

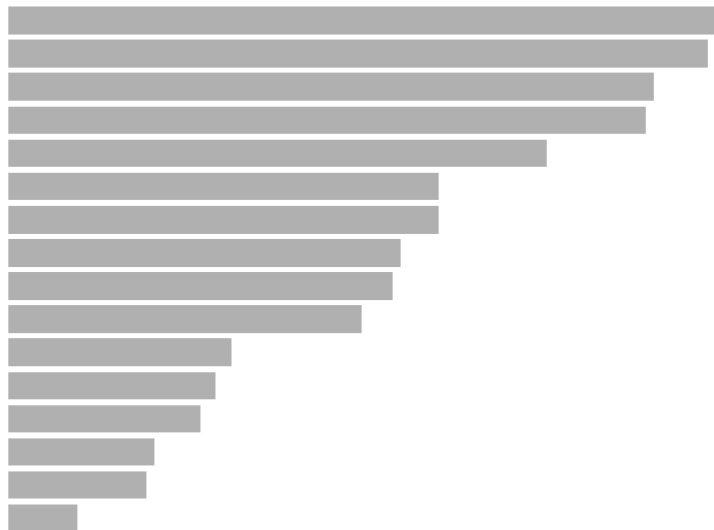
Visualisation

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10/28/2021

On initialise le graphique

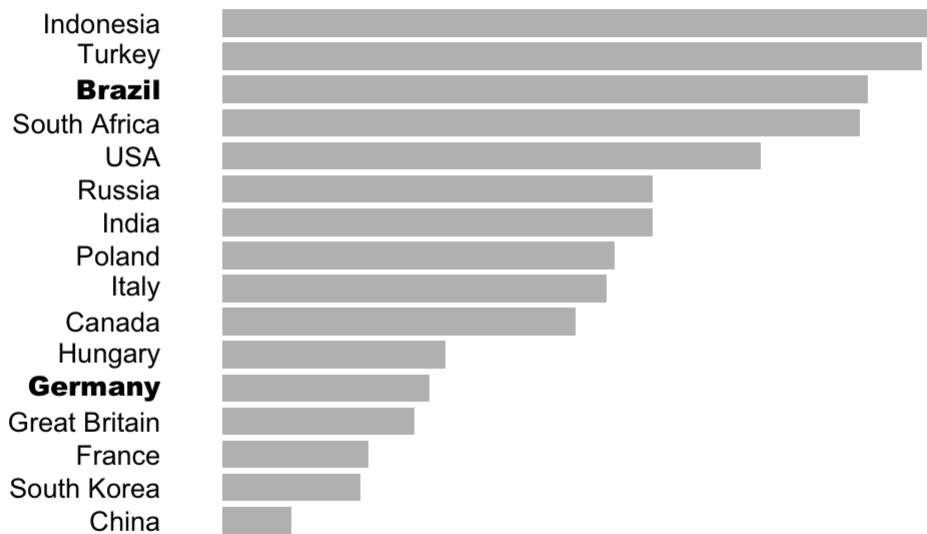
```
par(omi=c(0.65,0.25,0.75,0.75),mai=c(0.3,2,0.35,0),mgp=c(3,3,0),
    family="Arial", las=1)
x<-barplot(Percent,names.arg=F,hORIZ=T,border=NA,xlim=c(0,100),col="grey", cex.names=
0.85,axes=F)
```



On ajoute ensuite le nom des pays et en mettant en gras Germany et Brazil grâce à une boucle (si le pays est Germany ou Brazil, on applique la police Arial Black, sinon la police Arial standard)

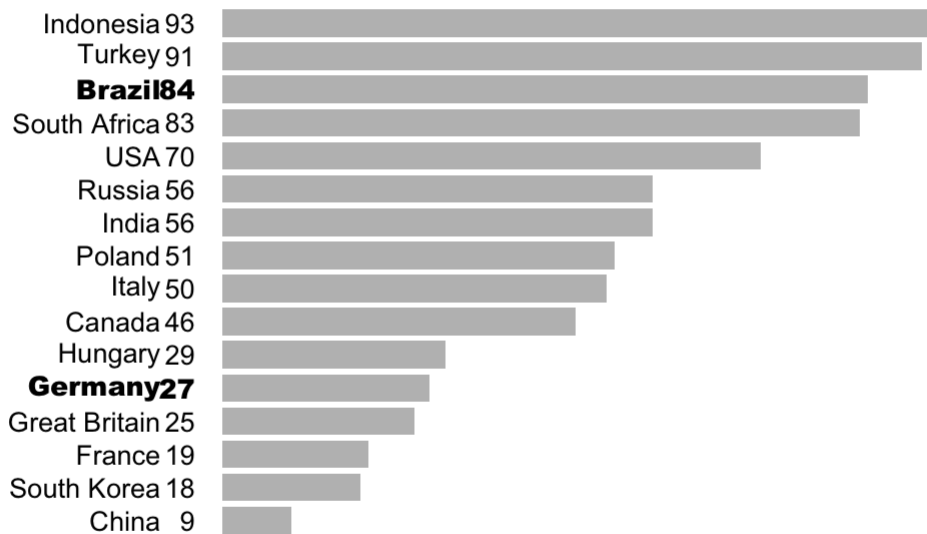
```
par(omi=c(0.65,0.25,0.75,0.75),mai=c(0.3,2,0.35,0),mgp=c(3,3,0),family="Arial", las=1)
x<-barplot(Percent,names.arg=F,hORIZ=T,border=NA,xlim=c(0,100),col="grey", cex.names=
0.85,axes=F)

for (i in 1:length(Country))
{
  if (Country[i] %in% c("Germany","Brazil"))
    {myFont<-"Arial Black"} else {myFont<-"Arial"}
  text(-8,x[i],Country[i],xpd=T,adj=1,cex=0.85,family=myFont)
}
```



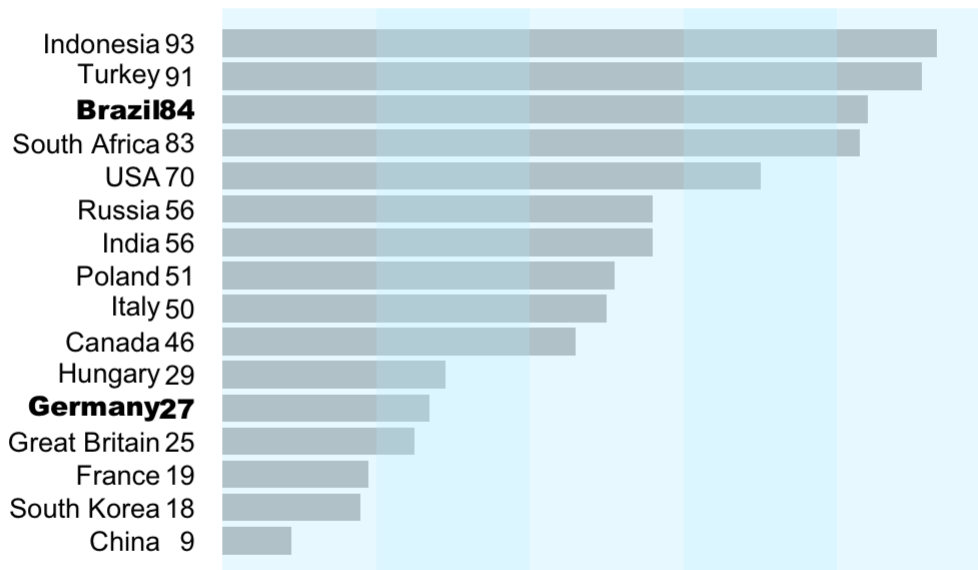
On ajoute ensuite les pourcentages correspondant aux pays, et on ajoute dans la boucle aussi la condition sur les pourcentages pour mettre ceux de Germany et de Brazil en gras

```
par(omi=c(0.65,0.25,0.75,0.75),mai=c(0.3,2,0.35,0),mgp=c(3,3,0),
    family="Arial", las=1)
x<-barplot(Percent,names.arg=F,hORIZ=T,border=NA,xlim=c(0,100),col="grey", cex.names=
0.85,axes=F)
par(omi=c(0.65,0.25,0.75,0.75),mai=c(0.3,2,0.35,0),mgp=c(3,3,0),
    family="Arial", las=1)
for (i in 1:length(Country))
{
  if (Country[i] %in% c("Germany","Brazil"))
    {myFont<-"Arial Black"} else {myFont<-"Arial"}
  text(-8,x[i],Country[i],xpd=T,adj=1,cex=0.85,family=myFont)
  text(-3.5,x[i],Percent[i],xpd=T,adj=1,cex=0.85,family=myFont)
}
```



On ajoute ensuite 4 rectangles de couleurs bleues afin d'aider à la lecture du graphique

```
par(omi=c(0.65,0.25,0.75,0.75),mai=c(0.3,2,0.35,0),mgp=c(3,3,0),
    family="Arial", las=1)
x<-barplot(Percent,names.arg=F,hORIZ=T,border=NA,xlim=c(0,100),col="grey", cex.names=
0.85,axes=F)
for (i in 1:length(Country))
{
  if (Country[i] %in% c("Germany","Brazil"))
    {myFont<-"Arial Black"} else {myFont<-"Arial"}
  text(-8,x[i],Country[i],xpd=T,adj=1,cex=0.85,family=myFont)
  text(-3.5,x[i],Percent[i],xpd=T,adj=1,cex=0.85,family=myFont)
}
rect(0,-0.5,20,28,col=rgb(191,239,255,80,maxColorValue=255),border=NA)
rect(20,-0.5,40,28,col=rgb(191,239,255,120,maxColorValue=255),border=NA)
rect(40,-0.5,60,28,col=rgb(191,239,255,80,maxColorValue=255),border=NA)
rect(60,-0.5,80,28,col=rgb(191,239,255,120,maxColorValue=255),border=NA)
rect(80,-0.5,100,28,col=rgb(191,239,255,80,maxColorValue=255),border=NA)
```



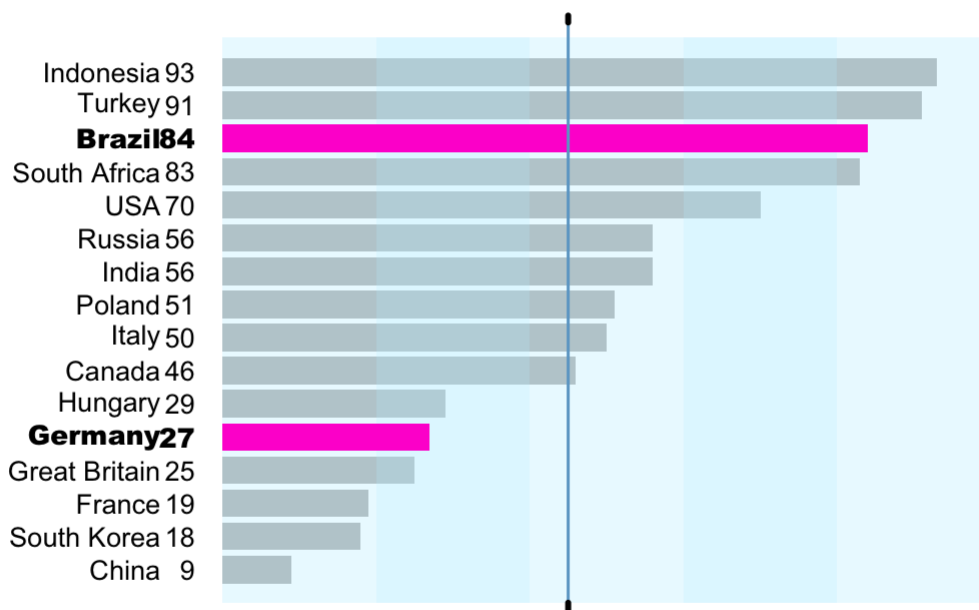
On souhaite mettre en évidence les barres de Brazil et de Germany en les changeant de couleur. Pour cela, on vient créer un second graphique en barre nommé x2. On lui donne comme hauteur la valeur des deux pays qui nous interesse.

```
par(omi=c(0.65,0.25,0.75,0.75),mai=c(0.3,2,0.35,0),mgp=c(3,3,0),
    family="Arial", las=1)
x<-barplot(Percent,names.arg=F,horiz=T,border=NA,xlim=c(0,100),col="grey", cex.names=
0.85,axes=F)
for (i in 1:length(Country))
{
  if (Country[i] %in% c("Germany","Brazil"))
    {myFont<-"Arial Black"} else {myFont<-"Arial"}
  text(-8,x[i],Country[i],xpd=T,adj=1,cex=0.85,family=myFont)
  text(-3.5,x[i],Percent[i],xpd=T,adj=1,cex=0.85,family=myFont)
}
rect(0,-0.5,20,28,col=rgb(191,239,255,80,maxColorValue=255),border=NA)
rect(20,-0.5,40,28,col=rgb(191,239,255,120,maxColorValue=255),border=NA)
rect(40,-0.5,60,28,col=rgb(191,239,255,80,maxColorValue=255),border=NA)
rect(60,-0.5,80,28,col=rgb(191,239,255,120,maxColorValue=255),border=NA)
rect(80,-0.5,100,28,col=rgb(191,239,255,80,maxColorValue=255),border=NA)
myValue2<-c(0,0,0,0,27,0,0,0,0,0,0,0,0,0,84,0,0)
myColour2<-rgb(255,0,210,maxColorValue=255)
x2<-barplot(myValue2,names.arg=F,horiz=T,border=NA,xlim=c(0,100),col=myColour2,cex.na
mes=0.85,axes=F,add=T)
```



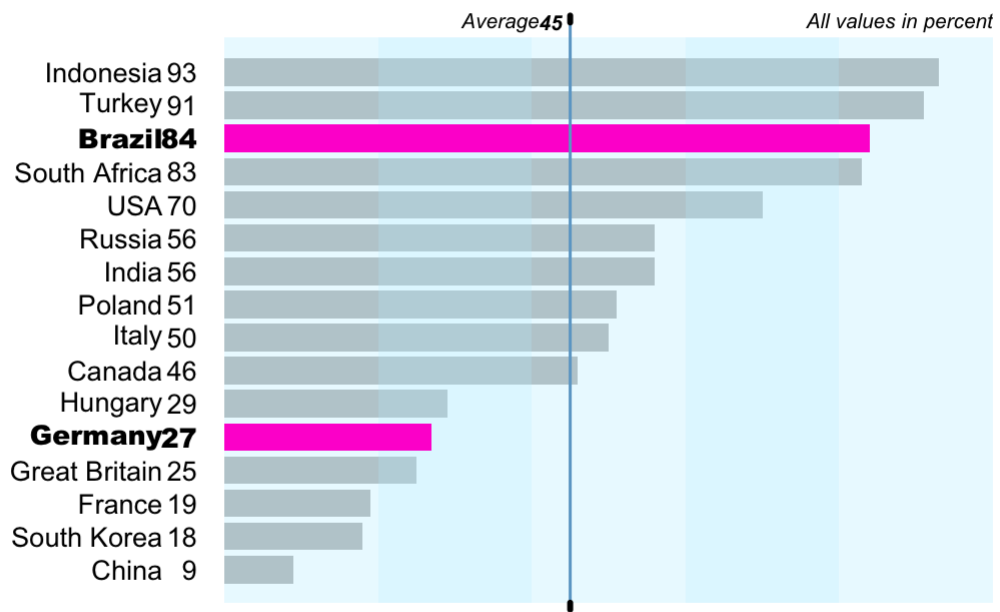
On vient ensuite ajouter une barre verticale qui représente la valeur moyenne grâce à arrows (et on mets en évidence les extrémités)

```
par(omi=c(0.65,0.25,0.75,0.75),mai=c(0.3,2,0.35,0),mgp=c(3,3,0),
    family="Arial", las=1)
x<-barplot(Percent,names.arg=F,horiz=T,border=NA,xlim=c(0,100),col="grey", cex.names=
0.85,axes=F)
for (i in 1:length(Country))
{
  if (Country[i] %in% c("Germany","Brazil"))
    {myFont<-"Arial Black"} else {myFont<-"Arial"}
  text(-8,x[i],Country[i],xpd=T,adj=1,cex=0.85,family=myFont)
  text(-3.5,x[i],Percent[i],xpd=T,adj=1,cex=0.85,family=myFont)
}
rect(0,-0.5,20,28,col=rgb(191,239,255,80,maxColorValue=255),border=NA)
rect(20,-0.5,40,28,col=rgb(191,239,255,120,maxColorValue=255),border=NA)
rect(40,-0.5,60,28,col=rgb(191,239,255,80,maxColorValue=255),border=NA)
rect(60,-0.5,80,28,col=rgb(191,239,255,120,maxColorValue=255),border=NA)
rect(80,-0.5,100,28,col=rgb(191,239,255,80,maxColorValue=255),border=NA)
myValue2<-c(0,0,0,0,27,0,0,0,0,0,0,0,0,0,84,0,0)
myColour2<-rgb(255,0,210,maxColorValue=255)
x2<-barplot(myValue2,names.arg=F,horiz=T,border=NA,xlim=c(0,100),col=myColour2,cex.na
mes=0.85,axes=F,add=T)
arrows(45,-0.5,45,20.5,lwd=1.5,length=0,xpd=T,col="skyblue3")
arrows(45,-0.5,45,-0.75,lwd=3,length=0,xpd=T)
arrows(45,20.5,45,20.75,lwd=3,length=0,xpd=T)
```



On vient ensuite labélisé cet axe grâce à text

```
par(omi=c(0.65,0.25,0.75,0.75),mai=c(0.3,2,0.35,0),mgp=c(3,3,0),
    family="Arial", las=1)
x<-barplot(Percent,names.arg=F,hORIZ=T,border=NA,xlim=c(0,100),col="grey", cex.names=
0.85,axes=F)
for (i in 1:length(Country))
{
  if (Country[i] %in% c("Germany","Brazil"))
    {myFont<-"Arial Black"} else {myFont<-"Arial"}
  text(-8,x[i],Country[i],xpd=T,adj=1,cex=0.85,family=myFont)
  text(-3.5,x[i],Percent[i],xpd=T,adj=1,cex=0.85,family=myFont)
}
rect(0,-0.5,20,28,col=rgb(191,239,255,80,maxColorValue=255),border=NA)
rect(20,-0.5,40,28,col=rgb(191,239,255,120,maxColorValue=255),border=NA)
rect(40,-0.5,60,28,col=rgb(191,239,255,80,maxColorValue=255),border=NA)
rect(60,-0.5,80,28,col=rgb(191,239,255,120,maxColorValue=255),border=NA)
rect(80,-0.5,100,28,col=rgb(191,239,255,80,maxColorValue=255),border=NA)
myValue2<-c(0,0,0,0,27,0,0,0,0,0,0,0,0,84,0,0)
myColour2<-rgb(255,0,210,maxColorValue=255)
x2<-barplot(myValue2,names.arg=F,hORIZ=T,border=NA,xlim=c(0,100),col=myColour2,cex.names=
0.85,axes=F,add=T)
arrows(45,-0.5,45,20.5,lwd=1.5,length=0,xpd=T,col="skyblue3")
arrows(45,-0.5,45,-0.75,lwd=3,length=0,xpd=T)
arrows(45,20.5,45,20.75,lwd=3,length=0,xpd=T)
text(41,20.5,"Average",adj=1,xpd=T,cex=0.65,font=3)
text(44,20.5,"45",adj=1,xpd=T,cex=0.65,family="Arial",font=4)
text(100,20.5,"All values in percent",adj=1,xpd=T,cex=0.65,font=3)
```



On ajoute enfin les éléments textuels du graphique grâce à mtext : titre, sous titre, source On utilise les paramètres de tailles et de placement afin de les différencier

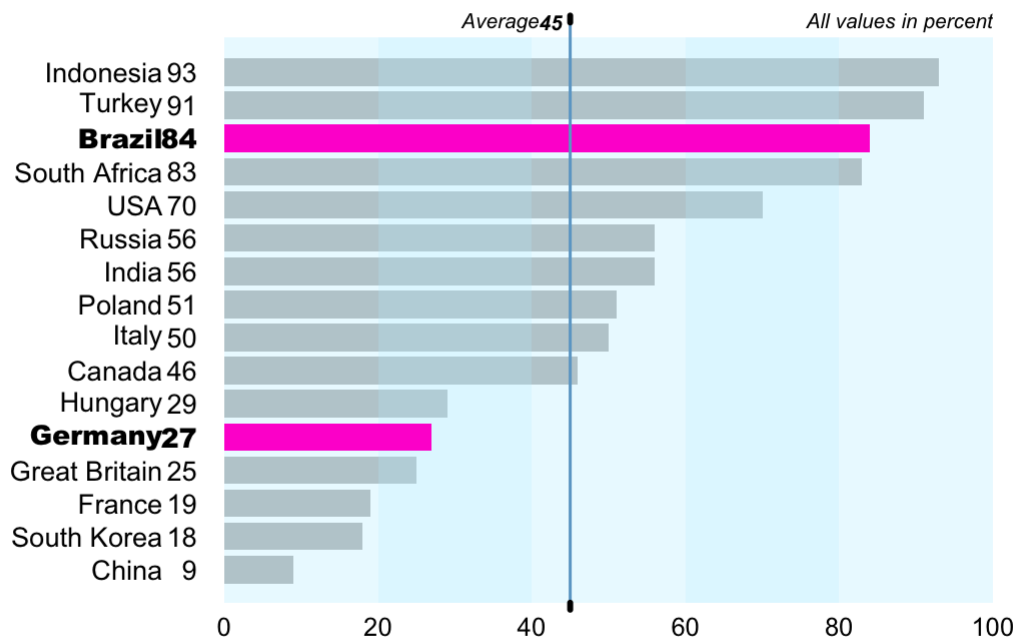
```

par(omi=c(0.65,0.25,0.75,0.75),mai=c(0.3,2,0.35,0),mgp=c(3,3,0),
    family="Arial", las=1)
x<-barplot(Percent,names.arg=F,hORIZ=T,border=NA,xlim=c(0,100),col="grey", cex.names=
0.85,axes=F)
for (i in 1:length(Country))
{
if (Country[i] %in% c("Germany","Brazil"))
    {myFont<-"Arial Black"} else {myFont<-"Arial"}
text(-8,x[i],Country[i],xpd=T,adj=1,cex=0.85,family=myFont)
text(-3.5,x[i],Percent[i],xpd=T,adj=1,cex=0.85,family=myFont)
}
rect(0,-0.5,20,28,col=rgb(191,239,255,80,maxColorValue=255),border=NA)
rect(20,-0.5,40,28,col=rgb(191,239,255,120,maxColorValue=255),border=NA)
rect(40,-0.5,60,28,col=rgb(191,239,255,80,maxColorValue=255),border=NA)
rect(60,-0.5,80,28,col=rgb(191,239,255,120,maxColorValue=255),border=NA)
rect(80,-0.5,100,28,col=rgb(191,239,255,80,maxColorValue=255),border=NA)
myValue2<-c(0,0,0,0,27,0,0,0,0,0,0,0,0,84,0,0)
myColour2<-rgb(255,0,210,maxColorValue=255)
x2<-barplot(myValue2,names.arg=F,hORIZ=T,border=NA,xlim=c(0,100),col=myColour2,cex.na
mes=0.85,axes=F,add=T)
arrows(45,-0.5,45,20.5,lwd=1.5,length=0,xpd=T,col="skyblue3")
arrows(45,-0.5,45,-0.75,lwd=3,length=0,xpd=T)
arrows(45,20.5,45,20.75,lwd=3,length=0,xpd=T)
text(41,20.5,"Average",adj=1,xpd=T,cex=0.65,font=3)
text(44,20.5,"45",adj=1,xpd=T,cex=0.65,family="Arial",font=4)
text(100,20.5,"All values in percent",adj=1,xpd=T,cex=0.65,font=3)
mtext(c(0,20,40,60,80,100),at=c(0,20,40,60,80,100),1,line=0,cex=0.80)
mtext("'I Definitely Believe in God or a Supreme Being'",3,line=1.3,adj=0,cex=1.2,fam
ily="Arial Black",outer=T)
mtext("was said in 2010 in:",3,line=-0.4,adj=0,cex=0.9,outer=T)
mtext("Source: www.ipsos-na.com, Design: Stefan Fichtel, iextract",1,line=1,adj=1.0,ce
x=0.65,outer=T,font=3)

```


'I Definitely Believe in God or a Supreme Being'

was said in 2010 in:

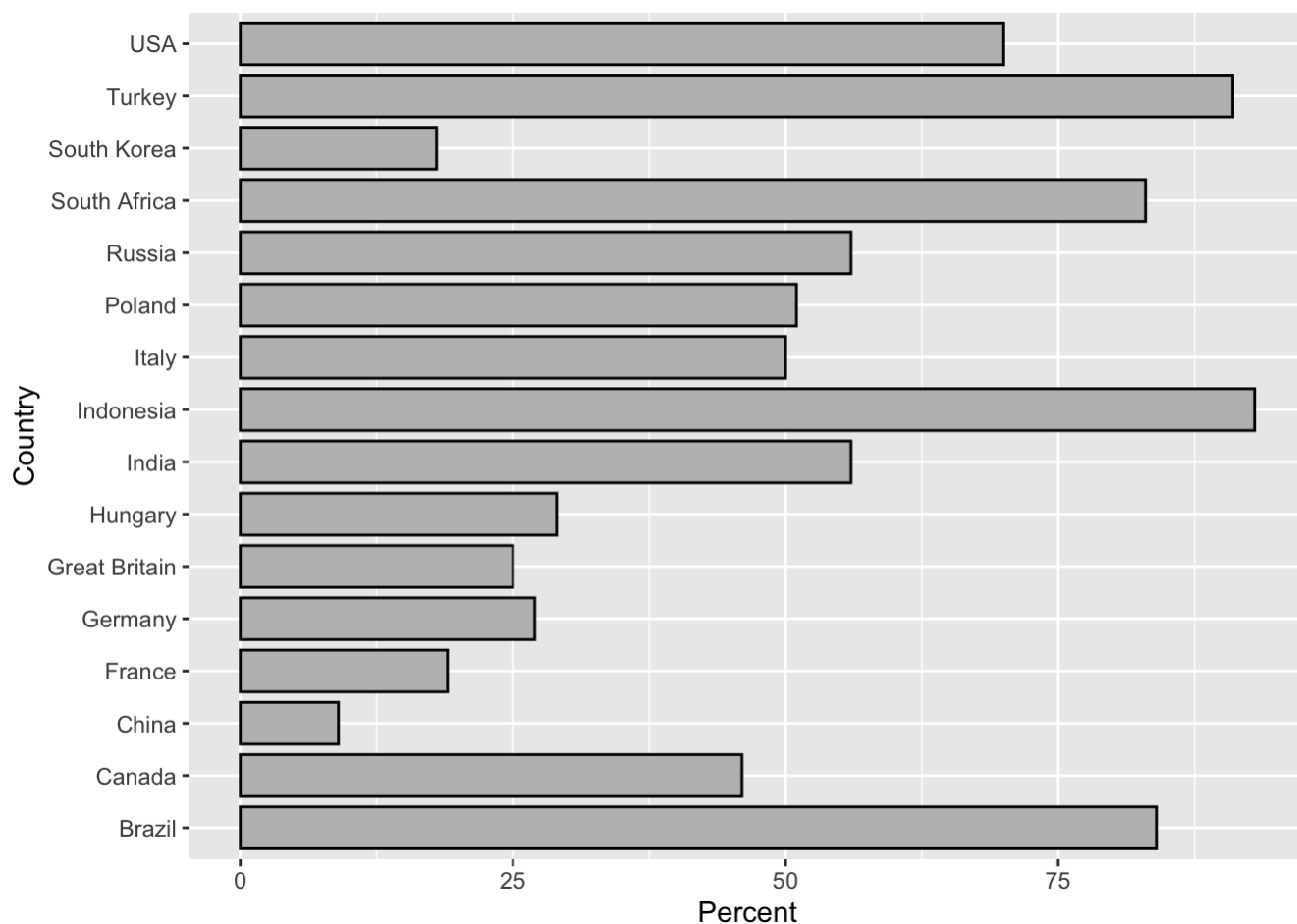


Source: www.ipsos-na.com, Design: Stefan Fichtel, ixtract

Ggplot2

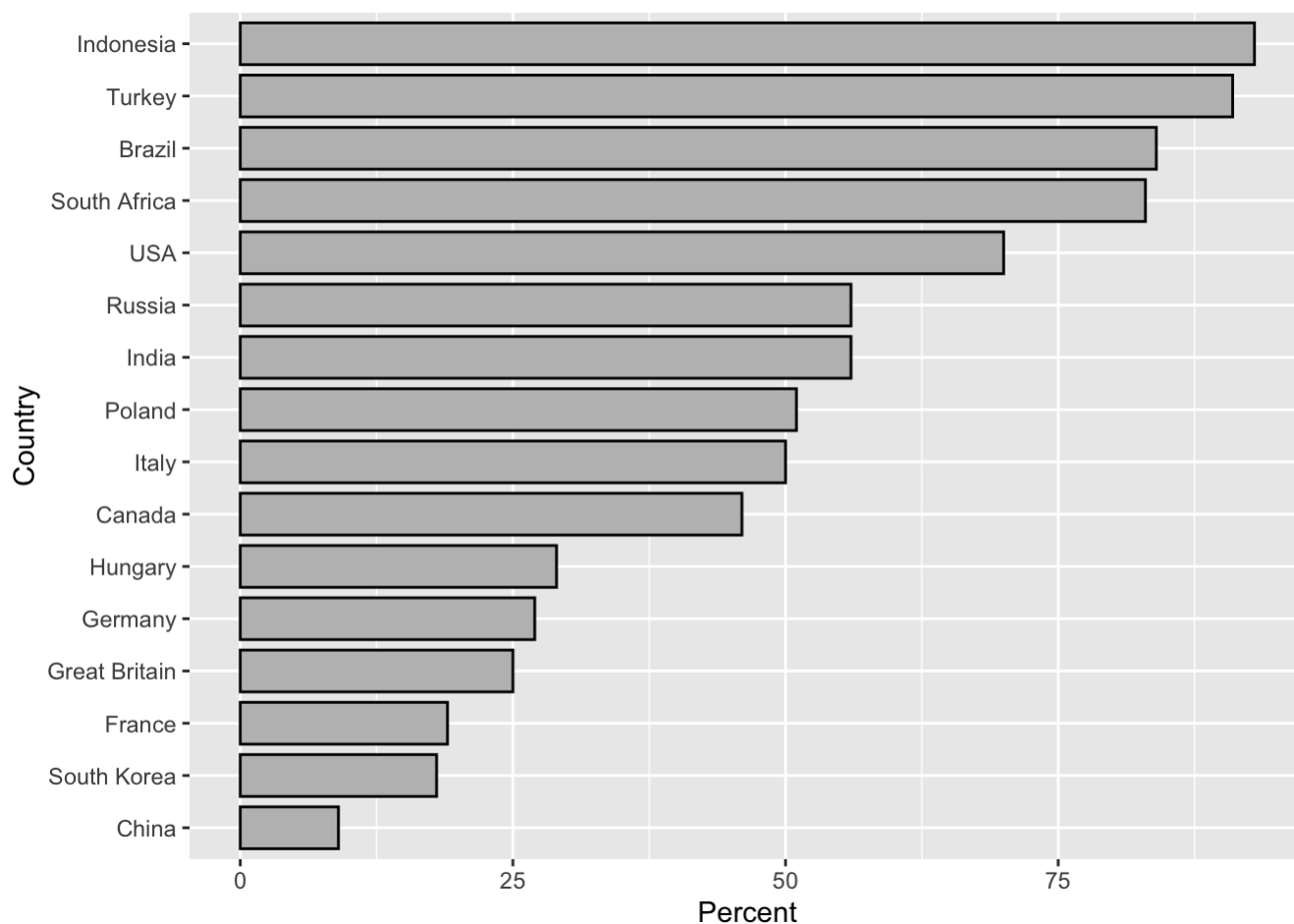
On crée pour commencer le graphique “de base” à l’air de ggplot et de geom_bar qui va tracer les histogrammes.

```
library("ggplot2")
n <- ggplot(data = ipsos, aes(x=Percent, y = Country, fill = Percent,)) +
  geom_bar(colour="black", fill="grey", width=.8,stat="identity")
n
```



On trie ensuite les barres dans un ordre décroissant en réordonnant le jeu de données

```
ipsos <- within(ipsos, Country <- reorder(Country, Percent))
n <- ggplot(data = ipsos, aes(x=Percent, y = Country, fill = Percent,)) +
  geom_bar(colour="black", fill="grey", width=.8,stat="identity",inherit.aes = T)
n
```

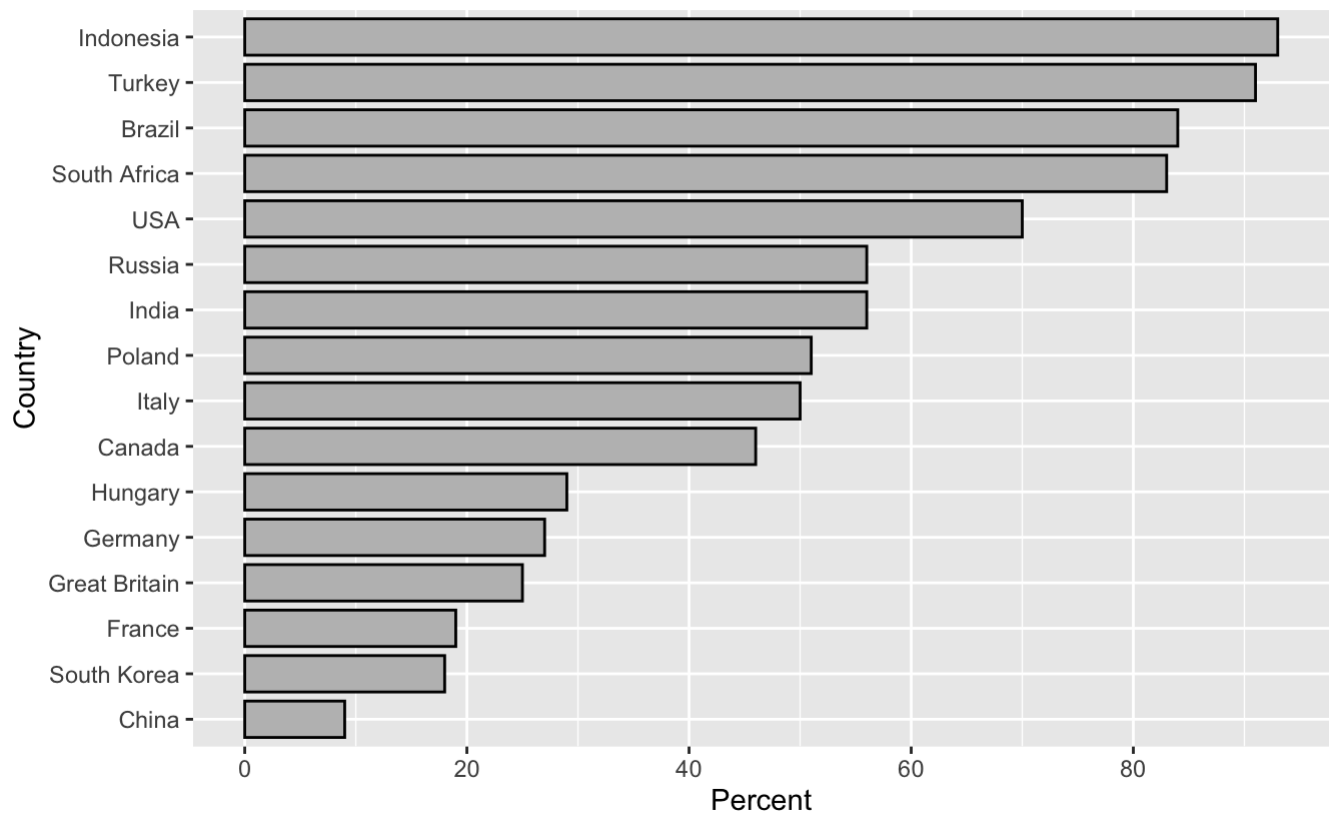


Après la création de ce graphique, nous allons venir ajouter les informations textuelles, comme le titre, sous-titre et la légende grâce à la fonction `labs`. On ajoute aussi l'échelle de l'axe x de 20 unités par 20 unités de 0 à 100

```
library(ggtext)
n <- n + labs(title = "I Definitely Believe in God or a Supreme Being", subtitle = "was said in 2010 in:", caption = "Source: www.ipsos-na.com, Design: Stefan Fichtel, extract") + scale_x_continuous(breaks = seq(0, 100, 20))

n
```

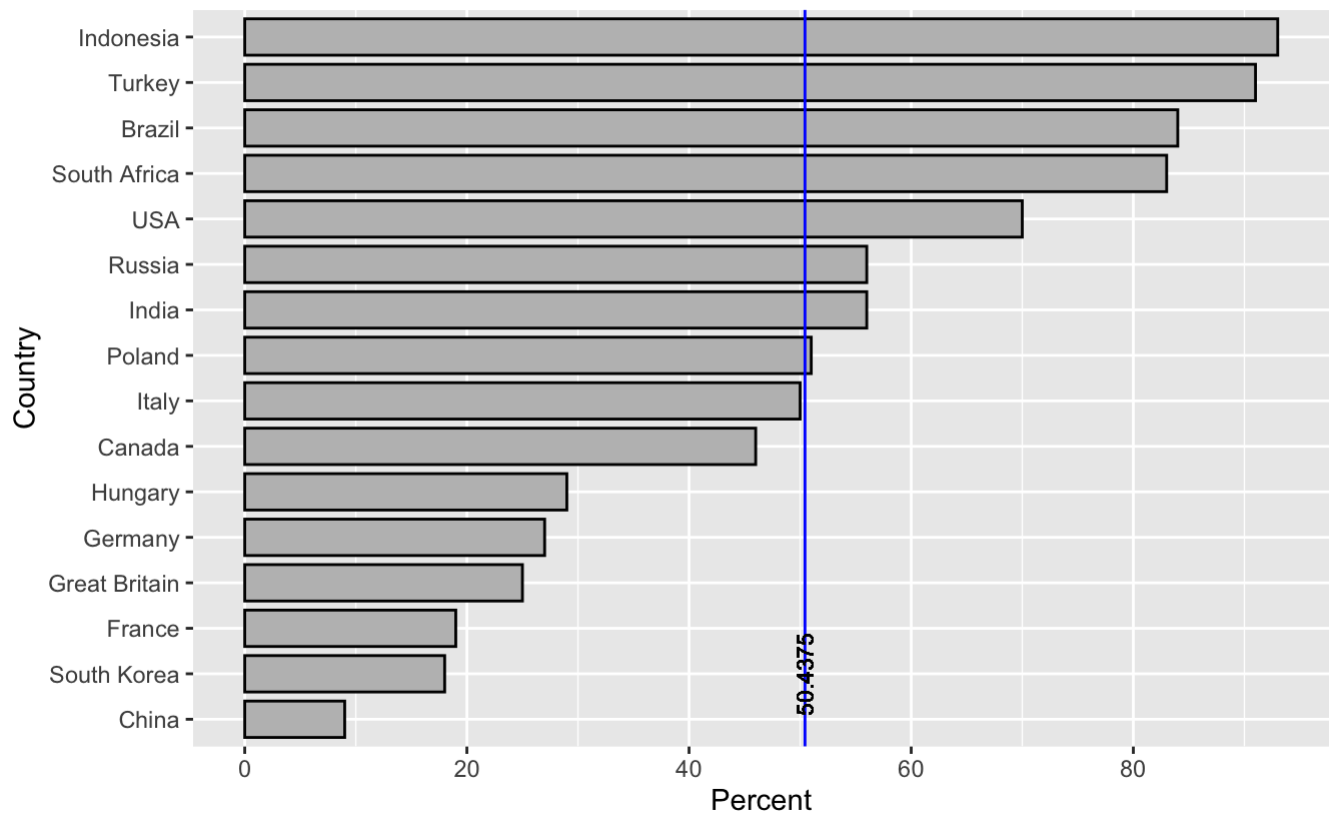
I Definitely Believe in God or a Supreme Being
was said in 2010 in:



On ajoute ensuite l'axe qui représente la moyenne en le traçant avec `geom_vline` et en ajoutant sa valeur avec `geom_text`

```
n <- n + geom_vline(xintercept = mean(Percent), col = "blue") + geom_text(aes(x = mean(Percent), y=2, label = mean(Percent)), size = 3, angle = 90)
n
```

I Definitely Believe in God or a Supreme Being was said in 2010 in:

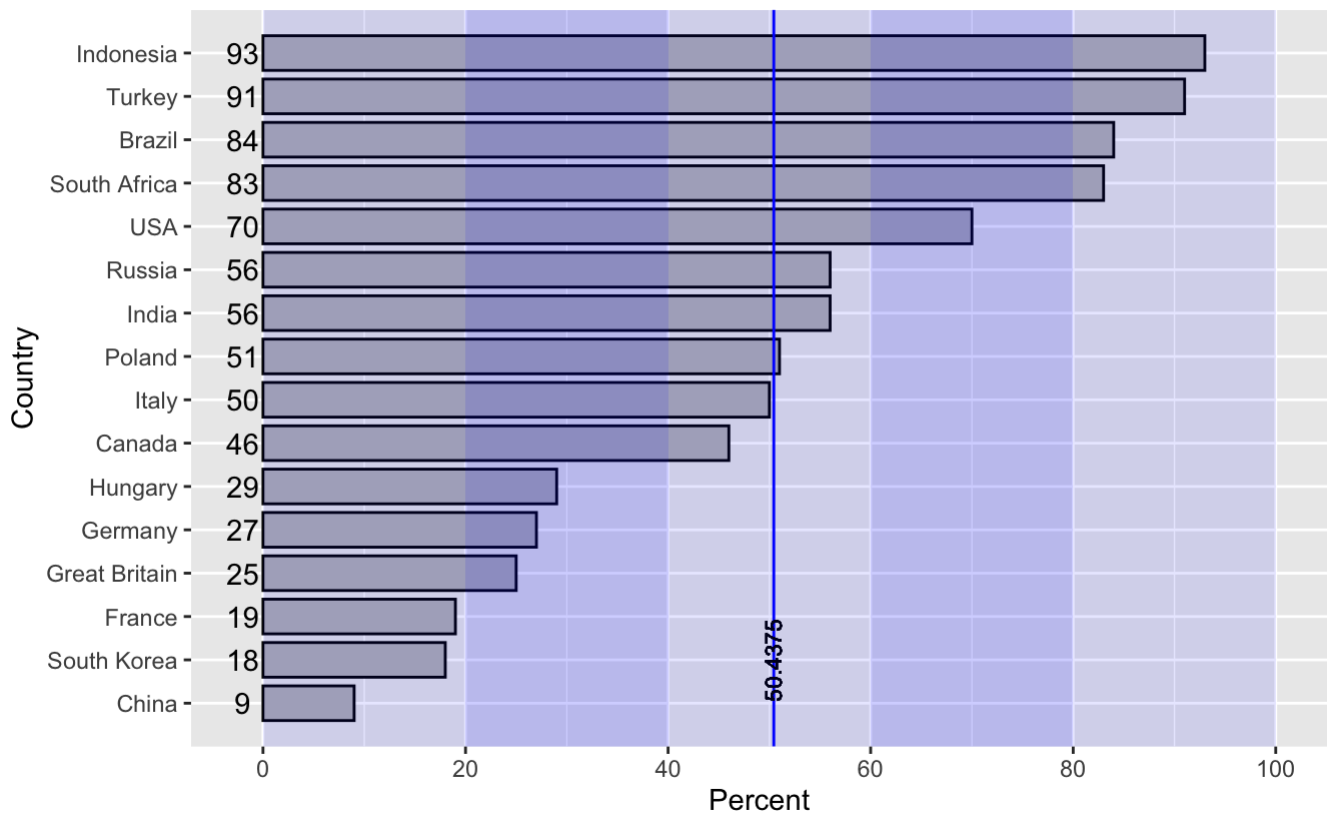


On ajoute ensuite les pourcentages correspondants à chaque pays

```
n <- n + annotate("text", y = 1:16, x = -2, label = Percent) + annotate("rect", xmin
= c(0,20,40,60,80), xmax = c(20,40,60,80,100), ymin = 0, ymax = 17, alpha = c(0.1,0.2
,0.1,0.2,0.1),fill = "blue")
```

n

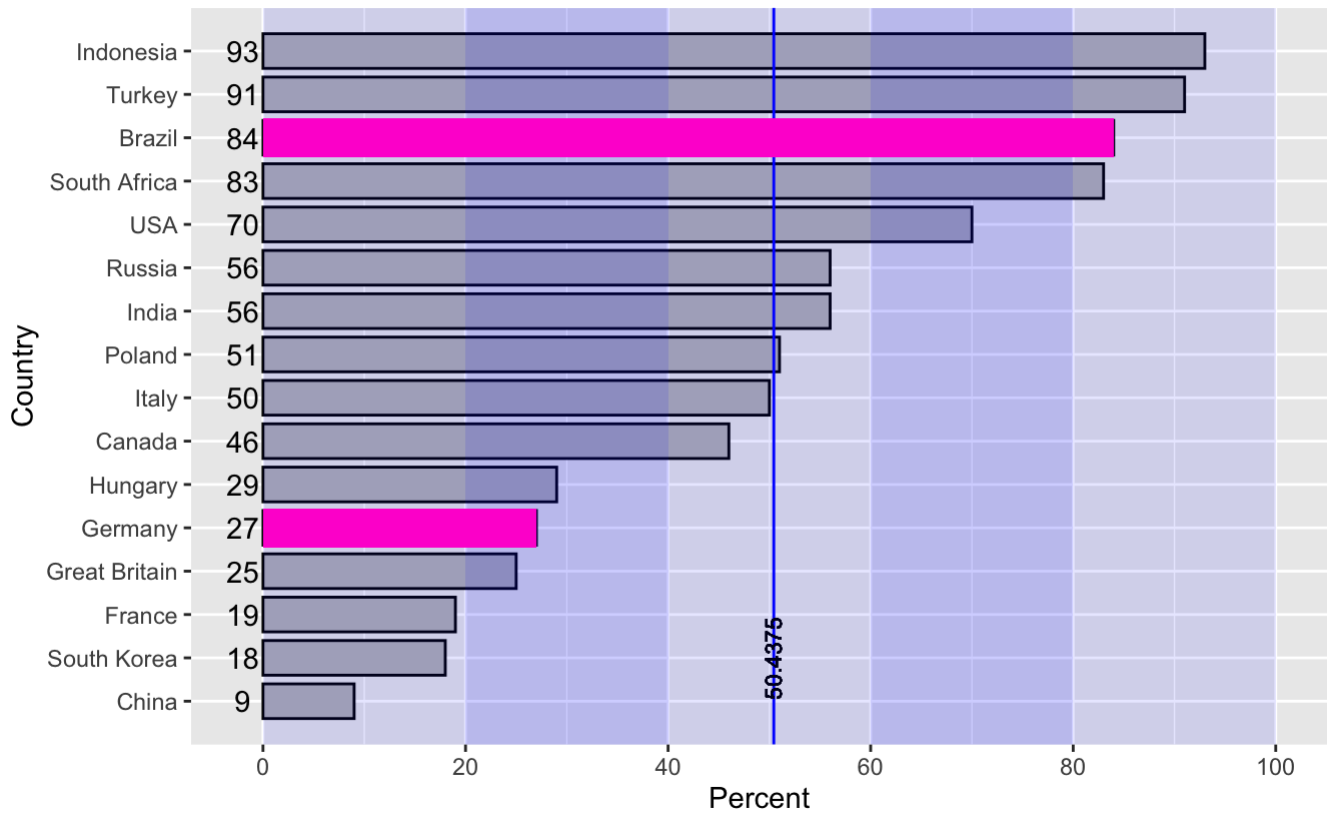
I Definitely Believe in God or a Supreme Being was said in 2010 in:



Et on mets en valeurs les pays qui nous intéresse (Germany et Brazil) en colorant leur barre en rose

```
n <- n + geom_bar(aes(x = c(0,0,84,0,0,0,0,0,0,0,0,0,0,27,0,0,0,0), y = Country), stat =
"identity", fill = myColour2)
n
```

I Definitely Believe in God or a Supreme Being was said in 2010 in:



Source: www.ipsos-na.com, Design: Stefan Fichtel, ixtract