

Chicago Domestic Crimes During Pandemic

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domvio<-domvio %>%
  mutate(MONTH = substring(Date..Of.Occurrence, 0, 2)) %>%
  mutate(DAY = substring(Date..Of.Occurrence, 4,5)) %>%
  mutate(YEAR = substring(Date..Of.Occurrence, 7,10))

#heres what the data looks like
glimpse(domvio)

## Rows: 231,002
## Columns: 20
## $ CASE. <chr> "JD163753", "JD212847", "JC497784", "JC459410...
## $ Date..Of.Occurrence <chr> "02/24/2020 08:15:00 PM", "04/10/2020 10:56:0...
## $ BLOCK <chr> "031XX W LEXINGTON ST", "005XX W 103RD ST", "...
## $ IUCR <chr> "1153", "0560", "0860", "0560", "0810", "0820...
## $ PRIMARY.DESCRPTION <chr> "DECEPTIVE PRACTICE", "ASSAULT", "THEFT", "AS...
## $ SECONDARY.DESCRPTION <chr> "FINANCIAL IDENTITY THEFT OVER $ 300", "SIMPL...
## $ LOCATION.DESCRPTION <chr> "", "RESIDENCE", "DEPARTMENT STORE", "SIDEWAL...
## $ ARREST <chr> "N", "N", "N", "N", "N", "N", "N", "N", "N", ...
## $ DOMESTIC <chr> "N", "N", "N", "N", "N", "N", "N", "N", "N", ...
## $ BEAT <int> 1134, 2232, 1924, 122, 123, 2433, 312, 914, 3...
## $ WARD <int> 24, 9, 44, 4, 25, 48, 20, 11, 5, 26, 27, 37, ...
## $ FBI.CD <chr> "11", "08A", "06", "08A", "06", "06", "08A", ...
## $ X.COORDINATE <int> NA, 1174583, NA, NA, NA, NA, 1180030, 1171590...
## $ Y.COORDINATE <int> NA, 1836593, NA, NA, NA, NA, 1862317, 1887793...
## $ LATITUDE <dbl> NA, 41.70700, NA, NA, NA, NA, 41.77747, 41.84...
## $ LONGITUDE <dbl> NA, -87.63629, NA, NA, NA, NA, -87.61556, -87...
## $ LOCATION <chr> "", "(41.707000821, -87.636288063)", "", "", ...
## $ MONTH <chr> "02", "04", "11", "10", "05", "12", "05", "05...
## $ DAY <chr> "24", "10", "03", "04", "24", "05", "07", "03...
## $ YEAR <chr> "2020", "2020", "2019", "2019", "2020", "2019...

domvio_mut<-domvio

#create an indicator for being before covid entirely
#this indicator is "isbeforecovid"
domvio_mut<-domvio_mut %>%
  mutate(isbeforecovid = case_when(
    YEAR == "2019" ~ 1,
    YEAR == "2020" & MONTH == "01" & DAY <= 24 ~ 1,
    YEAR == "2020" & MONTH == "01" & DAY > 24 ~ 0,
    YEAR == "2020" & MONTH > "01" ~ 0
  ))

#create an indicator for being before lockdown (tho covid is in the USA)
#this indicator is "isprelockdown"
domvio_mut<-domvio_mut %>%
  mutate(isbeforecovid = case_when(
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YEAR == "2019" ~ 0,
YEAR == "2020" & MONTH == "01" & DAY <= 24 ~ 0,
YEAR == "2020" & MONTH == "01" & DAY > 24 ~ 1,
YEAR == "2020" & MONTH == "02" ~ 1,
YEAR == "2020" & MONTH == "03" & DAY < "22" ~ 1,
YEAR == "2020" & MONTH == "03" & DAY >= "22" ~ 0,
YEAR == "2020" & MONTH > "03" ~ 0
))

#create an indicator for being in the lockdown
#this indicator is "islockdown"
domvio_mut<-domvio_mut %>%
  mutate(islockdown = case_when(
    YEAR == "2019" ~ 0,
    YEAR == "2020" & MONTH < "03" ~ 0,
    YEAR == "2020" & MONTH == "03" & DAY < "22" ~ 0,
    YEAR == "2020" & MONTH == "03" & DAY >= "22" ~ 1,
    YEAR == "2020" & MONTH == "04" ~ 1,
    YEAR == "2020" & MONTH == "05" & DAY <= "29" ~ 1,
    YEAR == "2020" & MONTH == "05" & DAY > "29" ~ 0,
    YEAR == "2020" & MONTH > "05" ~ 0
  ))

#create an indicator for the recovery period
#this indicator is "isrecovery"
domvio_mut<-domvio_mut %>%
  mutate(isrecovery = case_when(
    YEAR == "2019" ~ 0,
    YEAR == "2020" & MONTH < "05" ~ 0,
    YEAR == "2020" & MONTH == "05" & DAY <= "29" ~ 0,
    YEAR == "2020" & MONTH == "05" & DAY > "29" ~ 1,
    YEAR == "2020" & MONTH > "05" ~ 1
  ))

#create an indicator for phase 3 in the recovery
#this indicator is "isphase3"
domvio_mut<-domvio_mut %>%
  mutate(isphase3 = case_when(
    YEAR == "2019" ~ 0,
    YEAR == "2020" & MONTH < "06" ~ 0,
    YEAR == "2020" & MONTH == "06" & DAY < "03" ~ 0,
    YEAR == "2020" & MONTH == "06" & DAY >= "03" & DAY < "26" ~ 1,
    YEAR == "2020" & MONTH == "06" & DAY >= "26" ~ 0,
    YEAR == "2020" & MONTH > "06" ~ 0
  ))

#create an indicator for phase 4 in the recovery
#this indicator is "isphase4"

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domvio_mut<-domvio_mut %>%
  mutate(isphase4 = case_when(
    YEAR == "2019" ~ 0,
    YEAR == "2020" & MONTH < "06" ~ 0,
    YEAR == "2020" & MONTH == "06" & DAY < "26" ~ 0,
    YEAR == "2020" & MONTH == "06" & DAY >= "26" ~ 1,
    YEAR == "2020" & MONTH > "06" ~ 1
  ))
#create an indicator for cases of dom violence
#this indicator is "isdomviolence"

domvio_mut<-domvio_mut %>%
  mutate(isdomviolence = case_when(
    SECONDARY.DESCRPTION == "DOMESTIC BATTERY SIMPLE" ~ 1,
    SECONDARY.DESCRPTION != "DOMESTIC BATTERY SIMPLE" ~ 0
  ))
#create an indicator for cases of dom violence
#this indicator is "isdomviolence"

glimpse(domvio_mut)

## Rows: 231,002
## Columns: 26
## $ CASE. <chr> "JD163753", "JD212847", "JC497784", "JC459410...
## $ DATE..OF.OCCURRENCE <chr> "02/24/2020 08:15:00 PM", "04/10/2020 10:56:0...
## $ BLOCK <chr> "031XX W LEXINGTON ST", "005XX W 103RD ST", "...
## $ IUCR <chr> "1153", "0560", "0860", "0560", "0810", "0820...
## $ PRIMARY.DESCRPTION <chr> "DECEPTIVE PRACTICE", "ASSAULT", "THEFT", "AS...
## $ SECONDARY.DESCRPTION <chr> "FINANCIAL IDENTITY THEFT OVER $ 300", "SIMPL...
## $ LOCATION.DESCRPTION <chr> "", "RESIDENCE", "DEPARTMENT STORE", "SIDEWAL...
## $ ARREST <chr> "N", "N", "N", "N", "N", "N", "N", "N", "N", ...
## $ DOMESTIC <chr> "N", "N", "N", "N", "N", "N", "N", "N", "N", ...
## $ BEAT <int> 1134, 2232, 1924, 122, 123, 2433, 312, 914, 3...
## $ WARD <int> 24, 9, 44, 4, 25, 48, 20, 11, 5, 26, 27, 37, ...
## $ FBI.CD <chr> "11", "08A", "06", "08A", "06", "06", "08A", ...
## $ X.COORDINATE <int> NA, 1174583, NA, NA, NA, NA, 1180030, 1171590...
## $ Y.COORDINATE <int> NA, 1836593, NA, NA, NA, NA, 1862317, 1887793...
## $ LATITUDE <dbl> NA, 41.70700, NA, NA, NA, NA, 41.77747, 41.84...
## $ LONGITUDE <dbl> NA, -87.63629, NA, NA, NA, NA, -87.61556, -87...
## $ LOCATION <chr> "", "(41.707000821, -87.636288063)", "", "", ...
## $ MONTH <chr> "02", "04", "11", "10", "05", "12", "05", "05...
## $ DAY <chr> "24", "10", "03", "04", "24", "05", "07", "03...
## $ YEAR <chr> "2020", "2020", "2019", "2019", "2020", "2019...
## $ isbeforecovid <dbl> 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...
## $ islockdown <dbl> 0, 1, 0, 0, 1, 0, 1, 1, 1, 1, 1, 1, 1, 1, ...
## $ isrecovery <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...
## $ isphase3 <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...
## $ isphase4 <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...
## $ isdomviolence <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, ...

#if you are wondering about how the actual data looks like there it is
#number of observations during lockdown

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domvio_mut %>%
  count (islockdown)

##   islockdown      n
## 1           0 199769
## 2           1  31233

#number of observations during recovery
domvio_mut %>%
  count (isrecovery)

##   isrecovery      n
## 1           0 206549
## 2           1  24453

#number of observations during p3, p4
domvio_mut %>%
  count (isphase3)

##   isphase3      n
## 1           0 218280
## 2           1  12722

domvio_mut %>%
  count(isphase4)

##   isphase4      n
## 1           0 223458
## 2           1   7544

#number of observations during in 2020 pre covid
domvio_mut %>%
  count (isbeforecovid)

##   isbeforecovid      n
## 1               0 196383
## 2               1  34619

#number of cases of domestic violence
domvio_mut %>%
  count(isdomviolence)

##   isdomviolence      n
## 1               0 208833
## 2               1  22169

#see number of cases of domestic violence on a given day
domvio_mut %>%
  filter(YEAR=="2020") %>%
  filter(MONTH=="05") %>%
  filter(DAY=="30") %>%
  count(isdomviolence)

##   isdomviolence      n
## 1               0   810
## 2               1    68

#observations of dom violence on a day or month
domvio_mut %>%

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filter(YEAR=="2019") %>%  
filter(MONTH=="07") %>%  
count(isdomviolence)
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##   isdomviolence      n  
## 1              0 15740  
## 2              1  1604
```