Supplementary Materials:

Problems with the Big Five assessment in the World Values Survey

Contents

A: Information on variables

The `o` items relate to openness, `c` items to conscientiousness, `e` items to extraversion, `a` items to agreeableness, and `s` items to emotional stability. The items with the suffix `2` are reverse coded.

Item	WVS variable	Description	Reverse coded
o1	`V160J`	… has an active imagination	No
o2	`V160E`	… has few artistic interests	Yes
c1	`V160H`	… does a thorough job	No
c2	`V160C`	… tends to be lazy	Yes
e1	`V160F`	… is outgoing, sociable	No
e2	`V160A`	… is reserved	Yes
a1	`V160B`	… is generally trusting	No
a2	`V160G`	… tends to find fault with others	Yes
s1	`V160D`	… is relaxed, handles stress well	No
s2	`V160I`	… gets nervous easily	Yes

B: Data preprocessing

```r
# Load packages
library("rio")
library("ggplot2")
library("reshape2")
library("grid")
library("gridExtra")
library("tidyr")
library("stargazer")

# Load dataset (Stata format)
wvs <- import("WV6_Stata_v_2016_01_01.dta")

# Code missing values
trait.vars <- c("V160A", "V160B", "V160C", "V160D", "V160E",
                "V160F", "V160G", "V160H", "V160I", "V160J")
wvs[trait.vars][wvs[trait.vars] < 0] <- NA

# Reverse code and save variables
wvs$o1 <- wvs$V160J
wvs$o2 <- (wvs$V160E-6)*-1

wvs$c1 <- wvs$V160H
wvs$c2 <- (wvs$V160C-6)*-1

wvs$e1 <- wvs$V160F
wvs$e2 <- (wvs$V160A-6)*-1

wvs$a1 <- wvs$V160B
wvs$a2 <- (wvs$V160G-6)*-1

wvs$s1 <- wvs$V160D
wvs$s2 <- (wvs$V160I-6)*-1

wvs$male <- wvs$V240
wvs$male[wvs$male < 0] <- NA
wvs$male[wvs$male == 2] <- 0

wvs$age <- wvs$V242
wvs$age[wvs$age < 0] <- NA
```

C: Figures included in main text

```r
# Make data frame with the BFI-10 items
b5 <- wvs[c("V2","male","age","o1","o2","c1","c2","e1","e2","a1","a2","s1","s2")]
b5 <- na.omit(b5)

b5.cor <- data.frame(country = unique(b5$V2),
                     n = NA,
                     cor.o = NA,
                     se.o = NA,
                     cor.c = NA,
                     se.c = NA,
                     cor.e = NA,
                     se.e = NA,
                     cor.a = NA,
                     se.a = NA,
                     cor.s = NA,
                     se.s = NA
                     )




for (i in unique(b5$V2)){
  b5.cor$n[b5.cor$country == i] <- NROW(b5[b5$V2 == i,])
  b5.cor$cor.o[b5.cor$country == i] <- cor.test(b5[b5$V2 == i,]$o1,
                                                b5[b5$V2 == i,]$o2)$estimate
  b5.cor$se.o[b5.cor$country == i] <- cor.test(b5[b5$V2 == i,]$o1,
                                               b5[b5$V2 == i,]$o2)$estimate /
    cor.test(b5[b5$V2 == i,]$o1,b5[b5$V2 == i,]$o2)$statistic
  b5.cor$cor.c[b5.cor$country == i] <- cor.test(b5[b5$V2 == i,]$c1,
                                                b5[b5$V2 == i,]$c2)$estimate
  b5.cor$se.c[b5.cor$country == i] <- cor.test(b5[b5$V2 == i,]$c1,
                                               b5[b5$V2 == i,]$c2)$estimate /
    cor.test(b5[b5$V2 == i,]$c1,b5[b5$V2 == i,]$c2)$statistic
  b5.cor$cor.e[b5.cor$country == i] <- cor.test(b5[b5$V2 == i,]$e1,
                                                b5[b5$V2 == i,]$e2)$estimate
  b5.cor$se.e[b5.cor$country == i] <- cor.test(b5[b5$V2 == i,]$e1,
                                               b5[b5$V2 == i,]$e2)$estimate /
    cor.test(b5[b5$V2 == i,]$e1,b5[b5$V2 == i,]$e2)$statistic
  b5.cor$cor.a[b5.cor$country == i] <- cor.test(b5[b5$V2 == i,]$a1,
                                                b5[b5$V2 == i,]$a2)$estimate
  b5.cor$se.a[b5.cor$country == i] <- cor.test(b5[b5$V2 == i,]$a1,
                                               b5[b5$V2 == i,]$a2)$estimate /
    cor.test(b5[b5$V2 == i,]$a1,b5[b5$V2 == i,]$a2)$statistic
  b5.cor$cor.s[b5.cor$country == i] <- cor.test(b5[b5$V2 == i,]$s1,
                                                b5[b5$V2 == i,]$s2)$estimate
  b5.cor$se.s[b5.cor$country == i] <- cor.test(b5[b5$V2 == i,]$s1,
                                               b5[b5$V2 == i,]$s2)$estimate /
    cor.test(b5[b5$V2 == i,]$s1,b5[b5$V2 == i,]$s2)$statistic
  }
```

```r
b5.cor$name <- NA
b5.cor[b5.cor$country == 12,]$name <- "Algeria"
b5.cor[b5.cor$country == 48,]$name <- "Bahrain"
b5.cor[b5.cor$country == 76,]$name <- "Brazil"
b5.cor[b5.cor$country == 156,]$name <- "China"
b5.cor[b5.cor$country == 400,]$name <- "Jordan"
b5.cor[b5.cor$country == 414,]$name <- "Kuwait"
b5.cor[b5.cor$country == 702,]$name <- "Singapore"
b5.cor[b5.cor$country == 170,]$name <- "Colombia"
b5.cor[b5.cor$country == 218,]$name <- "Ecuador"
b5.cor[b5.cor$country == 818,]$name <- "Egypt"
b5.cor[b5.cor$country == 268,]$name <- "Georgia"
b5.cor[b5.cor$country == 276,]$name <- "Germany"
b5.cor[b5.cor$country == 344,]$name <- "Hong Kong"
b5.cor[b5.cor$country == 356,]$name <- "India"
b5.cor[b5.cor$country == 368,]$name <- "Iraq"
b5.cor[b5.cor$country == 422,]$name <- "Lebanon"
b5.cor[b5.cor$country == 434,]$name <- "Libya"
b5.cor[b5.cor$country == 528,]$name <- "Netherlands"
b5.cor[b5.cor$country == 586,]$name <- "Pakistan"
b5.cor[b5.cor$country == 275,]$name <- "Palestine"
b5.cor[b5.cor$country == 646,]$name <- "Rwanda"
b5.cor[b5.cor$country == 710,]$name <- "South Africa"
b5.cor[b5.cor$country == 764,]$name <- "Thailand"
b5.cor[b5.cor$country == 788,]$name <- "Tunisia"
b5.cor[b5.cor$country == 887,]$name <- "Yemen"

fig.ii.o <- ggplot(b5.cor, aes(x = name, y=cor.o, ymin=cor.o-1.96*se.o,
                               ymax=cor.o+1.96*se.o)) +
  geom_hline(yintercept = 0, size=0.5, linetype="dashed", colour="#999999") +
  geom_pointrange() +
  coord_flip() +
  ylab("r (Imagination, Few artistic interests)") +
  theme_minimal() +
  scale_y_continuous(breaks=c(-.5,0,.3), labels=c("-.5","0",".3")) +
  xlab("")

fig.ii.c <- ggplot(b5.cor, aes(x = name, y=cor.c, ymin=cor.c-1.96*se.c,
                               ymax=cor.c+1.96*se.c)) +
  geom_hline(yintercept = 0, size=0.5, linetype="dashed", colour="#999999") +
  geom_pointrange() +
  coord_flip() +
  ylab("r (Not lazy, Thorough job)") +
  theme_minimal() +
  scale_y_continuous(breaks=c(-.5,0,.5), labels=c("-.5","0",".5")) +
  xlab("")  +
  theme(axis.text.y = element_blank())

fig.ii.e <- ggplot(b5.cor, aes(x = name, y=cor.e, ymin=cor.e-1.96*se.e,
                               ymax=cor.e+1.96*se.e)) +
  geom_hline(yintercept = 0, size=0.5, linetype="dashed", colour="#999999") +
```

```r
  geom_pointrange() +
  coord_flip() +
  ylab("r (Not reserved, Outgoing)") +
  theme_minimal() +
  scale_y_continuous(breaks=c(-.5,0,.5), labels=c("-.5","0",".5")) +
  xlab("")  +
  theme(axis.text.y = element_blank())

fig.ii.a <- ggplot(b5.cor, aes(x = name, y=cor.a, ymin=cor.a-1.96*se.a,
                              ymax=cor.a+1.96*se.a)) +
  geom_hline(yintercept = 0, size=0.5, linetype="dashed", colour="#999999") +
  geom_pointrange() +
  coord_flip() +
  ylab("r (Trusting, Does not find faults)") +
  theme_minimal() +
  xlab("")

fig.ii.s <- ggplot(b5.cor, aes(x = name, y=cor.s, ymin=cor.s-1.96*se.s,
                              ymax=cor.s+1.96*se.s)) +
  geom_hline(yintercept = 0, size=0.5, linetype="dashed", colour="#999999") +
  geom_pointrange() +
  coord_flip() +
  ylab("r (Relaxed, not nervous)") +
  scale_y_continuous(breaks=c(-.5,0,.5), labels=c("-.5","0",".5")) +
  theme_minimal() +
  xlab("")  +
  theme(axis.text.y = element_blank())

png('figure1.png', height=8, width=8, units="in",res=700)
grid.arrange(fig.ii.o, fig.ii.c, fig.ii.e, fig.ii.a, fig.ii.s,
             widths=c(5, 4, 4), ncol=3)
dev.off()
```

```
## pdf
##   2
```

```r
b5.long <- gather(b5.cor, trait, value, c(cor.o,cor.c,cor.e,cor.a,cor.s),
                  factor_key=TRUE)

png('figure2.png', height=6, width=8, units="in",res=700)
ggplot(b5.long, aes(x=value, fill=trait)) +
  geom_vline(xintercept=0, linetype="dashed") +
  geom_vline(xintercept=-0.3, colour="gray", linetype="dashed") +
  geom_vline(xintercept=0.3, colour="gray", linetype="dashed") +
  scale_y_continuous(breaks=c(0,.25,.50,.75,1), labels=c("","","","","")) +
  scale_x_continuous(breaks=c(-.5,0,.5), labels=c("-.5","0",".5")) +
  geom_dotplot(stackgroups = TRUE, stackratio = 1.2, binwidth=0.07,
               dotsize = 0.7, binpositions = "all") +
  scale_fill_manual("", labels = c("Openness","Conscientiousness","Extraversion",
                                  "Agreeableness","Emotional Stability"),
                    values = c("#69D2E7","#81AD99", "#C02942",
                              "#F38630", "#ECD078")) +
```

```r
  xlab("Item-item correlation") +
  ylab("") +
  annotate("text", x = -0.8, y = 0.27, label = "Bahrain") +
  theme_minimal()
dev.off()
```

```
## pdf
##   2
```

D: Descriptive statistics

```r
# Get country with minimum number of observations
min(b5.cor$n)
```

[1] 653

```r
b5.cor$name[b5.cor$n == min(b5.cor$n)]
```

[1] "Yemen"

```r
# Get country with maximum number of observations
max(b5.cor$n)
```

[1] 3317

```r
b5.cor$name[b5.cor$n == max(b5.cor$n)]
```

[1] "South Africa"

```r
# Create summary statistics table
stargazer(b5[c("male","age","o1", "o2", "c1", "c2",
               "e1", "e2", "a1", "a2", "s1", "s2")],
          title = "Summary statistics",
          covariate.labels = c("Male","Age"),
          summary = TRUE)
```

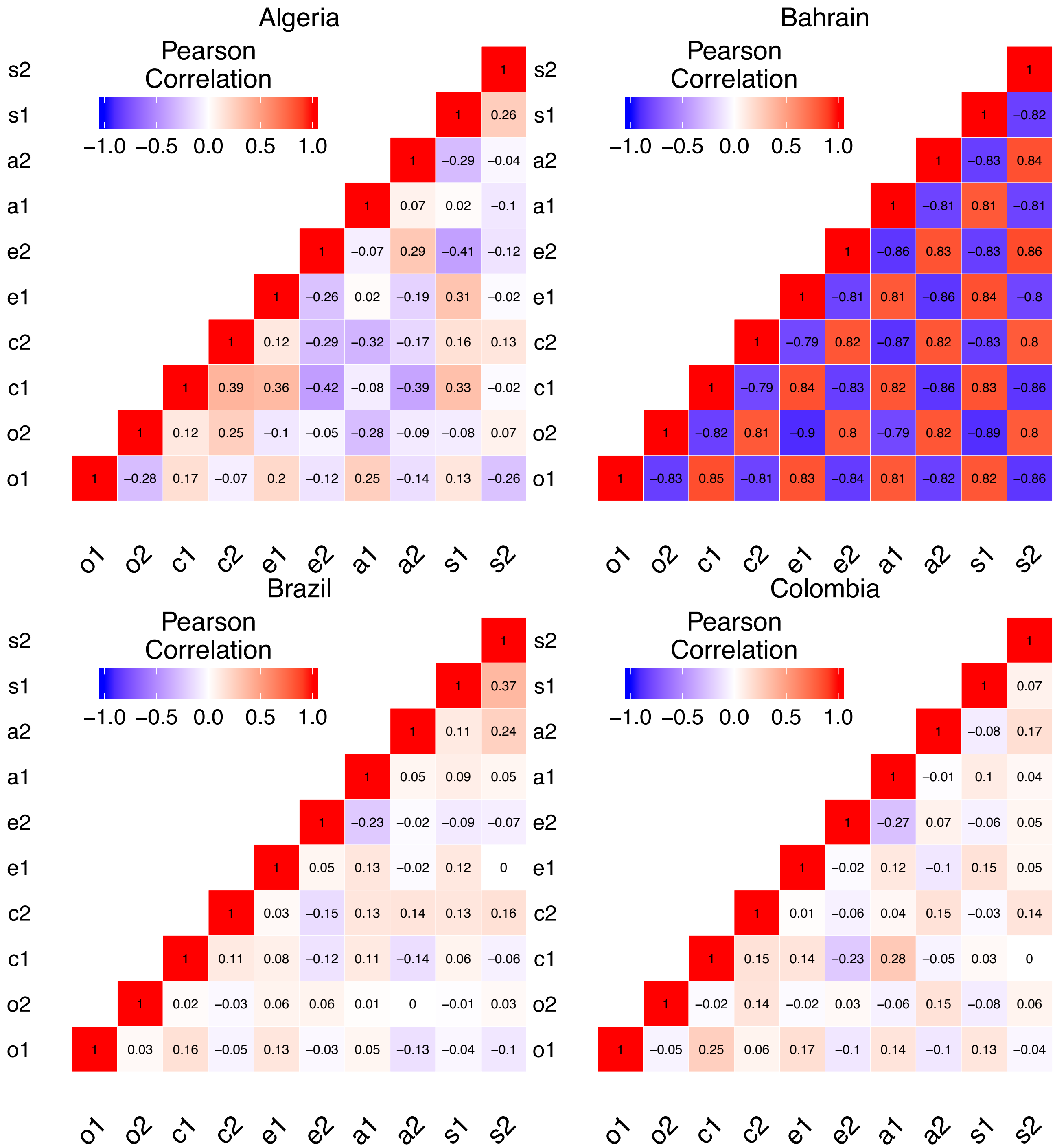
% Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu % Date and time: Tir, Feb 28, 2017 - 13:14:38

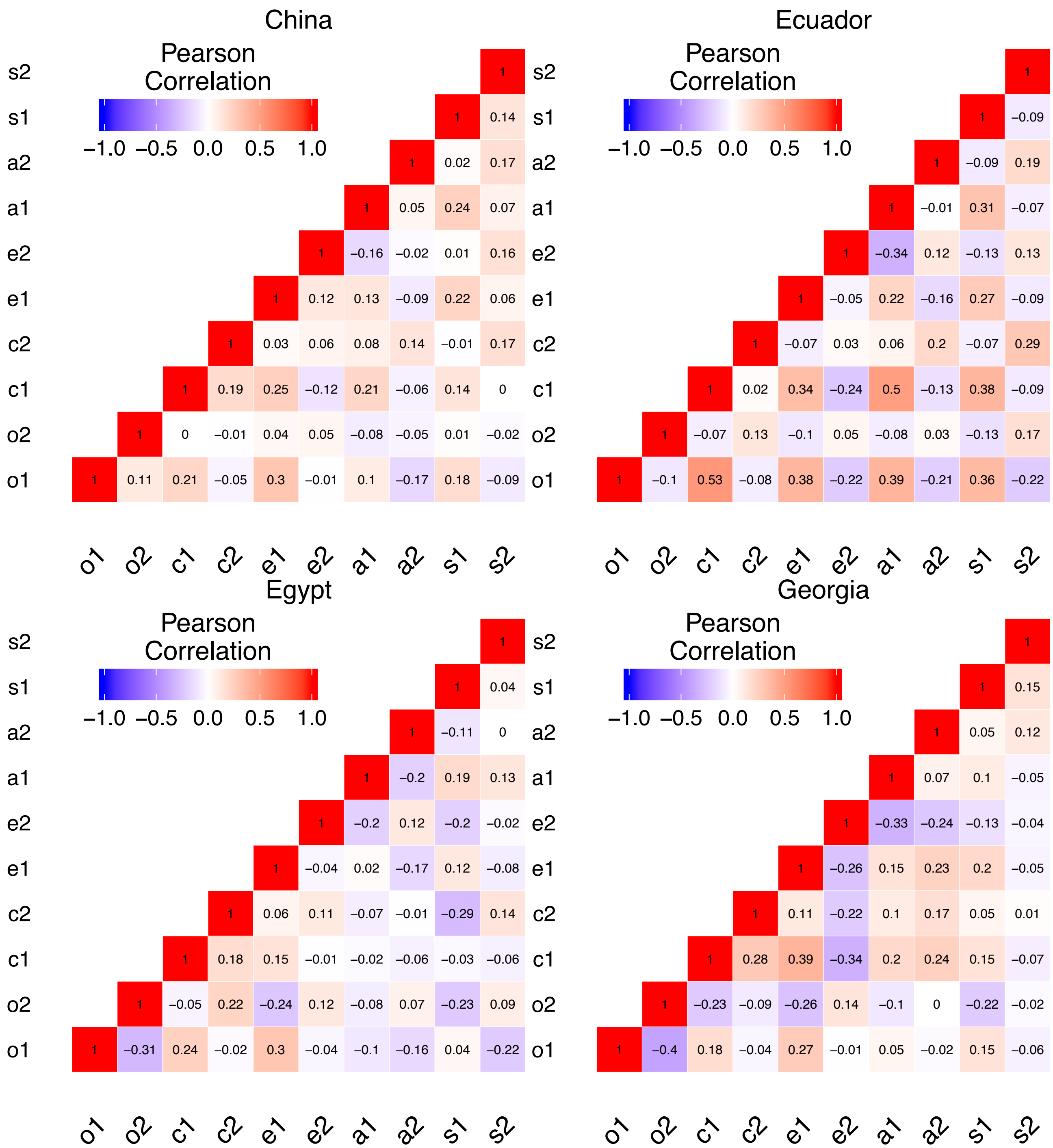
Table 2: Summary statistics

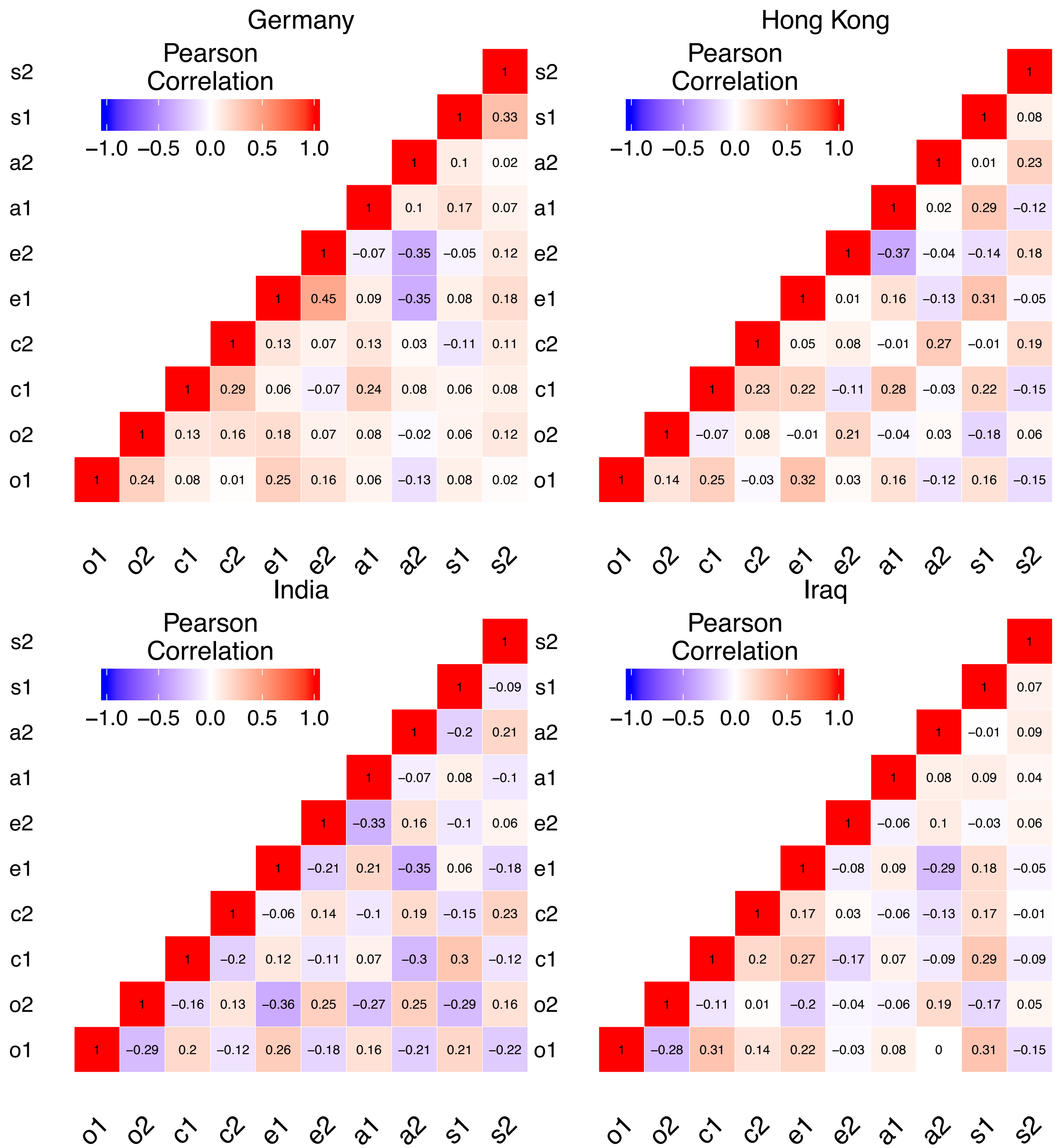
Statistic	N	Mean	St. Dev.	Min	Max
Male	32,880	0.494	0.500	0	1
Age	32,880	40.540	15.643	16	99
o1	32,880	3.242	1.239	1	5
o2	32,880	3.027	1.273	1	5
c1	32,880	3.617	1.248	1	5
c2	32,880	3.528	1.297	1	5
e1	32,880	3.536	1.224	1	5
e2	32,880	2.734	1.322	1	5
a1	32,880	3.374	1.295	1	5
a2	32,880	3.203	1.297	1	5
s1	32,880	3.326	1.194	1	5
s2	32,880	2.997	1.287	1	5

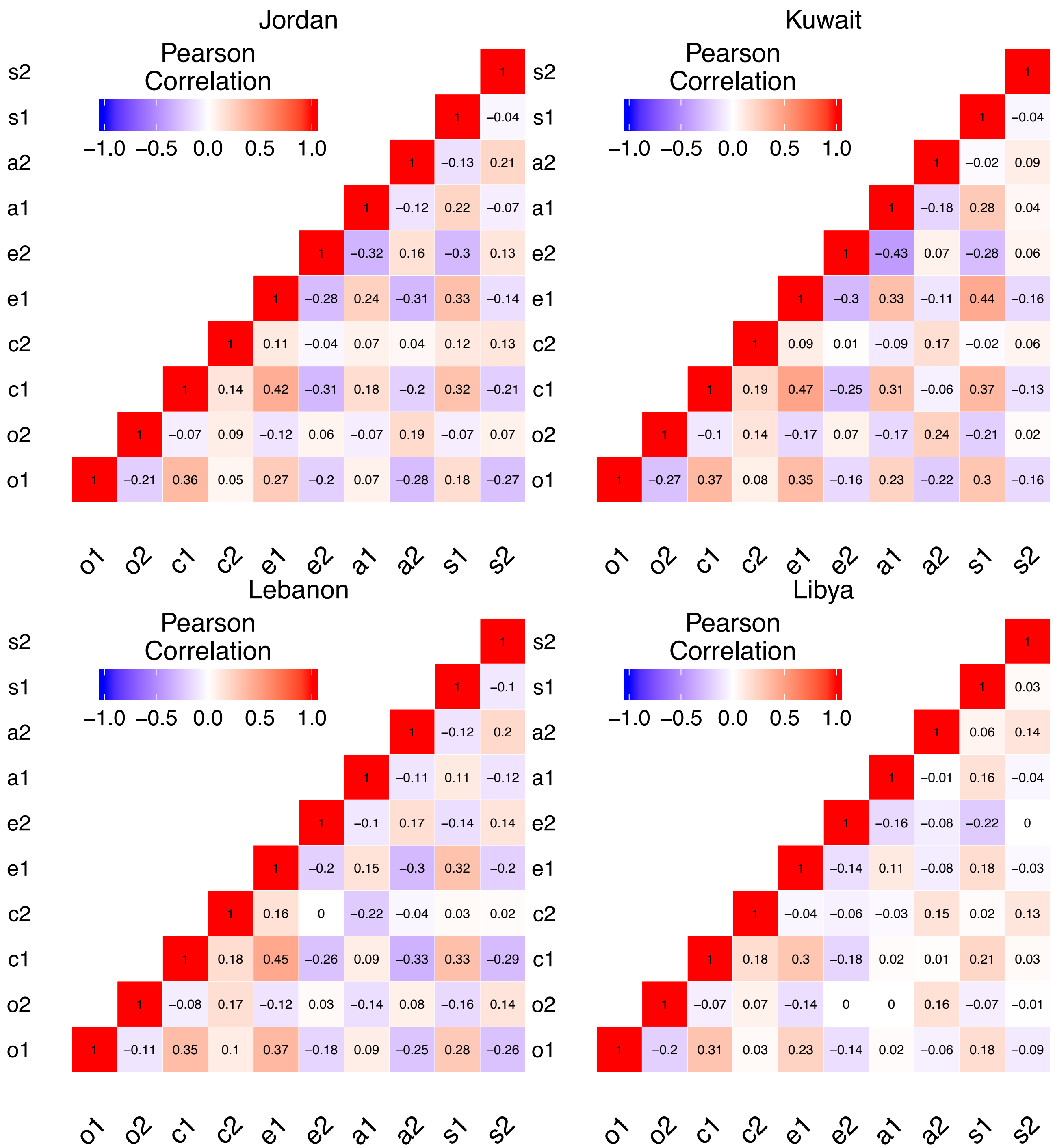
E: Interitem correlations

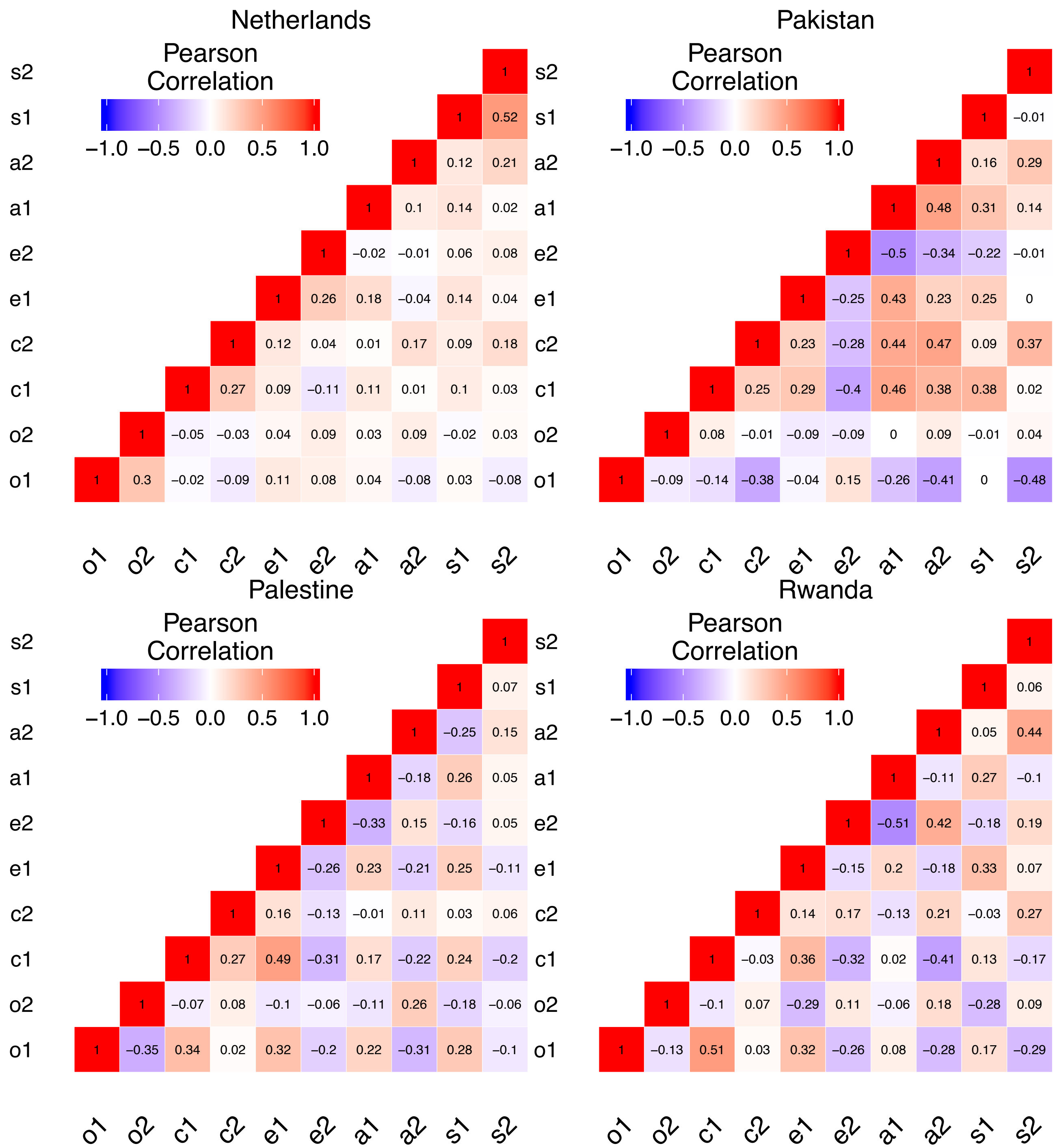
```
get_upper_tri <- function(cormat){
  cormat[lower.tri(cormat)]<- NA
  return(cormat)
}

for(i in unique(b5$V2)) {
  cormat <- round(cor(b5[b5$V2 == i,
                      c("o1","o2","c1","c2","e1","e2","a1","a2","s1","s2")]),
                  2)
  upper_tri <- get_upper_tri(cormat)

  melted_cormat <- melt(upper_tri, na.rm = TRUE)

  p <- ggplot(data = melted_cormat, aes(Var2, Var1, fill = value))+
    geom_tile(color = "white")+
    scale_fill_gradient2(low = "blue", high = "red", mid = "white",
                      midpoint = 0, limit = c(-1,1), space = "Lab",
                      name="Pearson\nCorrelation") +
    theme_minimal() +
    theme(axis.text.x = element_text(angle = 45, vjust = 1,
                                     size = 12, hjust = 1))+
    coord_fixed() +
    ggtitle(b5.cor[b5.cor$country == i,]$name) +
    geom_text(aes(Var2, Var1, label = value), color = "black", size = 2) +
    theme(
      axis.title.x = element_blank(),
      axis.title.y = element_blank(),
      panel.grid.major = element_blank(),
      panel.border = element_blank(),
      panel.background = element_blank(),
      axis.ticks = element_blank(),
      plot.title = element_text(size = 12),
      legend.justification = c(1, 0),
      legend.position = c(0.6, 0.7),
      legend.direction = "horizontal")+
    guides(fill = guide_colorbar(barwidth = 7, barheight = 1,
                                title.position = "top", title.hjust = 0.5))

  print(p)
}
```

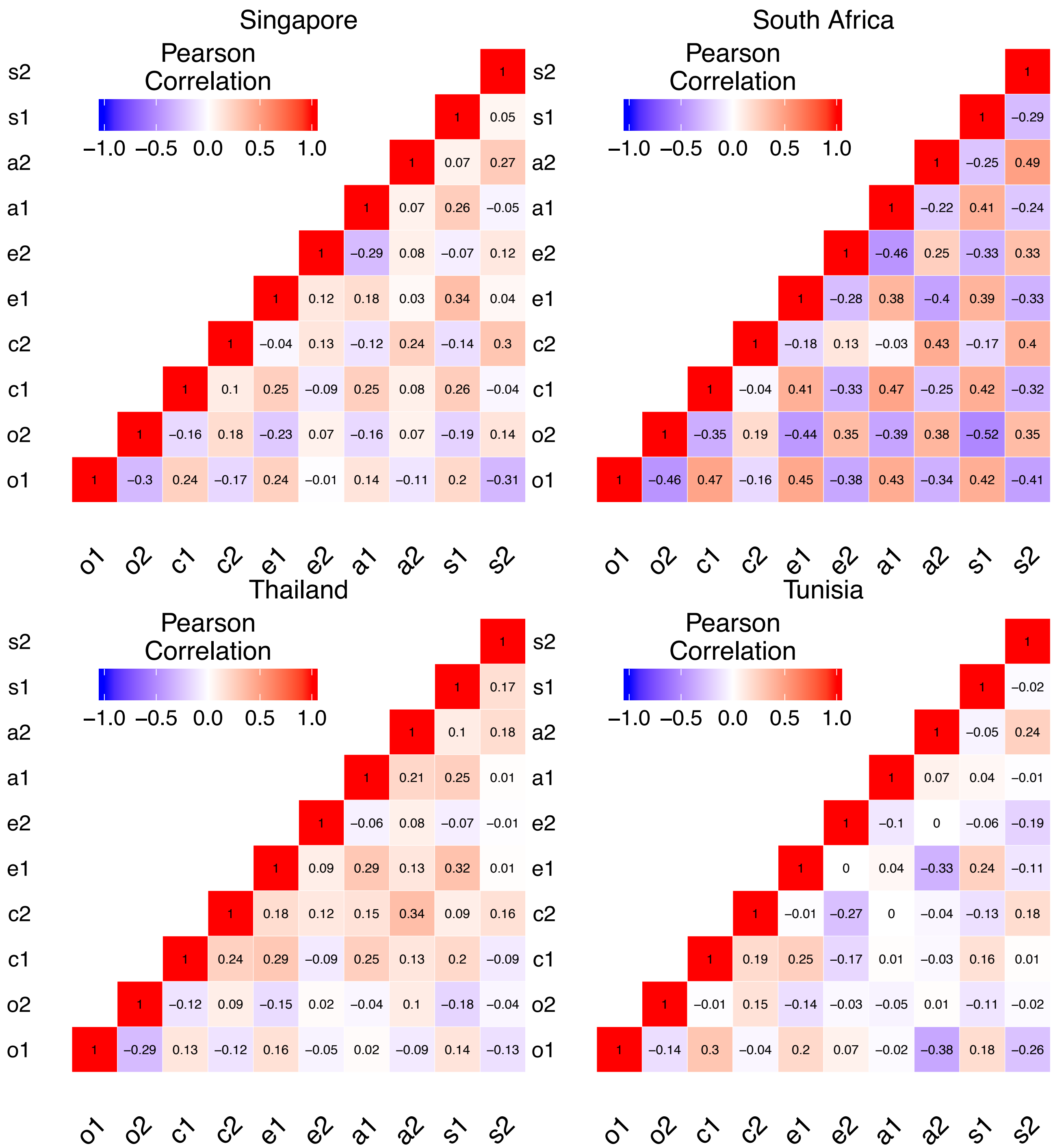

Algeria
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
s2 1 s2
s1 1 0.26 s1
a2 1 −0.29 −0.04 a2
a1 1 0.07 0.02 −0.1 a1
e2 1 −0.07 0.29 −0.41 −0.12 e2
e1 1 −0.26 0.02 −0.19 0.31 −0.02 e1
c2 1 0.12 −0.29 −0.32 −0.17 0.16 0.13 c2
c1 1 0.39 0.36 −0.42 −0.08 −0.39 0.33 −0.02 c1
o2 1 0.12 0.25 −0.1 −0.05 −0.28 −0.09 −0.08 0.07 o2
o1 1 −0.28 0.17 −0.07 0.2 −0.12 0.25 −0.14 0.13 −0.26 o1
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2
Bahrain
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
1
1 −0.82
1 −0.83 0.84
1 −0.81 0.81 −0.81
1 −0.86 0.83 −0.83 0.86
1 −0.81 0.81 −0.86 0.84 −0.8
1 −0.79 0.82 −0.87 0.82 −0.83 0.8
1 −0.79 0.84 −0.83 0.82 −0.86 0.83 −0.86
1 −0.82 0.81 −0.9 0.8 −0.79 0.82 −0.89 0.8
1 −0.83 0.85 −0.81 0.83 −0.84 0.81 −0.82 0.82 −0.86
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2
Brazil
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
s2 1 s2
s1 1 0.37 s1
a2 1 0.11 0.24 a2
a1 1 0.05 0.09 0.05 a1
e2 1 −0.23 −0.02 −0.09 −0.07 e2
e1 1 0.05 0.13 −0.02 0.12 0 e1
c2 1 0.03 −0.15 0.13 0.14 0.13 0.16 c2
c1 1 0.11 0.08 −0.12 0.11 −0.14 0.06 −0.06 c1
o2 1 0.02 −0.03 0.06 0.06 0.01 0 −0.01 0.03 o2
o1 1 0.03 0.16 −0.05 0.13 −0.03 0.05 −0.13 −0.04 −0.1 o1
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2
Colombia
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
1
1 0.07
1 −0.08 0.17
1 −0.01 0.1 0.04
1 −0.27 0.07 −0.06 0.05
1 −0.02 0.12 −0.1 0.15 0.05
1 0.01 −0.06 0.04 0.15 −0.03 0.14
1 0.15 0.14 −0.23 0.28 −0.05 0.03 0
1 −0.02 0.14 −0.02 0.03 −0.06 0.15 −0.08 0.06
1 −0.05 0.25 0.06 0.17 −0.1 0.14 −0.1 0.13 −0.04
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2

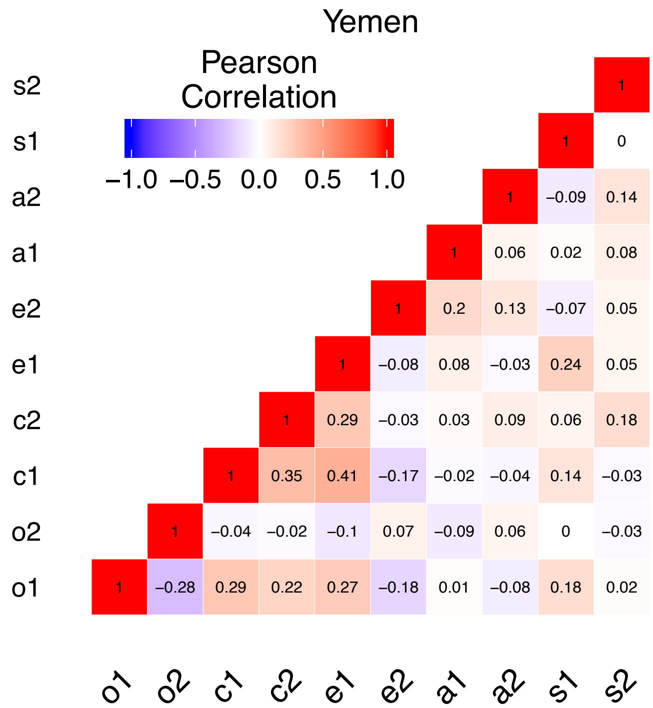

China
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
s2 1 s2
s1 1 0.14 s1
a2 1 0.02 0.17 a2
a1 1 0.05 0.24 0.07 a1
e2 1 −0.16 −0.02 0.01 0.16 e2
e1 1 0.12 0.13 −0.09 0.22 0.06 e1
c2 1 0.03 0.06 0.08 0.14 −0.01 0.17 c2
c1 1 0.19 0.25 −0.12 0.21 −0.06 0.14 0 c1
o2 1 0 −0.01 0.04 0.05 −0.08 −0.05 0.01 −0.02 o2
o1 1 0.11 0.21 −0.05 0.3 −0.01 0.1 −0.17 0.18 −0.09 o1
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2
Ecuador
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
1
1 −0.09
1 −0.09 0.19
1 −0.01 0.31 −0.07
1 −0.34 0.12 −0.13 0.13
1 −0.05 0.22 −0.16 0.27 −0.09
1 −0.07 0.03 0.06 0.2 −0.07 0.29
1 0.02 0.34 −0.24 0.5 −0.13 0.38 −0.09
1 −0.07 0.13 −0.1 0.05 −0.08 0.03 −0.13 0.17
1 −0.1 0.53 −0.08 0.38 −0.22 0.39 −0.21 0.36 −0.22
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2
Egypt
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
s2 1 s2
s1 1 0.04 s1
a2 1 −0.11 0 a2
a1 1 −0.2 0.19 0.13 a1
e2 1 −0.2 0.12 −0.2 −0.02 e2
e1 1 −0.04 0.02 −0.17 0.12 −0.08 e1
c2 1 0.06 0.11 −0.07 −0.01 −0.29 0.14 c2
c1 1 0.18 0.15 −0.01 −0.02 −0.06 −0.03 −0.06 c1
o2 1 −0.05 0.22 −0.24 0.12 −0.08 0.07 −0.23 0.09 o2
o1 1 −0.31 0.24 −0.02 0.3 −0.04 −0.1 −0.16 0.04 −0.22 o1
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2
Georgia
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
1
1 0.15
1 0.05 0.12
1 0.07 0.1 −0.05
1 −0.33 −0.24 −0.13 −0.04
1 −0.26 0.15 0.23 0.2 −0.05
1 0.11 −0.22 0.1 0.17 0.05 0.01
1 0.28 0.39 −0.34 0.2 0.24 0.15 −0.07
1 −0.23 −0.09 −0.26 0.14 −0.1 0 −0.22 −0.02
1 −0.4 0.18 −0.04 0.27 −0.01 0.05 −0.02 0.15 −0.06
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2


Germany
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
s2 1 s2
s1 1 0.33 s1
a2 1 0.1 0.02 a2
a1 1 0.1 0.17 0.07 a1
e2 1 −0.07 −0.35 −0.05 0.12 e2
e1 1 0.45 0.09 −0.35 0.08 0.18 e1
c2 1 0.13 0.07 0.13 0.03 −0.11 0.11 c2
c1 1 0.29 0.06 −0.07 0.24 0.08 0.06 0.08 c1
o2 1 0.13 0.16 0.18 0.07 0.08 −0.02 0.06 0.12 o2
o1 1 0.24 0.08 0.01 0.25 0.16 0.06 −0.13 0.08 0.02 o1
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2
Hong Kong
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
1
1 0.08
1 0.01 0.23
1 0.02 0.29 −0.12
1 −0.37 −0.04 −0.14 0.18
1 0.01 0.16 −0.13 0.31 −0.05
1 0.05 0.08 −0.01 0.27 −0.01 0.19
1 0.23 0.22 −0.11 0.28 −0.03 0.22 −0.15
1 −0.07 0.08 −0.01 0.21 −0.04 0.03 −0.18 0.06
1 0.14 0.25 −0.03 0.32 0.03 0.16 −0.12 0.16 −0.15
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2
India
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
s2 1 s2
s1 1 −0.09 s1
a2 1 −0.2 0.21 a2
a1 1 −0.07 0.08 −0.1 a1
e2 1 −0.33 0.16 −0.1 0.06 e2
e1 1 −0.21 0.21 −0.35 0.06 −0.18 e1
c2 1 −0.06 0.14 −0.1 0.19 −0.15 0.23 c2
c1 1 −0.2 0.12 −0.11 0.07 −0.3 0.3 −0.12 c1
o2 1 −0.16 0.13 −0.36 0.25 −0.27 0.25 −0.29 0.16 o2
o1 1 −0.29 0.2 −0.12 0.26 −0.18 0.16 −0.21 0.21 −0.22 o1
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2
Iraq
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
1
1 0.07
1 −0.01 0.09
1 0.08 0.09 0.04
1 −0.06 0.1 −0.03 0.06
1 −0.08 0.09 −0.29 0.18 −0.05
1 0.17 0.03 −0.06 −0.13 0.17 −0.01
1 0.2 0.27 −0.17 0.07 −0.09 0.29 −0.09
1 −0.11 0.01 −0.2 −0.04 −0.06 0.19 −0.17 0.05
1 −0.28 0.31 0.14 0.22 −0.03 0.08 0 0.31 −0.15
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2


Jordan
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
s2 1
s1 1 −0.04
a2 1 −0.13 0.21
a1 1 −0.12 0.22 −0.07
e2 1 −0.32 0.16 −0.3 0.13
e1 1 −0.28 0.24 −0.31 0.33 −0.14
c2 1 0.11 −0.04 0.07 0.04 0.12 0.13
c1 1 0.14 0.42 −0.31 0.18 −0.2 0.32 −0.21
o2 1 −0.07 0.09 −0.12 0.06 −0.07 0.19 −0.07 0.07
o1 1 −0.21 0.36 0.05 0.27 −0.2 0.07 −0.28 0.18 −0.27
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2
Kuwait
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
s2 1
s1 1 −0.04
a2 1 −0.02 0.09
a1 1 −0.18 0.28 0.04
e2 1 −0.43 0.07 −0.28 0.06
e1 1 −0.3 0.33 −0.11 0.44 −0.16
c2 1 0.09 0.01 −0.09 0.17 −0.02 0.06
c1 1 0.19 0.47 −0.25 0.31 −0.06 0.37 −0.13
o2 1 −0.1 0.14 −0.17 0.07 −0.17 0.24 −0.21 0.02
o1 1 −0.27 0.37 0.08 0.35 −0.16 0.23 −0.22 0.3 −0.16
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2
Lebanon
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
s2 1
s1 1 −0.1
a2 1 −0.12 0.2
a1 1 −0.11 0.11 −0.12
e2 1 −0.1 0.17 −0.14 0.14
e1 1 −0.2 0.15 −0.3 0.32 −0.2
c2 1 0.16 0 −0.22 −0.04 0.03 0.02
c1 1 0.18 0.45 −0.26 0.09 −0.33 0.33 −0.29
o2 1 −0.08 0.17 −0.12 0.03 −0.14 0.08 −0.16 0.14
o1 1 −0.11 0.35 0.1 0.37 −0.18 0.09 −0.25 0.28 −0.26
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2
Libya
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
s2 1
s1 1 0.03
a2 1 0.06 0.14
a1 1 −0.01 0.16 −0.04
e2 1 −0.16 −0.08 −0.22 0
e1 1 −0.14 0.11 −0.08 0.18 −0.03
c2 1 −0.04 −0.06 −0.03 0.15 0.02 0.13
c1 1 0.18 0.3 −0.18 0.02 0.01 0.21 0.03
o2 1 −0.07 0.07 −0.14 0 0 0.16 −0.07 −0.01
o1 1 −0.2 0.31 0.03 0.23 −0.14 0.02 −0.06 0.18 −0.09
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2


Netherlands
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
s2 1 s2
s1 1 0.52 s1
a2 1 0.12 0.21 a2
a1 1 0.1 0.14 0.02 a1
e2 1 −0.02 −0.01 0.06 0.08 e2
e1 1 0.26 0.18 −0.04 0.14 0.04 e1
c2 1 0.12 0.04 0.01 0.17 0.09 0.18 c2
c1 1 0.27 0.09 −0.11 0.11 0.01 0.1 0.03 c1
o2 1 −0.05 −0.03 0.04 0.09 0.03 0.09 −0.02 0.03 o2
o1 1 0.3 −0.02 −0.09 0.11 0.08 0.04 −0.08 0.03 −0.08 o1
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2
Pakistan
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
1
1 −0.01
1 0.16 0.29
1 0.48 0.31 0.14
1 −0.5 −0.34 −0.22 −0.01
1 −0.25 0.43 0.23 0.25 0
1 0.23 −0.28 0.44 0.47 0.09 0.37
1 0.25 0.29 −0.4 0.46 0.38 0.38 0.02
1 0.08 −0.01 −0.09 −0.09 0 0.09 −0.01 0.04
1 −0.09 −0.14 −0.38 −0.04 0.15 −0.26 −0.41 0 −0.48
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2
Palestine
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
s2 1 s2
s1 1 0.07 s1
a2 1 −0.25 0.15 a2
a1 1 −0.18 0.26 0.05 a1
e2 1 −0.33 0.15 −0.16 0.05 e2
e1 1 −0.26 0.23 −0.21 0.25 −0.11 e1
c2 1 0.16 −0.13 −0.01 0.11 0.03 0.06 c2
c1 1 0.27 0.49 −0.31 0.17 −0.22 0.24 −0.2 c1
o2 1 −0.07 0.08 −0.1 −0.06 −0.11 0.26 −0.18 −0.06 o2
o1 1 −0.35 0.34 0.02 0.32 −0.2 0.22 −0.31 0.28 −0.1 o1
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2
Rwanda
Pearson Correlation
−1.0 −0.5 0.0 0.5 1.0
1
1 0.06
1 0.05 0.44
1 −0.11 0.27 −0.1
1 −0.51 0.42 −0.18 0.19
1 −0.15 0.2 −0.18 0.33 0.07
1 0.14 0.17 −0.13 0.21 −0.03 0.27
1 −0.03 0.36 −0.32 0.02 −0.41 0.13 −0.17
1 −0.1 0.07 −0.29 0.11 −0.06 0.18 −0.28 0.09
1 −0.13 0.51 0.03 0.32 −0.26 0.08 −0.28 0.17 −0.29
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2


Singapore
South Africa
Thailand
Tunisia
Pearson
Correlation
−1.0 −0.5 0.0 0.5 1.0
s2
s1
a2
a1
e2
e1
c2
c1
o2
o1
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2


Yemen
Pearson
Correlation
−1.0 −0.5 0.0 0.5 1.0
s2
s1
a2
a1
e2
e1
c2
c1
o2
o1
o1 o2 c1 c2 e1 e2 a1 a2 s1 s2
1
0
1
−0.09 0.14
1
0.06 0.02 0.08
1
0.2 0.13 −0.07 0.05
1
−0.08 0.08 −0.03 0.24 0.05
1
0.29 −0.03 0.03 0.09 0.06 0.18
1
0.35 0.41 −0.17 −0.02 −0.04 0.14 −0.03
1
−0.04 −0.02 −0.1 0.07 −0.09 0.06 0 −0.03
1
−0.28 0.29 0.22 0.27 −0.18 0.01 −0.08 0.18 0.02