

# Trabajo Estadística Bayesiana

Eugenio Guzmán\*    Alejandra Molina†    Jaquelin Morillo‡    Diego Ramirez§  
Francisco Villarroel¶

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## Introducción

HOLA ESTE ES UN TRABAJO MUY BACÁN

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

## Driff Diffution model

You can also embed plots, for example:

Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

## Explicación del experimento

Se observó el comportamiento de veinte personas mientras participaban en un juego de ruleta. Su tarea era apostar por uno de los dos colores (naranja o celeste). Cada uno de los colores se identifica con la probabilidad de obtener un premio determinado. Algunas ruletas cuentan con un área gris (máscara) que oculta el verdadero color de la sección (ambigüedad).

#Modelación

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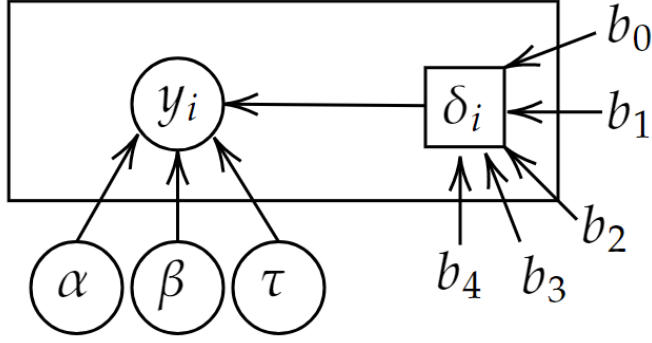
\*ejguzmanl@udd.cl

†alejandramm@gmail.com

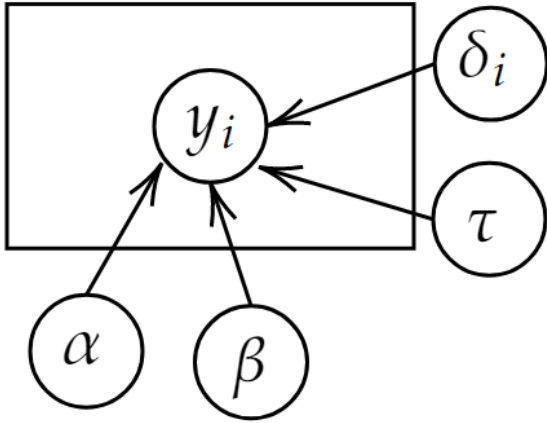
‡jaquelin.morillo@gmail.com

§diegoramirez.al34@gmail.com

¶fvillarroelr@udd.cl



$$\begin{aligned}
y_i &\sim \text{wiener}(\alpha, \beta, \tau, \delta_i) \\
\delta_i &= f(p, o) \\
\alpha &\sim \text{unif} \\
\beta &\sim \text{unif} \\
\tau &\sim \text{unif} \\
b &\sim \text{norm}(\mu, \sigma)
\end{aligned}$$



$$\begin{aligned}
y_i &\sim \text{wiener}(\alpha, \beta, \tau, \delta) \\
\delta_i &= \text{unif} \\
\alpha &\sim \text{unif} \\
\beta &\sim \text{unif} \\
\tau &\sim \text{unif}
\end{aligned}$$

## Resultados - Modelos y tablas sumarias

### Modelo 1

$$Y_{(ij)} \sim \text{Wiener}(\alpha_{(ij)}, \beta_{(ij)}, \tau_{(ij)}, \delta_{(ij)})$$

Este modelo supone una distribución Wiener dependiente de los parámetros alfa, beta, tau y delta en función de los sujetos estudiados y los *trials*.

Table 1: Media de los parámetros modelados

Modelo 1					
Parámetro	A	B	C	D	E
$\alpha$	0.76461	0.9084	0.92244	0.93057	0.95987
$\beta$	0.46303	0.51041	0.49342	0.5304	0.54067
$\tau$	0.0045092	0.0081149	0.001054	0.017666	0.016152
$\delta$	0.66599	0.085327	0.36738	-0.13167	0.26716

### Modelo 2

$$Y_{(ij)} \sim \text{Wiener}(\alpha_{(ij)}, \beta_{(ij)}, \tau_{(ij)} \delta_{(p_{ij}, o_{ij})})$$

Al igual que el modelo 1 se contemplan los mismos parámetros, con la excepción que el parámetro delta depende linealmente de la probabilidad y del premio normalizado

[chantar toda la wea de graficos y tablas acá]

Table 2: Media de los parámetros modelados

Modelo 2					
Parámetro	A	B	C	D	E
$\alpha$	0.88527	0.9671	0.96805	0.95355	0.9938
$\beta$	0.45883	0.502	0.49792	0.52661	0.53689
$\tau$	0.0021536	0.0061823	0.00085613	0.016333	0.015132
$b_0$	11.642	6.8589	5.3276	3.0593	2.7807
$b_1$	-13.817	-7.7817	-5.7075	-2.9145	-1.3458
$b_2$	-8.503	-5.3981	-4.3687	-3.2749	-4.0697

### Modelo 3

$$Y_{(ij)} \sim \text{Wiener}(\alpha_{(ij)}, \beta_{(ij)}, \tau_{(ij)}, \delta_{(p_{ij}, o_{ij})})$$

En esta wea p y o dependen cuadráticamente

[chantar toda la wea de graficos y tablas acá]

Table 3: Media de los parámetros modelados

Modelo 3					
Parámetro	A	B	C	D	E
$\alpha$	0.88881	0.96849	0.97048	0.95588	0.9952
$\beta$	0.45816	0.50246	0.49924	0.5284	0.53707
$\tau$	0.0021119	0.0061697	0.0010137	0.016375	0.015178
$b_0$	10.486	6.9346	4.8691	1.8444	2.3766
$b_1$	-10.635	-7.3161	-2.0708	-0.16917	1.3034
$b_2$	-5.3338	-6.343	-6.2612	0.36938	-5.0773
$b_3$	-3.264	-0.47105	-3.4009	-2.7109	-2.5218
$b_4$	-3.2369	0.94515	2.0646	-3.6848	1.1816

### Modelo 4

$$Y_{(ij)} \sim \text{Wiener}(\alpha_{(ij)}, \beta_{(ij)}, \tau_{(ij)}, \delta_{(p_{ij})})$$

sólo p depende cuadráticamente

Table 4: Media de los parámetros modelados

Modelo 4					
Parámetro	A	B	C	D	E
$\alpha$	0.83153	0.93395	0.94481	0.93427	0.96406
$\beta$	0.46895	0.50739	0.49798	0.52976	0.53892
$\tau$	0.0029797	0.0070839	0.0011369	0.017322	0.015736
$b_0$	2.5307	2.1188	0.92531	0.34464	-0.76552
$b_1$	1.7668	-4.2162	2.2647	-0.33574	5.1825
$b_3$	-8.9003	0.55325	-5.3849	-0.91345	-4.9913

**Modelo 5**

$$Y_{(ij)} \sim \text{Wiener}(\alpha_{(ij)}, \beta_{(ij)}, \tau_{(ij)}, \delta_{(o_{ij})})$$

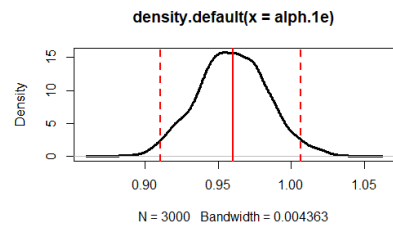
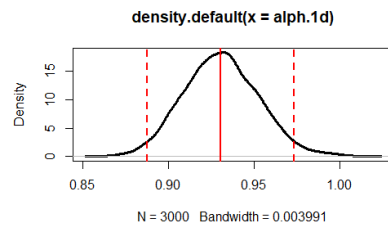
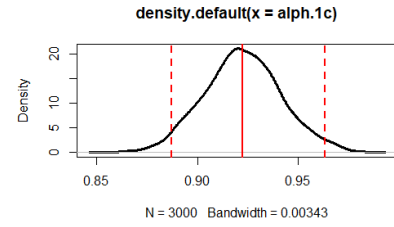
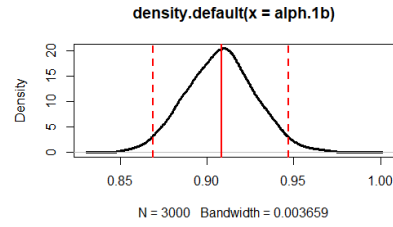
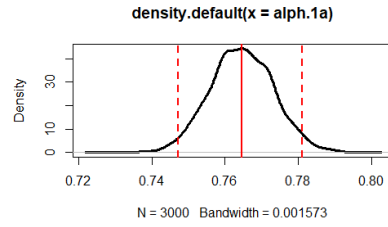
Sólo O depende cuadráticamente

[cantar toda la wea de graficos y tablas acá]

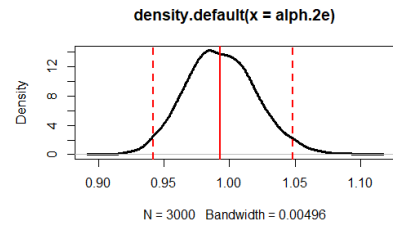
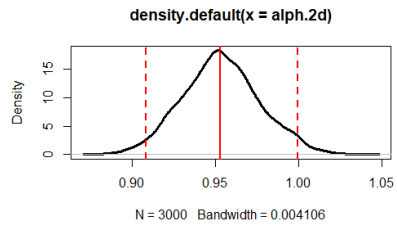
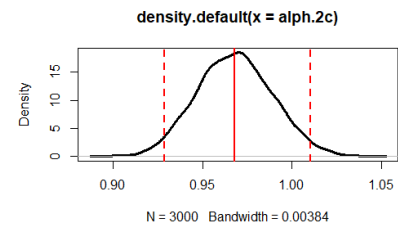
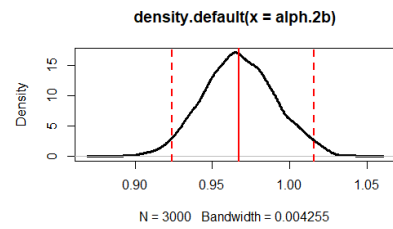
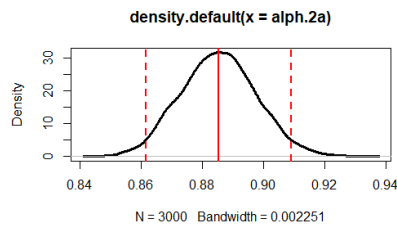
Table 5: Media de los parámetros modelados

Modelo 5					
Parámetro	A	B	C	D	E
$\alpha$	0.76539	0.90863	0.92702	0.9406	0.9907
$\beta$	0.46397	0.51086	0.49501	0.53197	0.53686
$\tau$	0.0044623	0.0079759	0.0012098	0.017156	0.015165
$b_0$	0.3456	0.21885	1.6944	-0.073462	2.3286
$b_2$	0.70658	-0.45442	-5.3103	2.6437	-6.063
$b_4$	-0.037301	0.27331	4.1839	-4.4153	2.5567

## Resultados - análisis de parámetros comparados por modelo

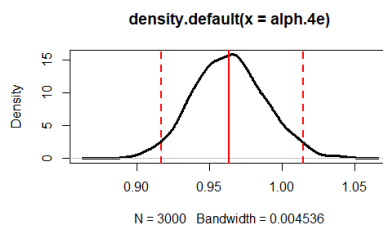
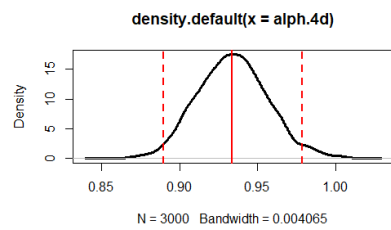
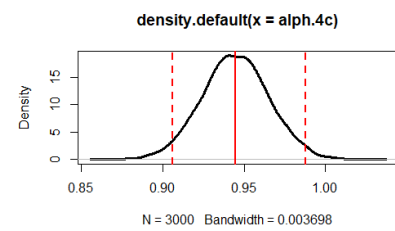
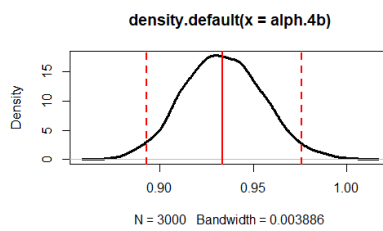
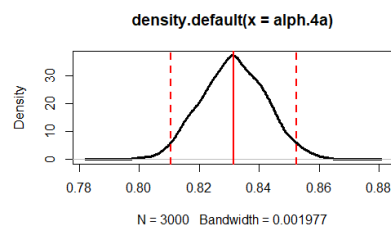
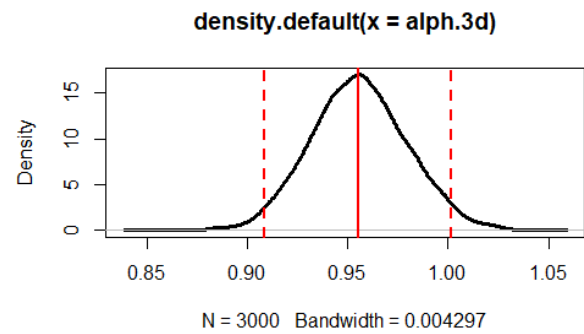
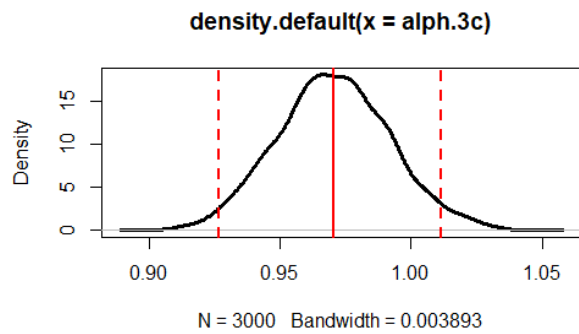
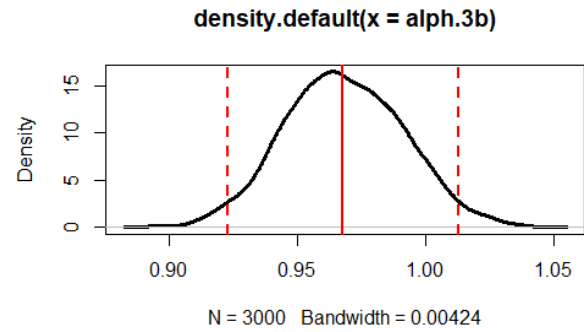
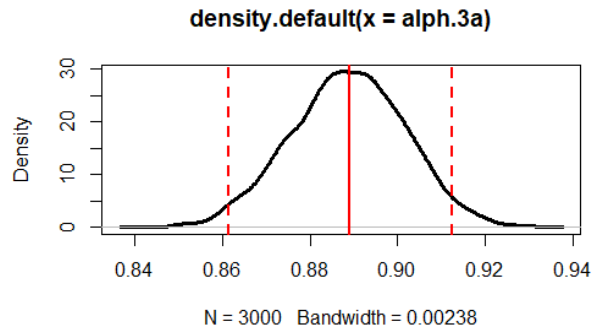


### Alfa Modelo 1

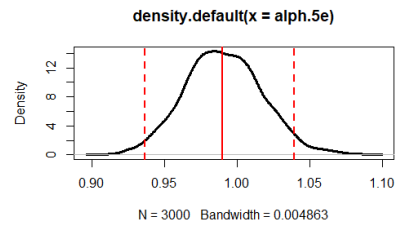
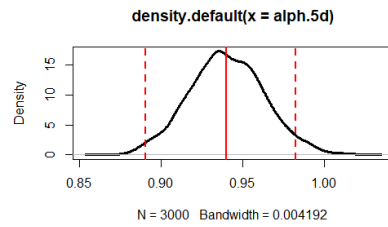
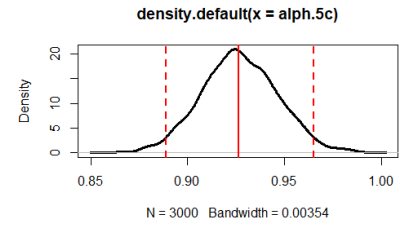
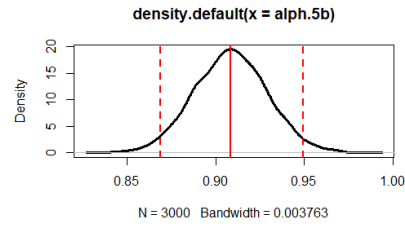
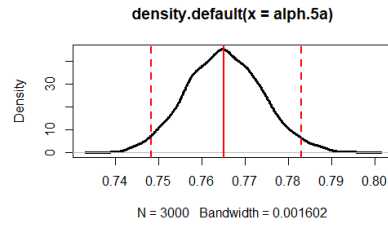


### alfa modelo 2

## Alfa Modelo 3

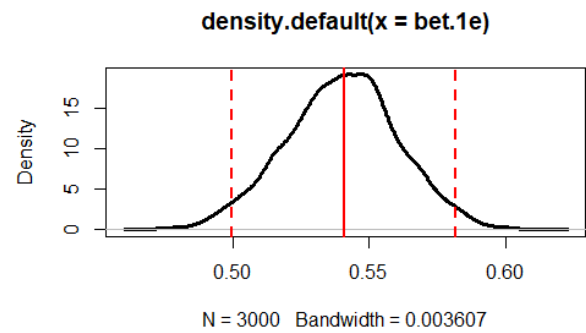
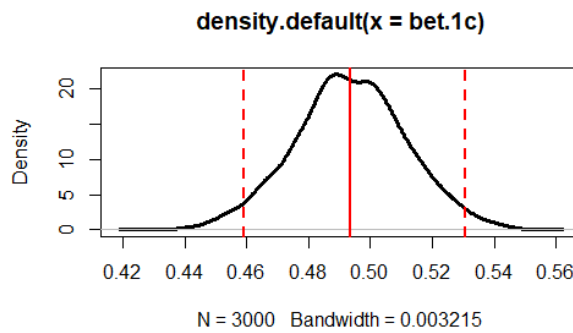
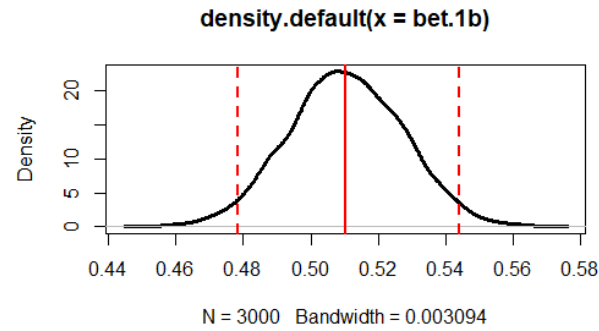
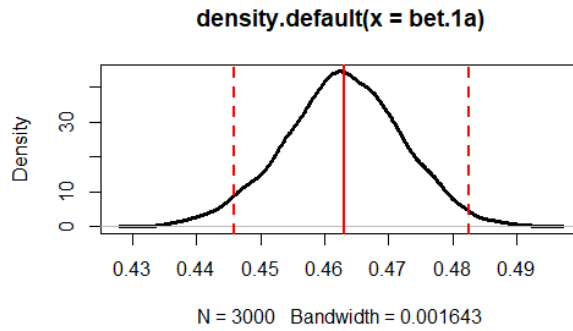


## Alfa modelo 4



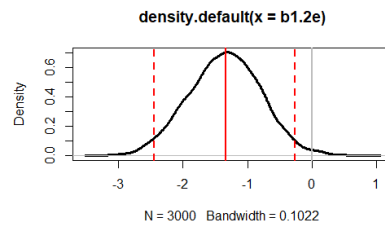
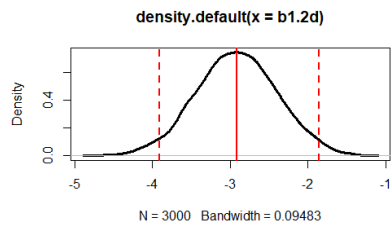
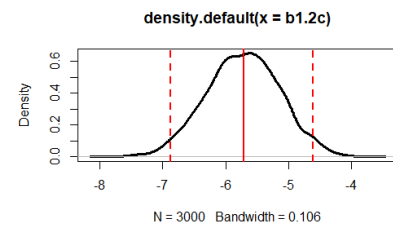
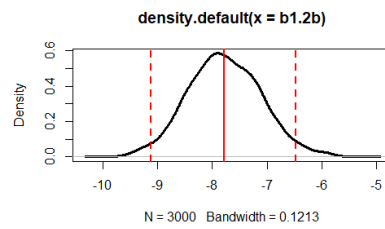
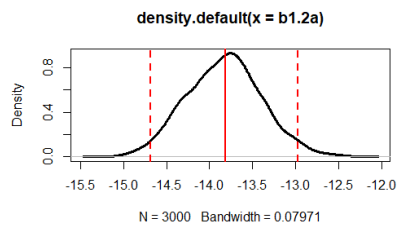
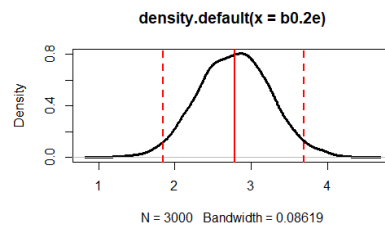
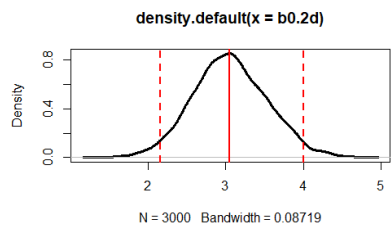
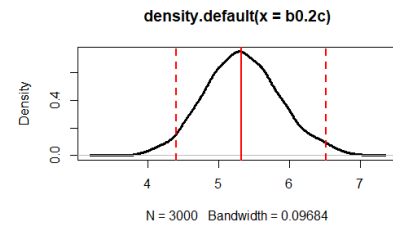
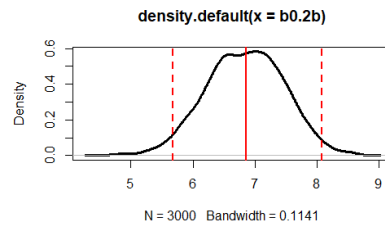
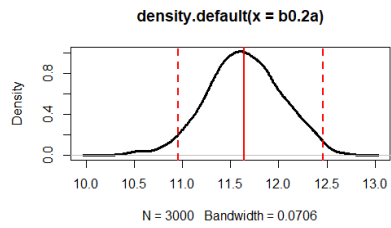
Alfa modelo 5

Betas

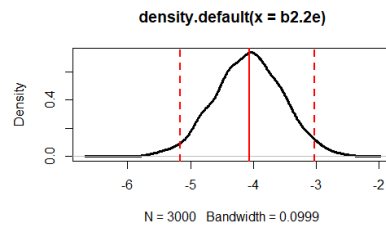
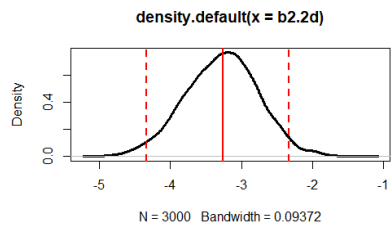
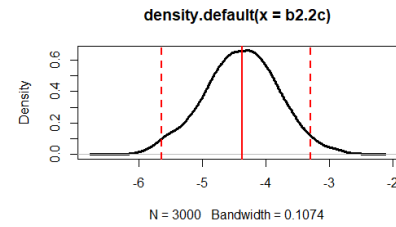
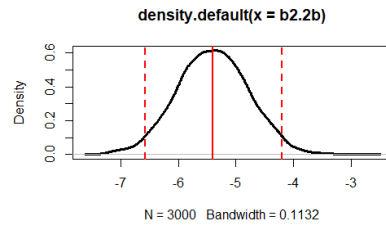
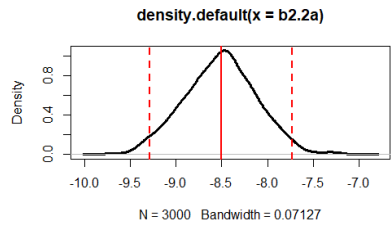
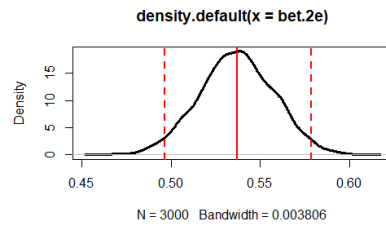
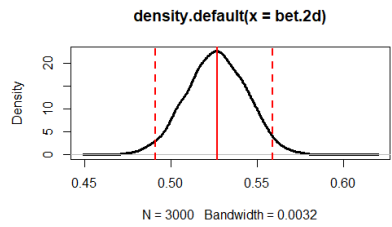
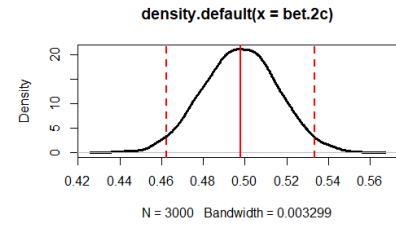
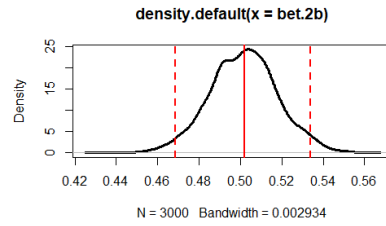
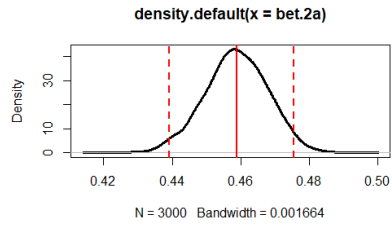


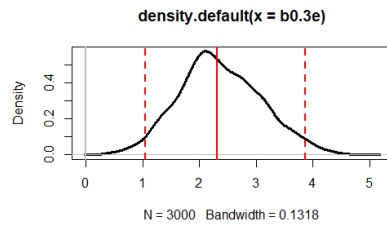
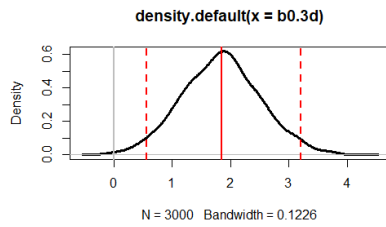
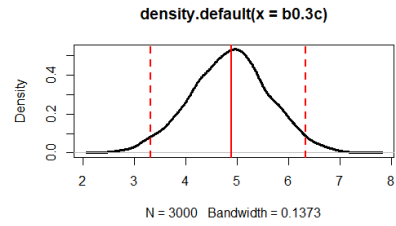
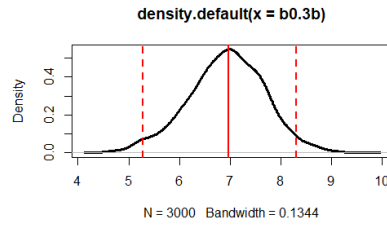
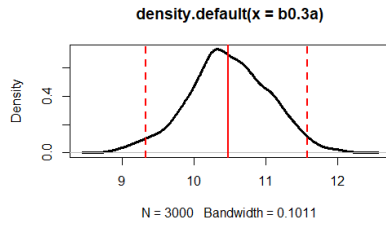
Betas modelo 1

## Betas modelo 2

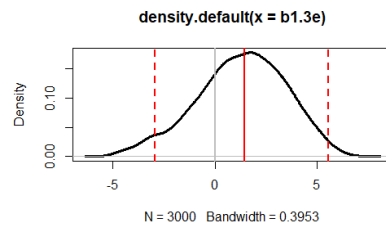
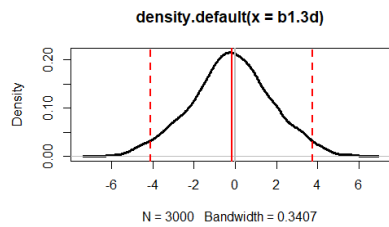
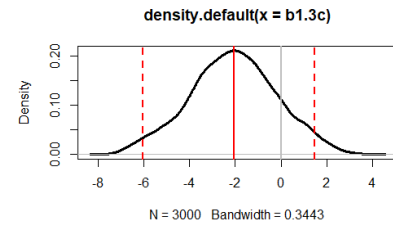
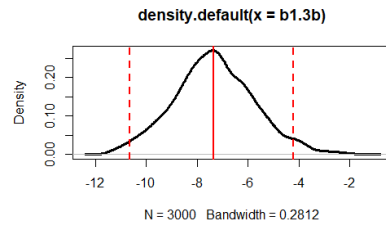
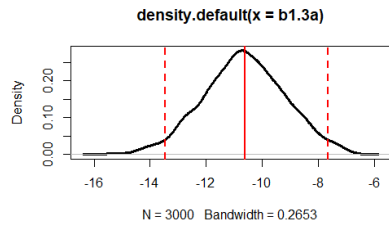


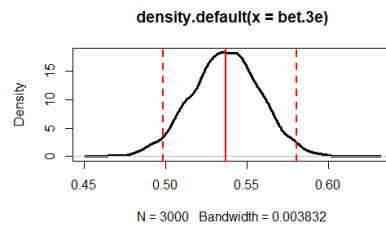
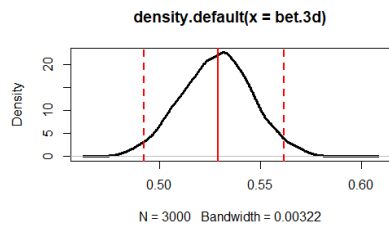
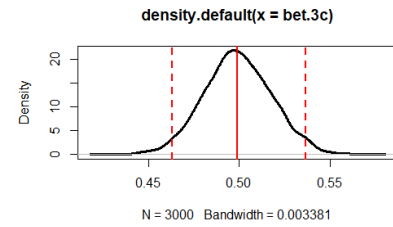
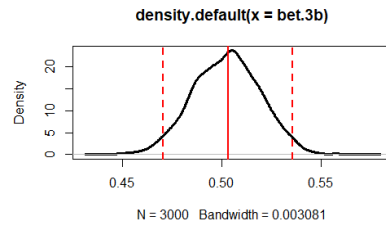
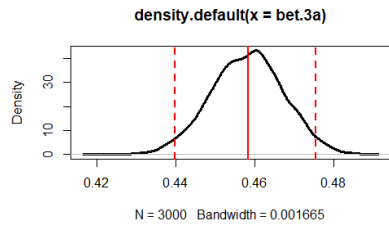
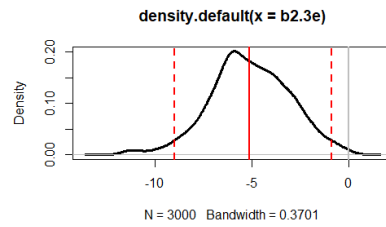
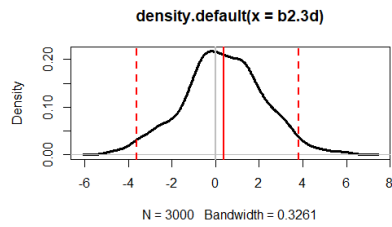
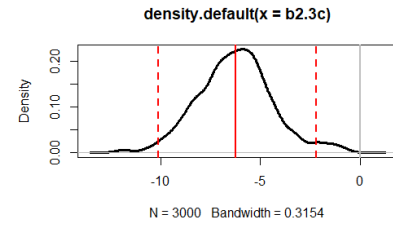
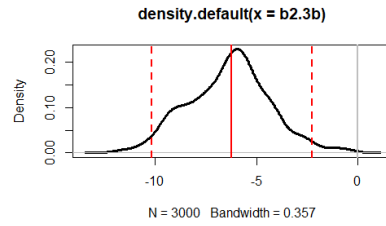
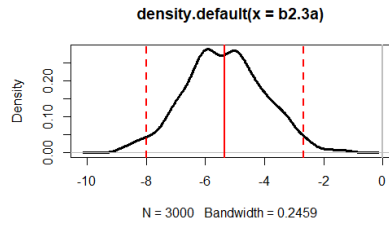


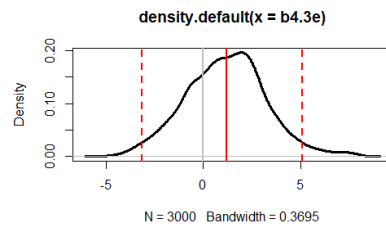
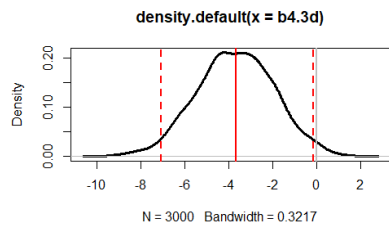
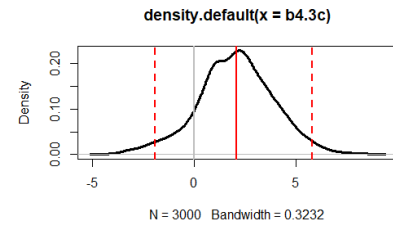
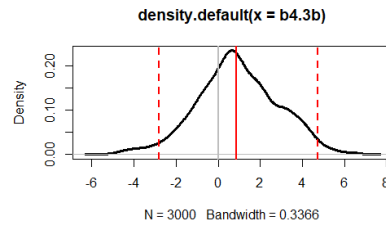
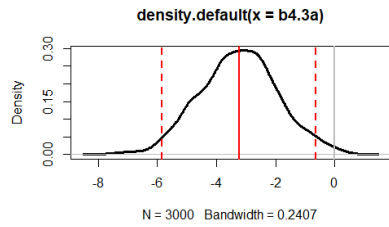
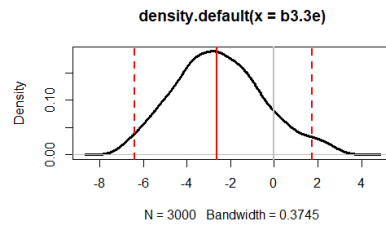
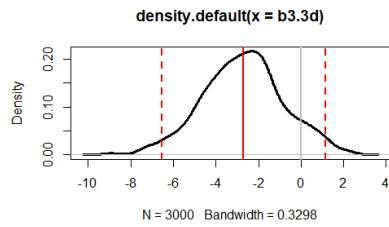
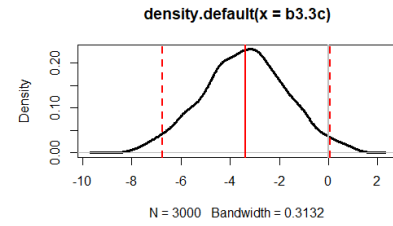
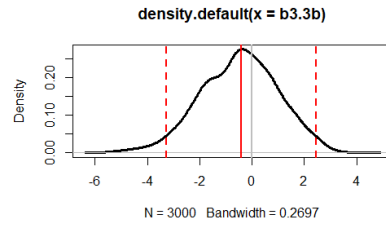
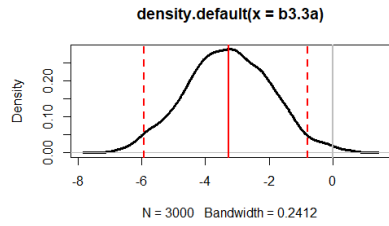


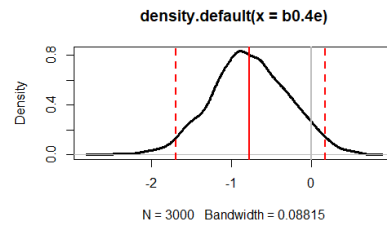
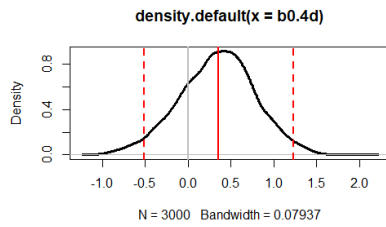
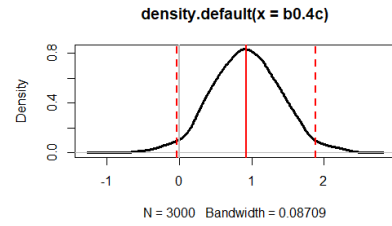
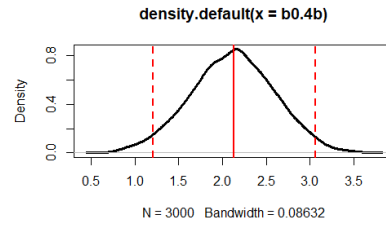
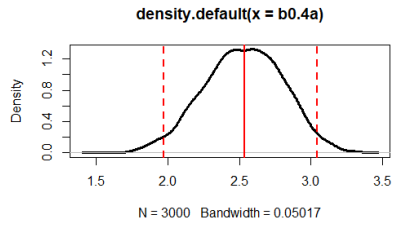


### Betas modelo 3

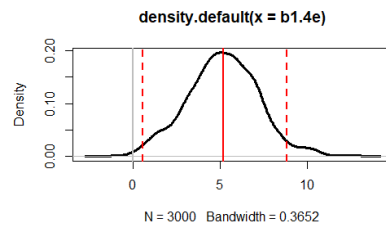
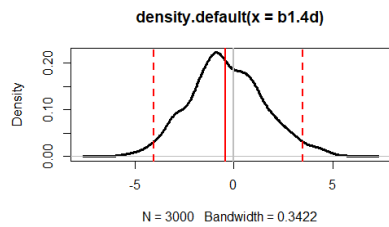
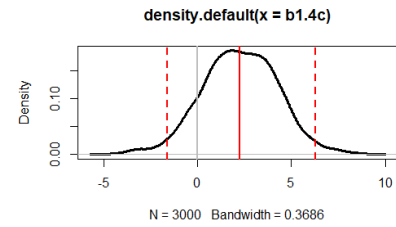
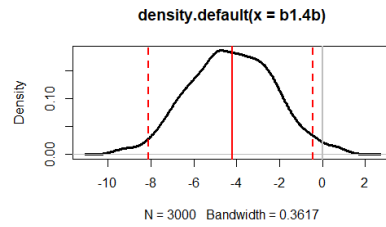
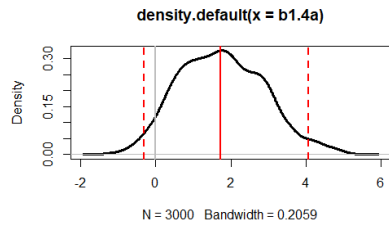


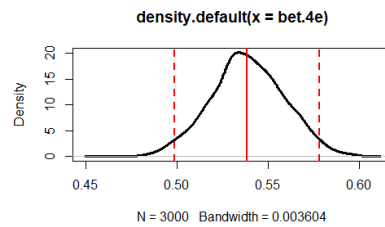
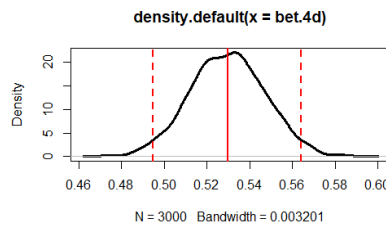
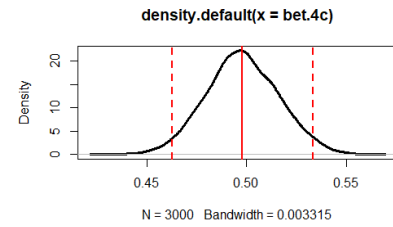
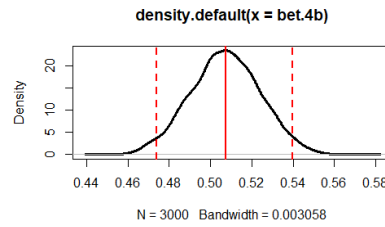
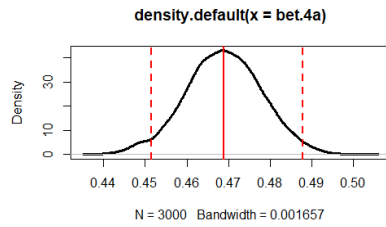
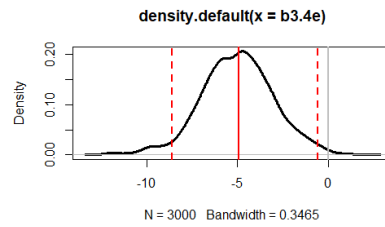
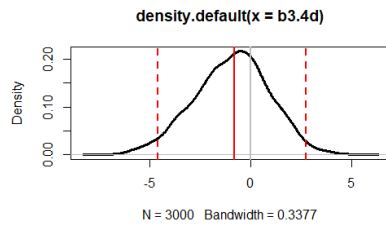
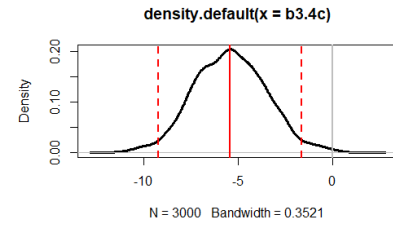
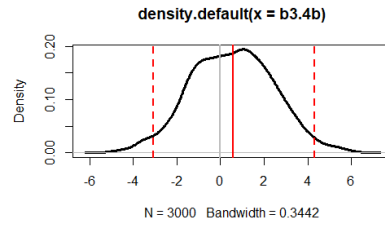
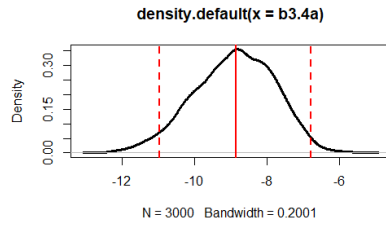






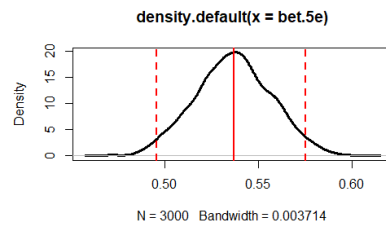
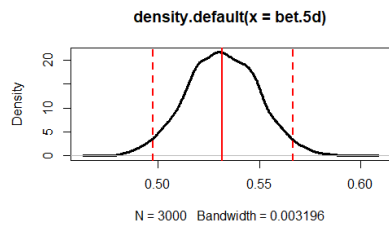
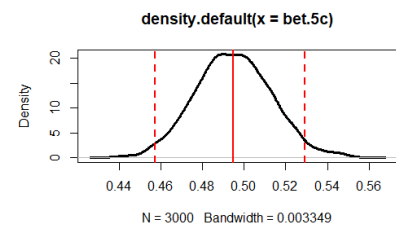
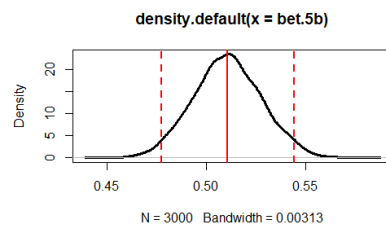
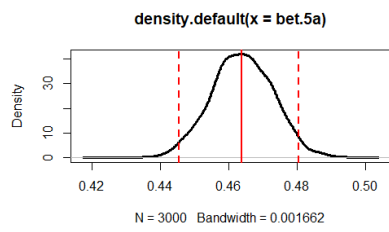
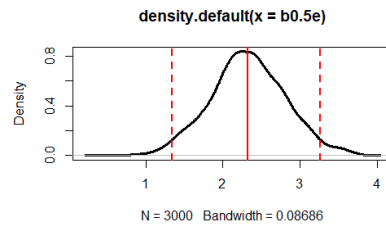
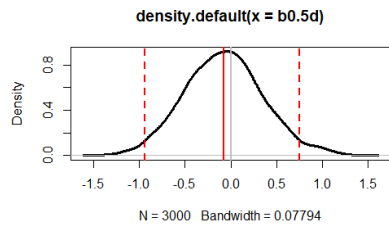
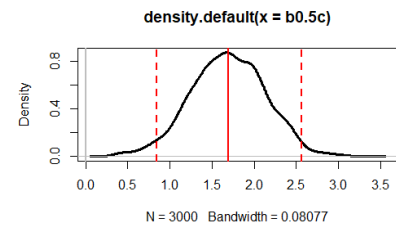
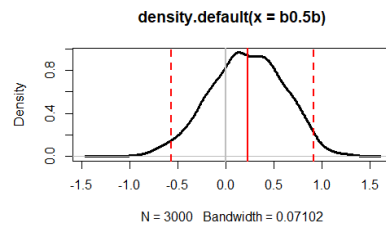
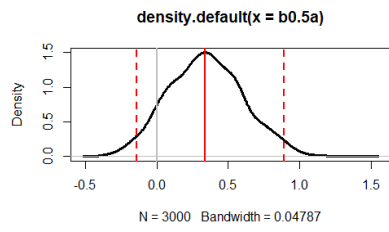
## Betas modelo 4

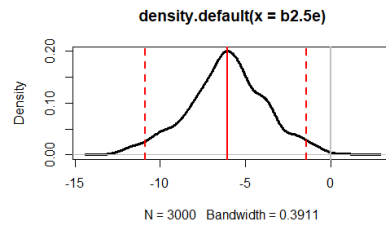
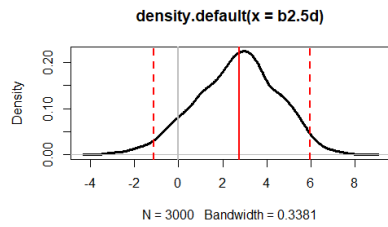
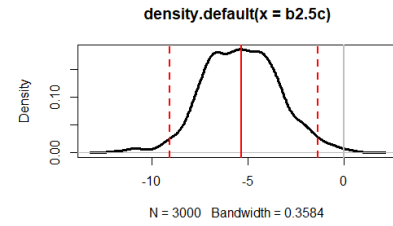
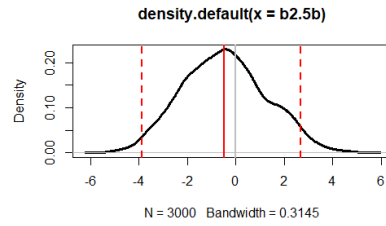
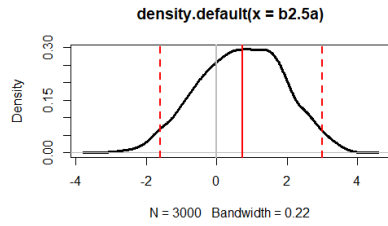




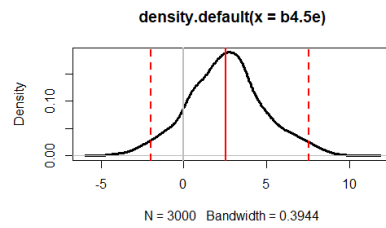
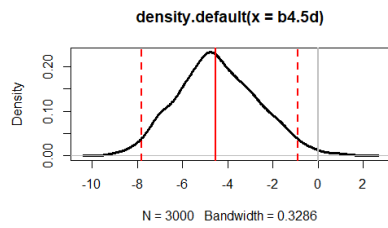
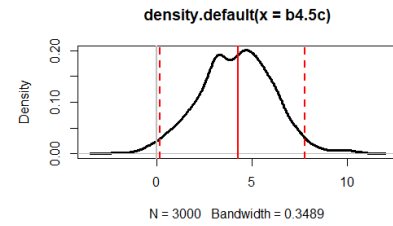
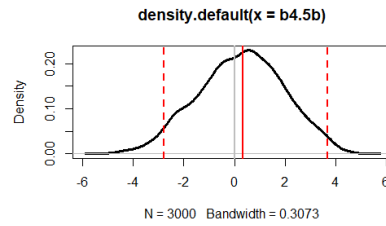
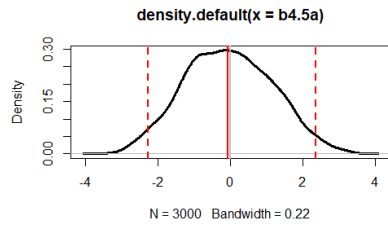
## Betas modelo 5

### Beta0

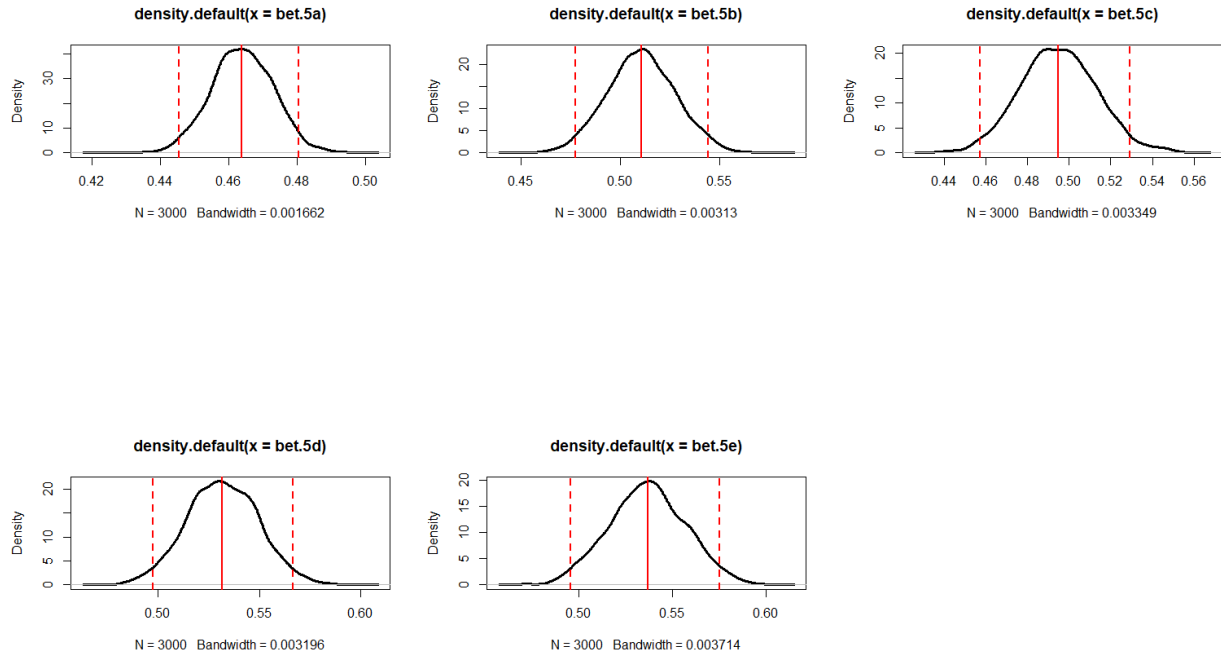




No hay beta3 (???)

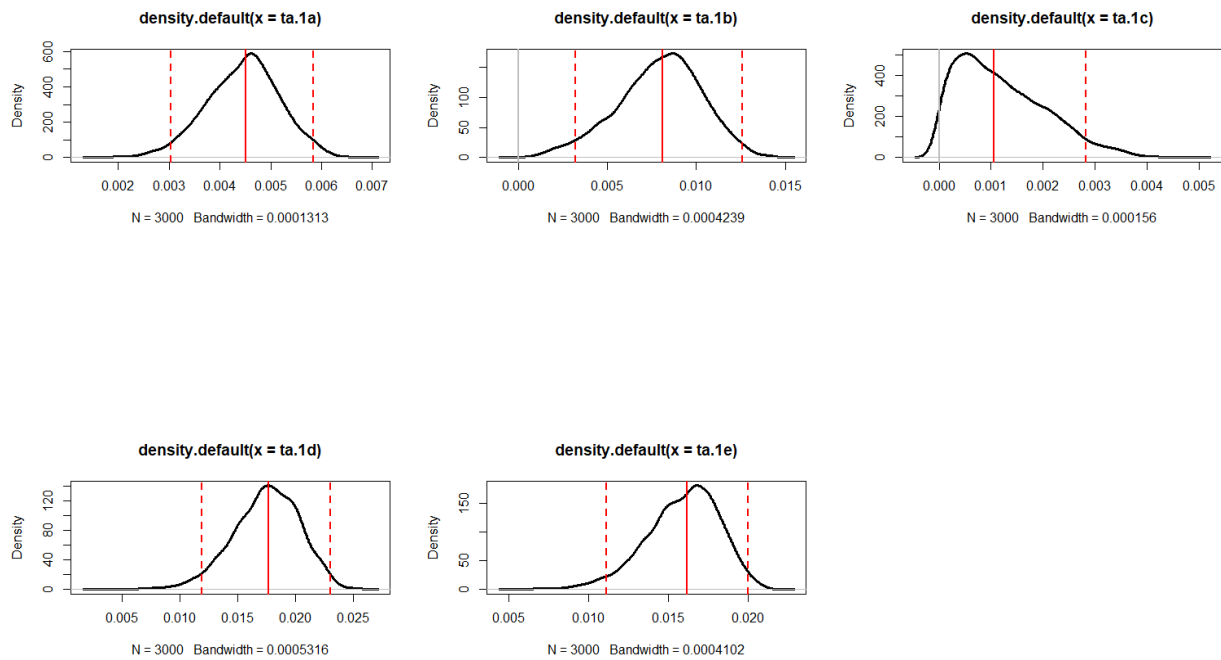




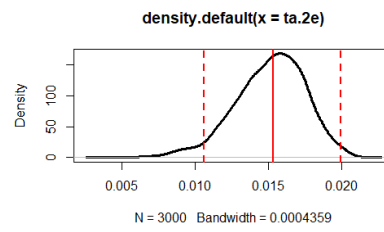
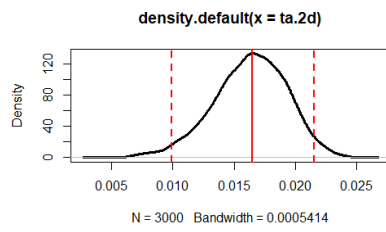
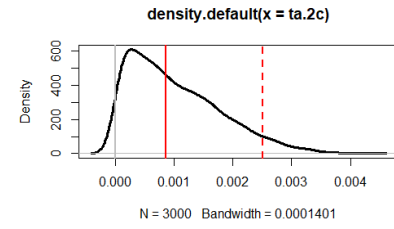
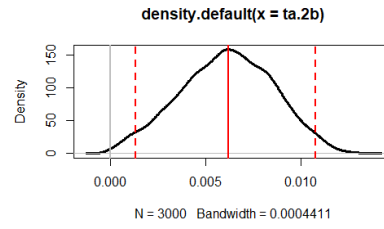
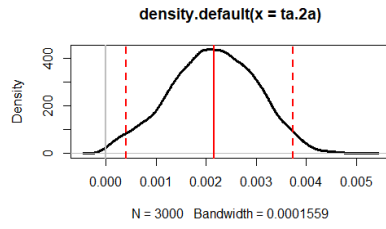


## Tau

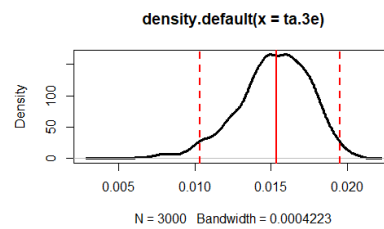
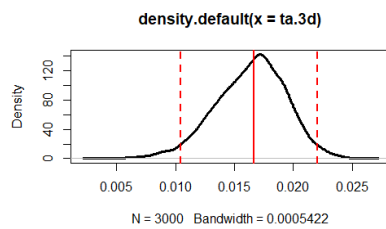
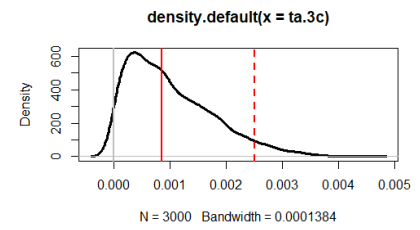
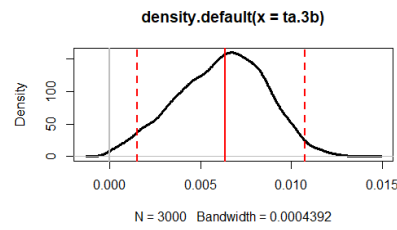
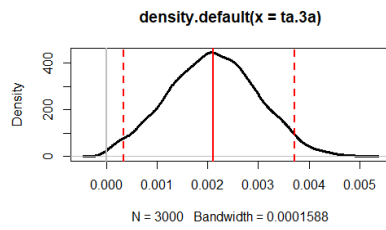
### Tau modelo 1



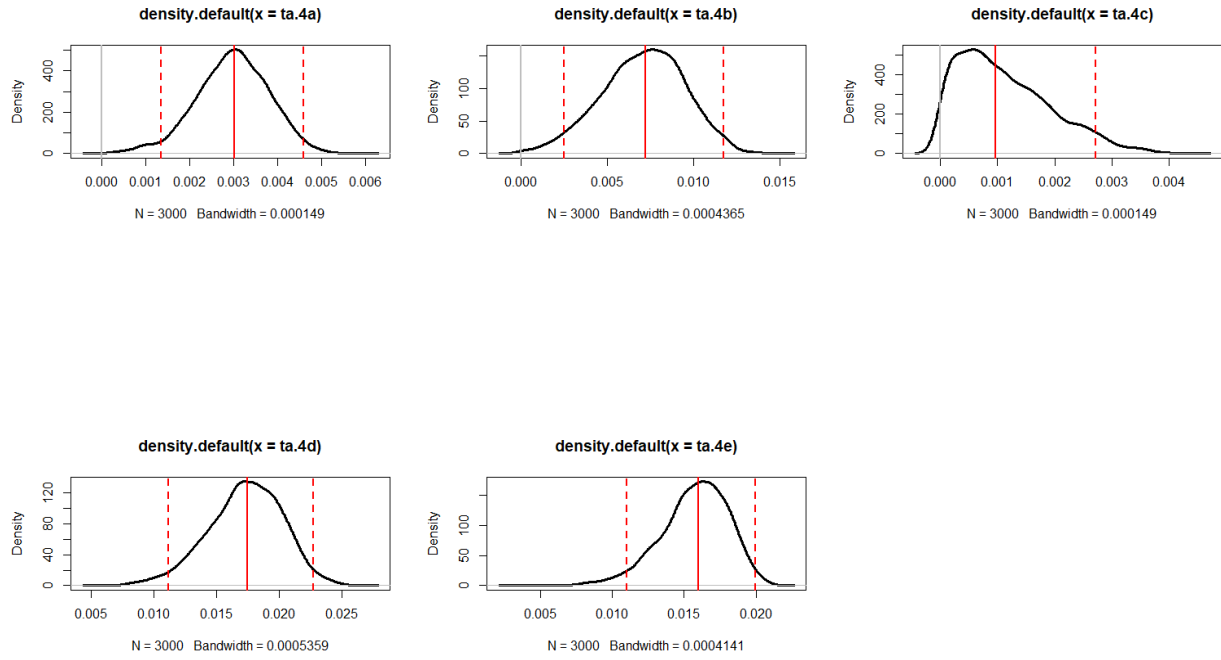
## Tau Modelo 2



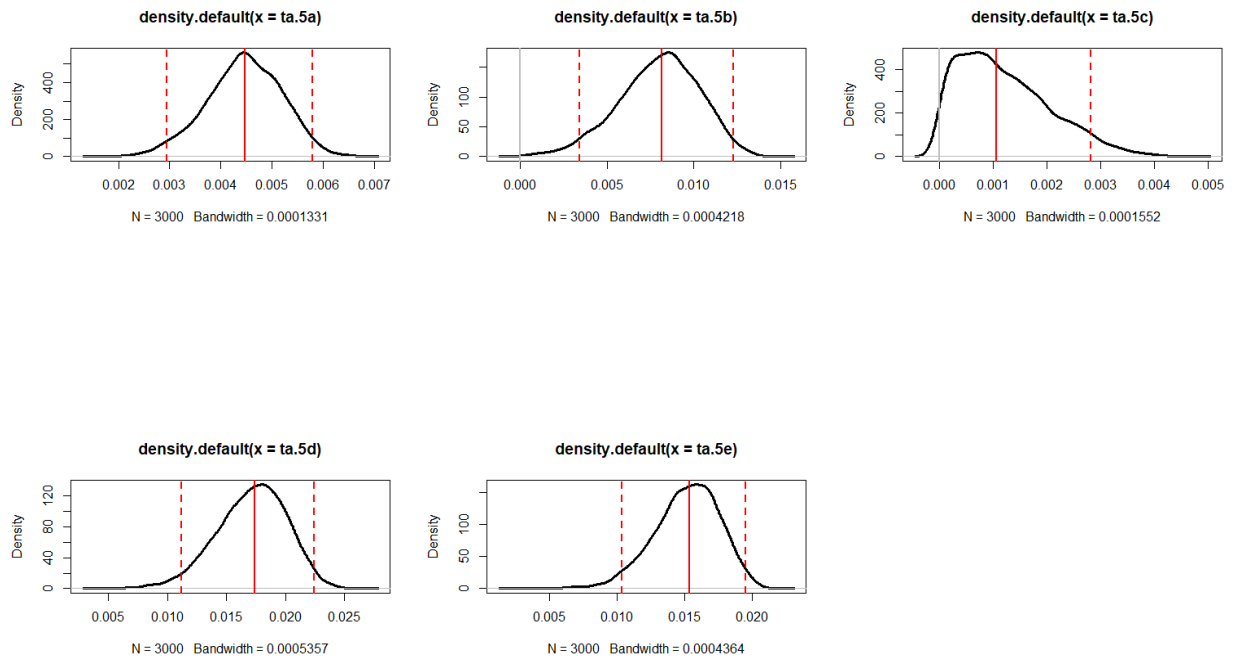
## Tau modelo 3



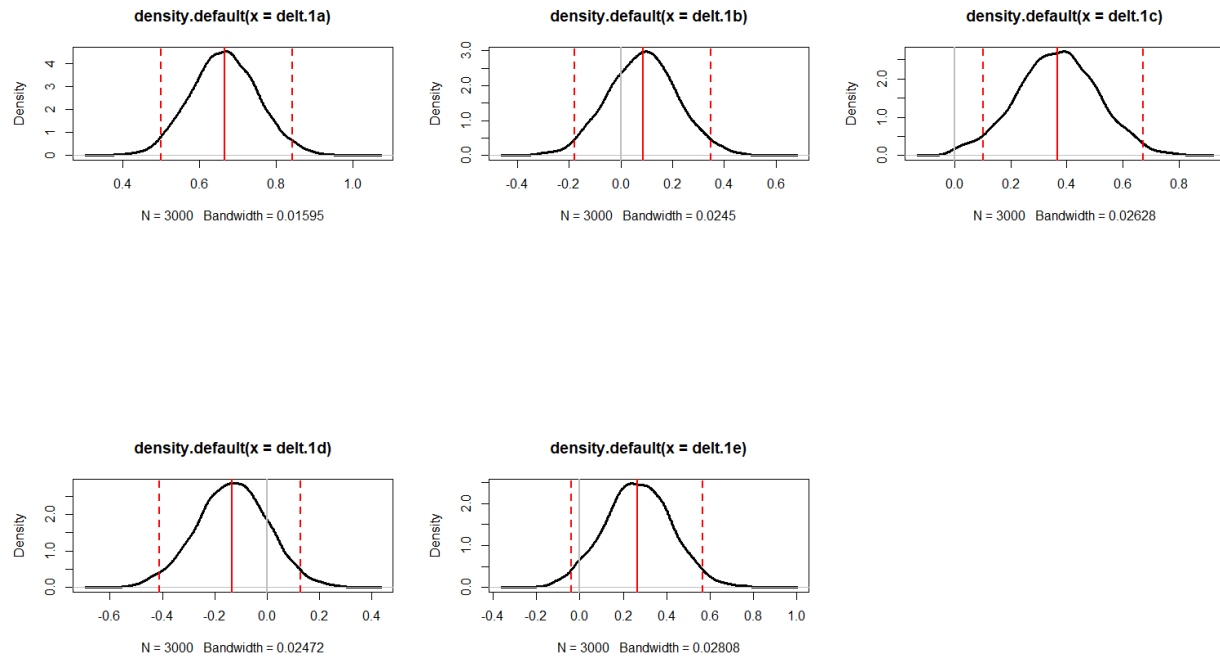
## Tau modelo 4



## Tau modelo 5



## Delta



## Delta modelo 1

[chantar toda la wea de graficos y tablas acá]

## Ajuste de modelo DIC y 100

Table 6: Resultados DIC  
Mascaras

Modelo	A	B	C	D	E
1	-1367	-31	-76	25	-20
2	-2367	-168	-176	-16	-71
3	-2390	-166	-176	-19	-69
4	-1977	-92	-126	21	-22
5	-1369	-29	-82	7	-65

1

## Comentarios finales