# Data transforming

## Creating new variables mean\_a, mean\_d, mean\_c, mean\_e

> data$mean\_a <- rowMeans(data[,3:16], na.rm=TRUE)

> data$mean\_c <- rowMeans(data[,64:75], na.rm=TRUE)

> data$mean\_d <- rowMeans(data[,76:91], na.rm=TRUE)

> data$mean\_e <- rowMeans(data[,92:102], na.rm=TRUE)

## Convertingdichotomous variables (from b15\_1 to b18\_9) into z-score

>data$zscoreb15\_1=scale(data$b15\_1, center = T, scale = T)

>data$zscoreb15\_2=scale(data$b15\_2, center = T, scale = T)

>data$zscoreb15\_3=scale(data$b15\_3, center = T, scale = T)

* data$zscoreb15\_4=scale(data$b15\_4, center = T, scale = T)
* data$zscoreb15\_5=scale(data$b15\_5, center = T, scale = T)
* data$zscoreb15\_6=scale(data$b15\_6, center = T, scale = T)
* data$zscoreb15\_7=scale(data$b15\_7, center = T, scale = T)
* data$zscoreb15\_8=scale(data$b15\_8, center = T, scale = T)
* data$zscoreb16\_1=scale(data$b16\_1, center = T, scale = T)
* data$zscoreb16\_2=scale(data$b16\_2, center = T, scale = T)
* data$zscoreb16\_3=scale(data$b16\_3, center = T, scale = T)
* data$zscoreb16\_4=scale(data$b16\_4, center = T, scale = T)
* data$zscoreb16\_5=scale(data$b16\_5, center = T, scale = T)
* data$zscoreb16\_6=scale(data$b16\_6, center = T, scale = T)
* data$zscoreb16\_7=scale(data$b16\_7, center = T, scale = T)
* data$zscoreb16\_8=scale(data$b16\_8, center = T, scale = T)
* data$zscoreb17\_1=scale(data$b17\_1, center = T, scale = T)
* data$zscoreb17\_2=scale(data$b17\_2, center = T, scale = T)
* data$zscoreb17\_3=scale(data$b17\_3, center = T, scale = T)
* data$zscoreb17\_4=scale(data$b17\_4, center = T, scale = T)
* data$zscoreb17\_5=scale(data$b17\_5, center = T, scale = T)
* data$zscoreb17\_6=scale(data$b17\_6, center = T, scale = T)
* data$zscoreb17\_7=scale(data$b17\_7, center = T, scale = T)
* data$zscoreb17\_8=scale(data$b17\_8, center = T, scale = T)
* data$zscoreb18\_1=scale(data$b18\_1, center = T, scale = T)
* data$zscoreb18\_2=scale(data$b18\_2, center = T, scale = T)
* data$zscoreb18\_3=scale(data$b18\_3, center = T, scale = T)
* data$zscoreb18\_4=scale(data$b18\_4, center = T, scale = T)
* data$zscoreb18\_5=scale(data$b18\_5, center = T, scale = T)
* data$zscoreb18\_6=scale(data$b18\_6, center = T, scale = T)
* data$zscoreb18\_7=scale(data$b18\_7, center = T, scale = T)
* data$zscoreb18\_8=scale(data$b18\_8, center = T, scale = T)
* data$zscoreb18\_9=scale(data$b18\_9, center = T, scale = T)
* data$mean\_b1 <- rowMeans(data[,17:18], na.rm=TRUE)
* data$mean\_b2 <- rowMeans(data[,21:24], na.rm=TRUE)
* data$mean\_b3 <- rowMeans(data[,181:210], na.rm=TRUE)
* s = c(1,2,3,4)
* sd=sd(s)
* m=mean(s)
* data$mean\_b4 = data$mean\_b3\*sd+m
* data$mean\_b5 <- rowMeans(data[,c(214,28,29,30)], na.rm=TRUE)
* data$mean\_b = rowMeans(data[,c(215,211,212)])

# Table 1

> data = read.csv2 (file.choose (), header = T)

> data[data==99] <- NA

> data1 = data[c(1,103:177)]

> library(DescTools)

> Desc(data1)

# Figure 1

* data$f1[data$f1 ==1] <- "Female"
* data$f1[data$f1 ==2] <- "Male"

>data$f6[data$f6 ==1] <- "Lower secondary"

>data$f6[data$f6 ==2] <- "Upper secondary"

>data$f6[data$f6 ==3] <- "Post-secondary"

>data$f6[data$f6 ==4] <- "Masters/ Doctoral"

>data$f6[data$f6 ==5] <- "I don’t know"

>data$f6 = factor(data$f6, levels=c("Lower secondary", "Upper secondary","Post-secondary", "Masters/ Doctoral", "I don’t know"))

> install.packages("ggplot2")

> library(ggplot2)

> p1 = ggplot(data =na.omit(data),aes(x=f6, fill=f1))+geom\_bar()+ylab("Number of people (person)")+xlab("")+theme\_bw()+theme\_classic() + labs(fill='Gender (F1)')

> p1

# Figure 2

* data$f1[data$f1 ==1] <- "Female"
* data$f1[data$f1 ==2] <- "Male"
* data$g14[data$g14 ==1] <- "Hardly ever"
* data$g14[data$g14 ==2] <- "Less than an hour"
* data$g14[data$g14 ==3] <- "1-2 hour"
* data$g14[data$g14 ==4] <- "3-4 hours"
* data$g14[data$g14 ==5] <- "5-6 hours"
* data$g14[data$g14 ==6] <- "7 hours or more"
* data$g14 = factor(data$g14, levels=c("Hardly ever", "1-2 hour","3-4 hours", "5-6 hours", "7 hours or more" ))
* p2=ggplot(data=na.omit(data),aes(x=g14, fill=f1))+geom\_bar()+ylab("Number of people (person)")+xlab("")+theme\_bw()+theme\_classic()+ labs (fill='Gender (F1)')
* p2

# Table 3

> data = read.csv (file.choose (), header = T)

> data[data==99] <- t=file.choose()

> data2 = data[c(1,31:63)]

> library(DescTools)

> Desc(data2)

# Figure 3\_b

>boxplot(data$mean\_a~data$f1, main="Digital Literacy mean scores by gender", xlab=“Gender (F1)”,

ylab="Mean scores", notch=T, col=c("red","blue"),

names=c("Female","Male"))

# Figure 4\_a1

> hist(data$mean\_b, col="green", main="Distribution of Digital Safety and Resilience meanscores")

# Figure 4\_a2

>boxplot(data$mean\_b~data$f1, main="Digital Safety & Resilience mean scores by gender", xlab=“Gender (F1)”,

ylab="Mean scores", notch=T, col=c("red","blue"),

names=c("Female","Male"))

# Figure 4\_b1

> hist(data$mean\_c, col="green", main="Distribution of Digital Participation & Agency meanscores")

# Figure 4\_b2

> boxplot(data$mean\_c~data$f1, main="Digital Participation & Agency mean scores by gender", xlab=“Gender (F1)”,

ylab="Mean scores", notch=T, col=c("red","blue"),

names=c("Female","Male"))

# Figure 4\_c1

> hist(data$mean\_d, col="green", main="Distribution of Emotional Inteligence")

# Figure 4\_c2

>boxplot(data$mean\_d~data$f1, main="Digital Emotional Intelligence mean scores by gender", xlab=“Gender (F1)”,

ylab="Mean scores", notch=T, col=c("red","blue"),

names=c("Female","Male"))

# Figure 4\_d1

> hist(data$mean\_e, col="green", main="Distribution of Creativity & Inovation")

# Figure 4\_d2

>boxplot(data$mean\_e~data$f1, main="Creativity & Innovation mean scores by gender", xlab=“Gender (F1)”,

ylab="Mean scores", notch=T, col=c("red","blue"),

names=c("Female","Male"))

# Table 4

>data = read.csv (file.choose (), header = T, na.string = T)

>names(data)

>attach(data)

>m = lm(mean\_b3 ~ factor(g1) + factor(f6) + factor(h2), data=data)

>summary(m)

# Table 5

>data = read.csv (file.choose (), header = T, na.string = T)

>names(data)

>attach(data)

>n= lm(mean\_d ~ factor(g2) + factor(f1), data=data)

>summary(n)