
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"))))
```

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.
```