Fragile State Index vs Mobility Score

```
# Read the data
fsi_18 <- read.csv("E:/Boston University/Statistics Practicum/Project 1/fsi-2018.csv")
ms_19 <- read.csv("E:/Boston University/Statistics Practicum/Project 1/global_ranking_2019.tab")

# Update country names
fsi_18$Country[fsi_18$Country=="Brunei Darussalam"] <- "Brunei"
fsi_18$Country[fsi_18$Country=="Congo Democratic Republic"] <- "Congo (Dem. Rep.)"
fsi_18$Country[fsi_18$Country=="Congo Republic"] <- "Congo (Rep.)"
fsi_18$Country[fsi_18$Country=="Cote d'Ivoire"] <- "Cote d'Ivoire (Ivory Coast)"
fsi_18$Country[fsi_18$Country=="Guinea Bissau"] <- "Guinea-Bissau   "
fsi_18$Country[fsi_18$Country=="Israel and West Bank"] <- "Israel"
fsi_18$Country[fsi_18$Country=="Kyrgyz Republic"] <- "Kyrgyzstan"
fsi_18$Country[fsi_18$Country=="Lao PDR"] <- "Laos"
fsi_18$Country[fsi_18$Country=="Russia"] <- "Russian Federation"
fsi_18$Country[fsi_18$Country=="Timor-Leste"] <- "Timor Leste"
fsi_18$Country[fsi_18$Country=="Cape Verde"] <- "Cape Verde Islands"
fsi_18$Country[fsi_18$Country=="Comoros"] <- "Comores Islands"
fsi_18$Country[fsi_18$Country=="Slovak Republic"] <- "Slovakia"
fsi_18$Country[fsi_18$Country=="Timor Leste"] <- "Timor-Leste"



# data cleaning
fsi_data <- filter(fsi_18,Year==2018) %>%
  select(Country,Year,Total)
fsi_data$Country <- str_c(fsi_data$Country,' ')

ms_19 <- rename(ms_19,Country=country)

# Merge two dataset
dat_18 <- merge(fsi_data,ms_19,all=T)

# Linear regression
fit_18 <-lm(access~Total,data = dat_18)
summary(fit_18)
```

```
##
## Call:
## lm(formula = access ~ Total, data = dat_18)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -67.241 -21.412  -1.797  20.599  74.545
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 235.75009    6.31312   37.34   <2e-16 ***
```

```
## Total        -1.94006    0.08704  -22.29   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 27.87 on 173 degrees of freedom
##   (27 observations deleted due to missingness)
## Multiple R-squared:  0.7417, Adjusted R-squared:  0.7402
## F-statistic: 496.8 on 1 and 173 DF,  p-value: < 2.2e-16
```

```r
# Plot
plot(dat_18$Total,dat_18$access,pch = 20, col = 'gray60',main = 'Fragile State Index vs Mobility Score')
abline(coef(fit_18[1]),coef(fit_18[2]), col = 'red', lty = 2, lwd = 1.3)
```