

Analyzing the Relationship Between Corruption Perceptions Index (CPI) and Human Development Index (HDI)

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2024-06-30

Before you start; “Zorunlu Paket Yükleniyor” means Installing required package

Loading the Data Set

```
library(readr)
hdi <- read_delim("https://raw.githubusercontent.com/RiUA/riua/master/hdi.csv",
";", escape_double = FALSE, col_types = cols(HDI = col_number()),
trim_ws = TRUE)
```

Definition of Basic Graphic Elements

```
require(ggplot2)
```

```
## Zorunlu paket yükleniyor: ggplot2
```

```
eg1 <- ggplot(hdi, aes(x = CPI, y = HDI)) +
  geom_smooth(method = "lm",
formula = y ~ log(x),
se = FALSE,
color = "red") +
  geom_point(color = "lightblue4", size = 2.5, shape = 1) +
  geom_point(color = "lightblue3", size = 1.5, shape = 1) +
  geom_point(color = "lightblue4", size = 2, shape = 1)
```

Specifying the Country Names to be Added to the Chart

In order to have an accurate analysis, a variety of countries have been selected.

```
require(ggrepel)
```

```
## Zorunlu paket yükleniyor: ggrepel
```

```
pointsToLabel <- c("Russia", "Venezuela", "Iraq", "Myanmar", "Sudan",  
"Afghanistan", "Turkey", "Greece", "Argentina", "Brazil",  
"India", "Italy", "China", "South Africa", "Spain",  
"France", "USA", "Germany", "UK", "Norway", "Japan")  
eg2 <- eg1 + geom_text_repel(aes(label = Country),  
color = "gray20",  
data = subset(hdi, Country %in% pointsToLabel),  
force = 10)  
library(ggrepel)  
eg2 <- eg1 + geom_text_repel(aes(label = Country),  
color = "gray20",  
data = subset(hdi, Country %in% pointsToLabel),  
force = 10)
```

Definition of Axes and Headings

```
eg3 <- eg2 +  
scale_x_continuous(name = "Corruption Perceptions Index (Higher Better)",  
breaks = c(seq(0,100,10))) +  
scale_y_continuous(name = "Human Development Index (Higher Better)",  
breaks = c(seq(0,100,20))) +  
expand_limits(y=0,x=0) +  
ggtitle("Corruption and Human Development",  
subtitle = "Sources: The Economist,  
Transparency International, UN")
```

Making Some Settings in the Theme

```
require(ggthemes)
```

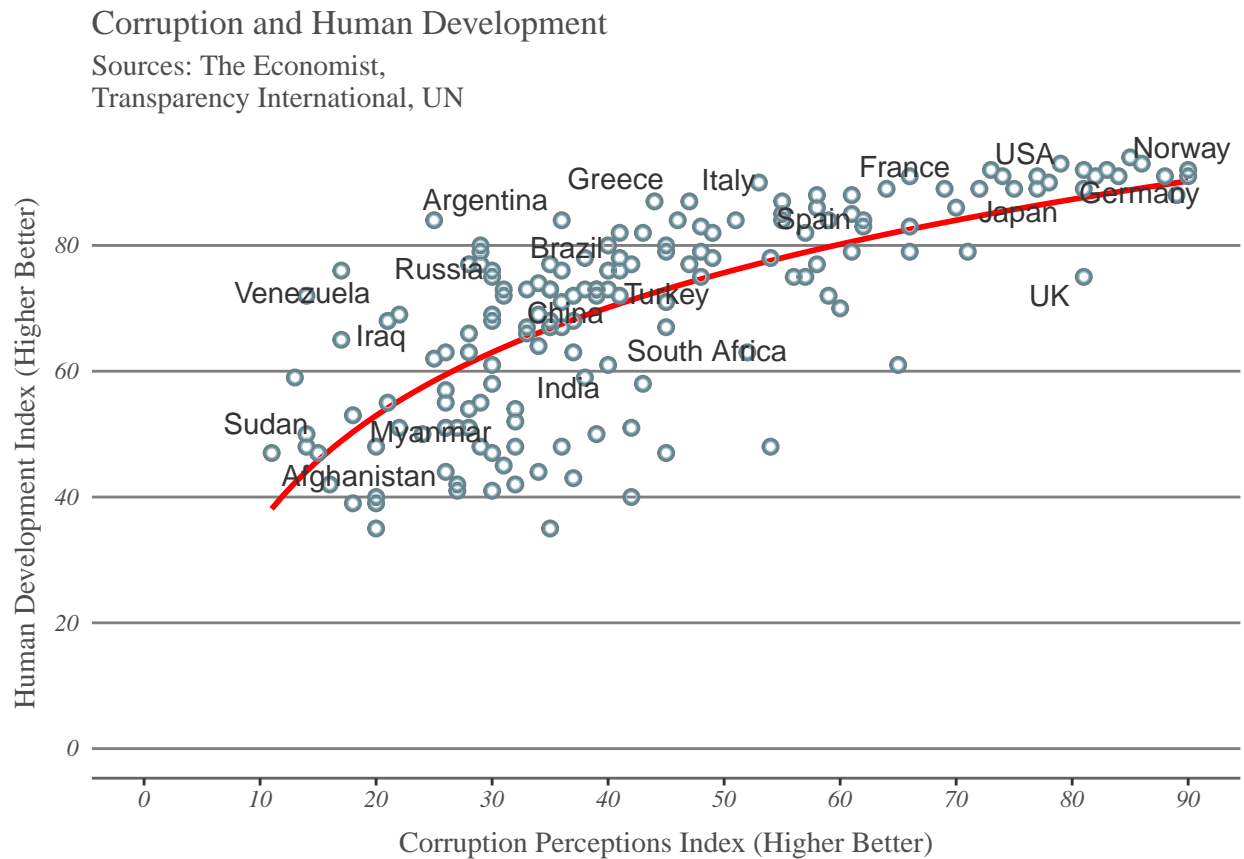
```
## Zorunlu paket yükleniyor: ggthemes
```

```
eg4 <- eg3 + theme_tufte() +  
theme(text = element_text(color = "gray30"),  
axis.text = element_text(face = "italic"),  
axis.title.x = element_text(vjust = -1),  
axis.title.y = element_text(vjust = 2),  
axis.ticks.y = element_blank(),  
axis.line = element_line(color = "gray40", size = 0.5),  
axis.line.y = element_blank(),  
panel.grid.major = element_line(color = "gray50", size = 0.5),  
panel.grid.major.x = element_blank())
```

```
## Warning: The 'size' argument of 'element_line()' is deprecated as of ggplot2 3.4.0.  
## i Please use the 'linewidth' argument instead.
```

```
## This warning is displayed once every 8 hours.
## Call 'lifecycle::last_lifecycle_warnings()' to see where this warning was
## generated.
```

```
print(eg4)
```



Observing that HDI increases as CPI increases in the graph generally supports the following conclusion:

>Countries with low perceptions of corruption tend to be better off in terms of human development.

>Combating corruption and promoting transparent governance are significant factors that positively influence human development.

This indicates that reducing corruption and encouraging good governance are critical not only from an ethical and political standpoint but also in terms of enhancing human development. Such an analysis can help policymakers develop strategies aimed at fighting corruption and improving human development outcomes.