Class 9

Sean Westwood

Plan:

- Exam structure
- Practice questions
- Pub quiz

Midterm

- One hour and 50 minutes (may start anytime between 11:00 AM and 8:00PM)
- Mixture of multiple choice (5) and analysis (8)
- I will be available to answer questions by email

Exam Practice

Today we will practice some analysis. You will work on the practice by yourself. I will answer questions as if this were an exam.

Time management will be important during the midterm. You should be able to answer the questions below in less than 60 minutes

We will analyze the relationship between indiscriminate violence and insurgent attacks using data about Russian artillery fire in Chechnya from 2000 to 2005.

This exercise is based on: Lyall, J. 2009. "Does Indiscriminate Violence Incite Insurgent Attacks?: Evidence from Chechnya." *Journal of Conflict Resolution* 53(3): 331–62.

Some believe that indiscriminate violence increases insurgent attacks by creating more cooperative relationships between citizens and insurgents. Others believe that indiscriminate violence can be effective in suppressing insurgents' activities.

```
chechen <- read.csv("chechen.csv")
```

Name	Description
village	Name of Chechnya village
groznyy	Variable indicating whether a village is in Groznyy (equal to 1) or not (equal to 0)
fire	Whether Russians struck a village with artillery fire (equal to 1) or not (equal to 0)
deaths	Estimated number of individuals killed during Russian artillery fire
preattack	The number of insurgent attacks before Russian artillery fire
postattack	The number of insurgent attacks after Russian artillery fire

Question 1

1.1. How many unique villages were hit by Russian fire? Note that villages will appear multiple times (one record for each time the Russians fired).

```
length(unique(chechen$village[chechen$fire == 1]))
```

```
[1] 75
```

1.2. Which village had the largest number of deaths?

```
tapply(chechen$deaths, chechen$village, sum, na.rm = T)
```

```
          Achireshki          Achkoi-Martan
                   0                      0
          Agishbatoi                Agishty
                   0                     25
     Akhkinchu-Barze            Alkhan-Kala
                   0                      0
         Alkhan-Yurt            Alkhazurovo
                   0                      0
               Argun       Aslanbek-Sherpivo
                  35                      0
           Avarskoye                 Avtury
                   0                      0
          Bachi-Yurt            Bas-Gordali
```

0	0
Belgatoy	Benoy
34	0
Berdakel	Borzoi
0	0
Chechen-Aul	Chiri-Yurt
1	0
Dachu-Borzoi	Dai
0	0
Dargo	Dolinskoe
0	0
Duba-Yurt	Dutsu-khote
0	0
Dyshne-Vedeno	Dzhalka
4	1
Dzhugurty	Elistanzhi
0	1
Ersenoi	Eshilkhatoy
0	1
Evli	Gansolchu
0	0
Gargachi	Gatin-Kali
2	0
Gekhi (Blagodatnoye)	Gekhi-Chu
0	0
Geldagan (Gel'dygen)	Germenchuk
0	0
Gikalo	Gikalovskiy
0	0
Goichu	Goity
0	2
Goryacheistochnenskaya	Grozny (Zavodskiy)
0	3
Grozny (Leninskiy)	Grozny (Zavodskiy)
21	2
Grushevoye	Gudermes
0	0
Guni	Ilaskhan-Yurt
0	0
Ishtiburi	Isti-Su
0	0
Khal-Keloi	Khambi-Irze
0	0

Kharsenoi	Khatuni
0	1
Khidi-Khutor	Kirov-Yurt
0	0
Kirova	Komsomolskoe
0	0
Kulary	Kurchaloi
0	0
Leshkoroy	Lipovka
0	0
Makhkety	Maloye (Malyye Varandy)
14	0
Malye Shuani	Marshen-Kali
0	0
Martan-Chu	Mayrtup
0	7
Mesedoy	Mesker-Yurt
0	1
Michurina	Morzoi-Mokkh
20	0
Musolt-Aul	Nadrech'ye
0	0
Neftyanoye	Nikolaevskaya
0	0
Nizhny Dai	Novogroznenskoi
0	0
Novye Aldy	Novye Atagi
2	5
Oktya'brskoe	Oktyabr'skiy (Groznyy)
0	0
Ortsi-Yurt	Pamyatoy
0	0
Pervomayskaya	Petropavlovskaya
0	2
Podgornyy	Prigorodny
0	0
Regety	Regety (Regita)
0	0
Roshni-chu	Sel'mentauzen
0	2
Serzhen-Yurt	Shaami-Yurt
37	1
Shali	Sharo-Argun

```
                         5                          1
                    Shatoi           Shena (Shuani)
                         2                          0
              Shirdi-Mokhk               Sovetskoye
                         0                          0
        Sredniye kurchali           Staraya Sunzha
                         0                          0
Staropomyslovskiy (Groznyy)            Starye Atagi
                         0                          5
                 Tangy-Chu                    Tashi
                         0                          0
                Tazen-Kale                  Tevzena
                         1                          0
              Tolstoy-Yurt             Trekhgor'ye
                         0                          0
                Tsa-Vedeno             Tsotan-Yurt
                         0                         16
                 Ulus-Kert              Urus-Martan
                         2                          1
                   Valerik                   Vedeno
                         1                          6
              Verkhny Dai           Yalkhoy-Mokhk
                         0                          0
              Yermolovskiy              Zakan-Yurt
                         1                          0
                   Zumsoj
                         0
```

```r
sort(tapply(chechen$deaths, chechen$village, sum, na.rm = T),
    decreasing = T)[1]
```

```
Serzhen-Yurt
          37
```

Question 2

2.1. Did Russian artillery result in a greater number of deaths in Groznyy compared to the villages outside of Groznyy? Compute a mean difference in deaths for the two groups.

```r
mean(chechen$deaths[chechen$groznyy == 1], na.rm = T) - mean(chechen$deaths[chechen$groznyy =
    0], na.rm = T)
```

```
[1] 2.141917
```

2.2. Conduct the same comparison but use median differences.

```
median(chechen$deaths[chechen$groznyy == 1], na.rm = T) - median(chechen$deaths[chechen$groz
    0], na.rm = T)
```

```
[1] 3
```

Question 3

3.1. Compare the average number of insurgent attacks after Russian fire for villages hit by artillery fire and those that were not hit.

```
mean(chechen$postattack[chechen$fire == 1]) - mean(chechen$postattack[chechen$fire ==
    0])
```

```
[1] -0.5534591
```

Question 4

4.1. Compute the mean difference in the `diffattack` (the difference between preattack and postattack) variable between villages shelled and villages not shelled.

```
chechen$diffattack <- chechen$preattack - chechen$postattack
```

```
mean(chechen$diffattack[chechen$fire == 1]) - mean(chechen$diffattack[chechen$fire ==
    0])
```

```
[1] 0.5157233
```