OMAS Survey R Demo

This document includes demonstration code for importing, wrangling, and summarizing data from the 2021 OMAS survey.

Load Data

```
library(tidyverse)
library(knitr)

#data_url <- ("https://collinpaschall.github.io/omas2021_puf_10122022.rds")

#dat <- read_rds(data_url)

# Drop observations from survey where FIPS is missing or otherwise not good
# (assume county must be known for this demonstration)

dat <- read_rds("omas2021_puf_10122022.rds") %>% filter(S9<996)

# Inspect if you want
# glimpse(dat)
```

```
# Merge in some county names corresponding with FIPS codes

# get FIPS from Kieran Healy's page

#fips <- read_csv("https://raw.githubusercontent.com/kjhealy/fips-codes/master/state_and_c

#write_csv(fips,"fips.csv")
fips <- read_csv("fips.csv")
```

```r
# data preparation

dat2 <- fips %>%

  filter(state=="OH") %>%

  mutate(fips=fips-39000) %>% # Subtract 39000 from the FIPS values for Ohio

  rename(`County Name` = name) %>% # rename fips$name to fips$county_name

  select(c("fips",`County Name`)) %>% # drop "state"

  left_join(dat,.,by=c("S9"="fips")) %>%  # join to survey data

  filter(`County Name` %in% c("Franklin County","Warren County","Cuyahoga County","Hamilto

  select(c(`County Name`,"A1","S17_1","H84_A2","D30")) %>% # select a handful of variables

  mutate(
    insurance_01 = case_when(
        A1==2 ~ 0,
        A1==1 ~ 1),
    `Insured Yes/No` = case_when(
        A1==2 ~ "No",
        A1==1 ~ "Yes"
    ),
    health_status = case_when(
        D30==5 ~ 1,
        D30==4 ~ 2,
        D30==3 ~ 3,
        D30==2 ~ 4,
        D30==1 ~ 5),
    white_01 = case_when(
       S17_1==2 ~ 0,
       S17_1==1 ~ 1)) %>%
    rename(income=H84_A2) %>%

    drop_na()  # drop NAs
```

Summary Values for Select Variables

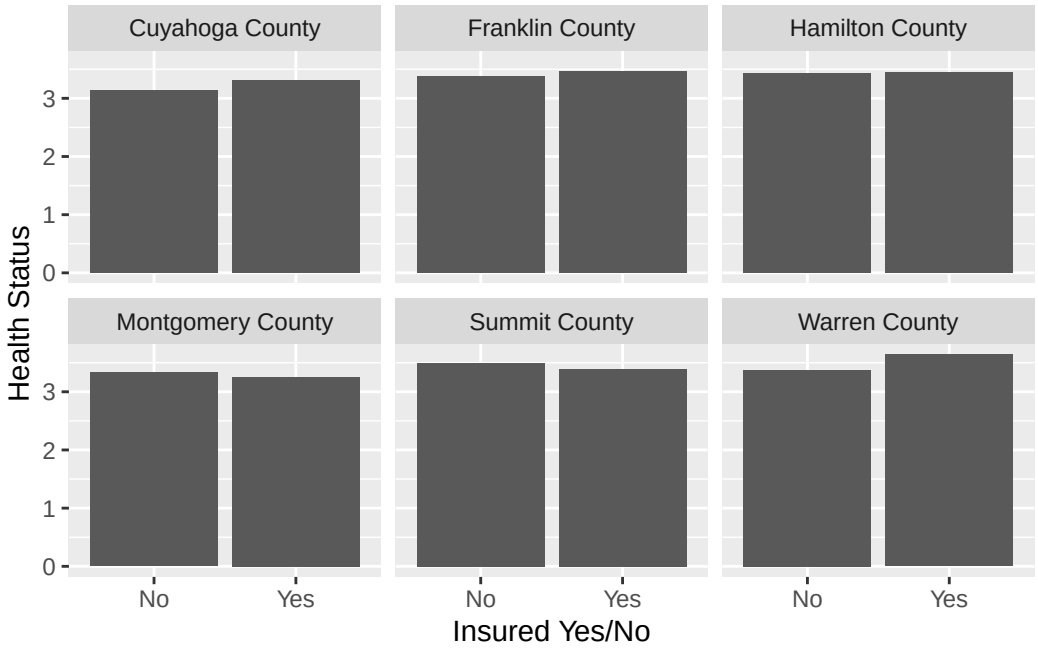
```
kable(dat2 %>%
    group_by(`County Name`) %>%
    summarise("Average Income"=round(mean(income),0),
              "Health Status"=round(mean(health_status),2),
              "% Insured"=round(sum(insurance_01)/n(),2),
              "% White"=round(sum(white_01)/n(),2)))
```

County Name	Average Income	Health Status	% Insured	% White
Cuyahoga County	6842	3.29	0.95	0.57
Franklin County	7995	3.46	0.93	0.67
Hamilton County	7767	3.45	0.94	0.64
Montgomery County	6422	3.26	0.94	0.66
Summit County	7363	3.39	0.95	0.81
Warren County	10459	3.64	0.98	0.87

Visualization of health status by insured status and county

```
summary_dat <- dat2 %>%
    group_by(`County Name`,`Insured Yes/No`) %>%
    summarise("Health Status"=round(mean(health_status),2))

summary_dat %>%
  ggplot(aes(x=`Insured Yes/No`,y=`Health Status`))+
  geom_bar(stat="identity")+
  facet_wrap(vars(`County Name`))
```



A simple regression model for health status as a function of other variables

```
library(stargazer)

mod <- lm(health_status~income+insurance_01+white_01,dat2)

stargazer(mod,type="html")
```

Dependent variable:

health_status

income

0.00000***

(0.00000)

insurance_01

0.001

(0.042)

white_01

0.257***

(0.020)

Constant

3.184***

(0.042)

Observations

11,780

R2

0.017

Adjusted R2

0.017

Residual Std. Error

1.044 (df = 11776)

F Statistic

67.288*** (df = 3; 11776)

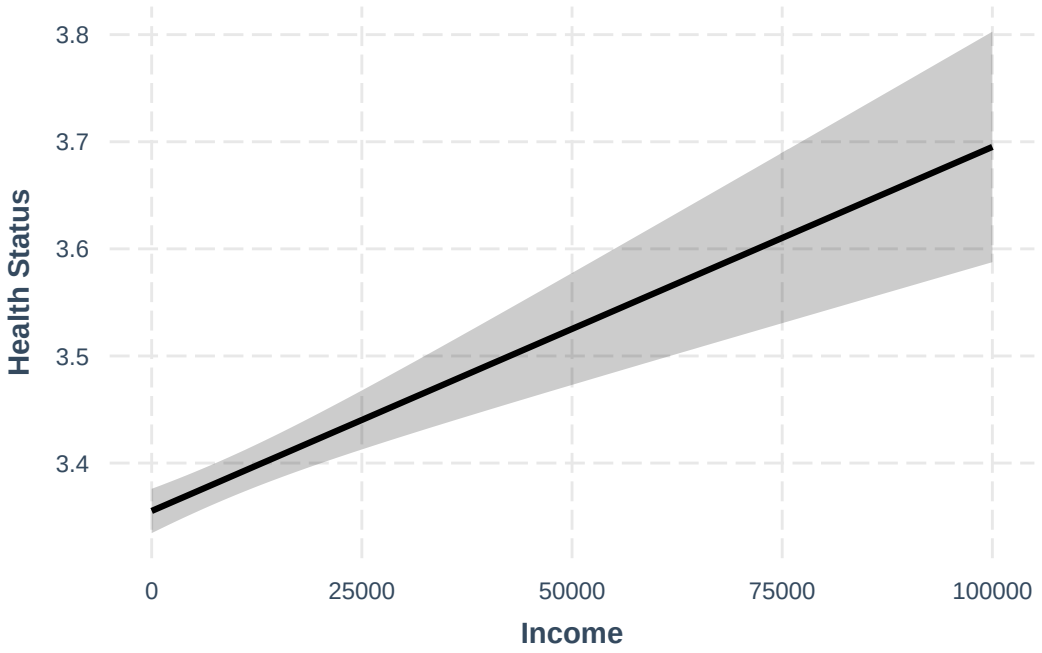
Note:

p<0.1; ***p<0.05;*** p<0.01

Visualizing predicted values using regression model

This figure displays predicted values for health status as a function of income, holding other variables at their means (which is not necessarily meaningful for categorical independent variables, but this is only for technical demonstration purposes.)

```
library(jtools)
effect_plot(mod,pred=income,interval=T)+
  xlab("Income")+
  ylab("Health Status")
```


Health Status
3.8
3.7
3.6
3.5
3.4
0
25000
50000
75000
100000
Income