PO12Q: Introduction to Quantitative Political Analysis II

Week 2 - Worksheet Solutions

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1 | Recoding

```
wdi <- wdi %>%
  mutate(politybin=
           ordered(
             cut(polity5, breaks=c(-11,0,11),
                 labels=c("Dictatorship","Democracy"))))

wdi <- wdi %>%
  mutate(gdpcat=
           ordered(
             cut(gdppc, breaks=c(-Inf,median(gdppc, na.rm=TRUE), Inf),
                 labels=c("Developing","Developed"))))

wdi <- wdi %>%
  mutate(growth=
           ordered(
             cut(gdpgrowth, breaks=c(-Inf,mean(gdpgrowth, na.rm=TRUE), Inf),
                 labels=c("slow-growing","fast-growing"))))
```

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2 | Two-Sample Test of a Proportion

- Which proportion of developing and developed countries are dictatorships?
  - **developing=29.87%, developed=22.86%**
- Do we verify or falsify our hypothesis at a 95% confidence level?
  - **We fail to reject the null hypothesis, p> 0.05**

2.1 Exercises

- Is a higher proportion of fast-growing countries democratic than slow-growing countries? Use a 95% confidence level.

```
table(wdi$growth, wdi$politybin)
##
##                Dictatorship Democracy
##   slow-growing           34        76
##   fast-growing            5        32
```

```
prop.test(c(76,32),c(110,37), correct=F)
##
##  2-sample test for equality of proportions without continuity correction
##
## data:  c(76, 32) out of c(110, 37)
## X-squared = 4.2983, df = 1, p-value = 0.03815
## alternative hypothesis: two.sided
## 95 percent confidence interval:
##  -0.31392718 -0.03398437
## sample estimates:
##    prop 1    prop 2
## 0.6909091 0.8648649

################################################################
# Yes, they are: the p-value is small enough.
```