Program Code_CAnD3 RRWM Exercise

Leah Houseman

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Download data and call in dataset

- Dataset is available to download from Canvas course for CAnD3 fellows only. For more information on how to access this data for purposes beyond the CAnD3 Training Program, see the `Data Accessibility Statement` in this repository.
- Call in dataset **(Be sure to change the file location to match the dataset on your local computer & call the dataframe "data" in order to ensure the code works without editing)**

```
data <- read_csv("/Users/leahj/Desktop/CAnD3/CAnD3/CAnD3_RWork/RRWM Exercise/CAnD3-RRWM-Exercise/Dataset
```

```
## Rows: 20602 Columns: 1316
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## dbl (1316): PUMFID, WGHT_PER, AGEC, AGEDC, AGEGR5, AGEGR10, SEX, MARSTAT, SE...
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
glimpse(data)
```

Take initial look at data to examine structure

```
## Rows: 20,602
## Columns: 1,316
## $ PUMFID   <dbl> 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18~
## $ WGHT_PER <dbl> 2616.1107, 952.4580, 531.2548, 2668.0354, 305.6069, 285.6552,~
## $ AGEC     <dbl> 55, 40, 64, 18, 62, 44, 32, 65, 56, 25, 80, 40, 67, 60, 20, 5~
## $ AGEDC    <dbl> 55.4, 40.4, 64.9, 18.5, 62.8, 44.6, 32.5, 65.7, 56.5, 25.9, 8~
## $ AGEGR5   <dbl> 9, 6, 10, 1, 10, 6, 4, 11, 9, 3, 14, 6, 11, 10, 2, 9, 9, 3, 1~
## $ AGEGR10  <dbl> 5, 3, 5, 1, 5, 3, 2, 6, 5, 2, 7, 3, 6, 5, 1, 5, 5, 2, 6, 5, 1~
## $ SEX      <dbl> 2, 2, 2, 1, 2, 2, 2, 1, 2, 1, 1, 2, 2, 2, 1, 2, 1, 1, 2, 1, 1~
## $ MARSTAT  <dbl> 1, 4, 1, 6, 5, 1, 1, 1, 1, 6, 1, 1, 3, 5, 2, 5, 1, 4, 1, 1, 6~
## $ SEXPR    <dbl> 1, 0, 1, 0, 0, 1, 1, 2, 1, 0, 2, 1, 0, 0, 2, 0, 2, 0, 1, 2, 0~
## $ PRTYPEC  <dbl> 1, 0, 1, 0, 0, 1, 1, 1, 1, 0, 1, 1, 0, 0, 2, 0, 1, 0, 1, 1, 0~
## $ CHRTIME6 <dbl> 4, 6, 1, 1, 1, 1, 5, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 3, 1, 1, 1~
## $ CHRINHDC <dbl> 2, 3, 0, 0, 0, 0, 2, 0, 0, 0, 1, 0, 0, 0, 0, 0, 1, 2, 0, 0, 0~
## $ CHH0014C <dbl> 0, 2, 0, 0, 0, 0, 2, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 2, 0, 0, 0~
## $ LIVARR12 <dbl> 3, 7, 2, 10, 1, 2, 3, 2, 2, 10, 4, 2, 1, 1, 6, 1, 3, 7, 2, 2,~
```

```
## $ HSDSIZEC <dbl> 4, 4, 2, 3, 1, 2, 4, 2, 2, 3, 3, 2, 1, 1, 5, 1, 3, 5, 2, 2, 2~
## $ MULTIGEN <dbl> 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2~
## $ FAMTYPE  <dbl> 2, 5, 1, 4, 6, 1, 2, 1, 1, 2, 2, 1, 6, 6, 1, 6, 4, 5, 1, 1, 6~
## $ PRV      <dbl> 48, 35, 35, 24, 59, 12, 48, 35, 13, 35, 10, 12, 46, 12, 13, 1~
## $ REGION   <dbl> 4, 3, 3, 2, 5, 1, 4, 3, 1, 3, 1, 1, 4, 1, 1, 1, 3, 1, 2, 3, 5~
## $ LUC_RST  <dbl> 1, 1, 1, 1, 1, 2, 1, 1, 2, 1, 1, 2, 2, 1, 1, 1, 1, 1, 1, 2, 1~
## $ GU_110   <dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1~
## $ GU_120   <dbl> 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 2, 1, 1, 1, 1, 1, 1, 2, 1, 1, 1~
## $ GU_130C  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ GU_150C  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ GU_170   <dbl> 2, 2, 2, 1, 2, 2, 2, 1, 2, 2, 2, 7, 2, 2, 1, 2, 2, 7, 2, 2, 2~
## $ GU_180   <dbl> 6, 6, 6, 1, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 1, 6, 6, 6, 6, 6, 6~
## $ GU_190   <dbl> 1, 1, 1, 2, 1, 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1~
## $ GU_210   <dbl> 1, 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1~
## $ APARSEPC <dbl> 96, 96, 96, 15, 22, 96, 9, 96, 96, 96, 96, 96, 96, 96, 96, 96~
## $ APARDIVC <dbl> 96, 96, 96, 15, 23, 96, 14, 96, 96, 96, 96, 96, 96, 96, 96, 9~
## $ MTHERLIV <dbl> 2, 1, 2, 9, 2, 1, 1, 1, 1, 1, 2, 2, 2, 1, 1, 1, 1, 1, 2, 1, 1~
## $ AMDIEDC  <dbl> 45, 96, 57, 96, 62, 96, 96, 96, 96, 96, 4, 23, 64, 96, 96, 96~
## $ AMOTHC   <dbl> 95, 65, 95, 45, 95, 75, 59, 85, 80, 54, 95, 95, 95, 84, 47, 8~
## $ LAM_50   <dbl> 6, 2, 6, 9, 6, 4, 4, 5, 1, 6, 6, 6, 6, 3, 6, 2, 1, 6, 6, 3, 4~
## $ BRTHMCAN <dbl> 1, 1, 2, 1, 2, 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 2~
## $ FTHERLIV <dbl> 2, 1, 2, 1, 2, 1, 1, 2, 2, 1, 2, 1, 2, 2, 1, 2, 2, 9, 2, 2, 1~
## $ AFDIEDC  <dbl> 53, 96, 47, 96, 56, 96, 96, 39, 40, 96, 57, 96, 42, 59, 96, 4~
## $ AFATHC   <dbl> 95, 71, 95, 46, 95, 76, 63, 95, 95, 62, 95, 69, 95, 95, 57, 9~
## $ LAF_50   <dbl> 6, 2, 6, 6, 6, 4, 3, 6, 6, 6, 6, 3, 6, 6, 6, 6, 6, 9, 6, 6, 4~
## $ BRTHFCAN <dbl> 1, 2, 2, 1, 2, 1, 1, 2, 1, 2, 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 2~
## $ GPARLIV  <dbl> 2, 2, 2, 1, 2, 2, 1, 2, 2, 1, 2, 2, 2, 2, 1, 2, 2, 1, 2, 2, 2~
## $ GPR_110A <dbl> 6, 6, 6, 1, 6, 6, 1, 6, 6, 1, 6, 6, 6, 6, 2, 6, 6, 2, 6, 6, 6~
## $ GPR_110B <dbl> 6, 6, 6, 1, 6, 6, 1, 6, 6, 2, 6, 6, 6, 6, 1, 6, 6, 2, 6, 6, 6~
## $ GPR_110C <dbl> 6, 6, 6, 2, 6, 6, 1, 6, 6, 1, 6, 6, 6, 6, 1, 6, 6, 1, 6, 6, 6~
## $ GPR_110D <dbl> 6, 6, 6, 2, 6, 6, 1, 6, 6, 1, 6, 6, 6, 6, 2, 6, 6, 2, 6, 6, 6~
## $ NLFTHOMC <dbl> 1, 2, 2, 0, 1, 1, 4, 1, 1, 0, 1, 1, 1, 1, 0, 1, 1, 0, 1, 1, 1~
## $ ALHOMFC  <dbl> 99.6, 19.8, 18.8, 99.6, 99.6, 99.6, 15.0, 99.6, 99.6, 99.6, 9~
## $ REALFTFA <dbl> 6, 1, 1, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REALFTFB <dbl> 6, 2, 2, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REALFTFC <dbl> 6, 2, 2, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REALFTFD <dbl> 6, 2, 2, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REALFTFE <dbl> 6, 2, 2, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REALFTFF <dbl> 6, 2, 2, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REALFTFG <dbl> 6, 2, 2, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REALFTFO <dbl> 6, 2, 2, 6, 6, 6, 1, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ ARTHOMFC <dbl> 99.6, 22.5, 20.7, 99.6, 99.6, 99.6, 18.0, 99.6, 99.6, 99.6, 9~
## $ REARETFA <dbl> 6, 2, 2, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETFB <dbl> 6, 2, 2, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETFC <dbl> 6, 2, 2, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETFD <dbl> 6, 2, 1, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETFE <dbl> 6, 2, 2, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETFF <dbl> 6, 2, 2, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETFG <dbl> 6, 2, 2, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETFH <dbl> 6, 2, 2, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETFI <dbl> 6, 2, 2, 6, 6, 6, 1, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETFJ <dbl> 6, 2, 2, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETFO <dbl> 6, 1, 2, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ ALFHOMLC <dbl> 18.5, 23.3, 21.7, 99.6, 19.7, 17.5, 19.8, 44.8, 18.5, 99.6, 2~
```

```
## $ REALFTLA <dbl> 1, 2, 2, 6, 2, 1, 2, 2, 2, 6, 2, 1, 2, 2, 6, 2, 1, 6, 2, 2, 1~
## $ REALFTLB <dbl> 2, 2, 1, 6, 2, 2, 2, 2, 2, 6, 2, 2, 1, 1, 6, 2, 2, 6, 2, 1, 2~
## $ REALFTLC <dbl> 2, 1, 1, 6, 1, 2, 2, 2, 1, 6, 1, 2, 2, 2, 6, 1, 2, 6, 1, 2, 2~
## $ REALFTLD <dbl> 2, 2, 2, 6, 2, 2, 2, 2, 2, 6, 2, 1, 2, 2, 6, 2, 2, 6, 2, 2, 2~
## $ REALFTLE <dbl> 2, 2, 2, 6, 2, 2, 2, 1, 2, 6, 2, 2, 2, 2, 6, 2, 2, 6, 2, 2, 2~
## $ REALFTLF <dbl> 2, 2, 2, 6, 2, 2, 2, 2, 2, 6, 2, 2, 2, 2, 6, 2, 2, 6, 2, 2, 2~
## $ REALFTLG <dbl> 2, 2, 2, 6, 2, 2, 2, 2, 2, 6, 2, 2, 2, 2, 6, 2, 2, 6, 2, 2, 2~
## $ REALFTLO <dbl> 2, 2, 2, 6, 2, 2, 1, 2, 2, 6, 2, 2, 2, 2, 6, 2, 2, 6, 2, 2, 2~
## $ ARTHOMLC <dbl> 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ REARETLA <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETLB <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETLC <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETLD <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETLE <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETLF <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETLG <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETLH <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETLI <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ REARETLJ <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ LHN_110  <dbl> 2, 1, 1, 6, 2, 2, 1, 2, 2, 6, 2, 2, 1, 2, 6, 2, 2, 6, 2, 2, 2~
## $ REARETLO <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ LHH_110  <dbl> 6, 6, 6, 1, 6, 6, 6, 6, 6, 1, 6, 6, 6, 6, 1, 6, 6, 1, 6, 6, 6~
## $ TOTUNC   <dbl> 2, 1, 1, 0, 1, 1, 2, 1, 1, 0, 1, 2, 1, 1, 1, 1, 2, 1, 1, 1, 0~
## $ NMAREVRC <dbl> 1, 1, 1, 0, 1, 1, 1, 1, 1, 0, 1, 1, 1, 1, 0, 1, 2, 1, 1, 1, 0~
## $ TOTCLWC  <dbl> 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0~
## $ NSEPEVR  <dbl> 1, 1, 0, 0, 1, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 1, 1, 1, 0, 0, 0~
## $ LEGMARST <dbl> 1, 2, 1, 5, 3, 1, 1, 1, 1, 5, 1, 1, 4, 3, 5, 3, 1, 2, 1, 1, 5~
## $ EVERMAR  <dbl> 1, 1, 1, 2, 1, 1, 1, 1, 1, 2, 1, 1, 1, 1, 2, 1, 1, 1, 1, 1, 2~
## $ EVERCL   <dbl> 1, 2, 2, 2, 1, 2, 1, 2, 1, 2, 2, 1, 2, 1, 1, 2, 1, 1, 2, 1, 2~
## $ MA0RNKC  <dbl> 2, 1, 1, 96, 96, 1, 2, 1, 1, 96, 1, 2, 96, 96, 96, 96, 98, 1,~
## $ ASEPMA0C <dbl> 99.6, 37.5, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ AGEMA0C  <dbl> 27.2, 23.3, 21.7, 99.6, 99.6, 28.9, 30.4, 43.3, 20.8, 99.6, 2~
## $ MA0_120  <dbl> 3, 3, 3, 6, 6, 3, 3, 3, 3, 6, 3, 2, 6, 6, 6, 6, 3, 3, 3, 3, 6~
## $ APRMA0C  <dbl> 28.8, 33.2, 22.4, 99.6, 99.6, 39.5, 34.4, 28.2, 26.8, 99.6, 2~
## $ ADFGRMA0 <dbl> 7, 2, 8, 96, 96, 2, 4, 15, 2, 96, 12, 2, 96, 96, 96, 96, 97, ~
## $ MA0_133  <dbl> 1, 1, 1, 6, 6, 2, 1, 2, 1, 6, 1, 2, 6, 6, 6, 6, 2, 2, 1, 1, 6~
## $ MA0_139  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ MA0_150  <dbl> 1, 6, 6, 6, 6, 6, 1, 6, 1, 6, 6, 1, 6, 6, 6, 6, 2, 1, 6, 1, 6~
## $ ACLMA0C  <dbl> 26.8, 99.6, 99.6, 99.6, 99.6, 99.6, 23.0, 99.6, 18.5, 99.6, 9~
## $ MA0_220  <dbl> 1, 1, 1, 6, 6, 1, 1, 1, 1, 6, 1, 1, 6, 6, 6, 6, 2, 1, 1, 1, 6~
## $ MA1RNKC  <dbl> 96, 96, 96, 96, 1, 96, 96, 96, 96, 96, 96, 96, 1, 1, 96, 1, 9~
## $ AGEMA1C  <dbl> 99.6, 99.6, 99.6, 99.6, 20.5, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ APRMA1C  <dbl> 99.6, 99.6, 99.6, 99.6, 23.0, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ MA1_150  <dbl> 6, 6, 6, 6, 1, 6, 6, 6, 6, 6, 6, 6, 6, 1, 6, 6, 1, 6, 6, 6, 6~
## $ ACLMA1C  <dbl> 99.6, 99.6, 99.6, 99.6, 19.7, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ MA1_165  <dbl> 6, 6, 6, 6, 1, 6, 6, 6, 6, 6, 6, 6, 1, 1, 6, 1, 2, 6, 6, 6, 6~
## $ MA1_170  <dbl> 6, 6, 6, 6, 1, 6, 6, 6, 6, 6, 6, 6, 5, 1, 6, 1, 1, 6, 6, 6, 6~
## $ ASEPMA1C <dbl> 99.6, 99.6, 99.6, 99.6, 55.2, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ ADIVMA1C <dbl> 99.6, 99.6, 99.6, 99.6, 57.0, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ ADTHMA1C <dbl> 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ MA1_220  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 1, 6, 6, 6~
## $ MA1_230  <dbl> 6, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 2, 2, 6, 2, 6, 6, 6, 6, 6~
## $ MA2RNKC  <dbl> 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 9~
## $ AGEMA2C  <dbl> 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
```

```
## $ APRMA2C  <dbl> 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ MA2_150  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ ACLMA2C  <dbl> 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ MA2_165  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ MA2_170C <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ ASEPMA2C <dbl> 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ ADIVMA2C <dbl> 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ ADTHMA2C <dbl> 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ MA2_220  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ MA2_230  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ MA3RNKC  <dbl> 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 9~
## $ AGEMA3C  <dbl> 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ APRMA3C  <dbl> 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ MA3_150  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ MA3_165  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ MA3_170C <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ ASEPMA3C <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ ADIVMA3C <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ PR_CL    <dbl> 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 1, 2, 2, 2, 2, 2, 2~
## $ CUORNKC  <dbl> 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 1, 96~
## $ CU0_107  <dbl> 1, 6, 6, 6, 2, 6, 1, 6, 2, 6, 6, 1, 6, 2, 6, 6, 2, 2, 6, 2, 6~
## $ ACU0C    <dbl> 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ CU0_120  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 4, 6, 6, 6, 6, 6, 6~
## $ APRCU0C  <dbl> 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ ADFGRCU0 <dbl> 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 8, 96~
## $ CU0_132  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6~
## $ CU0_133  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6~
## $ CU0_139  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ CU0_220  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6~
## $ CU1RNKC  <dbl> 1, 96, 96, 96, 96, 96, 1, 96, 96, 96, 96, 1, 96, 96, 96, 96, ~
## $ ACU1C    <dbl> 25.5, 99.6, 99.6, 99.6, 99.6, 99.6, 22.0, 99.6, 99.6, 99.6, 9~
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## $ ASEPCU1C <dbl> 26.5, 99.6, 99.6, 99.6, 99.6, 99.6, 22.5, 99.6, 99.6, 99.6, 9~
## $ ADTHCU1C <dbl> 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ CU1_190  <dbl> 2, 6, 6, 6, 6, 6, 2, 6, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ CU1_230  <dbl> 2, 6, 6, 6, 6, 6, 2, 6, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ CU2RNKC  <dbl> 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 9~
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## $ RSH_125B <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 4, 6, 6, 6, 6, 6, 6, 6, 2, 6, 6, 6~
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## $ MIC_120  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 1, 6, 6, 6, 6, 2, 6, 6, 2, 6, 6, 6~
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## $ CLI_160  <dbl> 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 96, 9~
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## $ COR_020  <dbl> 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2~
## $ COR_031  <dbl> 6, 6, 6, 2, 6, 6, 6, 2, 6, 2, 6, 6, 6, 6, 2, 6, 1, 6, 6, 1, 2~
## $ COR_041  <dbl> 6, 6, 1, 6, 1, 2, 6, 6, 1, 6, 6, 2, 2, 1, 6, 1, 6, 6, 1, 6, 6~
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## $ RCI10_2  <dbl> 2, 1, 1, 6, 2, 6, 1, 6, 2, 6, 6, 2, 6, 6, 6, 1, 1, 2, 1, 2, 6~
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## $ RCI10_4  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 1, 6, 6, 6, 6~
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## $ ACHD_2C  <dbl> 18, 13, 38, 996, 33, 996, 4, 996, 32, 996, 996, 21, 996, 996,~
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## $ ACHD_5C  <dbl> 996, 996, 996, 996, 996, 996, 996, 996, 996, 996, 996, 996, 9~
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## $ ACHD_7C  <dbl> 996, 996, 996, 996, 996, 996, 996, 996, 996, 996, 996, 996, 9~
## $ ACHB1C   <dbl> 33.2, 23.4, 23.3, 99.6, 25.5, 99.6, 24.9, 99.6, 22.0, 99.6, 3~
## $ ACHB2C   <dbl> 36.6, 27.6, 26.3, 99.6, 29.2, 99.6, 29.2, 99.6, 24.9, 99.6, 9~
## $ ACHB3C   <dbl> 39.8, 33.4, 30.4, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ ACHB4C   <dbl> 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
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## $ ACHJ5C   <dbl> 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ ACHJ6C   <dbl> 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ ACHJ7C   <dbl> 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 99.6, 9~
## $ CHDINFTC <dbl> 2, 3, 0, 6, 0, 6, 2, 6, 0, 6, 1, 0, 6, 0, 6, 0, 1, 0, 0, 0, 6~
## $ CHDINPTC <dbl> 0, 0, 0, 6, 0, 6, 0, 6, 0, 6, 0, 0, 6, 0, 6, 0, 0, 2, 0, 0, 6~
## $ CHDOUTC  <dbl> 1, 0, 3, 6, 2, 6, 0, 6, 2, 6, 0, 2, 6, 1, 6, 2, 3, 0, 2, 2, 6~
## $ CHDDECC  <dbl> 0, 0, 0, 6, 0, 6, 0, 6, 0, 6, 0, 0, 6, 0, 6, 0, 0, 0, 0, 0, 6~
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## $ HHDSTA7  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
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## $ RCI65_2  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 1, 6, 6, 6~
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## $ UPS_530  <dbl> 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 2, 6, 6, 6~
## $ UPS_540  <dbl> 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 2, 6, 6, 6~
## $ UPS_600  <dbl> 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 2, 6, 6, 6~
## $ WORKLW   <dbl> 1, 1, 2, 1, 1, 2, 1, 1, 1, 1, 2, 1, 2, 1, 1, 1, 1, 1, 2, 1, 1~
## $ LMAM_01  <dbl> 1, 1, 2, 1, 1, 2, 1, 1, 2, 1, 2, 1, 2, 1, 1, 2, 1, 1, 2, 1, 1~
## $ LMAM_02  <dbl> 6, 6, 2, 6, 6, 2, 6, 6, 1, 6, 2, 6, 2, 6, 6, 1, 6, 6, 2, 6, 6~
## $ LMAM_03C <dbl> 96, 96, 96, 96, 96, 96, 96, 96, 4, 96, 96, 96, 96, 96, 96, 6,~
## $ WORKLYR  <dbl> 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 1~
## $ REW_10   <dbl> 6, 6, 1, 6, 6, 1, 6, 6, 6, 6, 1, 6, 1, 6, 6, 6, 6, 6, 1, 6, 6~
## $ COW_10   <dbl> 2, 1, 6, 1, 2, 1, 1, 1, 1, 1, 1, 1, 6, 1, 1, 1, 1, 1, 1, 1, 1~
## $ NAIC12CW <dbl> 17, 20, 96, 20, 15, 96, 16, 7, 18, 6, 96, 16, 96, 4, 7, 7, 5,~
## $ NAIC12CY <dbl> 17, 20, 96, 20, 15, 10, 16, 7, 18, 6, 4, 16, 96, 4, 7, 7, 5, ~
## $ NOC1610W <dbl> 6, 2, 96, 7, 5, 96, 4, 7, 7, 7, 96, 5, 96, 2, 8, 7, 10, 7, 96~
## $ NOC1610  <dbl> 6, 2, 96, 7, 5, 7, 4, 7, 7, 7, 8, 5, 96, 2, 8, 7, 10, 7, 2, 8~
## $ NWE_110  <dbl> 52, 52, 96, 16, 52, 20, 52, 52, 52, 52, 2, 52, 96, 52, 52, 32~
## $ UHW_16GR <dbl> 7, 3, 6, 3, 3, 3, 5, 4, 3, 3, 3, 3, 6, 3, 3, 4, 3, 4, 3, 5, 2~
## $ UWS_230  <dbl> 7, 1, 96, 7, 1, 1, 4, 1, 4, 1, 3, 1, 96, 1, 1, 1, 1, 4, 1, 4,~
## $ TOE_240  <dbl> 6, 1, 6, 2, 6, 1, 1, 1, 1, 1, 2, 1, 6, 1, 1, 2, 1, 1, 2, 1, 1~
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## $ ESC1_01  <dbl> 2, 2, 2, 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 1~
## $ EDE_01A  <dbl> 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 2~
## $ EDE_01B  <dbl> 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 2~
## $ EDE_01C  <dbl> 6, 6, 6, 1, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 1~
## $ EDE_02   <dbl> 6, 6, 6, 1, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 1~
## $ ACOMPSTC <dbl> 18, 20, 20, 18, 18, 28, 19, 40, 40, 19, 23, 25, 17, 40, 19, 9~
## $ EHG3_01B <dbl> 2, 4, 6, 4, 2, 6, 4, 4, 4, 2, 3, 6, 2, 6, 4, 2, 2, 2, 2, 3, 2~
## $ EHG3_02B <dbl> 1, 6, 6, 6, 2, 6, 6, 6, 6, 1, 6, 6, 1, 6, 6, 2, 1, 2, 2, 6, 1~
## $ EHG3_03B <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 2, 6~
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## $ EHG3_05B <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ ACMPRYR  <dbl> 1, 96, 6, 96, 96, 1, 1, 8, 1, 1, 1, 1, 96, 96, 1, 96, 1, 1, 1~
## $ MAP_110  <dbl> 1, 96, 6, 96, 96, 1, 1, 8, 1, 1, 1, 1, 96, 96, 1, 96, 1, 1, 1~
## $ MAP_120C <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
## $ MAP_130  <dbl> 6, 6, 2, 6, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 2, 6~
## $ MAP_155  <dbl> 1, 96, 96, 96, 96, 4, 7, 96, 1, 1, 1, 1, 96, 96, 4, 96, 1, 1,~
## $ EOP_200  <dbl> 3, 96, 7, 96, 96, 4, 3, 97, 1, 2, 97, 3, 96, 96, 2, 96, 1, 4,~
## $ EOP_210  <dbl> 6, 6, 6, 6, 6, 6, 6, 6, 6, 1, 6, 6, 6, 6, 1, 6, 6, 6, 6, 1, 6~
## $ EOP_220  <dbl> 1, 6, 6, 6, 6, 6, 1, 6, 6, 6, 6, 2, 6, 6, 6, 6, 6, 6, 2, 6, 6~
## $ EOP_230  <dbl> 6, 6, 6, 6, 6, 3, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 3, 6, 6~
## $ EOP_240  <dbl> 6, 6, 2, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6~
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## $ SRH_115  <dbl> 2, 3, 2, 3, 1, 3, 2, 3, 1, 2, 4, 2, 2, 1, 1, 3, 1, 1, 4, 4, 1~
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## $ DWELC    <dbl> 1, 4, 1, 1, 2, 1, 1, 3, 1, 1, 1, 1, 1, 2, 1, 1, 3, 4, 2, 1, 4~
## $ ODR_10   <dbl> 1, 1, 1, 1, 2, 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 2, 1, 2, 1, 2~
## $ ODR_15A  <dbl> 2, 1, 1, 2, 6, 1, 2, 6, 1, 2, 1, 1, 1, 1, 2, 1, 6, 2, 6, 1, 6~
## $ ODR_15B  <dbl> 1, 2, 1, 2, 6, 2, 1, 6, 1, 2, 1, 1, 2, 2, 2, 2, 6, 2, 6, 1, 6~
## $ ODR_15C  <dbl> 2, 2, 2, 2, 6, 2, 2, 6, 2, 2, 2, 2, 2, 2, 2, 2, 6, 2, 6, 2, 6~
## $ ODR_15D  <dbl> 2, 2, 2, 1, 6, 2, 2, 6, 2, 1, 2, 2, 2, 2, 1, 2, 6, 1, 6, 2, 6~
## $ ODR_15E  <dbl> 2, 2, 2, 2, 6, 2, 2, 6, 2, 2, 2, 2, 2, 2, 2, 2, 6, 2, 6, 2, 6~
## $ BRTHMACR <dbl> 6, 6, 6, 6, 6, 6, 6, 4, 2, 6, 6, 6, 6, 6, 6, 6, 1, 6, 6, 6, 4~
## $ BRTHCAN  <dbl> 1, 1, 1, 1, 1, 1, 1, 2, 2, 1, 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 2~
## $ BRTHPRVC <dbl> 8, 6, 6, 5, 6, 1, 6, 96, 96, 6, 1, 3, 7, 4, 4, 4, 96, 3, 5, 6~
## $ YRARRI   <dbl> 96, 96, 96, 96, 96, 96, 96, 10, 3, 96, 96, 96, 96, 96, 96, 96~
## $ BPR_16   <dbl> 6, 6, 6, 6, 6, 6, 6, 1, 2, 6, 6, 6, 6, 6, 6, 6, 2, 6, 6, 6, 2~
## $ ALNDIMMG <dbl> 96, 96, 96, 96, 96, 96, 96, 9, 96, 96, 96, 96, 96, 96, 96, 96~
## $ BPR_19   <dbl> 1, 1, 1, 1, 1, 1, 1, 2, 2, 1, 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 6~
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## $ BRTPPRVC <dbl> 9, 96, 6, 96, 96, 3, 9, 12, 3, 12, 12, 3, 96, 96, 4, 96, 12, ~
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## $ AIP_01   <dbl> 2, 6, 2, 6, 6, 2, 2, 6, 2, 6, 2, 2, 6, 6, 2, 6, 6, 9, 2, 2, 6~
## $ VISMIN   <dbl> 2, 2, 2, 2, 2, 2, 2, 7, 2, 2, 2, 2, 2, 2, 2, 2, 7, 2, 2, 2, 1~
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## $ RELIGFLG <dbl> 2, 1, 1, 2, 2, 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 2, 1~
## $ REE_02   <dbl> 5, 3, 4, 4, 5, 1, 2, 1, 5, 5, 4, 4, 5, 4, 4, 5, 1, 5, 5, 5, 3~
## $ REE_03   <dbl> 3, 6, 1, 6, 1, 1, 1, 1, 6, 6, 6, 6, 6, 2, 5, 6, 2, 4, 1, 6, 6~
## $ RLR_110  <dbl> 2, 3, 1, 4, 1, 1, 1, 1, 2, 4, 2, 4, 2, 1, 3, 2, 1, 2, 2, 4, 2~
## $ LAN_01   <dbl> 1, 1, 1, 3, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 3, 1, 1~
## $ LANHOME  <dbl> 1, 1, 1, 2, 5, 1, 1, 3, 1, 1, 1, 1, 1, 1, 1, 1, 3, 1, 2, 1, 5~
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## $ TTLINCG2 <dbl> 1, 4, 3, 1, 1, 2, 1, 2, 1, 2, 1, 3, 2, 3, 1, 2, 3, 1, 1, 6, 1~
## $ FAMINCG2 <dbl> 6, 4, 6, 1, 1, 3, 1, 2, 4, 3, 5, 5, 2, 3, 2, 2, 3, 4, 3, 6, 5~
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## $ WTBS_002 <dbl> 4145.0801, 1031.1241, 549.9862, 2825.3705, 0.0000, 1049.0944,~
## $ WTBS_003 <dbl> 0.0000, 1065.5525, 619.7720, 0.0000, 311.6073, 947.4461, 0.00~
## $ WTBS_004 <dbl> 4241.5181, 0.0000, 563.9567, 7082.7623, 434.0768, 470.0399, 3~
## $ WTBS_005 <dbl> 2389.4467, 1806.2870, 531.5490, 3088.4830, 0.0000, 920.1595, ~
## $ WTBS_006 <dbl> 0.0000, 1019.0421, 0.0000, 2033.8998, 1271.8276, 335.8495, 0.~
## $ WTBS_007 <dbl> 0.0000, 862.4944, 436.5577, 0.0000, 0.0000, 437.4520, 5011.71~
## $ WTBS_008 <dbl> 0.0000, 811.5883, 0.0000, 2417.7361, 328.9031, 382.9706, 0.00~
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## $ WTBS_009 <dbl> 7922.0427, 0.0000, 494.3463, 5985.1268, 271.4713, 0.0000, 0.0~
## $ WTBS_010 <dbl> 0.0000, 893.1134, 2388.7294, 0.0000, 301.5156, 0.0000, 0.0000~
## $ WTBS_011 <dbl> 0.0000, 2202.8294, 550.4691, 5886.8911, 675.2346, 0.0000, 0.0~
## $ WTBS_012 <dbl> 0.0000, 1811.4760, 1499.4297, 2804.1926, 286.2656, 370.6977, ~
## $ WTBS_013 <dbl> 8210.8925, 990.0971, 0.0000, 0.0000, 878.1738, 0.0000, 6523.6~
## $ WTBS_014 <dbl> 3840.5942, 913.9506, 556.0487, 0.0000, 0.0000, 328.1486, 0.00~
## $ WTBS_015 <dbl> 3311.7241, 2957.3152, 1481.1421, 0.0000, 294.7996, 403.1231, ~
## $ WTBS_016 <dbl> 0.0000, 2784.9262, 0.0000, 0.0000, 0.0000, 538.0719, 0.0000, ~
## $ WTBS_017 <dbl> 0.0000, 1040.9743, 0.0000, 5689.3107, 0.0000, 274.0347, 6537.~
## $ WTBS_018 <dbl> 0.0000, 0.0000, 550.3119, 2326.1390, 465.8732, 278.8259, 2615~
## $ WTBS_019 <dbl> 4786.4693, 0.0000, 1105.2310, 3070.3221, 325.6457, 0.0000, 0.~
## $ WTBS_020 <dbl> 2702.0533, 0.0000, 1069.7442, 0.0000, 0.0000, 0.0000, 3361.75~
## $ WTBS_021 <dbl> 6092.8977, 1073.9855, 0.0000, 0.0000, 587.9608, 0.0000, 7062.~
## $ WTBS_022 <dbl> 4096.8728, 0.0000, 540.5944, 11487.5446, 0.0000, 0.0000, 0.00~
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## $ WTBS_026 <dbl> 3803.8439, 0.0000, 437.0265, 2168.5167, 356.1472, 659.0732, 0~
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## $ WTBS_028 <dbl> 4489.5988, 983.9725, 0.0000, 2775.7504, 369.4242, 582.1986, 0~
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## $ WTBS_034 <dbl> 0.0000, 1103.7234, 514.3572, 2176.9622, 242.8724, 0.0000, 271~
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## $ WTBS_042 <dbl> 4400.9751, 0.0000, 635.5093, 3918.2266, 367.8055, 288.7322, 0~
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## $ WTBS_057 <dbl> 8291.8181, 0.0000, 492.3541, 0.0000, 641.4764, 0.0000, 3756.7~
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## $ WTBS_068 <dbl> 7530.2804, 0.0000, 547.4456, 0.0000, 0.0000, 0.0000, 0.0000, ~
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## $ WTBS_070 <dbl> 0.0000, 1688.5572, 459.6302, 0.0000, 300.5124, 245.2290, 5510~
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## $ WTBS_074 <dbl> 0.0000, 832.3992, 527.7039, 2753.5835, 1468.3743, 1175.2465, ~
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## $ WTBS_076 <dbl> 0.0000, 0.0000, 0.0000, 6970.8594, 0.0000, 248.0435, 3498.902~
## $ WTBS_077 <dbl> 0.0000, 0.0000, 439.8856, 5256.2329, 578.0412, 266.0748, 0.00~
## $ WTBS_078 <dbl> 0.0000, 922.9982, 1028.8268, 5771.7127, 605.0832, 0.0000, 0.0~
## $ WTBS_079 <dbl> 3120.2876, 3067.3737, 0.0000, 2379.7450, 0.0000, 0.0000, 0.00~
## $ WTBS_080 <dbl> 2254.9404, 1001.6047, 484.6652, 5383.1362, 642.8663, 296.3315~
## $ WTBS_081 <dbl> 0.0000, 0.0000, 473.2269, 0.0000, 658.0195, 226.6406, 0.0000,~
## $ WTBS_082 <dbl> 0.0000, 0.0000, 548.4920, 3402.5997, 320.3239, 0.0000, 2461.5~
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## $ WTBS_084 <dbl> 2143.7888, 941.3198, 0.0000, 0.0000, 0.0000, 508.3771, 3017.2~
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## $ WTBS_098 <dbl> 0.0000, 0.0000, 1615.0234, 0.0000, 0.0000, 0.0000, 3241.2871,~
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## $ WTBS_103 <dbl> 6573.3314, 855.1161, 546.9766, 2862.0837, 502.0514, 302.5334,~
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## $ WTBS_130 <dbl> 3130.4873, 833.1427, 595.4383, 0.0000, 255.3136, 342.5925, 54~
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## $ WTBS_173 <dbl> 6727.3632, 0.0000, 591.1264, 3698.5133, 0.0000, 525.5402, 0.0~
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## $ WTBS_270 <dbl> 13512.3343, 1926.5594, 577.7748, 3151.8031, 0.0000, 598.7124,~
## $ WTBS_271 <dbl> 2953.5223, 1874.0567, 0.0000, 4549.2251, 338.7165, 0.0000, 0.~
## $ WTBS_272 <dbl> 3343.4303, 0.0000, 545.4646, 2655.4704, 302.2136, 330.9516, 3~
## $ WTBS_273 <dbl> 0.0000, 3189.3086, 545.9447, 2655.2707, 628.2938, 0.0000, 791~
## $ WTBS_274 <dbl> 0.0000, 782.7026, 1152.2506, 2618.1793, 0.0000, 965.4443, 510~
## $ WTBS_275 <dbl> 5684.3646, 0.0000, 556.2741, 3405.1711, 543.0777, 0.0000, 320~
## $ WTBS_276 <dbl> 6821.9869, 1125.0303, 546.9832, 3951.6876, 0.0000, 291.6022, ~
## $ WTBS_277 <dbl> 2991.9595, 1843.1385, 545.7172, 5305.7460, 1105.9015, 274.052~
## $ WTBS_278 <dbl> 3779.4239, 0.0000, 0.0000, 0.0000, 490.6214, 537.8417, 0.0000~
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## $ WTBS_280 <dbl> 0.0000, 886.2296, 437.3410, 5519.8314, 0.0000, 0.0000, 0.0000~
## $ WTBS_281 <dbl> 0.0000, 0.0000, 0.0000, 0.0000, 302.3995, 330.8440, 0.0000, 6~
## $ WTBS_282 <dbl> 0.0000, 969.1447, 0.0000, 5100.2945, 359.0628, 1039.4153, 0.0~
## $ WTBS_283 <dbl> 0.0000, 941.7890, 0.0000, 3632.3126, 1353.0216, 0.0000, 5689.~
## $ WTBS_284 <dbl> 2394.6812, 863.5526, 555.1818, 0.0000, 293.3470, 0.0000, 2902~
## $ WTBS_285 <dbl> 6790.1992, 1144.3005, 637.9667, 5858.8971, 249.7371, 0.0000, ~
## $ WTBS_286 <dbl> 0.0000, 907.9015, 0.0000, 2581.7167, 800.5574, 0.0000, 0.0000~
## $ WTBS_287 <dbl> 2168.9410, 2998.5434, 1046.1638, 2801.5102, 1119.6686, 258.45~
## $ WTBS_288 <dbl> 0.0000, 0.0000, 487.3399, 2877.8832, 0.0000, 514.9220, 6387.9~
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## $ WTBS_290 <dbl> 0.0000, 1490.0168, 571.4635, 0.0000, 478.4369, 285.1458, 0.00~
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## $ WTBS_292 <dbl> 3672.3214, 2073.5816, 0.0000, 0.0000, 0.0000, 658.7047, 4995.~
## $ WTBS_293 <dbl> 5841.9965, 880.2182, 522.1535, 0.0000, 272.6213, 0.0000, 0.00~
## $ WTBS_294 <dbl> 1634.1639, 1084.4750, 0.0000, 5788.9358, 0.0000, 238.5173, 24~
## $ WTBS_295 <dbl> 0.0000, 0.0000, 0.0000, 6657.3781, 238.4619, 675.6791, 0.0000~
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## $ WTBS_300 <dbl> 0.0000, 809.0698, 0.0000, 2177.9203, 670.3715, 379.6967, 2989~
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## $ WTBS_310 <dbl> 3048.5960, 0.0000, 1138.6707, 0.0000, 285.4061, 531.7434, 0.0~
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## $ WTBS_312 <dbl> 5244.3178, 928.7481, 516.5507, 0.0000, 850.4012, 618.9518, 0.~
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## $ WTBS_320 <dbl> 2564.4329, 0.0000, 0.0000, 0.0000, 488.6191, 500.7911, 2308.8~
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## $ WTBS_326 <dbl> 7650.6737, 1890.6458, 0.0000, 0.0000, 264.9253, 0.0000, 6119.~
## $ WTBS_327 <dbl> 3216.5149, 2031.9836, 474.3305, 4413.3073, 271.2782, 0.0000, ~
## $ WTBS_328 <dbl> 9508.0290, 0.0000, 709.7092, 0.0000, 581.7994, 600.3224, 6640~
## $ WTBS_329 <dbl> 5355.2317, 990.4462, 0.0000, 0.0000, 264.4262, 263.7391, 3991~
## $ WTBS_330 <dbl> 4049.3759, 1934.9078, 979.0490, 0.0000, 320.2067, 0.0000, 335~
## $ WTBS_331 <dbl> 0.0000, 0.0000, 0.0000, 0.0000, 350.6538, 483.2888, 0.0000, 0~
## $ WTBS_332 <dbl> 0.0000, 0.0000, 0.0000, 6059.7882, 307.1439, 539.0086, 0.0000~
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## $ WTBS_334 <dbl> 5246.7920, 954.1342, 598.9780, 2828.4881, 0.0000, 228.9960, 5~
## $ WTBS_335 <dbl> 2902.1727, 1045.0671, 0.0000, 5558.8262, 0.0000, 0.0000, 0.00~
## $ WTBS_336 <dbl> 2275.7838, 0.0000, 507.8750, 2785.7661, 824.7033, 0.0000, 354~
## $ WTBS_337 <dbl> 0.0000, 1086.9171, 1155.8732, 9066.5966, 639.0626, 0.0000, 0.~
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## $ WTBS_340 <dbl> 0.0000, 0.0000, 1776.0963, 2607.3280, 581.9899, 275.3432, 0.0~
## $ WTBS_341 <dbl> 2578.4272, 0.0000, 0.0000, 0.0000, 582.5208, 0.0000, 0.0000, ~
## $ WTBS_342 <dbl> 2720.6432, 995.4713, 1581.0395, 2630.8967, 271.0502, 661.4127~
## $ WTBS_343 <dbl> 12161.8388, 0.0000, 464.6279, 2606.4958, 0.0000, 361.4082, 0.~
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## $ WTBS_345 <dbl> 0.0000, 933.8985, 550.4593, 6165.1879, 0.0000, 341.0666, 0.00~
## $ WTBS_346 <dbl> 7574.0620, 848.2310, 1081.4894, 10975.9688, 0.0000, 0.0000, 4~
## $ WTBS_347 <dbl> 0.0000, 915.1965, 594.8946, 3243.2478, 1325.1445, 1770.7459, ~
## $ WTBS_348 <dbl> 8679.4688, 915.4008, 0.0000, 0.0000, 352.0991, 367.9216, 0.00~
## $ WTBS_349 <dbl> 2338.3648, 1719.6482, 611.0483, 5582.6474, 818.5465, 785.8455~
## $ WTBS_350 <dbl> 0.0000, 0.0000, 455.7602, 5778.0097, 246.3638, 229.5086, 6409~
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## $ WTBS_353 <dbl> 5896.9891, 848.8144, 490.5974, 2873.8327, 0.0000, 316.4644, 0~
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## $ WTBS_445 <dbl> 4065.8336, 1996.0541, 0.0000, 0.0000, 315.7265, 271.9700, 468~
## $ WTBS_446 <dbl> 4490.0076, 883.6674, 426.1155, 0.0000, 822.4283, 0.0000, 2908~
## $ WTBS_447 <dbl> 3343.9777, 785.6020, 935.7139, 0.0000, 304.6151, 240.1009, 29~
## $ WTBS_448 <dbl> 0.0000, 0.0000, 0.0000, 2510.6054, 942.9663, 303.9545, 0.0000~
## $ WTBS_449 <dbl> 3918.0683, 1029.4015, 0.0000, 0.0000, 0.0000, 671.3729, 12070~
## $ WTBS_450 <dbl> 0.0000, 0.0000, 459.5486, 2145.7752, 0.0000, 252.6824, 3210.1~
## $ WTBS_451 <dbl> 0.0000, 0.0000, 1649.9465, 0.0000, 0.0000, 289.6674, 8385.164~
## $ WTBS_452 <dbl> 6354.2889, 0.0000, 495.1521, 2421.9020, 612.9358, 339.2388, 0~
## $ WTBS_453 <dbl> 4991.0598, 1736.1742, 605.3684, 0.0000, 601.8860, 0.0000, 442~
## $ WTBS_454 <dbl> 0.0000, 2705.3398, 432.3779, 0.0000, 0.0000, 0.0000, 0.0000, ~
## $ WTBS_455 <dbl> 2770.3611, 994.0668, 1057.5035, 0.0000, 320.3150, 0.0000, 713~
## $ WTBS_456 <dbl> 0.0000, 974.2868, 0.0000, 4932.5603, 282.0872, 370.3501, 0.00~
## $ WTBS_457 <dbl> 7080.3107, 0.0000, 1105.5934, 5583.7506, 315.8687, 981.9374, ~
## $ WTBS_458 <dbl> 0.0000, 937.4879, 568.8536, 0.0000, 347.5187, 255.2760, 2807.~
## $ WTBS_459 <dbl> 3521.7204, 1996.8393, 541.6049, 7657.6763, 0.0000, 261.0618, ~
## $ WTBS_460 <dbl> 2623.2220, 961.7776, 1027.9450, 7793.3980, 0.0000, 709.3506, ~
## $ WTBS_461 <dbl> 3655.0427, 0.0000, 0.0000, 0.0000, 251.6824, 292.9144, 0.0000~
## $ WTBS_462 <dbl> 3234.1489, 0.0000, 596.8550, 0.0000, 285.7511, 531.1621, 0.00~
## $ WTBS_463 <dbl> 2966.0673, 953.2472, 566.1644, 7297.9177, 254.3136, 891.2163,~
## $ WTBS_464 <dbl> 0.0000, 992.2508, 514.2258, 0.0000, 246.3298, 241.5757, 0.000~
## $ WTBS_465 <dbl> 5791.6841, 0.0000, 0.0000, 2877.1189, 641.9744, 257.6515, 0.0~
## $ WTBS_466 <dbl> 4056.5241, 1755.5350, 0.0000, 0.0000, 0.0000, 541.0631, 6200.~
## $ WTBS_467 <dbl> 2008.6803, 0.0000, 534.0265, 0.0000, 744.2170, 356.4583, 2594~
## $ WTBS_468 <dbl> 0.0000, 1118.2585, 520.4641, 0.0000, 248.9628, 0.0000, 0.0000~
## $ WTBS_469 <dbl> 5585.5576, 0.0000, 0.0000, 4458.5265, 0.0000, 544.7812, 0.000~
## $ WTBS_470 <dbl> 0.0000, 0.0000, 546.5177, 7841.3757, 0.0000, 678.7890, 2888.1~
## $ WTBS_471 <dbl> 0.0000, 904.8384, 0.0000, 0.0000, 0.0000, 600.8470, 0.0000, 1~
## $ WTBS_472 <dbl> 3680.5096, 956.4202, 557.6797, 3449.2923, 347.5574, 0.0000, 2~
## $ WTBS_473 <dbl> 4903.4074, 2769.0059, 1748.9547, 2744.3078, 0.0000, 405.5050,~
## $ WTBS_474 <dbl> 4208.9060, 1806.4926, 1202.0288, 5368.0022, 0.0000, 341.1118,~
## $ WTBS_475 <dbl> 7028.6508, 4344.1253, 0.0000, 2794.2064, 0.0000, 0.0000, 3691~
## $ WTBS_476 <dbl> 0.0000, 949.5188, 584.5279, 6332.0176, 673.8847, 0.0000, 0.00~
## $ WTBS_477 <dbl> 0.0000, 1994.6992, 517.3981, 7518.1217, 290.4071, 0.0000, 0.0~
## $ WTBS_478 <dbl> 0.0000, 996.4011, 570.4762, 0.0000, 598.6327, 0.0000, 5772.52~
## $ WTBS_479 <dbl> 0.0000, 946.4337, 0.0000, 6034.5731, 0.0000, 655.9358, 2499.2~
## $ WTBS_480 <dbl> 0.0000, 0.0000, 0.0000, 9326.7694, 588.6740, 371.5285, 3995.5~
## $ WTBS_481 <dbl> 8486.0471, 1880.0484, 1217.6283, 2924.2891, 0.0000, 478.9901,~
## $ WTBS_482 <dbl> 3133.9437, 967.0742, 0.0000, 2026.1440, 356.7806, 737.9675, 3~
## $ WTBS_483 <dbl> 2602.8079, 1844.1912, 494.8542, 3009.4700, 653.5631, 259.4127~
## $ WTBS_484 <dbl> 0.0000, 0.0000, 0.0000, 2083.9131, 594.8751, 0.0000, 0.0000, ~
## $ WTBS_485 <dbl> 8277.0078, 2169.7840, 538.1495, 0.0000, 0.0000, 449.7132, 394~
## $ WTBS_486 <dbl> 0.0000, 816.2923, 0.0000, 2545.6244, 328.8860, 0.0000, 2137.0~
## $ WTBS_487 <dbl> 0.0000, 0.0000, 471.5791, 2477.5504, 512.4321, 416.3528, 0.00~
## $ WTBS_488 <dbl> 2341.4773, 865.0782, 0.0000, 5910.9924, 335.1046, 0.0000, 0.0~
## $ WTBS_489 <dbl> 1870.5439, 0.0000, 1025.3345, 2263.1077, 567.0900, 837.1196, ~
## $ WTBS_490 <dbl> 3986.2168, 2080.6081, 0.0000, 4197.9913, 0.0000, 524.7107, 13~
## $ WTBS_491 <dbl> 0.0000, 953.9591, 0.0000, 0.0000, 272.9662, 852.4945, 6561.51~
## $ WTBS_492 <dbl> 3717.5490, 959.3292, 0.0000, 0.0000, 294.2843, 0.0000, 4830.3~
## $ WTBS_493 <dbl> 4480.3572, 0.0000, 0.0000, 2408.4193, 341.1610, 0.0000, 0.000~
## $ WTBS_494 <dbl> 5037.7680, 1919.3675, 522.2923, 2435.1799, 506.5591, 0.0000, ~
```

```
## $ WTBS_495 <dbl> 4895.5585, 952.4731, 0.0000, 0.0000, 0.0000, 284.8291, 7903.0~
## $ WTBS_496 <dbl> 5226.5730, 0.0000, 2536.6184, 4616.8112, 0.0000, 0.0000, 3046~
## $ WTBS_497 <dbl> 8290.5548, 0.0000, 0.0000, 2267.9956, 0.0000, 0.0000, 3082.59~
## $ WTBS_498 <dbl> 2489.4551, 1956.1373, 616.9312, 2457.4982, 0.0000, 554.2389, ~
## $ WTBS_499 <dbl> 0.0000, 0.0000, 546.1335, 5719.5993, 0.0000, 0.0000, 3212.394~
## $ WTBS_500 <dbl> 2380.1798, 2257.7389, 0.0000, 5404.4878, 359.1155, 679.1276, ~
```

```
missing_table <- miss_var_summary(data)
missing_table
```

Understand the nature of missing data

```
## # A tibble: 1,316 x 3
##    variable n_miss pct_miss
##    <chr>     <int>    <num>
##  1 PUMFID        0        0
##  2 WGHT_PER      0        0
##  3 AGEC          0        0
##  4 AGEDC         0        0
##  5 AGEGR5        0        0
##  6 AGEGR10       0        0
##  7 SEX           0        0
##  8 MARSTAT       0        0
##  9 SEXPR         0        0
## 10 PRTYPEC       0        0
## # i 1,306 more rows
```

- We can see that the missing data has been accounted for via special missing values. These will need to be dealt with for the variables of interest.

Define Research Question and Recode Key Variables

- This analysis will aim to answer the questions 1) What percentage of Canadians aged between 14-49 intend to have a child in the next 3 years? and 2) Does this vary by self-rated physical health?
- The sample will be limited to those aged under 50 (AGEC) and who (or whose spouse) have not been told that they cannot have any(more) biological children (Respondent = FI_140, Spouse = FI_240: 1 = Yes, 2 = No).
- The primary independent variable (CH3YRS) will use a survey question (FI_105) that asked "do you intend to have a(nother) child within the next 3 years?
- Drop missing data from variables of interest. Usually, a data imputation method would be used to handle missing data, but for the purposes of this exercise, drop the missing values from the dataframe.

Remove those over age 50 and those who or (whose spouse) have been told they cannot have any(more) biological children

```
#Remove respondents over age 50
glimpse(data$AGEC) #view variable
```

```
##  num [1:20602] 55 40 64 18 62 44 32 65 56 25 ...
```

```r
summary(data$AGEC)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   15.00   37.00   54.00   51.71   66.00   80.00
```

```r
#Remove those over age 50
data <- data |> subset(AGEC < 50)
#View variable after change
glimpse(data$AGEC)
```

```
##  num [1:8927] 40 18 44 32 25 40 20 29 23 16 ...
```

```r
summary(data$AGEC)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    15.0    28.0    35.0    34.2    42.0    49.0
```

```r
#Exclude if respondent or spouse has been told they cannot have any(more) bio children. 1 = Has bee tol
glimpse(data$FI_140)
```

```
##  num [1:8927] 6 2 2 2 2 2 2 2 6 6 ...
```

```r
summary(data$FI_140)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    1.00    2.00    2.00    3.45    6.00    8.00
```

```r
#Assign missing values (6-9)
data <- data |>
  replace_with_na(replace = list(FI_140 = c(6, 7, 8, 9)))
#Remove those who responded yes
data <- data |> subset(FI_140 != 1)
#View variable to ensure this worked as intended
summary(data$FI_140)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##       2       2       2       2       2       2
```

```r
table(data$FI_140)
```

```
##
##    2
## 5496
```

```r
#Do the same for the spouse (FI_240)
glimpse(data$FI_240)
```

```
##  num [1:5496] 6 2 6 2 2 2 6 2 2 2 ...
```

```r
summary(data$FI_240)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   1.000   2.000   2.000   3.409   6.000   9.000
```

```r
#Assign missing values (6-9)
data <- data |>
  replace_with_na(replace = list(FI_240 = c(6, 7, 8, 9)))
#Remove those who responded yes
data <- data |> subset(FI_240 != 1)
#View variable to ensure this worked as intended
summary(data$FI_240)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##       2       2       2       2       2       2
```

```r
table(data$FI_240)
```

```
##
##    2
## 3530
```

Create a binary outcome variable, "CH3YRS" to reflect fertility intentions (Yes/No) within the next 3 years

```r
#View variable to examine structure
glimpse(data$FI_105)
```

```
##  num [1:3530] 4 2 5 3 4 4 1 3 1 2 ...
```

```r
summary(data$FI_105)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   1.000   2.000   3.000   3.076   4.000   8.000
```

```r
table(data$FI_105)
```

```
##
##    1    2    3    4    5    6    7    8
##  551  652  678 1310  319   11    3    6
```

```r
#We can tell based on the codebook that 1 = Definitely yes, 2 = Probably yes, 3 = Probably Not, 4 = No,

data <- data |>
  replace_with_na(replace = list(FI_105 = c(6, 7, 8, 9)))
summary(data$FI_105) #view variable to ensure this worked
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.    NA's
##   1.000   2.000   3.000   3.055   4.000   5.000      20
```

```r
#Now I will transform this variable into yes/no variable, CH3YRS
data <- data |>
  mutate(CH3YRS = case_when(
    FI_105 == 1 ~ "1_Yes",
    FI_105 == 2 ~ "1_Yes",
    FI_105 == 3 ~ "2_No",
    FI_105 == 4 ~ "2_No",
    FI_105 == 5 ~ "2_No",
    FI_105 == 6 ~ "2_No",
  ))
table(data$FI_105, data$CH3YRS) #compare old and new variable to ensure recode worked as intended
```

```
##
##     1_Yes 2_No
##   1   551    0
##   2   652    0
##   3     0  678
##   4     0 1310
##   5     0  319
```

```r
#view new variable to ensure it looks as intended
glimpse(data$CH3YRS)
```

```
##  chr [1:3530] "2_No" "1_Yes" "2_No" "2_No" "2_No" "2_No" "1_Yes" "2_No" ...
```

```r
data$CH3YRS <- as.factor(data$CH3YRS) #recode as factor variable
summary(data$CH3YRS)
```

```
## 1_Yes  2_No  NA's
##  1203  2307    20
```

```r
table(data$CH3YRS)
```

```
##
## 1_Yes  2_No
##  1203  2307
```

```r
data$FI_105 <- NULL #Remove old variable
```

Recode the primary independent variable, Self-Rated Physical Health (SRPH using codebook variable SRH_110)

```r
#View variable
glimpse(data$SRH_110)
```

```
##  num [1:3530] 3 2 4 2 3 8 2 2 1 3 ...
```

```r
summary(data$SRH_110)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   1.000   1.000   2.000   2.146   3.000   9.000
```

```r
table(data$SRH_110)
```

```
##
##    1    2    3    4    5    7    8    9
##  995 1371  954  158   28    3    7   14
```

```r
#The "Don't know," "refusal," and "not stated" responses (6-9) need to be designated as missing
data <- data |>
  replace_with_na(replace = list(SRH_110 = c(6, 7, 8, 9)))
summary(data$SRH_110) #view variable to ensure this worked
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.    NA's
##   1.000   1.000   2.000   2.102   3.000   5.000      24
```

```r
#This variable is originally coded as 5 = poor and 1 = excellent, but for ease of interpretation, I wil
data <- data |>
  mutate(SRPH = case_when(
    SRH_110 == 1 ~ "5_Excellent",
    SRH_110 == 2 ~ "4_Very Good",
    SRH_110 == 3 ~ "3_Good",
    SRH_110 == 4 ~ "2_Fair",
    SRH_110 == 5 ~ "1_Poor",
  ))

glimpse(data$SRPH) # View recoded variable
```

```
##  chr [1:3530] "3_Good" "4_Very Good" "2_Fair" "4_Very Good" "3_Good" NA ...
```

```r
data$SRPH <- as.factor(data$SRPH) #Recode as  factor variable

#View old variable and new to make sure recode processed correctly, view new variable
table(data$SRH_110, data$SRPH)
```

```
##
##     1_Poor 2_Fair 3_Good 4_Very Good 5_Excellent
##   1      0      0      0           0         995
##   2      0      0      0        1371           0
##   3      0      0    954           0           0
##   4      0    158      0           0           0
##   5     28      0      0           0           0
```

```r
glimpse(data$SRPH)
```

```
##  Factor w/ 5 levels "1_Poor","2_Fair",..: 3 4 2 4 3 NA 4 4 5 3 ...
```

```r
summary(data$SRPH)
```

```
##      1_Poor      2_Fair      3_Good 4_Very Good 5_Excellent        NA's
##          28         158         954        1371         995          24
```

```r
data$SRH_110 <- NULL #Remove old variable
```

Age, measured in whole numbers (Codebook variable AGEC)

```r
#Since there are multiple measures of age (Groups of 5/10-year intervals, a whole number version, and a
data$AGEDC <- NULL
data$AGEGR5 <- NULL
data$AGEGR10 <- NULL

#View the variable to confirm it does not need recoding
glimpse(data$AGEC)
```

```
##  num [1:3530] 44 25 40 20 29 44 29 21 36 29 ...
```

```r
summary(data$AGEC)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   18.00   29.00   34.00   34.59   40.00   49.00
```

```r
table(data$AGEC) #There are no missing data on this one.
```

```
##
##  18  19  20  21  22  23  24  25  26  27  28  29  30  31  32  33  34  35  36  37
##   1   2  40  44  73  67  89  98 114 124 130 161 195 168 163 156 164 179 176 145
##  38  39  40  41  42  43  44  45  46  47  48  49
## 140 121 138 113 118 108 117  93  92  69  70  62
```

Sex

```r
#View variable
glimpse(data$SEX)
```

```
##  num [1:3530] 2 1 2 1 2 2 2 2 1 1 ...
```

```r
summary(data$SEX)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   1.000   1.000   2.000   1.543   2.000   2.000
```

```r
table(data$SEX) #There are no missing data on this variable.
```

```
##
##    1    2
## 1613 1917
```

```r
#For ease of interpretation, I am adding labels to this variable.
data <- data |>
  mutate(SEX = case_when(
    SEX == 1 ~ "1_Male",
    SEX == 2 ~ "2_Female"
  ))
data$SEX <- as.factor(data$SEX) #recode as factor variable
glimpse(data$SEX) # View recoded variable
```

```
##  Factor w/ 2 levels "1_Male","2_Female": 2 1 2 1 2 2 2 2 1 1 ...
```

```r
summary(data$SEX)
```

```
##   1_Male 2_Female
##     1613     1917
```

Martial Status

```r
#View variable
glimpse(data$MARSTAT)
```

```
##  num [1:3530] 1 6 1 2 1 1 1 6 2 6 ...
```

```r
summary(data$MARSTAT)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   1.000   1.000   1.000   2.153   2.000   6.000
```

```r
table(data$MARSTAT) #There are no remaining missing data after we removed those out of scope of this an
```

```
##
##    1    2    3    4    5    6
## 2055  800    2   29   42  602
```

```r
#This variable has multiple categories that effectually mean "no longer married" for various reasons. F
data <- data |>
  mutate(MARSTAT = case_when(
    MARSTAT == 1 ~ "1_Married",
    MARSTAT == 2 ~ "2_Common Law",
    MARSTAT == 3 ~ "3_Widowed/Separated/Divorced",
    MARSTAT == 4 ~ "3_Widowed/Separated/Divorced",
    MARSTAT == 5 ~ "3_Widowed/Separated/Divorced",
    MARSTAT == 6 ~ "4_Single",
  ))
data$MARSTAT <- as.factor(data$MARSTAT) #recode as factor variable
glimpse(data$MARSTAT) # View recoded variable
```

```
##  Factor w/ 4 levels "1_Married","2_Common Law",..: 1 4 1 2 1 1 1 4 2 4 ...
```

```r
summary(data$MARSTAT)
```

```
##                     1_Married                 2_Common Law
##                          2055                          800
## 3_Widowed/Separated/Divorced                     4_Single
##                            73                          602
```

Education level (EDULVL, using codebook variable EHG3_01B)

```r
#View variable
glimpse(data$EHG3_01B)
```

```
##  num [1:3530] 6 2 6 4 1 4 6 4 6 7 ...
```

```r
summary(data$EHG3_01B)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   1.000   3.000   4.000   6.221   6.000  99.000
```

```r
table(data$EHG3_01B)
```

```
##
##    1    2    3    4    5    6    7   97   98   99
##  109  590  255  836  131 1045  502    6    4   52
```

```r
#The "Don't know," "refusal," and "not stated" responses (96-99) need to be accounted as missing
data <- data %>%
  replace_with_na(replace = list(EHG3_01B = c(96, 97, 98, 99)))
summary(data$EHG3_01B) #check to make sure this worked
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.    NA's
##   1.000   3.000   4.000   4.567   6.000   7.000      62
```

```r
#This variable has multiple categories that effectually mean "post-secondary education below the bachel
data <- data |>
  mutate(EDULVL = case_when(
    EHG3_01B == 1 ~ "1_Less than H.S.",
    EHG3_01B == 2 ~ "2_H.S/Equiv",
    EHG3_01B == 3 ~ "3_P.S under Bach",
    EHG3_01B == 4 ~ "3_P.S under Bach",
    EHG3_01B == 5 ~ "3_P.S under Bach",
    EHG3_01B == 6 ~ "4_Bach Degree",
    EHG3_01B == 7 ~ "5_Post Bach Lvl",
  ))

glimpse(data$EDULVL) # View recoded variable
```

```
##  chr [1:3530] "4_Bach Degree" "2_H.S/Equiv" "4_Bach Degree" ...
```

```
data$EDULVL <- as.factor(data$EDULVL) #Recode as factor variable

#View old variable and new to make sure recode processed correctly, view new variable
table(data$EHG3_01B, data$EDULVL)
```

```
##
##     1_Less than H.S. 2_H.S/Equiv 3_P.S under Bach 4_Bach Degree 5_Post Bach Lvl
##   1              109           0                0              0                0
##   2                0         590                0              0                0
##   3                0           0              255              0                0
##   4                0           0              836              0                0
##   5                0           0              131              0                0
##   6                0           0                0           1045                0
##   7                0           0                0              0              502
```

```
glimpse(data$EDULVL)
```

```
##  Factor w/ 5 levels "1_Less than H.S.",..: 4 2 4 3 1 3 4 3 4 5 ...
```

```
summary(data$EDULVL)
```

```
## 1_Less than H.S.      2_H.S/Equiv 3_P.S under Bach    4_Bach Degree
##              109              590             1222             1045
##  5_Post Bach Lvl             NA's
##              502               62
```

```
data$EHG3_01B <- NULL #Remove old variable
```

Drop missing values from variables of interest (CH3YRS, SRPH, AGEC, SEX, MARSTAT, EDULVL)

```
data <- data |>
  filter(
    !is.na(CH3YRS),
    !is.na(SRPH),
    !is.na(AGEC),
    !is.na(SEX),
    !is.na(MARSTAT),
    !is.na(EDULVL),
  )

#View variables to ensure this worked
summary(data$CH3YRS)
```

```
## 1_Yes  2_No
##  1184  2252
```

```
summary(data$SRPH)
```

```
##      1_Poor      2_Fair      3_Good 4_Very Good 5_Excellent
##          28         151         937        1351         969
```

```r
summary(data$AGEC)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   18.00   29.00   34.00   34.58   40.00   49.00
```

```r
summary(data$MARSTAT)
```

```
##                     1_Married                   2_Common Law
##                          1996                            780
## 3_Widowed/Separated/Divorced                      4_Single
##                            70                            590
```

```r
summary(data$EDULVL)
```

```
## 1_Less than H.S.      2_H.S/Equiv 3_P.S under Bach    4_Bach Degree
##              106              581             1213             1040
##  5_Post Bach Lvl
##              496
```

Create a table to display the percent and count for the CH3YRS variable by EDULVL variable, called "edulvl_table

```r
edulvl_table <- data |>
  count(CH3YRS, EDULVL) |>
  group_by(CH3YRS) |>
  mutate(percent = round(100 * n / sum(n), 1)) |>
  ungroup() |>
  select(-n) |>
  pivot_wider(names_from = CH3YRS, values_from = percent) |>
  gt() |>
  tab_header(
    title = "Descriptive Statistics by Fertility Intention by Education Level",
    subtitle = "Percent distribution"
  ) |>
  cols_label(
    EDULVL = "Education Level",
    "1_Yes" = "Yes",
    "2_No" = "No"
  ) |>
  tab_options(
    table.background.color = "#4D4E53",
  ) |>
  tab_footnote(md("*Data from 2017 GSS, Statistics Canada
                  N = 4,164*"))

edulvl_table
```

```r
#Save table
gtsave(edulvl_table, "/Users/leahj/Desktop/CAnD3/CAnD3/CAnD3_RWork/RRWM Exercise/CAnD3-RRWM-Exercise/edu
```

Descriptive Statistics by Fertility Intention by Education Level

Percent distribution

Education Level	Yes	No
1_Less than H.S.	3.0	3.1
2_H.S/Equiv	15.7	17.5
3_P.S under Bach	36.3	34.8
4_Bach Degree	29.5	30.7
5_Post Bach Lvl	15.5	13.9

Data from 2017 GSS, Statistics Canada N = 4,164

Logistic Regression (Output = CH3YRS, Input = SRPH, SEX, EDULVL, MARSTAT, AGEC) with table displaying results, seed set at 567 for replicability purposes, capture session info

```
set.seed(567) #set the seed for replicability purposes


# Run logistic regression
LogRegressionModel <- glm(CH3YRS ~ SRPH + SEX + EDULVL + MARSTAT + AGEC,
             data = data,
             family = binomial)

# Tidy the model output
LogR_table <- tidy(LogRegressionModel, exponentiate = TRUE, conf.int = TRUE)

# Display results in a formatted table
LogR_table <- LogR_table |>
  select(term, estimate, conf.low, conf.high, p.value) |>
  rename(
    Term = term,
    OR = estimate,
    `CI Lower` = conf.low,
    `CI Upper` = conf.high,
    `P-value` = p.value
  ) |>
  gt() |>
  tab_header(
    title = "Logistic Regression Results",
    subtitle = "Predicting Fertility Intentions"
  ) |>
  tab_options(
    table.background.color = "#4D4E53",
  ) |>
  tab_footnote(md("*Data from 2017 GSS, Statistics Canada
                  N = 4,164*"))

#save table
gtsave(LogR_table, "/Users/leahj/Desktop/CAnD3/CAnD3/CAnD3_RWork/RRWM Exercise/CAnD3-RRWM-Exercise/LogR
```

```r
#Document session info
sessionInfo()
```

```
## R version 4.5.1 (2025-06-13)
## Platform: aarch64-apple-darwin20
## Running under: macOS Tahoe 26.0.1
##
## Matrix products: default
## BLAS:   /Library/Frameworks/R.framework/Versions/4.5-arm64/Resources/lib/libRblas.0.dylib
## LAPACK: /Library/Frameworks/R.framework/Versions/4.5-arm64/Resources/lib/libRlapack.dylib;  LAPACK v
##
## locale:
## [1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8
##
## time zone: America/Regina
## tzcode source: internal
##
## attached base packages:
## [1] stats     graphics  grDevices utils     datasets  methods   base
##
## other attached packages:
##  [1] naniar_1.1.0       gt_1.1.0           kableExtra_1.4.0   knitr_1.50
##  [5] yardstick_1.3.2    workflowsets_1.1.1 workflows_1.3.0    tune_2.0.0
##  [9] tailor_0.1.0       rsample_1.3.1      recipes_1.3.1      parsnip_1.3.3
## [13] modeldata_1.5.1    infer_1.0.9        dials_1.4.2        scales_1.4.0
## [17] broom_1.0.10       tidymodels_1.4.1   lubridate_1.9.4    forcats_1.0.1
## [21] stringr_1.5.2      dplyr_1.1.4        purrr_1.1.0        readr_2.1.5
## [25] tidyr_1.3.1        tibble_3.3.0       ggplot2_4.0.0      tidyverse_2.0.0
##
## loaded via a namespace (and not attached):
##  [1] rlang_1.1.6         magrittr_2.0.4      furrr_0.3.1
##  [4] compiler_4.5.1      systemfonts_1.2.3   vctrs_0.6.5
##  [7] lhs_1.2.0           pkgconfig_2.0.3     crayon_1.5.3
## [10] fastmap_1.2.0       backports_1.5.0     utf8_1.2.6
## [13] rmarkdown_2.29      prodlim_2025.04.28  markdown_2.0
## [16] tzdb_0.5.0          visdat_0.6.0        bit_4.6.0
## [19] xfun_0.53           litedown_0.7        parallel_4.5.1
## [22] R6_2.6.1            stringi_1.8.7       RColorBrewer_1.1-3
## [25] parallelly_1.45.1   rpart_4.1.24        Rcpp_1.1.0
## [28] future.apply_1.20.0 Matrix_1.7-4        splines_4.5.1
## [31] nnet_7.3-20         timechange_0.3.0    tidyselect_1.2.1
## [34] rstudioapi_0.17.1   yaml_2.3.10         timeDate_4041.110
## [37] codetools_0.2-20    listenv_0.9.1       lattice_0.22-7
## [40] withr_3.0.2         S7_0.2.0            evaluate_1.0.5
## [43] future_1.67.0       survival_3.8-3      xml2_1.4.0
## [46] pillar_1.11.1       generics_0.1.4      vroom_1.6.6
## [49] hms_1.1.3           commonmark_2.0.0    globals_0.18.0
## [52] class_7.3-23        glue_1.8.0          tools_4.5.1
## [55] data.table_1.17.8   gower_1.0.2         fs_1.6.6
## [58] grid_4.5.1          ipred_0.9-15        cli_3.6.5
## [61] DiceDesign_1.10     textshaping_1.0.3   viridisLite_0.4.2
## [64] svglite_2.2.1       lava_1.8.1          gtable_0.3.6
## [67] GPfit_1.0-9         sass_0.4.10         digest_0.6.37
```

```
## [70] farver_2.1.2        htmltools_0.5.8.1   lifecycle_1.0.4
## [73] hardhat_1.4.2       bit64_4.6.0-1       MASS_7.3-65
```

```r
#Save to a file
writeLines(capture.output(sessionInfo()), "session_info.txt")
```