Untitled

jjw

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library(knitr)  
library(tidyverse)

## -- Attaching packages --------------------------------------------------------------------------------------------------------- tidyverse 1.3.0 --

## v ggplot2 3.3.2 v purrr 0.3.4  
## v tibble 3.0.1 v dplyr 1.0.0  
## v tidyr 1.1.0 v stringr 1.4.0  
## v readr 1.3.1 v forcats 0.5.0

## -- Conflicts ------------------------------------------------------------------------------------------------------------ tidyverse\_conflicts() --  
## x dplyr::filter() masks stats::filter()  
## x dplyr::lag() masks stats::lag()

library(e1071)

## Warning: package 'e1071' was built under R version 4.0.2

library(moments)

##   
## Attaching package: 'moments'

## The following objects are masked from 'package:e1071':  
##   
## kurtosis, moment, skewness

library(gt)

## Warning: package 'gt' was built under R version 4.0.2

library(ggpubr)

## Warning: package 'ggpubr' was built under R version 4.0.2

library(ggplotify)

## Warning: package 'ggplotify' was built under R version 4.0.2

library(grid)  
library(tinytex)

## Warning: package 'tinytex' was built under R version 4.0.2

# 1. Creamos las muestras, evaluamos el estadístico en ellas, así como la media muestral  
muestreo <- function(alpha, beta){  
 lista <- list()  
 tabla\_muestras <- matrix(ncol = 40, nrow = 10) %>% as.data.frame()  
 lista[[6]] <- matrix(ncol = 40, nrow = 1) %>% as.data.frame()  
 media\_poblacional <- alpha / (alpha + beta)  
 varianza\_poblacional <- alpha \* beta / (((alpha + beta) ^ 2 ) \* (alpha + beta + 1))  
 for(j in 1:40){  
 set.seed(j)  
 tabla\_muestras[, j] <- rbeta(10, shape1 = alpha, shape2 = beta)  
 colnames(tabla\_muestras)[j] <- as.numeric(gsub("V", "", colnames(tabla\_muestras)[j]))  
 colnames(lista[[6]])[j] <- as.numeric(gsub("V", "", colnames(tabla\_muestras)[j]))  
 lista[[6]][, j] <- 0.5\*(quantile(tabla\_muestras[, j], probs = c(0.6)) + quantile(tabla\_muestras[, j], probs = c(0.4)))  
 }  
 lista[[1]] <- tabla\_muestras  
 lista[[2]] <- media\_poblacional  
 lista[[3]] <- varianza\_poblacional  
 lista[[4]] <- data.frame(Muestra = names(colMeans(tabla\_muestras)), mediamuestral = unname(colMeans(tabla\_muestras)))   
 lista[[5]] <- data.frame(estimador = "media\_muestral",   
 Media = mean(lista[[4]][, 2]),  
 Mediana = median(lista[[4]][, 2]),  
 SD = sd(lista[[4]][, 2]),   
 IQR = IQR(lista[[4]][, 2]),   
 MAD = mad(lista[[4]][, 2]),   
 Curtosis = moments::kurtosis(lista[[4]][, 2]),   
 Asimetria = e1071::skewness(lista[[4]][, 2]))  
 lista[[6]] <- gather(as.data.frame(lista[[6]]))   
 colnames(lista[[6]]) <- c("Muestra", "Estadístico")  
 lista[[7]] <- data.frame(estimador = "estadístico",  
 Media = mean(lista[[6]][, 2]),  
 Mediana = median(lista[[6]][, 2]),  
 SD = sd(lista[[6]][, 2]),   
 IQR = IQR(lista[[6]][, 2]),   
 MAD = mad(lista[[6]][, 2]),   
 Curtosis = moments::kurtosis(lista[[6]][, 2]),   
 Asimetria = e1071::skewness(lista[[6]][, 2]))  
 lista[[8]] <- rbind(lista[[5]], lista[[7]])  
 names(lista) <- c("tabla\_muestras", "media\_poblacional", "varianza\_poblacional", "media\_muestral",   
 "medidas\_media\_muestral", "estadistico", "medidas\_estadistico", "tabla\_comparacion")  
 lista  
}  
resultados <- muestreo(alpha = 2, beta = 2)  
datosgrafico <- inner\_join(resultados$media\_muestral , resultados$estadistico)

## Joining, by = "Muestra"

library(gt)  
library(tidyverse)  
gt(data = resultados$tabla\_comparacion) %>% tab\_header(title = "Hola em dic Marc")

Hola em dic Marc

estimador

Media

Mediana

SD

IQR

MAD

Curtosis

Asimetria

media\_muestral

0.5072706

0.5012344

0.07211760

0.08862303

0.06388053

3.077518

0.3099279

estadístico

0.5035930

0.5041133

0.08791211

0.13532182

0.09725723

2.656788

0.2748998

kableExtra::kbl(resultados$tabla\_comparacion, format = "latex", booktabs = TRUE, longtable = TRUE)