RWorksheet#3b

Andrey Sumadic

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```
#a.
respondents <- 1:20

data <- data.frame(
  respondents,
  sex = c(2, 2, 1, 2, 2, 2, 2, 2, 2, 2, 1, 2, 2, 2, 2, 2, 2, 2, 1, 2),
  fathers_occupation = c(1, 3, 3, 3, 1, 2, 3, 1, 1, 1, 3, 2, 1, 3, 3, 1, 3, 1, 2, 1),
  persons_at_home = c(5, 7, 3, 8, 5, 9, 6, 7, 8, 4, 7, 5, 4, 7, 8, 8, 3, 11, 7, 6),
  siblings_at_school = c(6, 4, 4, 1, 2, 1, 5, 3, 1, 2, 3, 2, 5, 5, 2, 1, 2, 5, 3, 2),
  types_of_house = c(1, 2, 3, 1, 1, 3, 3, 1, 2, 3, 2, 3, 2, 2, 3, 3, 3, 3, 3, 2)
)

data
```

```
##    respondents sex fathers_occupation persons_at_home siblings_at_school
## 1            1   2                  1               5                  6
## 2            2   2                  3               7                  4
## 3            3   1                  3               3                  4
## 4            4   2                  3               8                  1
## 5            5   2                  1               5                  2
## 6            6   2                  2               9                  1
## 7            7   2                  3               6                  5
## 8            8   2                  1               7                  3
## 9            9   2                  1               8                  1
## 10          10   2                  1               4                  2
## 11          11   1                  3               7                  3
## 12          12   2                  2               5                  2
## 13          13   2                  1               4                  5
## 14          14   2                  3               7                  5
## 15          15   2                  3               8                  2
## 16          16   2                  1               8                  1
## 17          17   2                  3               3                  2
## 18          18   2                  1              11                  5
## 19          19   1                  2               7                  3
## 20          20   2                  1               6                  2
##    types_of_house
## 1               1
## 2               2
## 3               3
## 4               1
## 5               1
## 6               3
## 7               3
```

```
## 8               1
## 9               2
## 10              3
## 11              2
## 12              3
## 13              2
## 14              2
## 15              3
## 16              3
## 17              3
## 18              3
## 19              3
## 20              2
```

```
#b
str(data)
```

```
## 'data.frame':    20 obs. of  6 variables:
##  $ respondents       : int  1 2 3 4 5 6 7 8 9 10 ...
##  $ sex               : num  2 2 1 2 2 2 2 2 2 2 ...
##  $ fathers_occupation: num  1 3 3 3 1 2 3 1 1 1 ...
##  $ persons_at_home   : num  5 7 3 8 5 9 6 7 8 4 ...
##  $ siblings_at_school: num  6 4 4 1 2 1 5 3 1 2 ...
##  $ types_of_house    : num  1 2 3 1 1 3 3 1 2 3 ...
```

```
#c.
mean(data$siblings_at_school)
```

```
## [1] 2.95
```

```
#d.
data[1:2,]
```

```
##   respondents sex fathers_occupation persons_at_home siblings_at_school
## 1           1   2                  1               5                  6
## 2           2   2                  3               7                  4
##   types_of_house
## 1              1
## 2              2
```

```
#e.
data[c(3,5), c(2,4)]
```

```
##   sex persons_at_home
## 3   1               3
## 5   2               5
```

```
#f.
types_houses <- data$types_of_house

#g.
data[data$sex == 1 & data$fathers_occupation == 1, ]
```

```
## [1] respondents        sex                fathers_occupation persons_at_home
## [5] siblings_at_school types_of_house
## <0 rows> (or 0-length row.names)
```

```
#h.
data[data$sex == 2 & data$siblings_at_school >= 5, ]
```

```
##    respondents sex fathers_occupation persons_at_home siblings_at_school
## 1            1   2                  1               5                  6
## 7            7   2                  3               6                  5
## 13          13   2                  1               4                  5
## 14          14   2                  3               7                  5
## 18          18   2                  1              11                  5
##    types_of_house
## 1               1
## 7               3
## 13              2
## 14              2
## 18              3
```

```
3.
```

```
## [1] 3
```

```
#a.
household <- read.csv("HouseholdData.csv", header = TRUE, sep = ",")
household
```

```
##    Respondents    Sex Fathers.Occupation Persons.at.Home Siblings.at.School
## 1            1   Male                  1               5                  2
## 2            2 Female                  2               7                  3
## 3            3 Female                  3               3                  0
## 4            4   Male                  3               8                  5
## 5            5   Male                  1               6                  2
## 6            6 Female                  2               4                  3
## 7            7 Female                  2               4                  1
## 8            8   Male                  3               2                  2
## 9            9 Female                  1              11                  6
## 10          10   Male                  3               6                  2
##    Types.of.Houses
## 1             Wood
## 2         Congrete
## 3         Congrete
## 4             Wood
## 5    Semi-congrete
## 6    Semi-congrete
## 7             Wood
## 8    Semi-congrete
## 9    Semi-congrete
## 10        Congrete
```

```
#b
household$Sex <- factor(household$Sex,
                        levels = c("Male", "Female"),
                        labels = c(1,2))
household
```

```
##    Respondents Sex Fathers.Occupation Persons.at.Home Siblings.at.School
## 1            1   1                  1               5                  2
## 2            2   2                  2               7                  3
## 3            3   2                  3               3                  0
## 4            4   1                  3               8                  5
## 5            5   1                  1               6                  2
## 6            6   2                  2               4                  3
```

```
## 7            7   2                 2               4                  1
## 8            8   1                 3               2                  2
## 9            9   2                 1              11                  6
## 10          10   1                 3               6                  2
##    Types.of.Houses
## 1             Wood
## 2         Congrete
## 3         Congrete
## 4             Wood
## 5    Semi-congrete
## 6    Semi-congrete
## 7             Wood
## 8    Semi-congrete
## 9    Semi-congrete
## 10        Congrete
```

```
#c.
household$Types.of.Houses <- factor(household$Types.of.Houses,
                          levels = c("Wood", "Congrete", "Semi-congrete"),
                          labels = c(1,2,3))
household
```

```
##    Respondents Sex Fathers.Occupation Persons.at.Home Siblings.at.School
## 1            1   1                 1               5                  2
## 2            2   2                 2               7                  3
## 3            3   2                 3               3                  0
## 4            4   1                 3               8                  5
## 5            5   1                 1               6                  2
## 6            6   2                 2               4                  3
## 7            7   2                 2               4                  1
## 8            8   1                 3               2                  2
## 9            9   2                 1              11                  6
## 10          10   1                 3               6                  2
##    Types.of.Houses
## 1                1
## 2                2
## 3                2
## 4                1
## 5                3
## 6                3
## 7                1
## 8                3
## 9                3
## 10               2
```

```
#d.
household$Fathers.Occupation <- factor(household$Fathers.Occupation,
                          levels = c(1,2,3),
                          labels = c("Farmer", "Driver", "Others"))
household
```

```
##    Respondents Sex Fathers.Occupation Persons.at.Home Siblings.at.School
## 1            1   1             Farmer               5                  2
## 2            2   2             Driver               7                  3
## 3            3   2             Others               3                  0
## 4            4   1             Others               8                  5
```

```
## 5            5   1            Farmer               6                  2
## 6            6   2            Driver               4                  3
## 7            7   2            Driver               4                  1
## 8            8   1            Others               2                  2
## 9            9   2            Farmer              11                  6
## 10          10   1            Others               6                  2
##    Types.of.Houses
## 1                1
## 2                2
## 3                2
## 4                1
## 5                3
## 6                3
## 7                1
## 8                3
## 9                3
## 10               2
```

```
#e.
household[household$Sex == 2 & household$Fathers.Occupation == "Driver",]
```

```
##   Respondents Sex Fathers.Occupation Persons.at.Home Siblings.at.School
## 2           2   2            Driver               7                  3
## 6           6   2            Driver               4                  3
## 7           7   2            Driver               4                  1
##   Types.of.Houses
## 2               2
## 6               3
## 7               1
```

```
#f.
household[household$Siblings.at.School >= 5,]
```

```
##   Respondents Sex Fathers.Occupation Persons.at.Home Siblings.at.School
## 4           4   1            Others               8                  5
## 9           9   2            Farmer              11                  6
##   Types.of.Houses
## 4               1
## 9               3
```

```
#4. This line graph shows that the number of tweets sent per day increased over the months represented,
#with less daily variability in later months compared to earlier ones. The visual representation
#clearly conveys the trends in Twitter usage over time.
```