Some gun violence analysis with Wikipedia data

This analysis is a reperformance of http://nbviewer.ipython.org/gist/minrk/4358066 (http://nbviewer.ipython.org/gist/minrk/4358066)

The result expected is to analyze the following relationship ratios: - Homicides using guns - Intentional homicides - Countries by per-capita GDP

To reperform the analysis, was considered the following data:

- totals.csv - List of countries by intentional homicide rate - https://en.wikipedia.org /wiki/List_of_countries_by_intentional_homicide_rate (https://en.wikipedia.org /wiki/List_of_countries_by_intentional_homicide_rate)
- guns.csv - List of countries by firearm-related death rate - https://en.wikipedia.org /wiki/List_of_countries_by_firearm-related_death_rate (https://en.wikipedia.org /wiki/List_of_countries_by_firearm-related_death_rate)
- gdp.csv - Countries by GDP per capita - https://en.wikipedia.org /wiki/List_of_countries_by_GDP_(PPP)_per_capita (https://en.wikipedia.org /wiki/List_of_countries_by_GDP_(PPP)_per_capita)

Loading and cleaning the data:

```
totals = data.table(read.csv('totals.csv', sep = ';', header = TRUE))
setnames(totals, c("Country","Intentional_Homicides_Rate","Intentional_Homicide
s_Total_Count","Intentional_Region","Intentional_Subregion","Intentional_Homici
des_Year"))

guns = data.table(read.csv('guns.csv', sep = ';', header = TRUE)[,c(1,2,4,5,12)
])
setnames(guns, c("Country","Homicides_Total","Gun_Homicides_Total","Gun_Homicid
es_Year","Gun_Homicides_Sources_and_Notes"))

gdp = data.table(read.csv('gdp.csv', sep = ';', header = TRUE))
setnames(gdp, c("GDP_Rank","Country","GDP_Int.dolar","GDP_Year"))

gdp$GDP_Rank = as.numeric(gdp$GDP_Rank)
```

Merging the datasets

```
data = merge(totals, guns, by="Country")
data = merge(data, gdp, by="Country")
```

Extracting the percenage of homicides using guns from the total of homicides

```
data$Gun_Percent = 100 * data$Gun_Homicides_Total / data$Homicides_Total
```

Sorting by “Gun_Homicides_Total” and presenting the top 15 countries by total of homicides related to guns

```
data = data[order(Gun_Homicides_Total, decreasing = TRUE)]
head(data[,c(1,7,8,10), with = FALSE], 15)
```

```
##           Country Homicides_Total Gun_Homicides_Total
##  1:      Honduras           64.80                64.80
##  2:   El Salvador           46.85                39.90
##  3:       Jamaica           39.74                39.40
##  4:     Venezuela           50.90                39.00
##  5:     Swaziland           37.16                37.16
##  6:     Guatemala           36.38                34.80
##  7:      Colombia           28.14                27.10
##  8:        Brazil           19.03                18.10
##  9:  South Africa           21.51                17.00
## 10:        Panama           17.60                16.10
## 11:        Mexico           11.17                10.00
## 12:      Paraguay            8.16                 7.30
## 13:     Nicaragua            7.29                 5.90
## 14:    Costa Rica            6.28                 4.60
## 15: United States           10.64                 3.55
##     Gun_Homicides_Sources_and_Notes
##  1:            Guns in Honduras[26]
##  2:         Guns in El Salvador[18]
##  3:             Guns in Jamaica[33]
##  4:           Guns in Venezuela[70]
##  5:           Guns in Swaziland[62]
##  6:           Guns in Guatemala[25]
##  7:            Guns in Colombia[12]
##  8:               Guns in Brazil[8]
##  9:        Guns in South Africa[59]
## 10:              Guns in Panama[47]
## 11:              Guns in Mexico[40]
## 12:            Guns in Paraguay[48]
## 13:           Guns in Nicaragua[45]
## 14:          Guns in Costa Rica[13]
## 15:       Guns in United States[68]
```

Sorting by GDP ranking and presenting the top 30 countries by total of homicides related to guns

```
top = data[order(GDP_Rank)][1:30,c(1,7,8), with = FALSE]
top = top[order(Gun_Homicides_Total, decreasing = TRUE)]
head(top, 10)
```

```
##           Country Homicides_Total Gun_Homicides_Total
##  1: United States           10.64                3.55
##  2:        Israel            1.87                0.94
##  3:    Luxembourg            2.02                0.60
##  4:        Greece            1.64                0.59
##  5:        Canada            2.22                0.51
##  6:      Portugal            1.77                0.48
##  7:        Kuwait            0.36                0.36
##  8:         Italy            1.28                0.36
##  9:       Iceland            1.57                0.32
## 10:       Estonia            2.54                0.30
```

```
#df = head(top, 10)[,1:2, with = F]

#barplot(df,
#        main="Countries by Guns Homicides and Total Homicides",
#        xlab="Countries",
#        ylab ="per 100.000 people",
#        col=c("darkblue","red"),
#        legend = rownames(df))
```

Adding USA, Canada, and Mexico to all of Europe

```
americas_countries = c("United States", "Canada", "Mexico")
reg_data = data[Intentional_Region %in% "Europe"]
reg_data = rbind(reg_data, data[Country %in% americas_countries])

top_reg = reg_data[order(GDP_Rank)][1:30,c(1,7,8), with = FALSE]
top_reg = top_reg[order(Gun_Homicides_Total, decreasing = TRUE)]
head(top_reg, 25)
```

```
##            Country Homicides_Total Gun_Homicides_Total
##  1:         Mexico           11.17                10.00
##  2:  United States           10.64                 3.55
##  3:        Croatia            3.54                 1.10
##  4:     Luxembourg            2.02                 0.60
##  5:         Greece            1.64                 0.59
##  6:         Canada            2.22                 0.51
##  7:       Portugal            1.77                 0.48
##  8:          Italy            1.28                 0.36
##  9:        Iceland            1.57                 0.32
## 10:        Estonia            2.54                 0.30
## 11:        Belgium            2.42                 0.29
## 12:        Finland            3.64                 0.26
## 13:       Bulgaria            2.35                 0.23
## 14:        Denmark            1.28                 0.22
## 15:         France            3.01                 0.22
## 16:    Netherlands            0.46                 0.20
## 17:        Germany            1.24                 0.20
## 18:         Sweden            1.47                 0.19
## 19:        Austria            2.95                 0.18
## 20:       Slovakia            1.75                 0.18
## 21:         Latvia            1.43                 0.18
## 22:          Spain            0.62                 0.15
## 23:        Hungary            0.87                 0.13
## 24: Czech Republic            1.76                 0.12
## 25:        Belarus            0.10                 0.10
##            Country Homicides_Total Gun_Homicides_Total
```

Comparing US, Canada and UK

```
americas_countries = c("United States", "Canada", "United Kingdom")
reg2_data = data[Country %in% americas_countries]

top_reg2 = reg2_data[order(GDP_Rank)][,c(1,7,8), with = FALSE]
top_reg2 = top_reg2[order(Gun_Homicides_Total, decreasing = TRUE)]
top_reg2
```

```
##           Country Homicides_Total Gun_Homicides_Total
## 1:  United States           10.64                 3.55
## 2:         Canada            2.22                 0.51
## 3: United Kingdom            0.26                 0.05
```

Normalize to the US numbers (inverse)

```
americas_countries = c("United States", "Canada", "United Kingdom")
reg2_data = data[Country %in% americas_countries]

top_reg2 = reg2_data[order(GDP_Rank)][,c(1,7,8), with = FALSE]
top_reg2 = top_reg2[order(Gun_Homicides_Total, decreasing = TRUE)]
top_reg2
```

```
##           Country Homicides_Total Gun_Homicides_Total
## 1:  United States           10.64                3.55
## 2:         Canada            2.22                0.51
## 3: United Kingdom            0.26                0.05
```