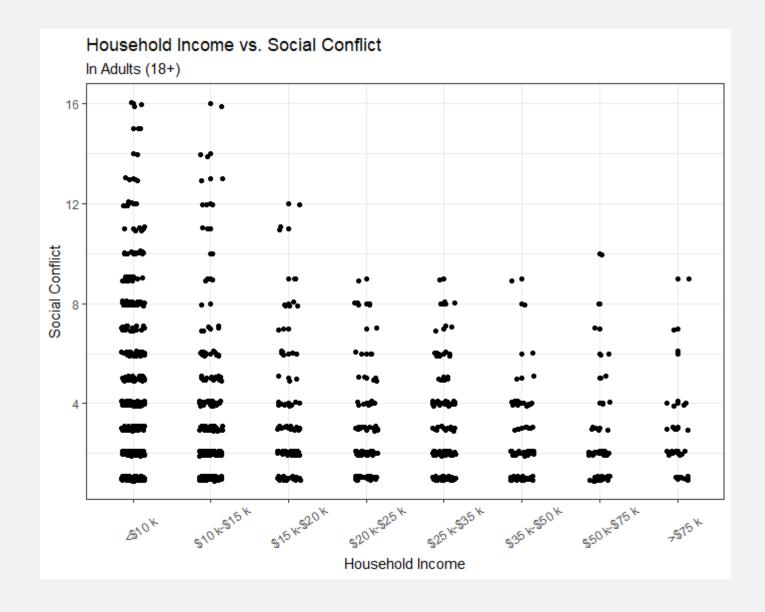
HOUSEHOLD INCOME AND HOUSEHOLD DANGERS

- Income reported by <u>Tell Me About Yourself: Question 6</u>
  - *LESS_THN_10K;*
  - *MORE_THN_10_LESS_THEN_15K*
  - *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 Situation: Question 2</u>
  - Do you have problems with…? [1] Yes, [2] No, [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 vs. Danger
In Adults (18+)

HOUSEHOLD INCOME AND SOCIAL CONFLICT

- Less significant correlation
- Plateaus after $20k

HOUSEHOLD INCOME FUTURE WORK

- 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?