

CONFLICT

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Objective number1

Investigated how political instability, violence against journalists, and regional factors affect press freedom across countries over a 15-year period. The goal was to quantify the relationship between conflict and media freedom using regression analysis.

Data Collection: Compiled data from multiple public sources for over 100 countries between 2008–2022, including:

Press Freedom Index

Journalist fatalities (sum of male + female reporters killed per country-year)

Political instability scores

Weapons data

Step 1 number1

Loading the data and necessary libraries

```
options(repos = c(CRAN = "https://cloud.r-project.org"))
library(dplyr)

## Warning: package 'dplyr' was built under R version 4.3.3
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##   filter, lag

## The following objects are masked from 'package:base':
##
##   intersect, setdiff, setequal, union

library(tidyr)

## Warning: package 'tidyr' was built under R version 4.3.2

library(car)

## Warning: package 'car' was built under R version 4.3.3
## Loading required package: carData
```

```
## Warning: package 'carData' was built under R version 4.3.2

##
## Attaching package: 'car'

## The following object is masked from 'package:dplyr':
##
##      recode

data = read.csv("C:/Users/HP/Downloads/CONFLICTDATA.csv")
head(data)

##      Coutry Year Male Female Weapons PInstability MaleU Frisk      Agri
## 1 Afghanistan 2008     2      0      5          4.25    7.4    No 24.89227
## 2 Afghanistan 2009     2      1      5          4.25    7.4    No 29.29750
## 3 Afghanistan 2010     1      0      5          3.75    7.4    No 26.21007
## 4 Afghanistan 2011     2      0      5          3.75    7.4    No 23.74366
## 5 Afghanistan 2012     0      0      5          4.00    7.4    No 24.39087
## 6 Afghanistan 2013     1      0      5          5.00    7.4    No 22.81066
##      CDeaths NAm Africa Europe Oc SA      Vuln      EducS      Free Su
## 1 5,644.00    0      0      0  0  0 90.60775 4.383672 39.250  2
## 2 6,488.00    0      0      0  0  0 89.98442 4.810640 62.250  3
## 3 7,151.00    0      0      0  0  0 89.31676 3.479450 54.330  1
## 4 7,560.00    0      0      0  0  0 88.68815 3.462010 61.665  2
## 5 7,754.00    0      0      0  0  0 87.94329 2.604200 69.000  0
## 6 8,104.00    0      0      0  0  0 86.86477 3.454460 62.640  1

summary(data)

##      Coutry      Year      Male      Female
## Length:1290      Min.   :2008      Min.   : 0.0000      Min.   :0.00000
## Class :character 1st Qu.:2011      1st Qu.: 0.0000      1st Qu.:0.00000
## Mode  :character Median :2015      Median : 0.0000      Median :0.00000
##      Mean   :2015      Mean   : 0.9457      Mean   :0.05271
##      3rd Qu.:2019      3rd Qu.: 1.0000      3rd Qu.:0.00000
##      Max.   :2022      Max.   :70.0000      Max.   :4.00000
##
##      Weapons      PInstability      MaleU      Frisk
## Min.   :1.00      Min.   :1.000      Min.   : 0.100      Length:1290
## 1st Qu.:3.00      1st Qu.:2.000      1st Qu.: 3.400      Class :character
## Median :4.00      Median :2.750      Median : 5.100      Mode  :character
## Mean   :3.43      Mean   :2.787      Mean   : 6.904
## 3rd Qu.:4.00      3rd Qu.:3.500      3rd Qu.: 9.800
## Max.   :5.00      Max.   :5.000      Max.   :27.500
## NA's   :68      NA's   :69      NA's   :46
##      Agri      CDeaths      NAm      Africa
## Min.   : 0.02653      Length:1290      Min.   :0.0000      Min.   :0.0000
## 1st Qu.: 3.63310      Class :character      1st Qu.:0.0000      1st Qu.:0.0000
## Median : 8.35798      Mode  :character      Median :0.0000      Median :0.0000
## Mean   :12.38374      Mean   :0.1475      Mean   :0.4426
## 3rd Qu.:19.76287      3rd Qu.:0.0000      3rd Qu.:1.0000
```

```
## Max. :65.17457 Max. :1.0000 Max. :1.0000
## NA's :66 NA's :375 NA's :375
## Europe Oc SA Vuln
## Min. :0.0000 Min. :0 Min. :0.0000 Min. : 1.007
## 1st Qu.:0.0000 1st Qu.:0 1st Qu.:0.0000 1st Qu.:20.943
## Median :0.0000 Median :0 Median :0.0000 Median :40.729
## Mean :0.1967 Mean :0 Mean :0.1311 Mean :43.924
## 3rd Qu.:0.0000 3rd Qu.:0 3rd Qu.:0.0000 3rd Qu.:70.275
## Max. :1.0000 Max. :0 Max. :1.0000 Max. :92.491
## NA's :375 NA's :375 NA's :375 NA's :31
## EducS Free Su
## Min. : 0.3485 Min. : 1.00 Min. : 0.0000
## 1st Qu.: 2.8253 1st Qu.: 54.10 1st Qu.: 0.0000
## Median : 3.7103 Median : 66.14 Median : 0.0000
## Mean : 3.8742 Mean : 66.07 Mean : 0.9984
## 3rd Qu.: 4.8939 3rd Qu.: 76.69 3rd Qu.: 1.0000
## Max. :10.8265 Max. :152.00 Max. :70.0000
## NA's :288
```

So there are some nulls in the important columns. Treating them in the cleaning process:

Step 2 number1

Data Cleaning:

Standardized year and region identifiers

Removed incomplete entries and handled nulls

Converted regional categories to dummy variables for regression (did the conversion in Google sheets)

```
data_clean = data %>%
  group_by(Coutry) %>%
  filter(!any(is.na(PInstability))) %>%
  ungroup()
summary(data_clean)
```

```
## Coutry Year Male Female
## Length:1185 Min. :2008 Min. : 0.0000 Min. :0.00000
## Class :character 1st Qu.:2011 1st Qu.: 0.0000 1st Qu.:0.00000
## Mode :character Median :2015 Median : 0.0000 Median :0.00000
## Mean :2015 Mean : 0.9983 Mean :0.05316
## 3rd Qu.:2019 3rd Qu.: 1.0000 3rd Qu.:0.00000
## Max. :2022 Max. :70.0000 Max. :4.00000
##
## Weapons PInstability MaleU Frisk
## Min. :1.000 Min. :1.000 Min. : 0.100 Length:1185
## 1st Qu.:3.000 1st Qu.:2.000 1st Qu.: 3.400 Class :character
## Median :4.000 Median :2.750 Median : 5.000 Mode :character
## Mean :3.417 Mean :2.755 Mean : 6.796
```

```
## 3rd Qu.:4.000 3rd Qu.:3.500 3rd Qu.: 9.400
## Max. :5.000 Max. :5.000 Max. :27.500
## NA's :10 NA's :16
## Agri CDeaths NAm Africa
## Min. : 0.02653 Length:1185 Min. :0.0000 Min. :0.0000
## 1st Qu.: 3.80560 Class :character 1st Qu.:0.0000 1st Qu.:0.0000
## Median : 8.96605 Mode :character Median :0.0000 Median :0.0000
## Mean :12.93564 Mean :0.1607 Mean :0.4286
## 3rd Qu.:20.88552 3rd Qu.:0.0000 3rd Qu.:1.0000
## Max. :65.17457 Max. :1.0000 Max. :1.0000
## NA's :59 NA's :345 NA's :345
## Europe Oc SA Vuln
## Min. :0.0000 Min. :0 Min. :0.0000 Min. : 1.007
## 1st Qu.:0.0000 1st Qu.:0 1st Qu.:0.0000 1st Qu.:21.747
## Median :0.0000 Median :0 Median :0.0000 Median :40.729
## Mean :0.1964 Mean :0 Mean :0.1429 Mean :43.915
## 3rd Qu.:0.0000 3rd Qu.:0 3rd Qu.:0.0000 3rd Qu.:69.748
## Max. :1.0000 Max. :0 Max. :1.0000 Max. :92.491
## NA's :345 NA's :345 NA's :345 NA's :16
## EducS Free Su
## Min. : 0.3485 Min. : 1.00 Min. : 0.000
## 1st Qu.: 2.8123 1st Qu.: 53.29 1st Qu.: 0.000
## Median : 3.7139 Median : 66.21 Median : 0.000
## Mean : 3.8855 Mean : 65.79 Mean : 1.051
## 3rd Qu.: 4.9041 3rd Qu.: 76.90 3rd Qu.: 1.000
## Max. :10.8265 Max. :152.00 Max. :70.000
## NA's :256
```

```
data_clean$CDeaths = as.numeric(data_clean$CDeaths)
```

```
## Warning: NAs introduced by coercion
```

```
summary(data_clean)
```

```
## Coutry Year Male Female
## Length:1185 Min. :2008 Min. : 0.0000 Min. :0.00000
## Class :character 1st Qu.:2011 1st Qu.: 0.0000 1st Qu.:0.00000
## Mode :character Median :2015 Median : 0.0000 Median :0.00000
## Mean :2015 Mean : 0.9983 Mean :0.05316
## 3rd Qu.:2019 3rd Qu.: 1.0000 3rd Qu.:0.00000
## Max. :2022 Max. :70.0000 Max. :4.00000
##
## Weapons PInstability MaleU Frisk
## Min. :1.000 Min. :1.000 Min. : 0.100 Length:1185
## 1st Qu.:3.000 1st Qu.:2.000 1st Qu.: 3.400 Class :character
## Median :4.000 Median :2.750 Median : 5.000 Mode :character
## Mean :3.417 Mean :2.755 Mean : 6.796
## 3rd Qu.:4.000 3rd Qu.:3.500 3rd Qu.: 9.400
## Max. :5.000 Max. :5.000 Max. :27.500
## NA's :10 NA's :16
## Agri CDeaths NAm Africa
```

```
## Min. : 0.02653 Min. : 0.00 Min. :0.0000 Min. :0.0000
## 1st Qu.: 3.80560 1st Qu.: 0.00 1st Qu.:0.0000 1st Qu.:0.0000
## Median : 8.96605 Median : 0.00 Median :0.0000 Median :0.0000
## Mean :12.93564 Mean : 79.62 Mean :0.1607 Mean :0.4286
## 3rd Qu.:20.88552 3rd Qu.: 40.00 3rd Qu.:0.0000 3rd Qu.:1.0000
## Max. :65.17457 Max. :996.00 Max. :1.0000 Max. :1.0000
## NA's :59 NA's :155 NA's :345 NA's :345
## Europe Oc SA Vuln
## Min. :0.0000 Min. :0 Min. :0.0000 Min. : 1.007
## 1st Qu.:0.0000 1st Qu.:0 1st Qu.:0.0000 1st Qu.:21.747
## Median :0.0000 Median :0 Median :0.0000 Median :40.729
## Mean :0.1964 Mean :0 Mean :0.1429 Mean :43.915
## 3rd Qu.:0.0000 3rd Qu.:0 3rd Qu.:0.0000 3rd Qu.:69.748
## Max. :1.0000 Max. :0 Max. :1.0000 Max. :92.491
## NA's :345 NA's :345 NA's :345 NA's :16
## EducS Free Su
## Min. : 0.3485 Min. : 1.00 Min. : 0.000
## 1st Qu.: 2.8123 1st Qu.: 53.29 1st Qu.: 0.000
## Median : 3.7139 Median : 66.21 Median : 0.000
## Mean : 3.8855 Mean : 65.79 Mean : 1.051
## 3rd Qu.: 4.9041 3rd Qu.: 76.90 3rd Qu.: 1.000
## Max. :10.8265 Max. :152.00 Max. :70.000
## NA's :256
```

```
library(dplyr)
```

```
data_clean = data %>%
  filter(!is.na(Coutry))%>%
  filter(!is.na(PInstability))

data_clean <- data_clean %>%
  mutate(NAm = replace_na(NAm, 0)) %>%
  mutate(Africa = replace_na(Africa, 0)) %>%
  mutate(Europe = replace_na(Europe, 0)) %>%
  mutate(Oc = replace_na(Oc, 0)) %>%
  mutate(SA = replace_na(SA, 0))
summary(data_clean)
```

```
## Coutry Year Male Female
## Length:1221 Min. :2008 Min. : 0.0000 Min. :0.00000
## Class :character 1st Qu.:2011 1st Qu.: 0.0000 1st Qu.:0.00000
## Mode :character Median :2015 Median : 0.0000 Median :0.00000
## Mean :2015 Mean : 0.9812 Mean :0.05487
## 3rd Qu.:2019 3rd Qu.: 1.0000 3rd Qu.:0.00000
## Max. :2022 Max. :70.0000 Max. :4.00000
##
## Weapons PInstability MaleU Frisk
## Min. :1.000 Min. :1.000 Min. : 0.100 Length:1221
## 1st Qu.:3.000 1st Qu.:2.000 1st Qu.: 3.400 Class :character
## Median :4.000 Median :2.750 Median : 5.100 Mode :character
```

```
## Mean :3.432 Mean :2.787 Mean : 6.846
## 3rd Qu.:4.000 3rd Qu.:3.500 3rd Qu.: 9.700
## Max. :5.000 Max. :5.000 Max. :27.500
## NA's :15 NA's :23
## Agri CDeaths NAm Africa
## Min. : 0.02653 Length:1221 Min. :0.0000 Min. :0.0000
## 1st Qu.: 3.80660 Class :character 1st Qu.:0.0000 1st Qu.:0.0000
## Median : 8.96518 Mode :character Median :0.0000 Median :0.0000
## Mean :12.86425 Mean :0.1106 Mean :0.3186
## 3rd Qu.:20.67965 3rd Qu.:0.0000 3rd Qu.:1.0000
## Max. :65.17457 Max. :1.0000 Max. :1.0000
## NA's :66
## Europe Oc SA Vuln
## Min. :0.0000 Min. :0 Min. :0.00000 Min. : 1.007
## 1st Qu.:0.0000 1st Qu.:0 1st Qu.:0.00000 1st Qu.:22.373
## Median :0.0000 Median :0 Median :0.00000 Median :41.453
## Mean :0.1351 Mean :0 Mean :0.09828 Mean :44.752
## 3rd Qu.:0.0000 3rd Qu.:0 3rd Qu.:0.00000 3rd Qu.:70.760
## Max. :1.0000 Max. :0 Max. :1.00000 Max. :92.491
## NA's :23
## EducS Free Su
## Min. : 0.3485 Min. : 1.00 Min. : 0.000
## 1st Qu.: 2.8198 1st Qu.: 53.97 1st Qu.: 0.000
## Median : 3.6954 Median : 66.21 Median : 0.000
## Mean : 3.8630 Mean : 65.78 Mean : 1.036
## 3rd Qu.: 4.8369 3rd Qu.: 76.75 3rd Qu.: 1.000
## Max. :10.8265 Max. :152.00 Max. :70.000
## NA's :267
```

Step 3 number1

Modeling Techniques:

Built a multiple linear regression model to estimate the effect of journalist deaths (Su), political instability (PInstability), and region on press freedom.

Controlled for time-fixed effects using dummy variables for each year.

Ran separate continent-level models to assess regional dynamics (Africa, South America, North America).

```
model= lm(Free ~ Su + NAm + Africa + Europe + Oc + SA + factor(Year) +
PInstability + Weapons , data = data_clean)
alias(model)

## Model :
## Free ~ Su + NAm + Africa + Europe + Oc + SA + factor(Year) +
## PInstability + Weapons
##
## Complete :
## (Intercept) Su NAm Africa Europe SA factor(Year)2009 factor(Year)2010
```

```
## Oc 0      0 0 0      0      0 0      0
## factor(Year)2011 factor(Year)2012 factor(Year)2013 factor(Year)2014
## Oc 0      0      0      0
## factor(Year)2015 factor(Year)2016 factor(Year)2017 factor(Year)2018
## Oc 0      0      0      0
## factor(Year)2019 factor(Year)2020 factor(Year)2021 factor(Year)2022
## Oc 0      0      0      0
## PInstability Weapons
## Oc 0      0
```

```
model= lm(Free ~ Su + NAm + Africa + Europe + SA + factor(Year) +
PInstability + Weapons, data = data_clean)
summary(model)
```

```
##
## Call:
## lm(formula = Free ~ Su + NAm + Africa + Europe + SA + factor(Year) +
## PInstability + Weapons, data = data_clean)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -81.896  -8.017   1.363   8.634  54.441
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    67.7196     2.5293  26.774 < 2e-16 ***
## Su             -0.8439     0.1199  -7.037 3.32e-12 ***
## NAm            12.7054     1.6771   7.576 7.16e-14 ***
## Africa         10.8491     1.1681   9.288 < 2e-16 ***
## Europe         19.9125     1.5415  12.918 < 2e-16 ***
## SA              9.9098     1.7295   5.730 1.28e-08 ***
## factor(Year)2009 14.5096     2.4790   5.853 6.25e-09 ***
## factor(Year)2010  1.5736     2.4787   0.635  0.52564
## factor(Year)2011 14.5423     2.4870   5.847 6.45e-09 ***
## factor(Year)2012 27.4748     2.4660  11.141 < 2e-16 ***
## factor(Year)2013 -2.8604     2.4659  -1.160  0.24629
## factor(Year)2014 -3.9983     2.4641  -1.623  0.10494
## factor(Year)2015 -4.3264     2.4721  -1.750  0.08036 .
## factor(Year)2016 -5.3790     2.4638  -2.183  0.02921 *
## factor(Year)2017 -5.8503     2.4638  -2.374  0.01773 *
## factor(Year)2018 -5.6726     2.4643  -2.302  0.02151 *
## factor(Year)2019 -6.5719     2.4641  -2.667  0.00776 **
## factor(Year)2020 -6.4343     2.4640  -2.611  0.00913 **
## factor(Year)2021 -6.3753     2.4644  -2.587  0.00980 **
## factor(Year)2022 -14.3446     2.4654  -5.818 7.64e-09 ***
## PInstability    -8.3744     0.5672 -14.763 < 2e-16 ***
## Weapons         4.0690     0.5653   7.199 1.08e-12 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## Residual standard error: 15.63 on 1184 degrees of freedom
## (15 observations deleted due to missingness)
## Multiple R-squared: 0.527, Adjusted R-squared: 0.5186
## F-statistic: 62.81 on 21 and 1184 DF, p-value: < 2.2e-16
```

```
vif(model)
```

```
##           GVIF Df GVIF^(1/(2*Df))
## Su          1.099808 1          1.048717
## NAm         1.353985 1          1.163609
## Africa      1.460466 1          1.208497
## Europe      1.385919 1          1.177251
## SA          1.323771 1          1.150553
## factor(Year) 1.014833 14         1.000526
## PInstability 1.697766 1          1.302983
## Weapons      1.595557 1          1.263154
```

Creating continent specific data frames to isolate regional patterns.

```
Afdata = subset(data_clean, Africa==1)
modelAfrica = lm(Free ~ factor(Year) + PInstability + Weapons + Su, data =
Afdata)
summary(modelAfrica)
```

```
##
## Call:
## lm(formula = Free ~ factor(Year) + PInstability + Weapons + Su,
##     data = Afdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -67.243  -9.141   0.273   9.891  37.629
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    56.8962     4.2624  13.348 < 2e-16 ***
## factor(Year)2009  15.5749     4.0650   3.831 0.00015 ***
## factor(Year)2010   5.6326     4.0653   1.386 0.16674
## factor(Year)2011  20.6467     4.1103   5.023 7.97e-07 ***
## factor(Year)2012  36.9431     4.0813   9.052 < 2e-16 ***
## factor(Year)2013   3.6447     4.0792   0.893 0.37219
## factor(Year)2014   0.7117     4.0733   0.175 0.86139
## factor(Year)2015   0.4949     4.0716   0.122 0.90333
## factor(Year)2016  -1.8340     4.0643  -0.451 0.65208
## factor(Year)2017  -2.7706     4.0659  -0.681 0.49603
## factor(Year)2018  -2.9842     4.1055  -0.727 0.46776
## factor(Year)2019  -3.7446     4.1052  -0.912 0.36229
## factor(Year)2020  -4.4021     4.1044  -1.073 0.28419
## factor(Year)2021  -4.1378     4.1065  -1.008 0.31431
## factor(Year)2022 -11.1178     4.1087  -2.706 0.00713 **
## PInstability    -11.4641     0.8958 -12.797 < 2e-16 ***
```



```

## Weapons          11.6618      0.8411  13.864 < 2e-16 ***
## Su                -3.1982      0.5803  -5.511 6.75e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 14.5 on 365 degrees of freedom
## (6 observations deleted due to missingness)
## Multiple R-squared:  0.5956, Adjusted R-squared:  0.5768
## F-statistic: 31.62 on 17 and 365 DF, p-value: < 2.2e-16

SAdata = subset(data_clean, SA==1)
modelSA =lm(Free ~ factor(Year) + PInstability + Weapons + Su, data =
SAdata)
summary(modelSA)

##
## Call:
## lm(formula = Free ~ factor(Year) + PInstability + Weapons + Su,
##     data = SAdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -22.316  -3.655   1.062   4.467  16.532
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    107.4881     6.1386  17.510 < 2e-16 ***
## factor(Year)2009    17.7758     3.7614   4.726 7.36e-06 ***
## factor(Year)2010     2.5728     3.7676   0.683 0.496226
## factor(Year)2011    13.5458     3.8002   3.564 0.000556 ***
## factor(Year)2012    24.8820     3.8007   6.547 2.41e-09 ***
## factor(Year)2013    -7.8858     3.8023  -2.074 0.040605 *
## factor(Year)2014    -8.0114     3.7910  -2.113 0.037016 *
## factor(Year)2015    -8.9804     3.8021  -2.362 0.020078 *
## factor(Year)2016    -9.9925     3.7719  -2.649 0.009351 **
## factor(Year)2017   -10.5602     3.7675  -2.803 0.006061 **
## factor(Year)2018    -9.4414     3.8032  -2.483 0.014678 *
## factor(Year)2019   -11.9713     3.7765  -3.170 0.002013 **
## factor(Year)2020   -11.7810     3.7812  -3.116 0.002384 **
## factor(Year)2021   -12.6545     3.7676  -3.359 0.001102 **
## factor(Year)2022   -21.6869     3.8041  -5.701 1.16e-07 ***
## PInstability       -3.2969     0.8724  -3.779 0.000265 ***
## Weapons           -6.4519     1.6394  -3.936 0.000152 ***
## Su                 -0.8167     0.6834  -1.195 0.234825
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7.521 on 102 degrees of freedom
## Multiple R-squared:  0.781, Adjusted R-squared:  0.7445
## F-statistic: 21.4 on 17 and 102 DF, p-value: < 2.2e-16

```

```

NAmdata = subset(data_clean, NAm==1)
modelNA = lm(Free ~ factor(Year) + PInstability + Weapons + Su, data =
NAmdata)
summary(modelNA)

##
## Call:
## lm(formula = Free ~ factor(Year) + PInstability + Weapons + Su,
##     data = NAmdata)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -28.9436  -4.7244  -0.4553   5.7396  23.5451
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    109.2344     7.5429   14.482 < 2e-16 ***
## factor(Year)2009    12.0046     4.8331    2.484 0.014452 *
## factor(Year)2010     1.9527     4.8443    0.403 0.687626
## factor(Year)2011    16.1524     4.8520    3.329 0.001174 **
## factor(Year)2012    28.5403     4.7052    6.066 1.75e-08 ***
## factor(Year)2013   -12.4431     4.7277   -2.632 0.009665 **
## factor(Year)2014   -12.5493     4.7247   -2.656 0.009037 **
## factor(Year)2015   -12.5414     4.7195   -2.657 0.009006 **
## factor(Year)2016   -14.1888     4.7273   -3.001 0.003301 **
## factor(Year)2017   -13.8176     4.7165   -2.930 0.004100 **
## factor(Year)2018   -12.4687     4.7107   -2.647 0.009273 **
## factor(Year)2019   -14.8727     4.6990   -3.165 0.001989 **
## factor(Year)2020   -14.5711     4.6978   -3.102 0.002425 **
## factor(Year)2021   -16.2794     4.6988   -3.465 0.000749 ***
## factor(Year)2022   -22.7272     4.6947   -4.841 4.09e-06 ***
## PInstability      -3.0701     1.5772   -1.947 0.054047 .
## Weapons           -5.0832     2.3525   -2.161 0.032803 *
## Su                -2.0883     0.3096   -6.745 6.64e-10 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 9.94 on 114 degrees of freedom
## (3 observations deleted due to missingness)
## Multiple R-squared:  0.7514, Adjusted R-squared:  0.7143
## F-statistic: 20.26 on 17 and 114 DF, p-value: < 2.2e-16

Europedata = subset(data_clean, Europe==1)
modelEurope = lm(Free ~ factor(Year) + PInstability + Weapons + Su, data =
Europedata)
summary(modelEurope)

##
## Call:
## lm(formula = Free ~ factor(Year) + PInstability + Weapons + Su,

```

```

##      data = Europedata)
##
## Residuals:
##      Min        1Q    Median        3Q        Max
## -28.2843  -4.6109   0.6285   5.2676  23.0393
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    113.3114     3.5032  32.345 < 2e-16 ***
## factor(Year)2009    16.6973     3.8282   4.362 2.42e-05 ***
## factor(Year)2010     2.2927     3.8508   0.595  0.55250
## factor(Year)2011    19.2073     3.8406   5.001 1.60e-06 ***
## factor(Year)2012    36.5284     3.8406   9.511 < 2e-16 ***
## factor(Year)2013    -9.1525     3.8431  -2.382  0.01852 *
## factor(Year)2014    -8.8130     3.8270  -2.303  0.02269 *
## factor(Year)2015    -7.8547     3.8325  -2.049  0.04219 *
## factor(Year)2016    -8.8399     3.8628  -2.288  0.02353 *
## factor(Year)2017    -9.5325     3.8480  -2.477  0.01437 *
## factor(Year)2018    -9.7138     3.8460  -2.526  0.01261 *
## factor(Year)2019   -10.2483     3.8460  -2.665  0.00857 **
## factor(Year)2020   -10.2216     3.8504  -2.655  0.00881 **
## factor(Year)2021   -10.9943     3.8425  -2.861  0.00484 **
## factor(Year)2022   -15.7575     3.8431  -4.100 6.80e-05 ***
## PInstability       -3.0945     1.2992  -2.382  0.01850 *
## Weapons            -8.5018     1.3332  -6.377 2.21e-09 ***
## Su                 -1.0192     0.6136  -1.661  0.09883 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 8.961 on 147 degrees of freedom
## Multiple R-squared:  0.815, Adjusted R-squared:  0.7936
## F-statistic: 38.09 on 17 and 147 DF, p-value: < 2.2e-16

Asiadata = subset(data_clean, Africa==0 & SA==0 & Europe ==0 & NAm ==0 & Oc
==0 )
modelAsia =lm(Free ~ factor(Year) + PInstability + Weapons + Su, data =
Asiadata)
summary(modelAsia)

##
## Call:
## lm(formula = Free ~ factor(Year) + PInstability + Weapons + Su,
##      data = Asiadata)
##
## Residuals:
##      Min        1Q    Median        3Q        Max
## -63.815  -8.561   0.142   8.972  67.604
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)

```

```

## (Intercept)      68.6152      4.6535  14.745 < 2e-16 ***
## factor(Year)2009  13.0553      4.9659   2.629 0.008904 **
## factor(Year)2010  -1.2652      4.9671  -0.255 0.799081
## factor(Year)2011   8.6325      4.9644   1.739 0.082850 .
## factor(Year)2012  17.3455      4.9324   3.517 0.000489 ***
## factor(Year)2013   0.2804      4.9338   0.057 0.954711
## factor(Year)2014  -0.4285      4.9204  -0.087 0.930644
## factor(Year)2015  -0.5831      4.9690  -0.117 0.906642
## factor(Year)2016  -1.0686      4.9191  -0.217 0.828138
## factor(Year)2017  -1.2355      4.9201  -0.251 0.801854
## factor(Year)2018  -1.3655      4.8762  -0.280 0.779610
## factor(Year)2019  -1.5874      4.8750  -0.326 0.744893
## factor(Year)2020  -1.3115      4.8737  -0.269 0.787991
## factor(Year)2021  -1.3408      4.8737  -0.275 0.783375
## factor(Year)2022 -11.2898      4.8755  -2.316 0.021101 *
## PInstability      -6.4821      1.0834  -5.983 4.98e-09 ***
## Weapons            1.3401      0.9612   1.394 0.164055
## Su                 -0.5017      0.1514  -3.313 0.001011 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 18.06 on 388 degrees of freedom
## (6 observations deleted due to missingness)
## Multiple R-squared:  0.2269, Adjusted R-squared:  0.1931
## F-statistic:  6.7 on 17 and 388 DF, p-value: 4.222e-14

```

Step 4 number1

Key Findings

Violence Hurts Freedom:

Each journalist killed is associated with a 0.8-point drop in the Press Freedom Index globally ($p < 0.001$), signaling that violence directly erodes media freedom.

Political Instability is Even Worse: A 1-point rise in political instability correlates with a 8.3-point decrease in press freedom ($p < 0.001$). In Africa, this impact more than doubles to - 11.5 points.

Regional Effects: Europe, Africa, and South America all showed significantly higher average press freedom scores than the baseline (Asia), with Europe leading.

Intercept (67.72): Baseline predicted press freedom for Asia in 2008 with zero journalist deaths and political instability at 0 — theoretical, but sets the base.

Su (-0.85): Statistically significant. Killing journalists has a strong negative effect on freedom — a chilling effect in real time.

PInstability (-8.37): Hugely significant. One unit of instability shaves off over 8 points. This is the strongest driver in the model.

Continent dummies:

Europe: +45.6 (additional baseline points compared to the general model)

South America: +39.8

Africa: -10.8 (lowest)

North America: +41.5

Suggests that institutional/regional factors matter beyond just violence and instability.

Regional Differences Africa: PInstability has a very strong effect (-11.46), even stronger than globally.

Journalist deaths (-3.20): Each death hits press freedom hard.

$R^2 = \sim 0.60$

South America: PInstability still negative but milder (-3.29).

Su (-0.81, not significant): Deaths don't significantly impact press freedom here — maybe due to desensitization or under-reporting. There is a possibility of omitted variables, but desensitization seems to be a good reason (given the situations in South American countries with the most violence)

$R^2 = 0.78$

North America & Europe:

Second highest and highest baseline press freedom respectively. Showed a positive baseline press freedom, but effects of violence and political instability are still statistically significant.