Read_WriteData

Paul

7/10/2020

#Introduction This is the starting point in R Markdown

```
x<-1:10
```

#Read data from github

#Basic data manipulation

```
library(skimr) # Gives the general overview of the data
skim(new_data)
```

Data summary

Name	new_data
Number of rows	2509
Number of columns	28

_____

Column type frequency:

character	23
numeric	5

_____

Group variables	None

Variable type: character

skim_variable	n_missing	complete_rate	min	max	empty	n_unique	whitespace
account_type	0	1.00	4	19	0	7	0
district	0	1.00	10	10	0	3	0
urban	0	1.00	5	5	0	2	0
gender	0	1.00	4	6	0	2	0
highest_grade_completed	256	0.90	4	11	0	15	0
mm_account_cancelled	0	1.00	2	3	0	2	0
prefer_cash	49	0.98	2	3	0	3	0

mm_trust	180	0.93	2	3	0	3	0
mm_account_telco	783	0.69	9	29	0	7	0
mm_account_telco_main	1657	0.34	9	9	0	3	0
v234	886	0.65	2	3	0	3	0
agent_trust	1051	0.58	2	3	0	3	0
v236	1964	0.22	2	3	0	2	0
v237	472	0.81	2	3	0	2	0
v238	462	0.82	2	3	0	2	0
v240	462	0.82	2	3	0	2	0
v241	527	0.79	2	3	0	2	0
v242	551	0.78	2	3	0	2	0
v243	472	0.81	2	3	0	2	0
v244	1984	0.21	2	3	0	2	0
v245	472	0.81	2	3	0	2	0
v246	462	0.82	2	3	0	2	0
mm_account	0	1.00	2	3	0	2	0

Variable type: numeric

skim_variable	n_missing	complete_rate	mean	sd	p0	p25	p50	p75	p100	hist
hhid	0	1	1597.33	351.45	1001.00	1290.00	1593.00	1905.00	2205.00	▇▇▇▇▇
weight	0	1	443.16	475.81	14.58	196.72	296.21	511.74	4812.17	▇▁▁▁▁
account_num	0	1	1.78	0.89	1.00	1.00	2.00	2.00	6.00	▇▂▁▁▁
age	0	1	37.67	13.62	18.00	27.00	35.00	46.00	97.00	▇▇▂▁▁
hh_members	0	1	4.71	1.99	1.00	3.00	5.00	6.00	18.00	▇▇▁▁▁

```
#use of summary, head, tail
head(new_data) #first 6rows of dataset

## # A tibble: 6 x 28
##    hhid weight account_num account_type district urban gender   age
hh_members
##   <dbl>  <dbl>       <dbl> <chr>        <chr>    <chr> <chr>  <dbl>
<dbl>
## 1  1001   146.           1 SACCO Accou~ Distric~ Urban male      32
1
```

```
## 2  1001   146.           2 VSLA Account Districˆ Urban male      32
1
## 3  1002   123.           1 Mobile Money Districˆ Rural male      32
4
## 4  1002   123.           2 Bank Account Districˆ Rural male      32
4
## 5  1002   123.           3 VSLA Account Districˆ Rural male      32
4
## 6  1003   760.           1 Mobile Money Districˆ Urban male      30
8
## # ... with 19 more variables: highest_grade_completed <chr>,
## #   mm_account_cancelled <chr>, prefer_cash <chr>, mm_trust <chr>,
## #   mm_account_telco <chr>, mm_account_telco_main <chr>, v234 <chr>,
## #   agent_trust <chr>, v236 <chr>, v237 <chr>, v238 <chr>, v240 <chr>,
## #   v241 <chr>, v242 <chr>, v243 <chr>, v244 <chr>, v245 <chr>, v246
<chr>,
## #   mm_account <chr>
```

```
tail(new_data) #last 6 rows of dataset
```

```
## # A tibble: 6 x 28
##    hhid weight account_num account_type district urban gender   age
hh_members
##   <dbl>  <dbl>       <dbl> <chr>        <chr>    <chr> <chr>  <dbl>
<dbl>
## 1  2203   103.           1 Mobile Money Districˆ Rural female    18
7
## 2  2203   103.           2 Bank Account Districˆ Rural female    18
7
## 3  2204   496.           1 Mobile Money Districˆ Rural female    58
6
## 4  2204   496.           2 Bank Account Districˆ Rural female    58
6
## 5  2205   667.           1 Mobile Money Districˆ Rural female    23
7
## 6  2205   667.           2 Bank Account Districˆ Rural female    23
7
## # ... with 19 more variables: highest_grade_completed <chr>,
## #   mm_account_cancelled <chr>, prefer_cash <chr>, mm_trust <chr>,
## #   mm_account_telco <chr>, mm_account_telco_main <chr>, v234 <chr>,
## #   agent_trust <chr>, v236 <chr>, v237 <chr>, v238 <chr>, v240 <chr>,
## #   v241 <chr>, v242 <chr>, v243 <chr>, v244 <chr>, v245 <chr>, v246
<chr>,
## #   mm_account <chr>
```

```
summary(new_data) # genera; summary of the data
```

```
##       hhid          weight         account_num    account_type
##  Min.   :1001   Min.   :  14.58   Min.   :1.000   Length:2509
##  1st Qu.:1290   1st Qu.: 196.72   1st Qu.:1.000   Class :character
##  Median :1593   Median : 296.21   Median :2.000   Mode  :character
```

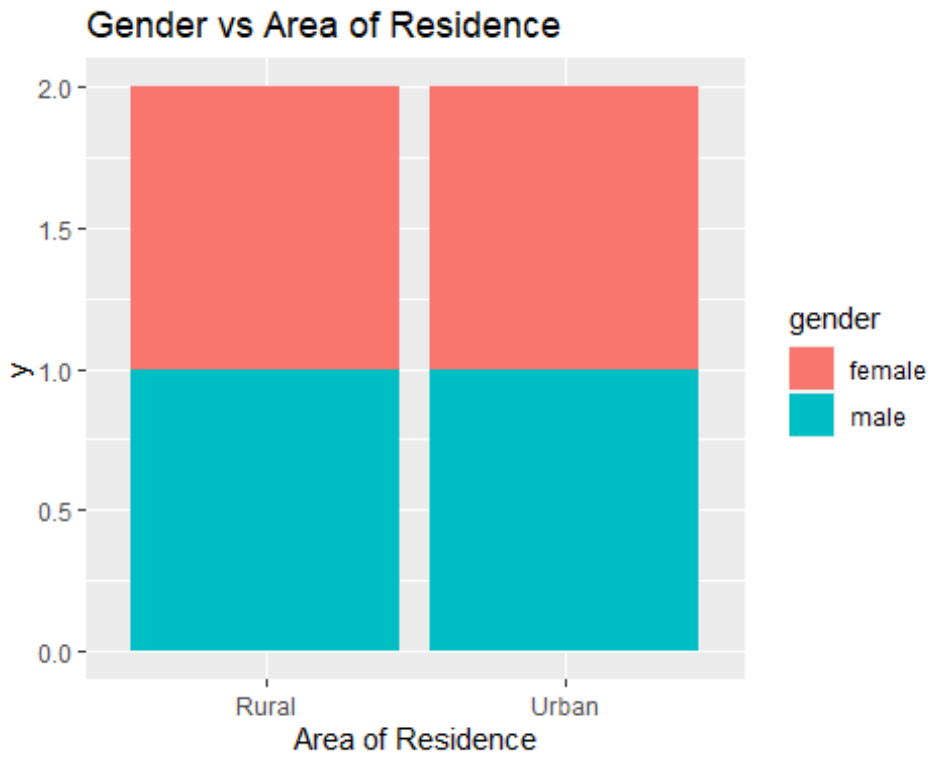
```
##  Mean   :1597   Mean   : 443.16   Mean   :1.775
##  3rd Qu.:1905   3rd Qu.: 511.74   3rd Qu.:2.000
##  Max.   :2205   Max.   :4812.16   Max.   :6.000
##    district           urban              gender              age
##  Length:2509        Length:2509        Length:2509        Min.   :18.00
##  Class :character   Class :character   Class :character   1st Qu.:27.00
##  Mode  :character   Mode  :character   Mode  :character   Median :35.00
##                                                           Mean   :37.67
##                                                           3rd Qu.:46.00
##                                                           Max.   :97.00
##    hh_members     highest_grade_completed mm_account_cancelled
##  Min.   : 1.000   Length:2509             Length:2509
##  1st Qu.: 3.000   Class :character        Class :character
##  Median : 5.000   Mode  :character        Mode  :character
##  Mean   : 4.714
##  3rd Qu.: 6.000
##  Max.   :18.000
##  prefer_cash          mm_trust         mm_account_telco
mm_account_telco_main
##  Length:2509        Length:2509        Length:2509        Length:2509
##  Class :character   Class :character   Class :character   Class :character
##  Mode  :character   Mode  :character   Mode  :character   Mode  :character
##
##
##
##     v234           agent_trust           v236              v237
##  Length:2509        Length:2509        Length:2509        Length:2509
##  Class :character   Class :character   Class :character   Class :character
##  Mode  :character   Mode  :character   Mode  :character   Mode  :character
##
##
##
##     v238              v240              v241              v242
##  Length:2509        Length:2509        Length:2509        Length:2509
##  Class :character   Class :character   Class :character   Class :character
##  Mode  :character   Mode  :character   Mode  :character   Mode  :character
##
##
##
##     v243              v244              v245              v246
##  Length:2509        Length:2509        Length:2509        Length:2509
##  Class :character   Class :character   Class :character   Class :character
##  Mode  :character   Mode  :character   Mode  :character   Mode  :character
##
##
##
##   mm_account
##  Length:2509
##  Class :character
##  Mode  :character
```

```
##
##
##

##Gender vs Urban summary(frequencies and percentages)
#ctrl + shift + m  - to insert the pipe
new_data %>% count(urban, gender)
```

```
## # A tibble: 4 x 3
##   urban gender     n
##   <chr> <chr>  <int>
## 1 Rural female  1144
## 2 Rural male     819
## 3 Urban female   314
## 4 Urban male     232
```

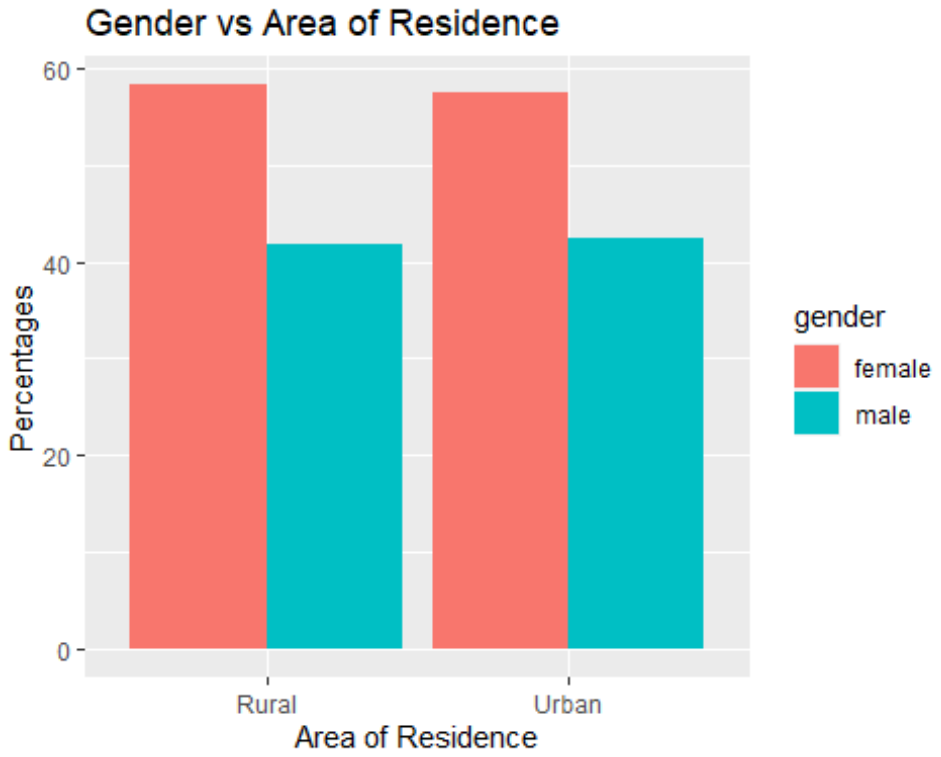
```
#visualize the data using columns
library(ggplot2)
new_data %>% count(urban, gender) %>%
 ggplot(aes(x=urban, y=1, fill=gender))+
  geom_col()+
  xlab("Area of Residence")+
  #Ylab("Percentages")+
  ggtitle("Gender vs Area of Residence")
```




```
#visualize the data using a bar graph
new_data %>% group_by(urban, gender)%>%
```

```
summarise(count=n())%>%
 mutate(percent1=(count/sum(count))*100)%>%
ggplot(aes(x=urban, y=percent1, fill=gender))+
  geom_bar(stat="identity",position="dodge")+
  xlab("Area of Residence")+
  ylab("Percentages")+
  ggtitle("Gender vs Area of Residence")
```

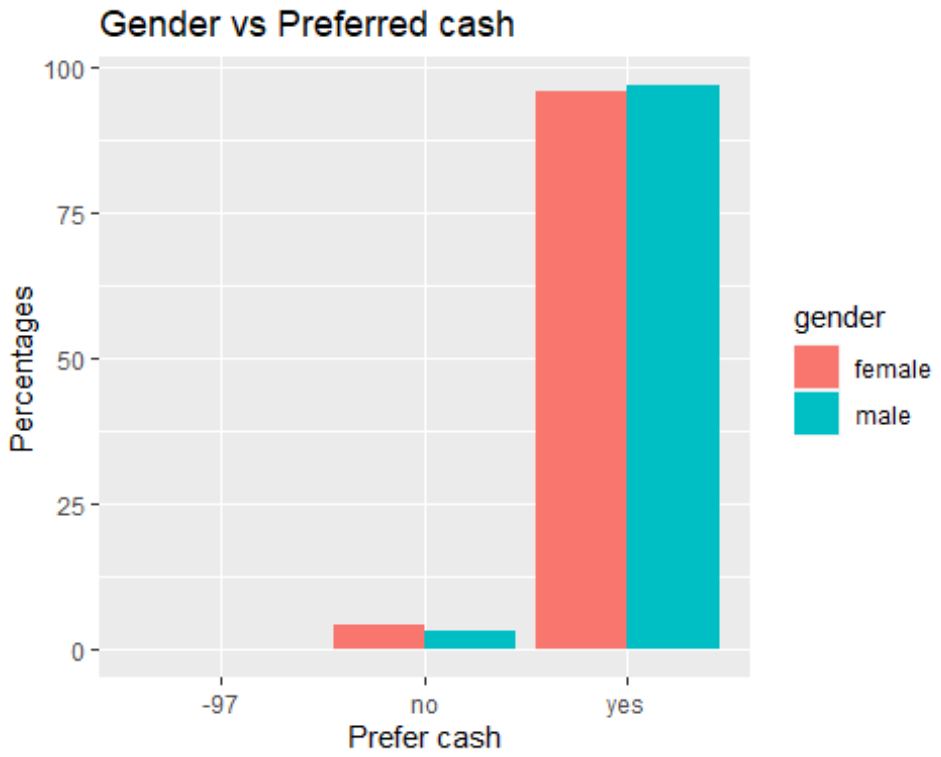
```
## `summarise()` regrouping output by 'urban' (override with `.groups`
argument)
```



The number of female and male respondents in rural areas were 58.28 and 57.51 percent while those in urban areas were 41.72 and 42.49 percent respectively.

```
#Summarize the data and plot a bar graph
#to drop the nas
new_data %>% group_by(gender, prefer_cash)%>%
  drop_na(gender, prefer_cash) %>%
summarise(count=n())%>%
 mutate(percent2=(count/sum(count))*100) %>%
ggplot(aes(x=prefer_cash, y=percent2, fill=gender))+
  geom_bar(stat="identity",position="dodge")+
  xlab("Prefer cash")+
  ylab("Percentages")+
  ggtitle("Gender vs Preferred cash")
```

```
## `summarise()` regrouping output by 'gender' (override with `.groups`
argument)
```



The percentage number of female who had a preferred cash were 95.79 while those without were only 4.21. On the other hand, the percentage number of males with a preferred cash was 96.71 while those without were only 3.19.