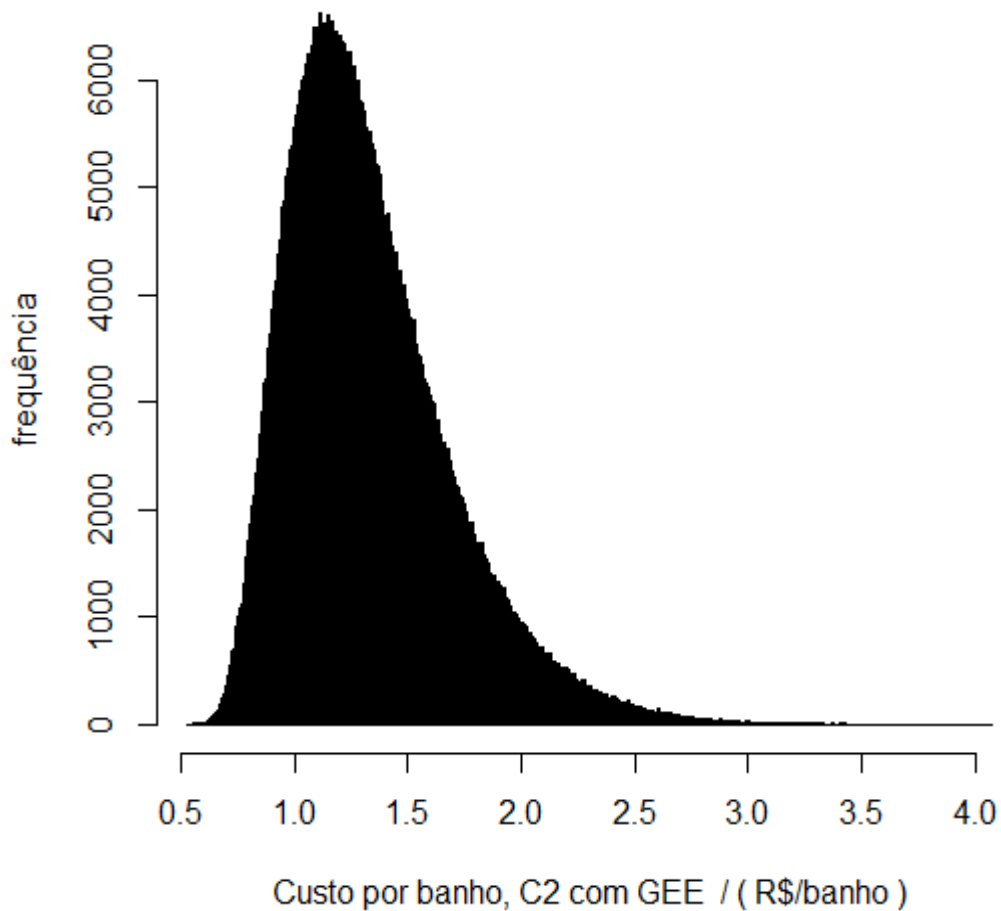


## Apêndice A – Histogramas de Entradas e Saídas com o R<sup>1</sup>

### 1. CHUVEIRO ELÉTRICO

**Histograma da Custo por banho, C2 com GEE**

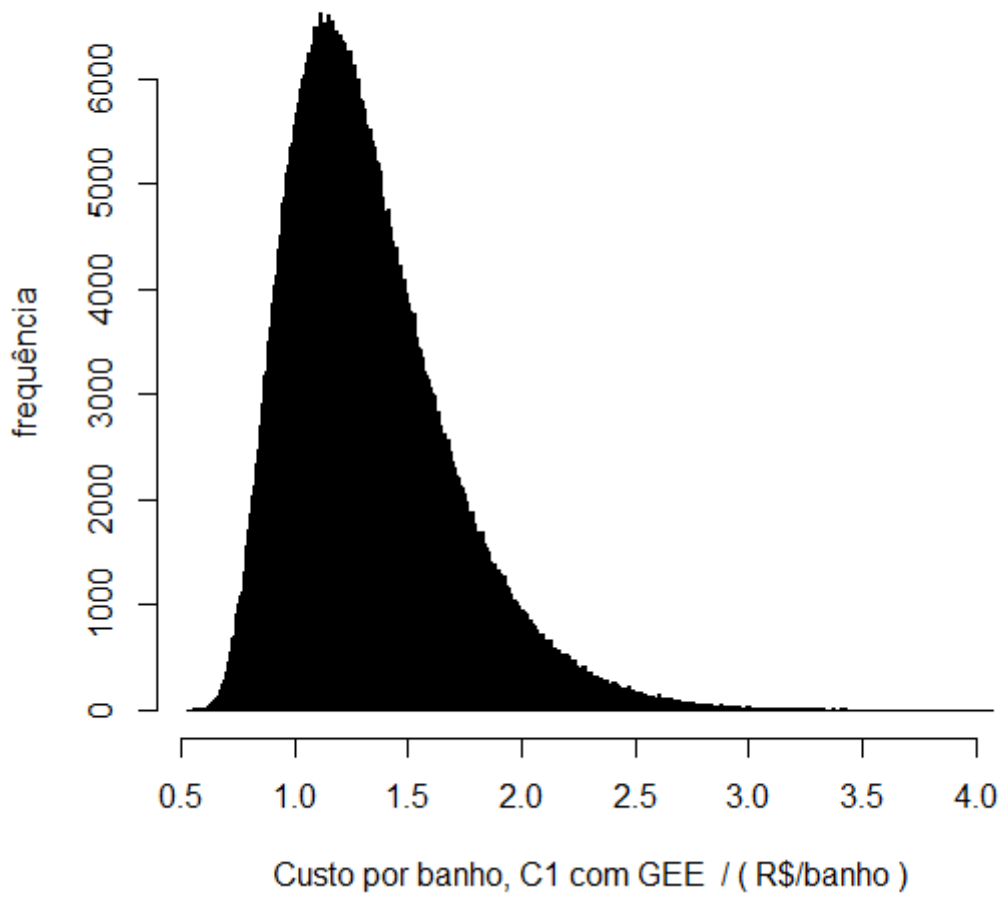


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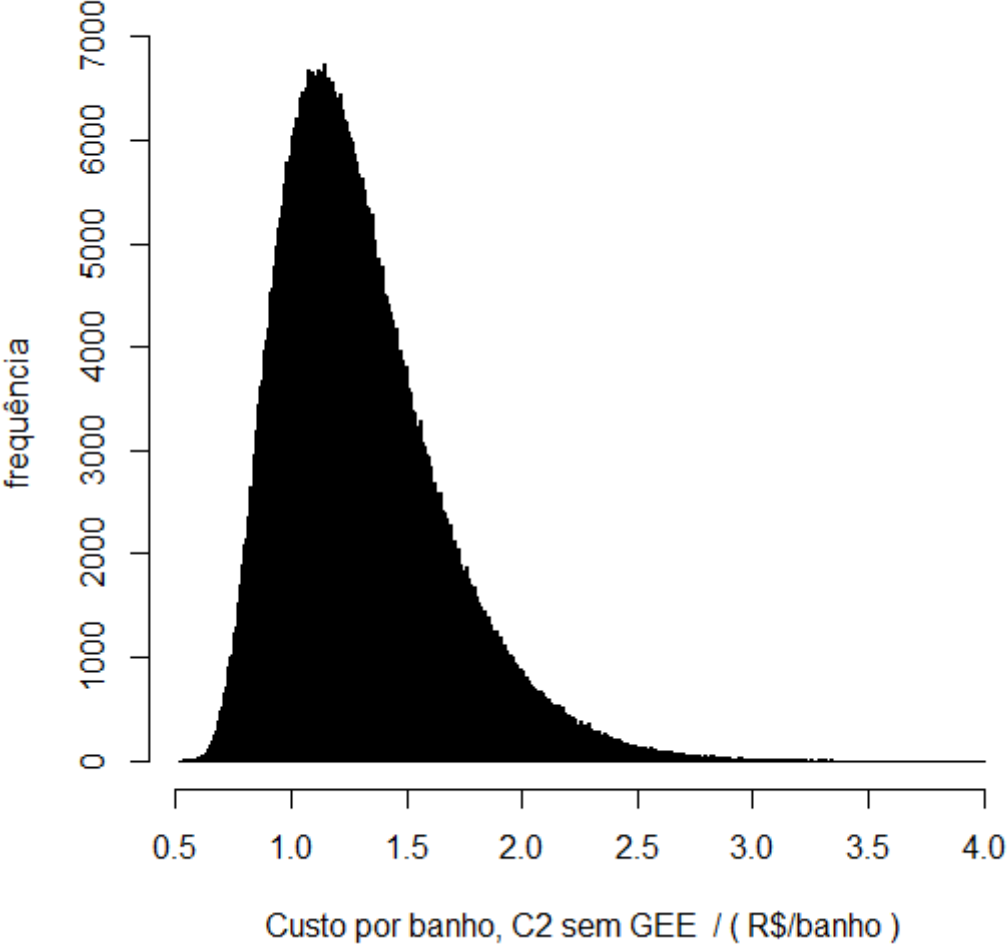
<sup>1</sup> Elemento pós-textual integrante da dissertação de mestrado acadêmico de Rilton Gonçalo Bonfim Primo, intitulada “Economia e eco-eficiência de sistemas de aquecimento de água para conjuntos verticais na Zona Intertropical: revisão da literatura de experimentos e estimações para o nordeste do Brasil”, defendida e aprovada em 16 de abril de 2018 no Programa de Pós-Graduação em Engenharia Industrial da Escola Politécnica da Universidade Federal da Bahia, como requisito parcial de conclusão do Mestrado Acadêmico em Engenharia Industrial - Desenvolvimento Sustentável de Processos e Produtos. Orientador 1: Prof. Dr. Ricardo de Araújo Kalid. Orientador 2: Prof. Dr. Marcelo de Santana Silva.



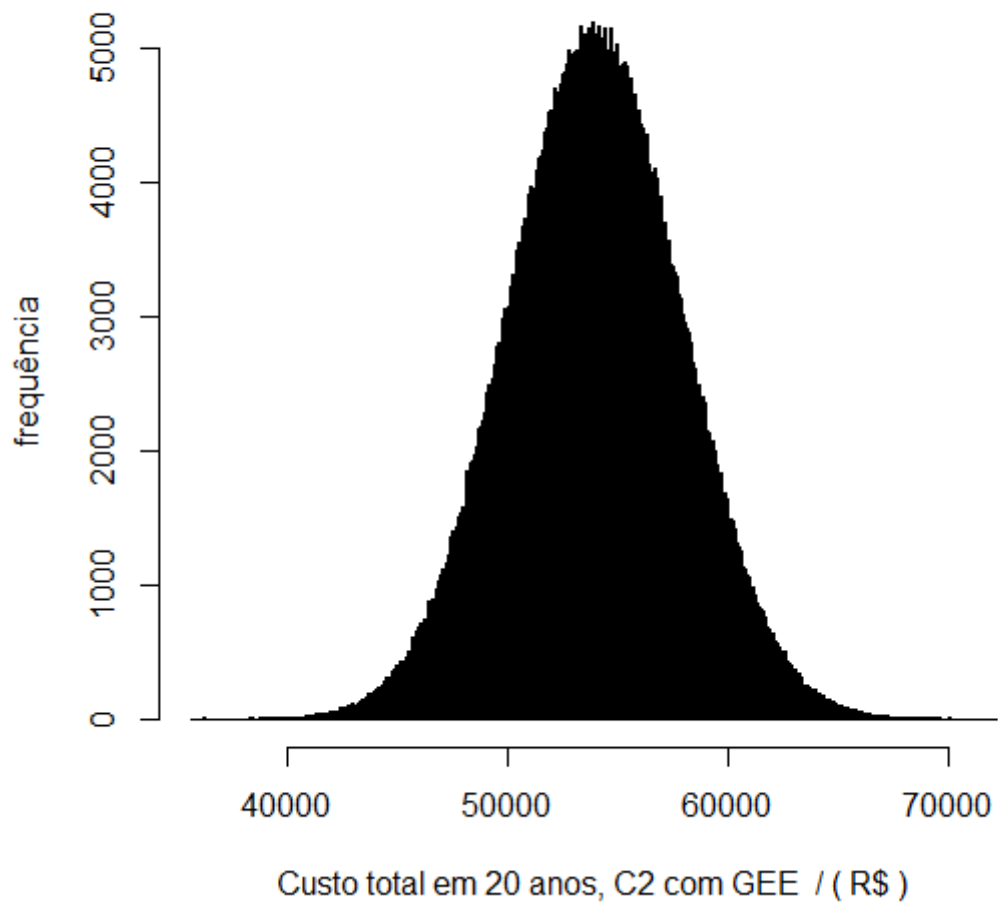
### Histograma da Custo por banho, C1 com GEE



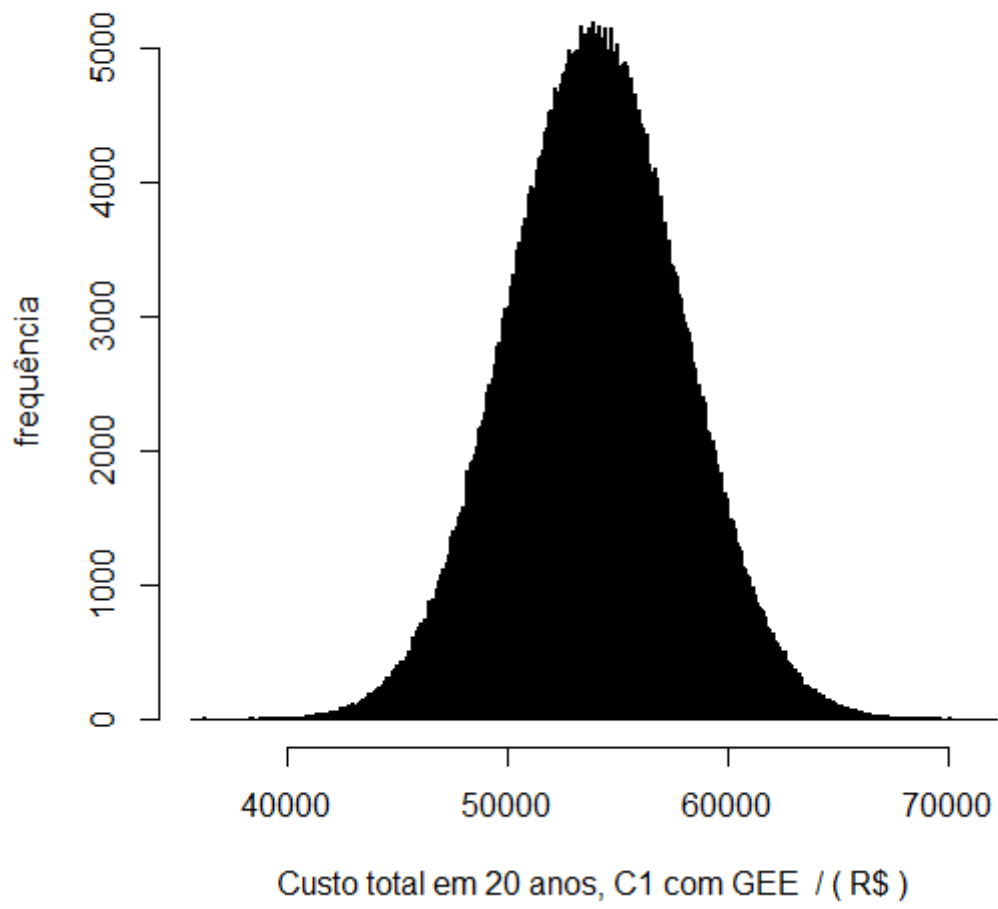
**Histograma da Custo por banho, C2 sem GEE**



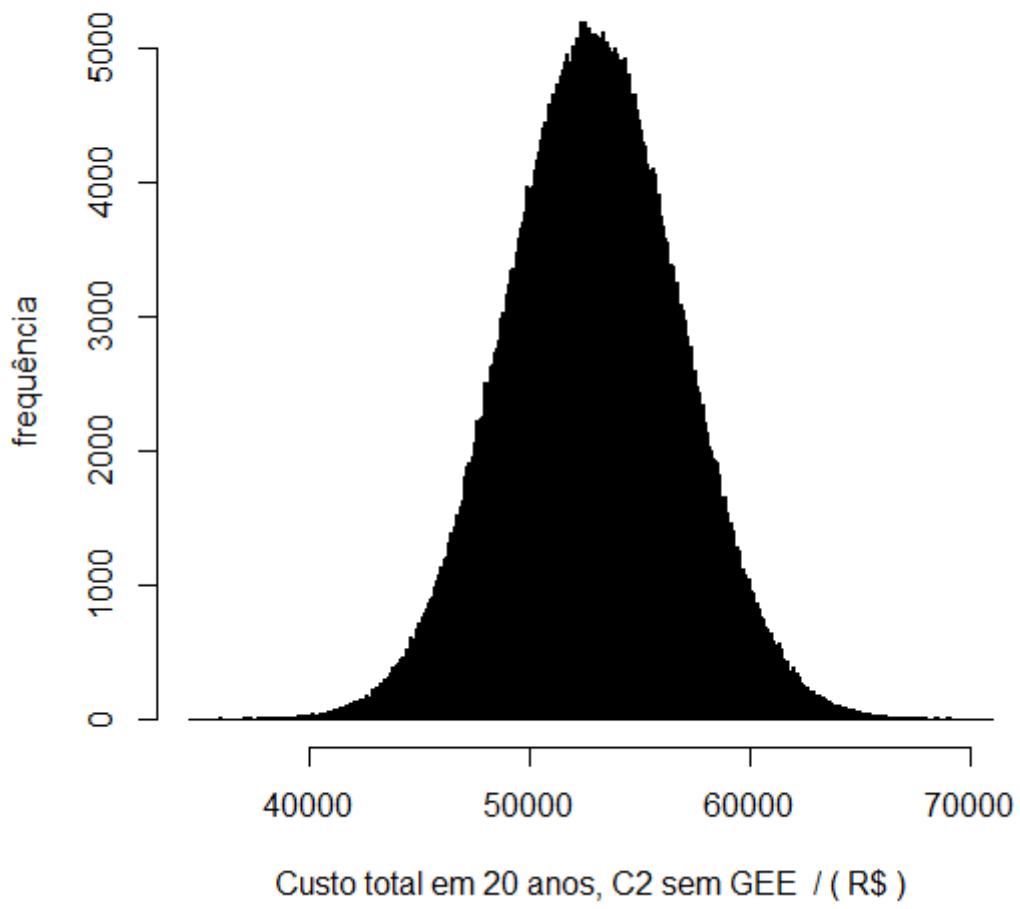
### Histograma da Custo total em 20 anos, C2 com GEE



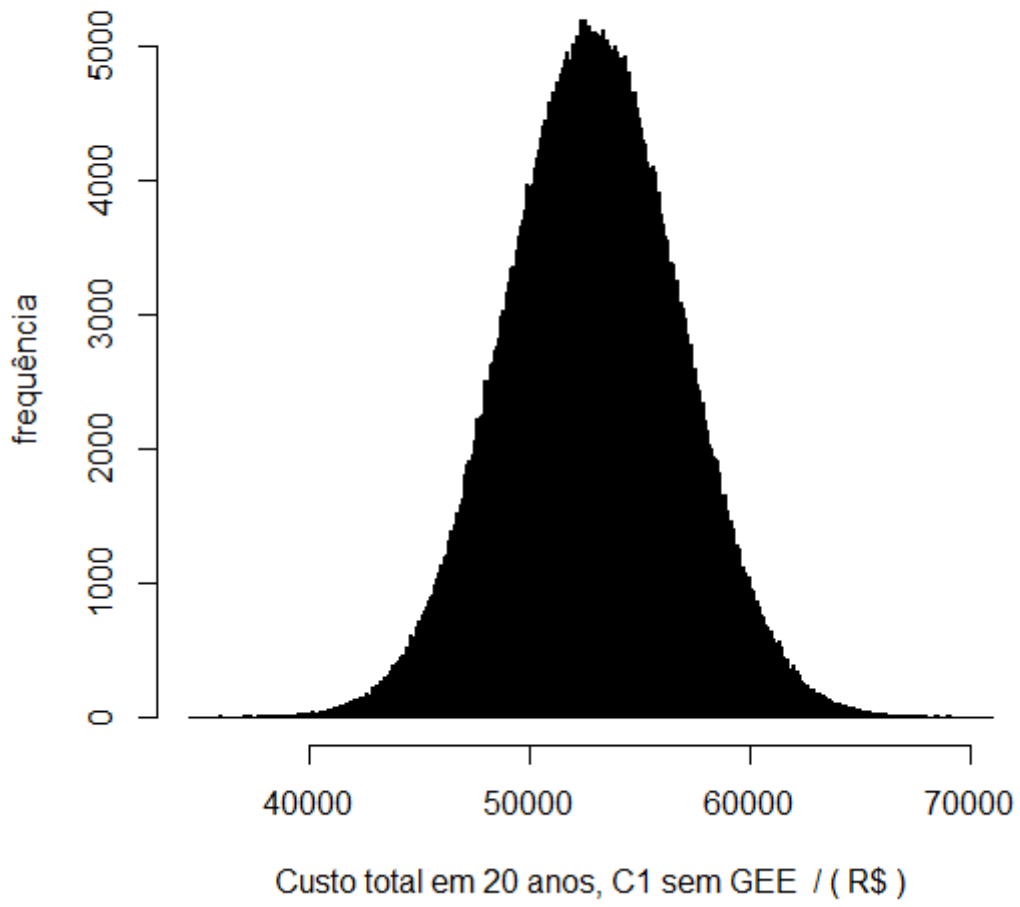
### Histograma da Custo total em 20 anos, C1 com GEE



### Histograma da Custo total em 20 anos, C2 sem GEE

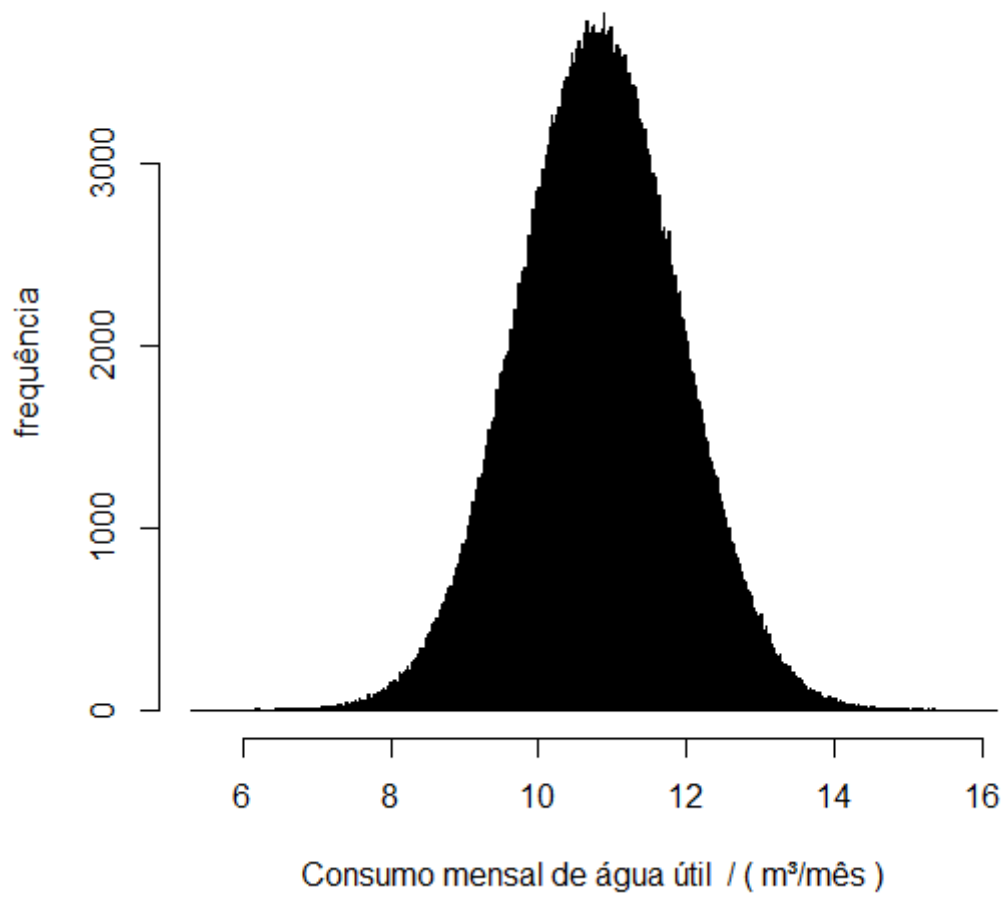


### Histograma da Custo total em 20 anos, C1 sem GEE

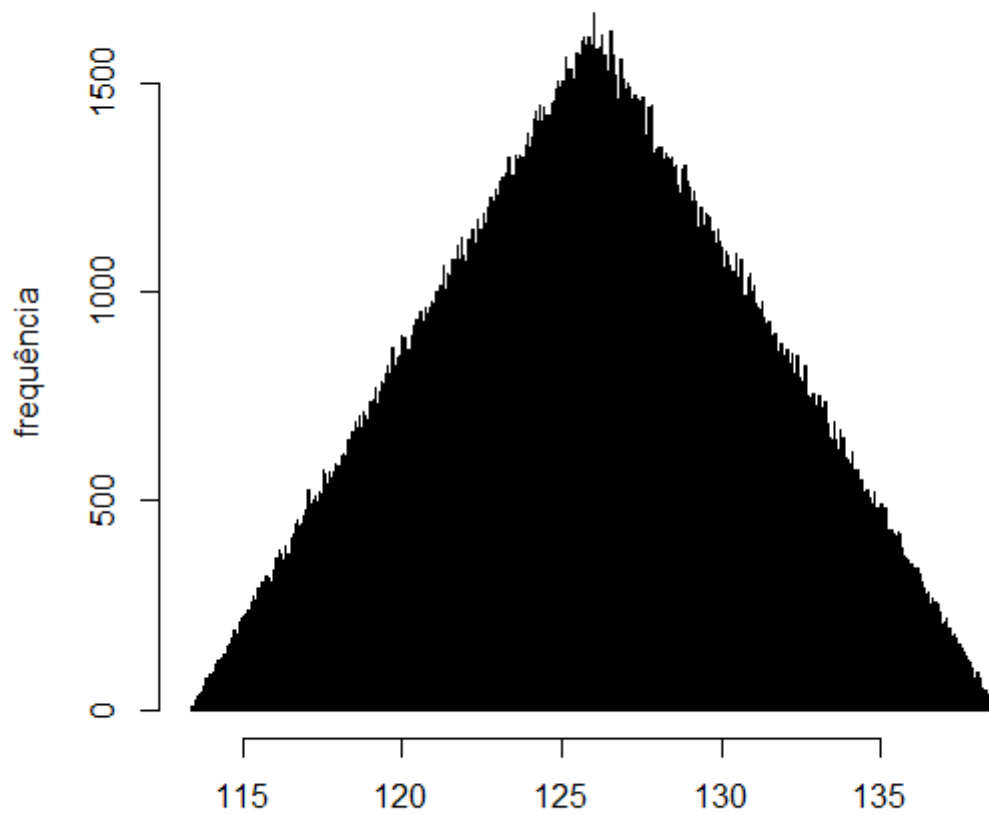




## Histograma da Consumo mensal de água útil

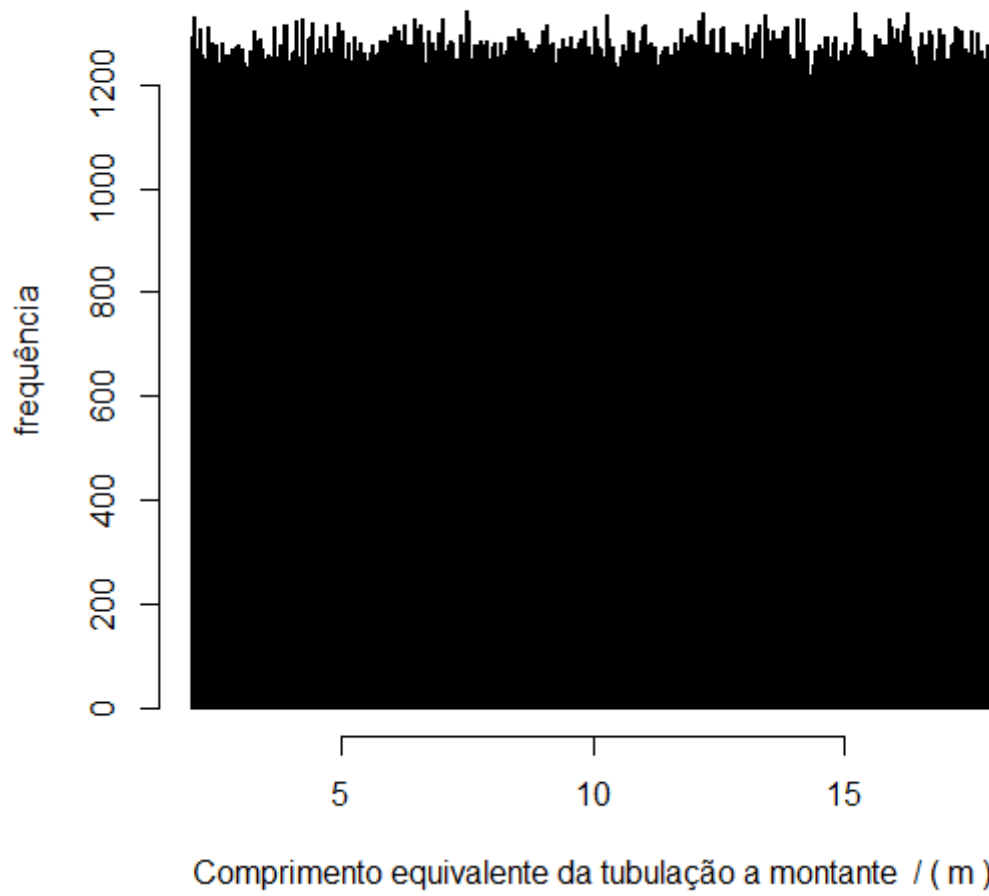


## grama da Consumo mensal de energia do chuveiro elétrico

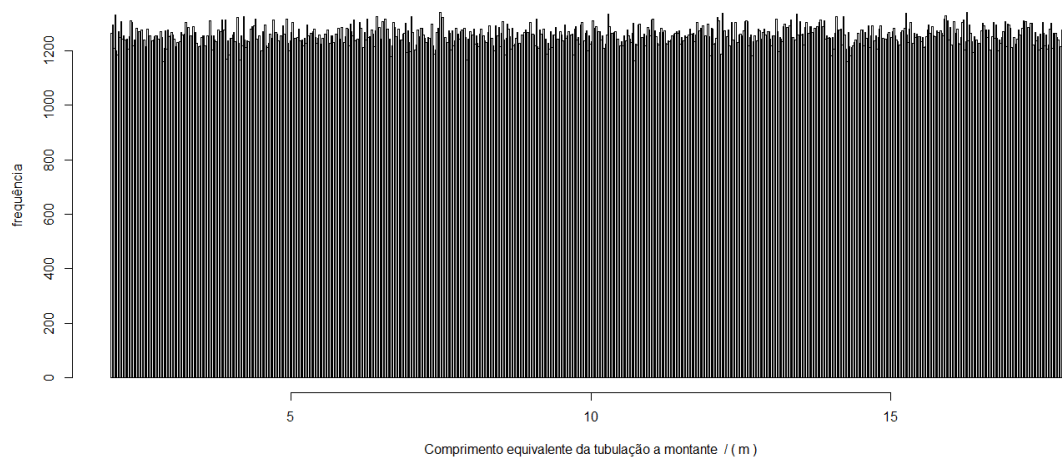


Consumo mensal de energia do chuveiro elétrico de 3,5 kW / ( kW.h )

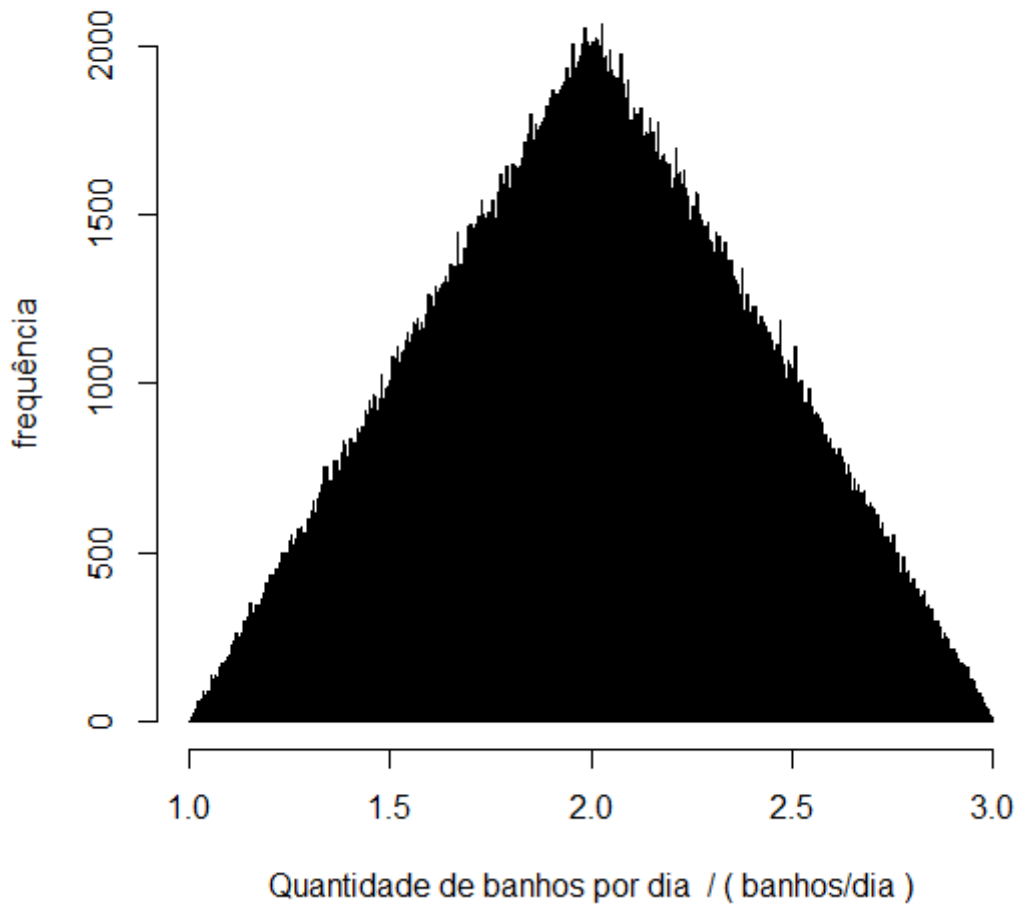
## istograma da Comprimento equivalente da tubulação a mor



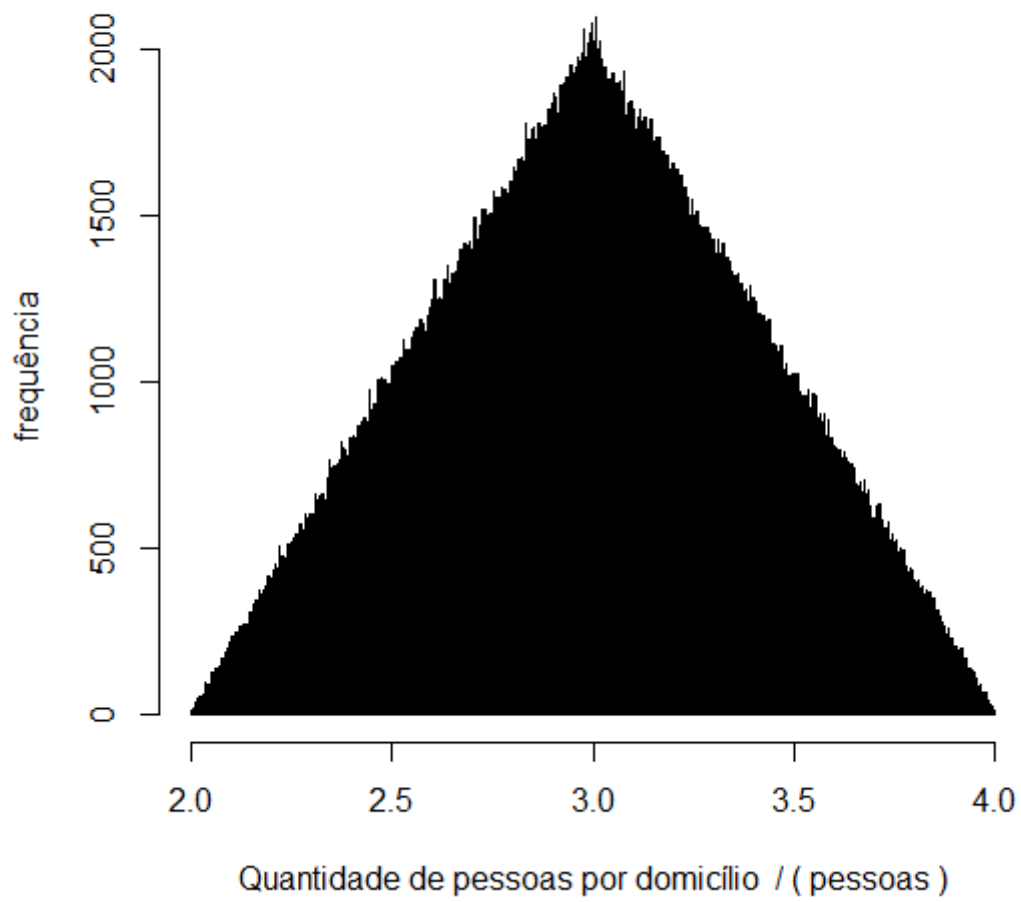
Histograma da Comprimento equivalente da tubulação a montante



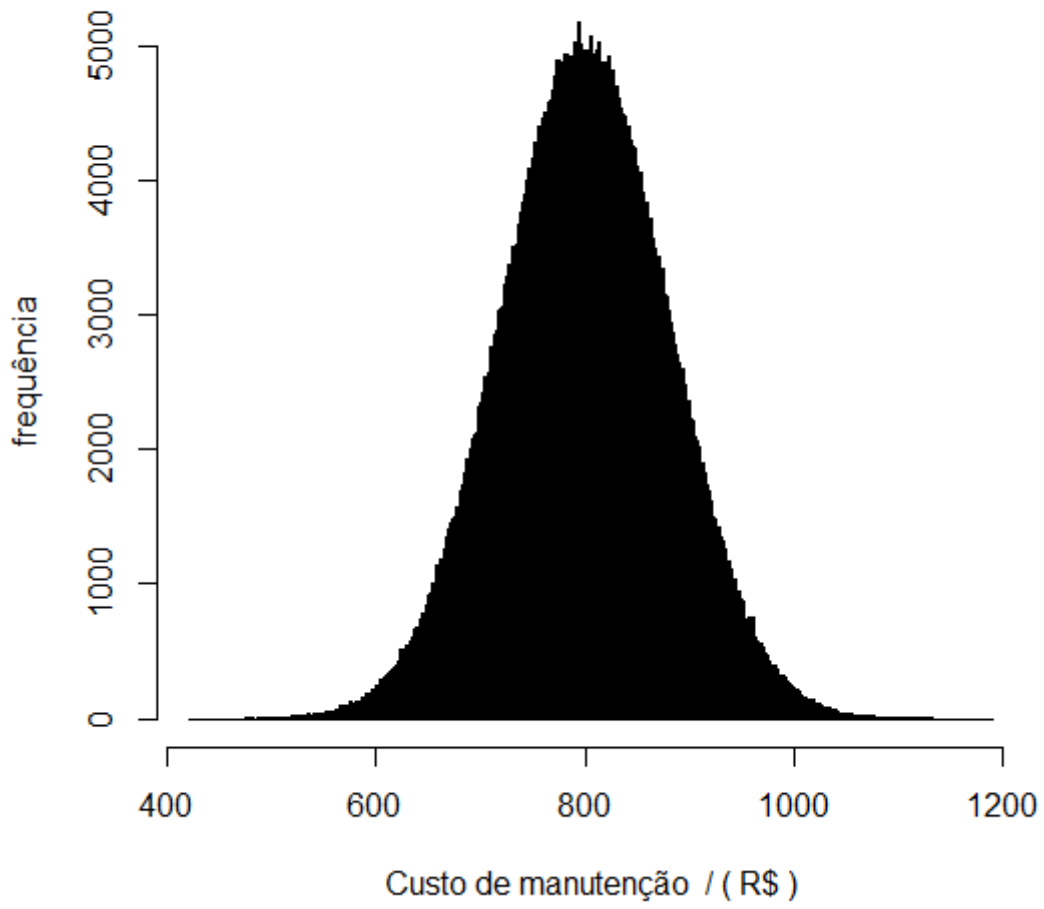
### Histograma da Quantidade de banhos por dia



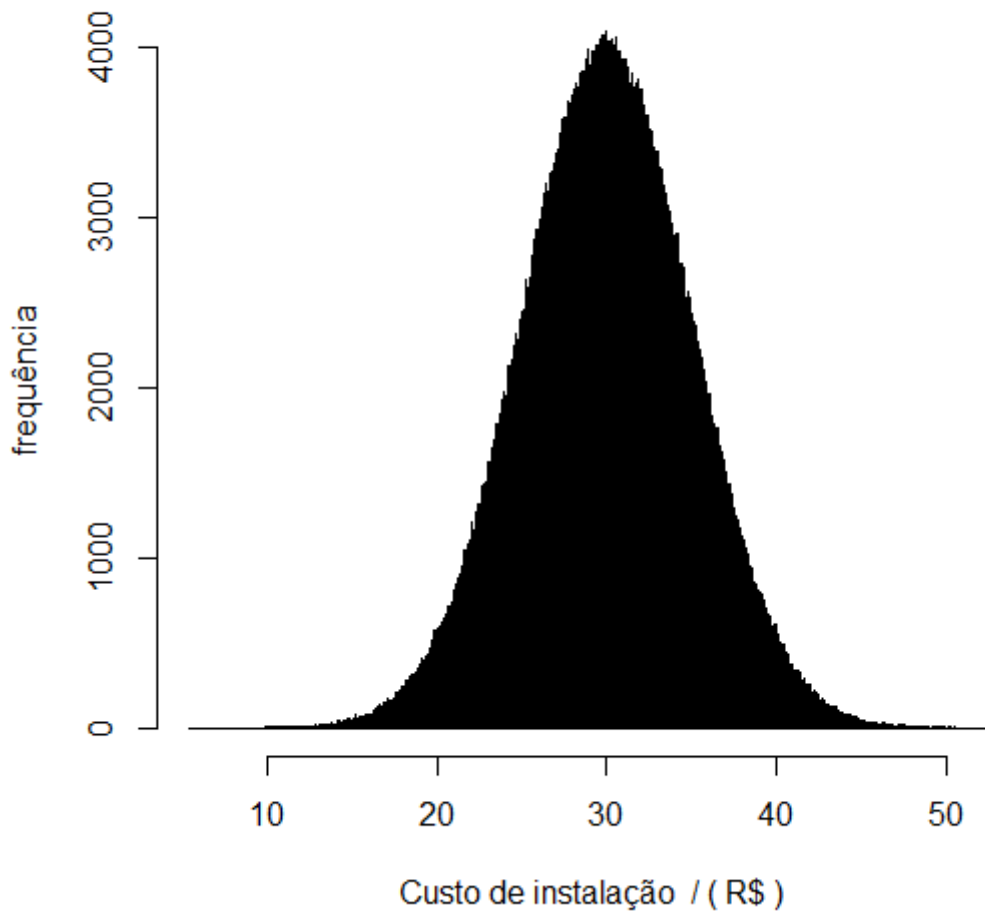
## Histograma da Quantidade de pessoas por domicílio



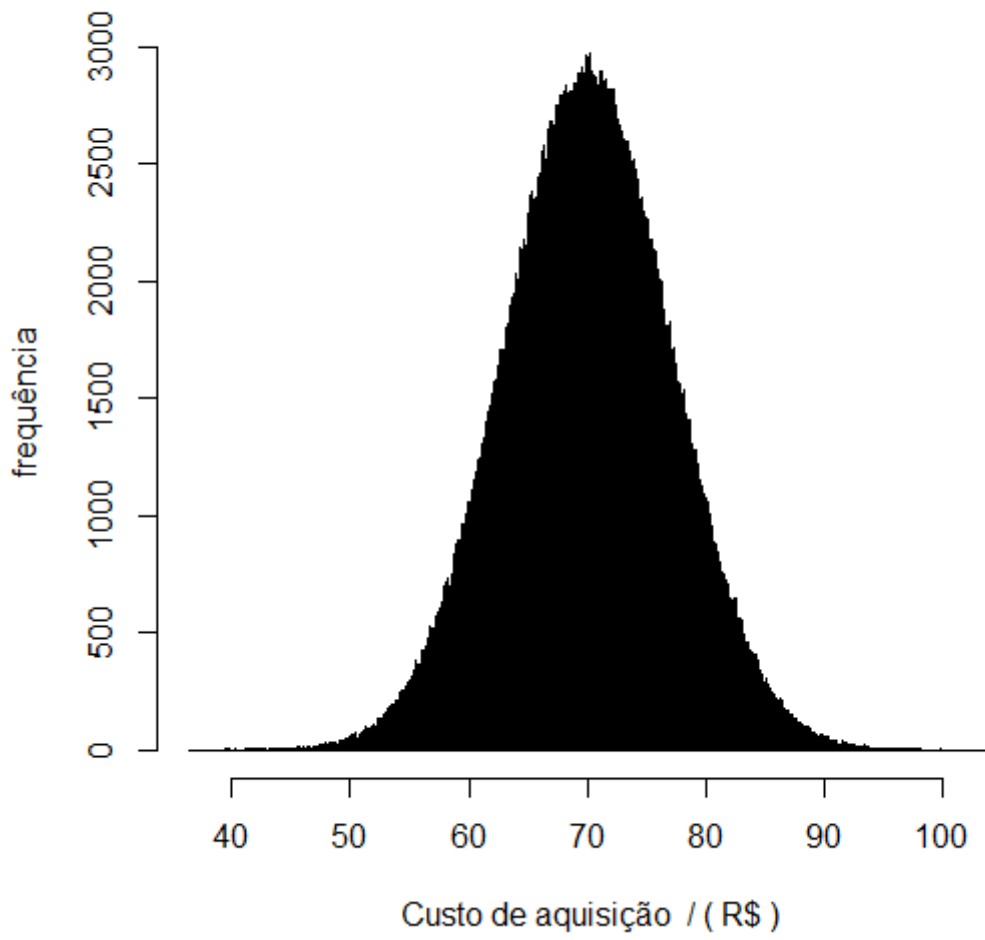
## Histograma da Custo de manutenção



### Histograma da Custo de instalação

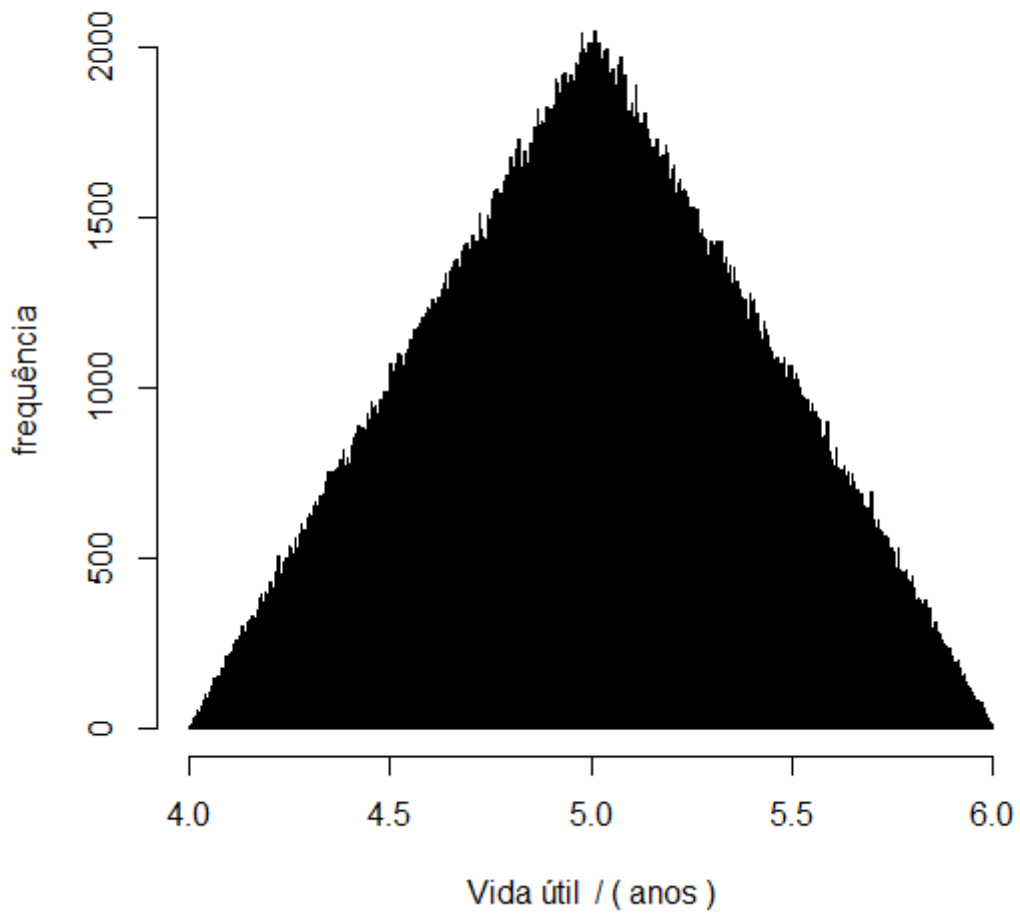


### Histograma da Custo de aquisição



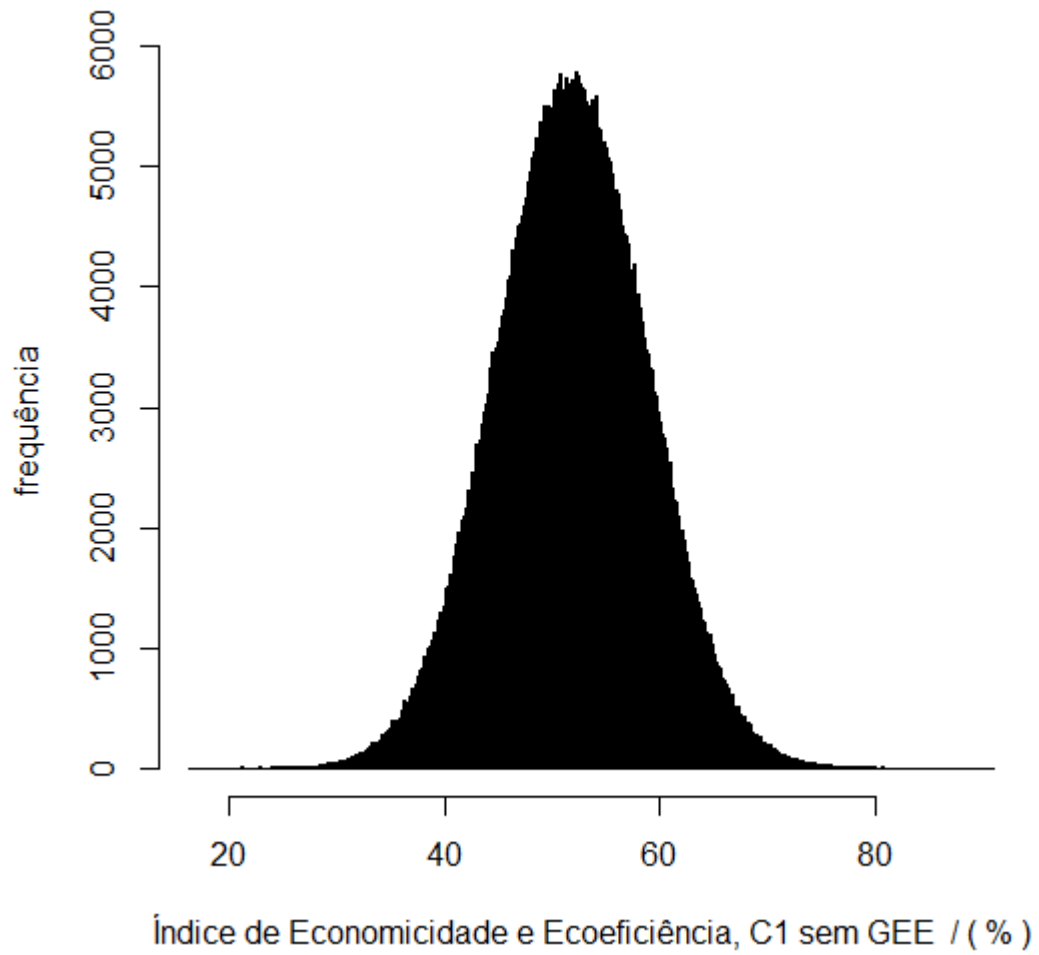


### Histograma da Vida útil

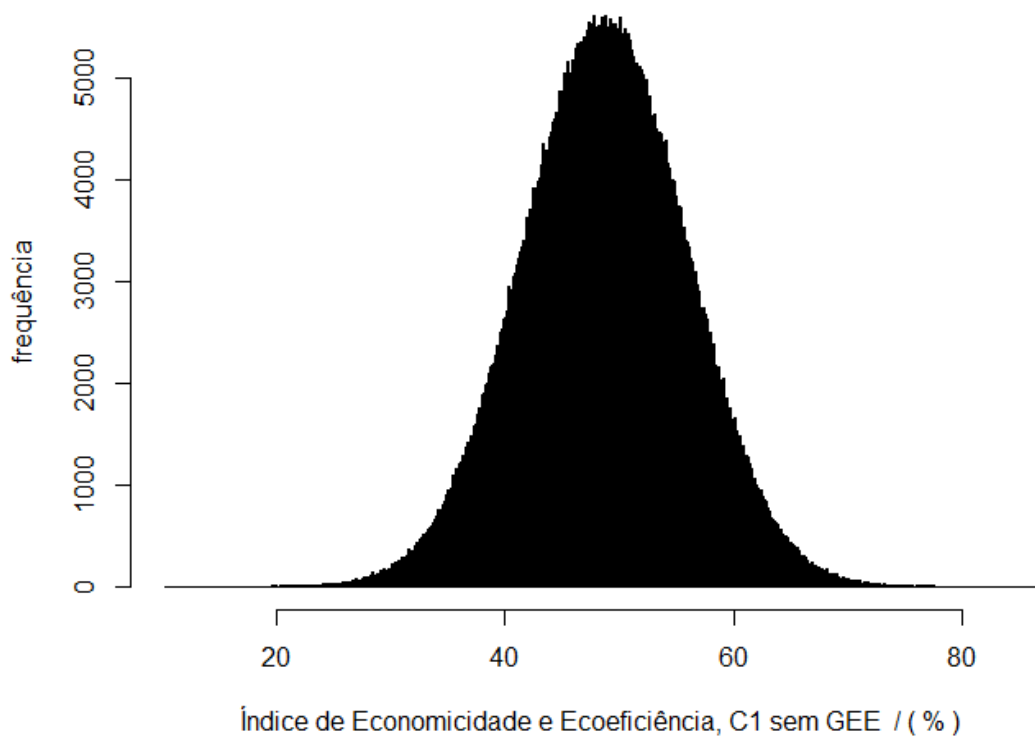


## 2. SAS CONVENCIONAL

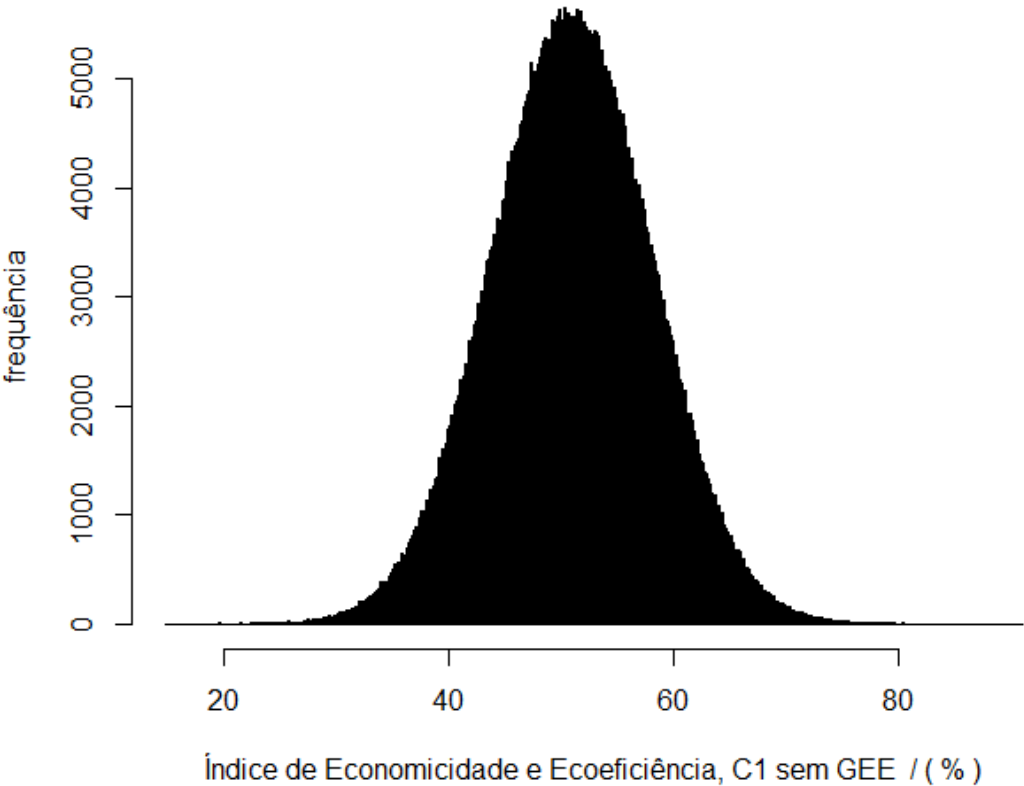
ograma da Índice de Economicidade e Ecoeficiência, C1 se



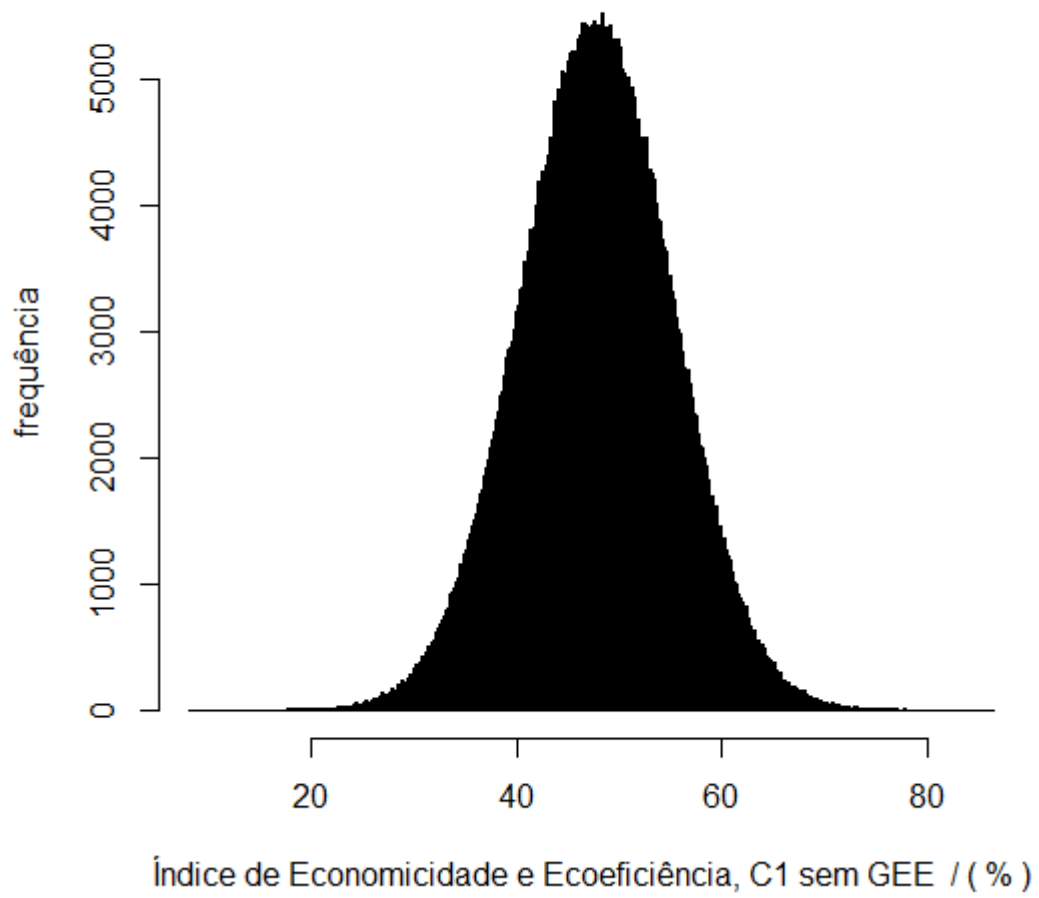
### Histograma da Índice de Economicidade e Ecoeficiência, C1 sem GEE



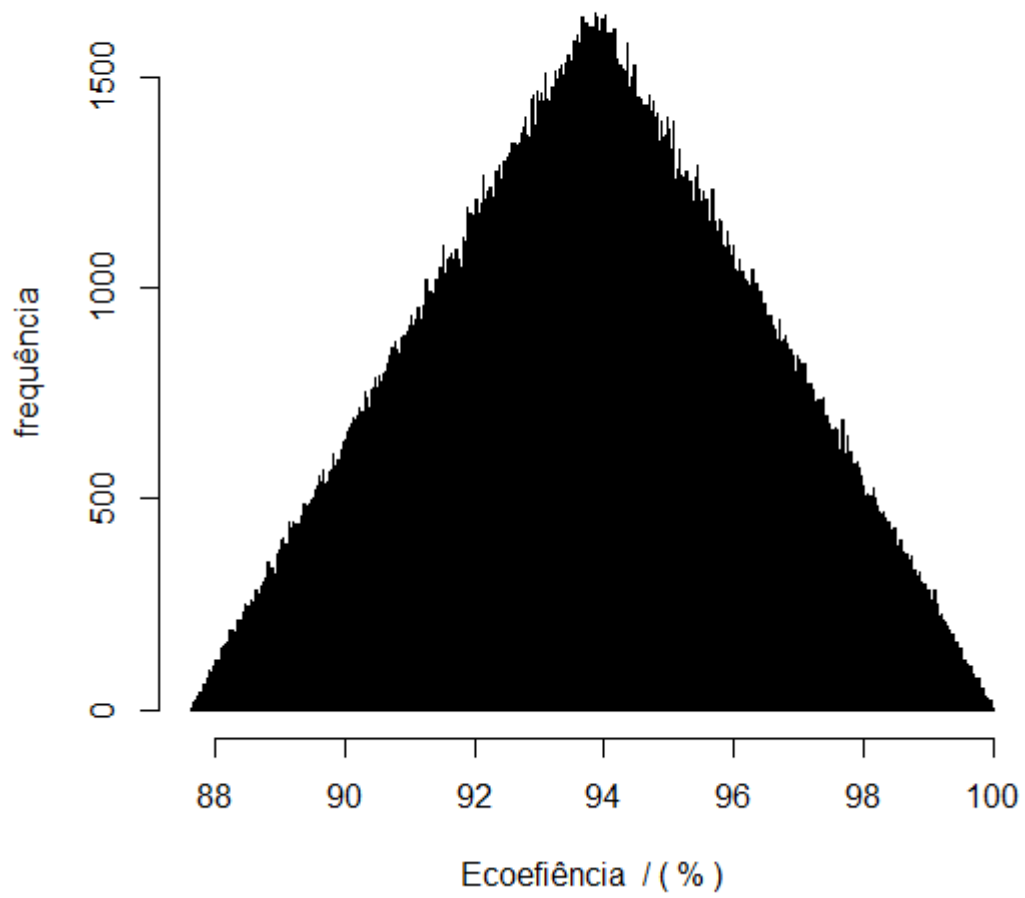
**Histograma da Índice de Economicidade e Ecoeficiência, C1 sem GI**



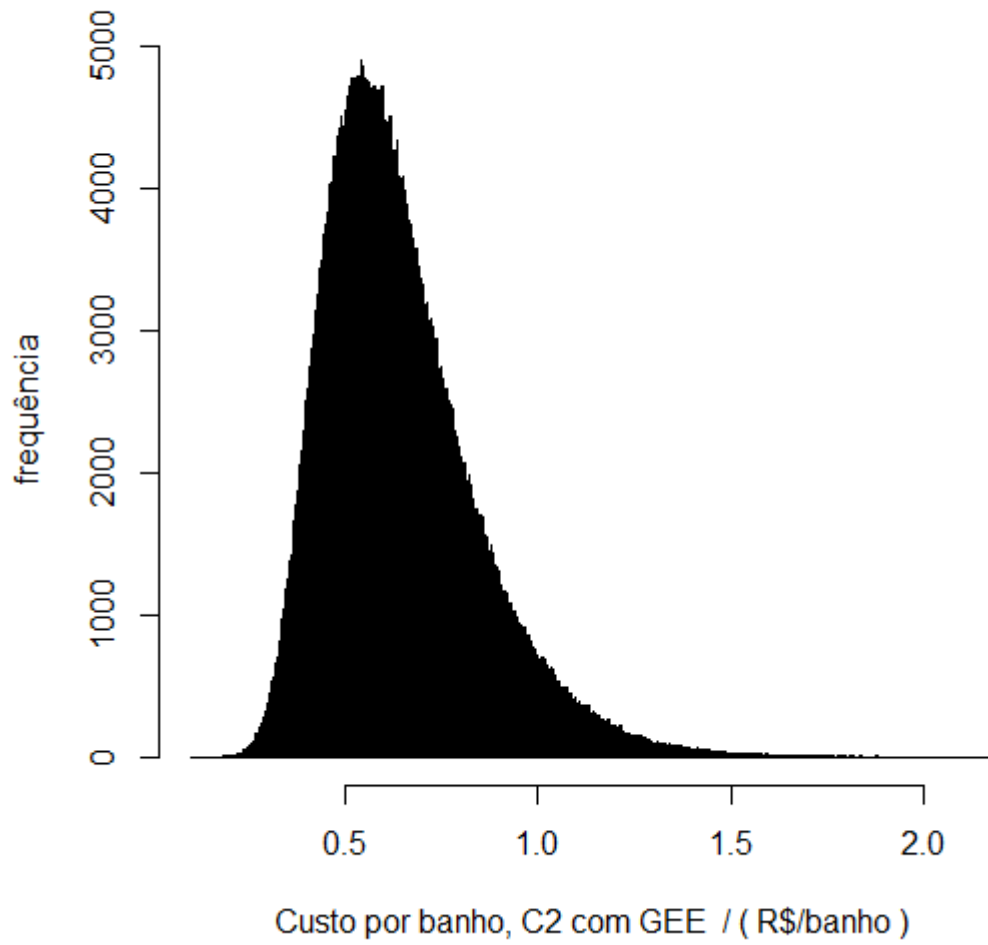
**ograma da Índice de Economicidade e Ecoeficiência, C1 se**



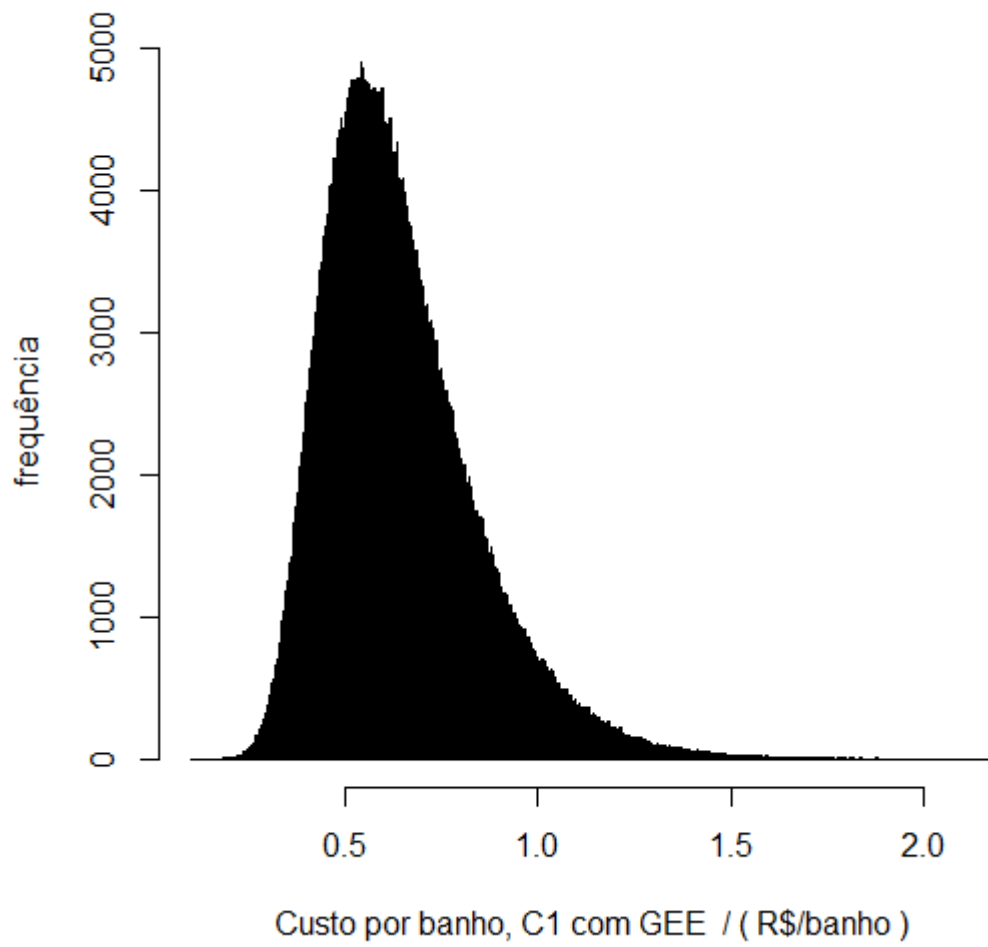
## Histograma da Ecoeficiência



**Histograma da Custo por banho, C2 com GEE**

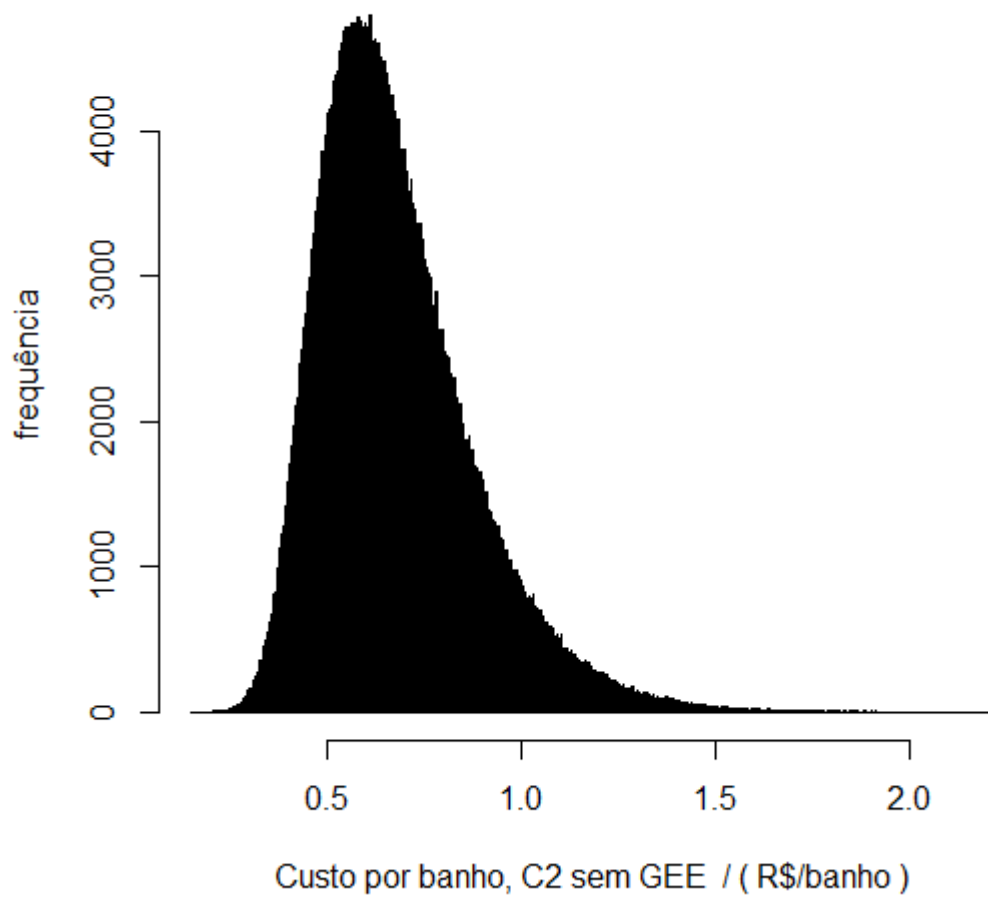


**Histograma da Custo por banho, C1 com GEE**

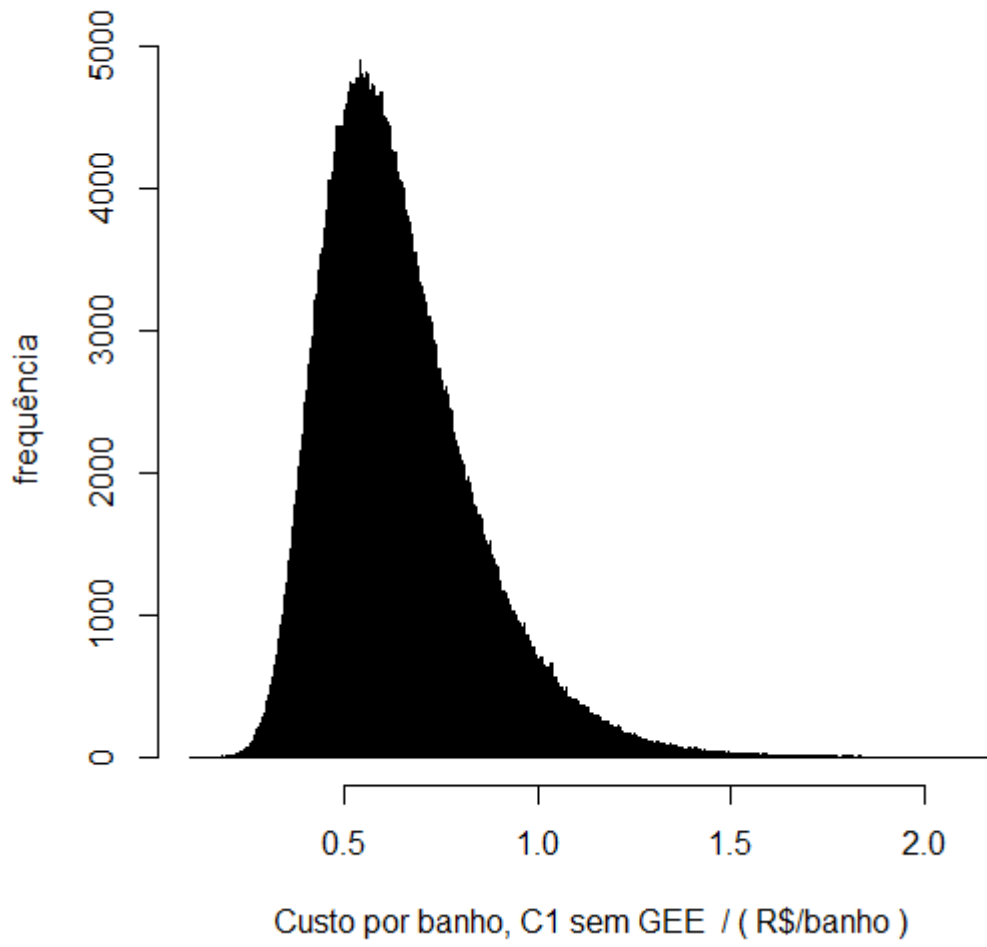




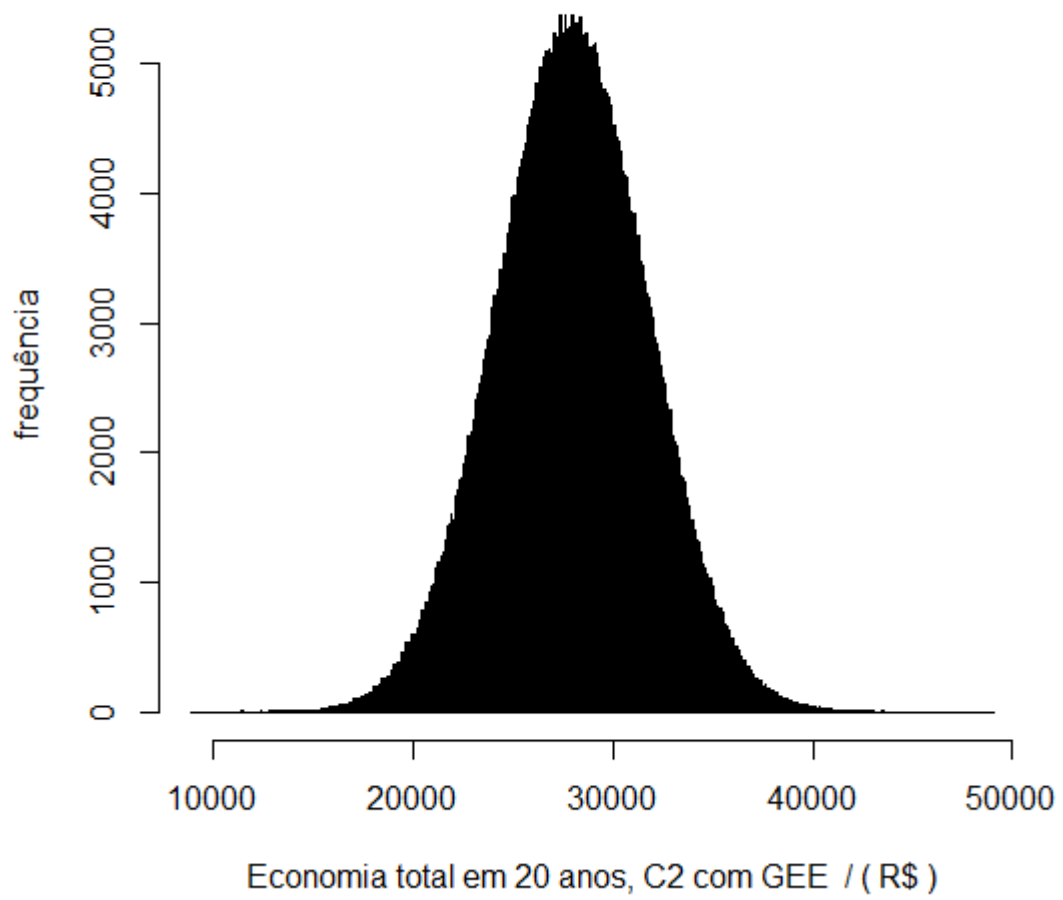
### Histograma da Custo por banho, C2 sem GEE



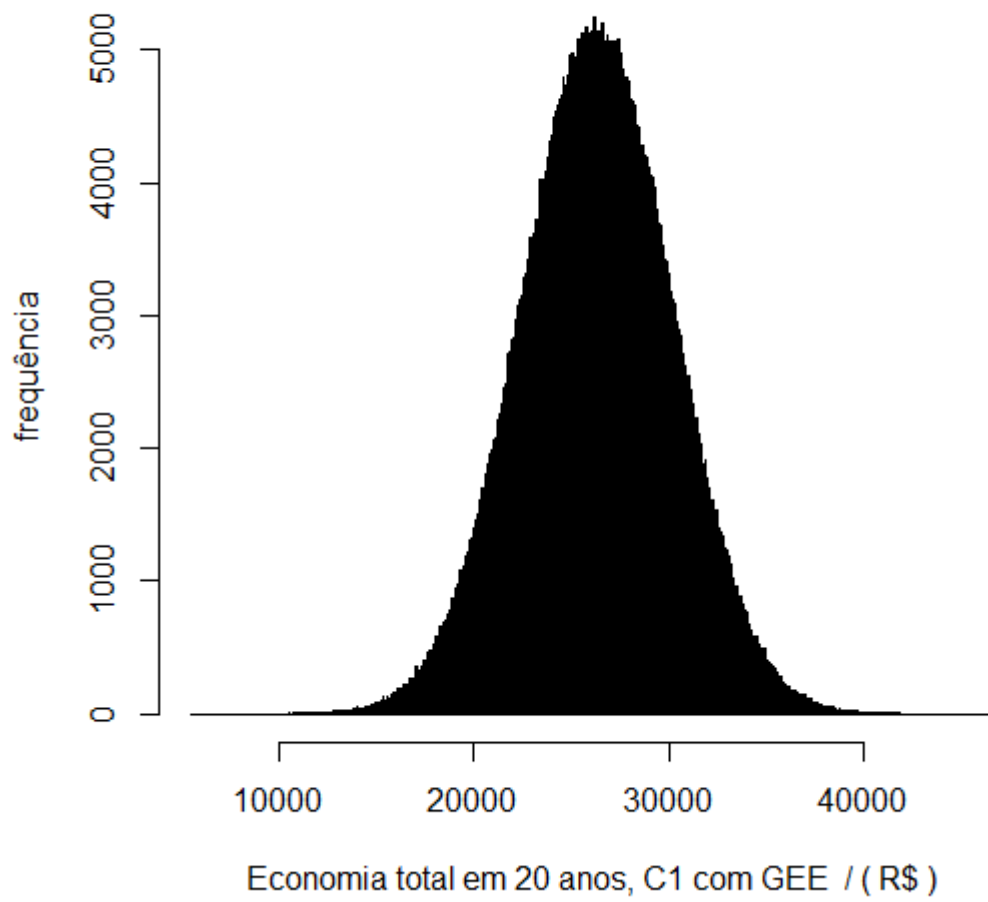
**Histograma da Custo por banho, C1 sem GEE**



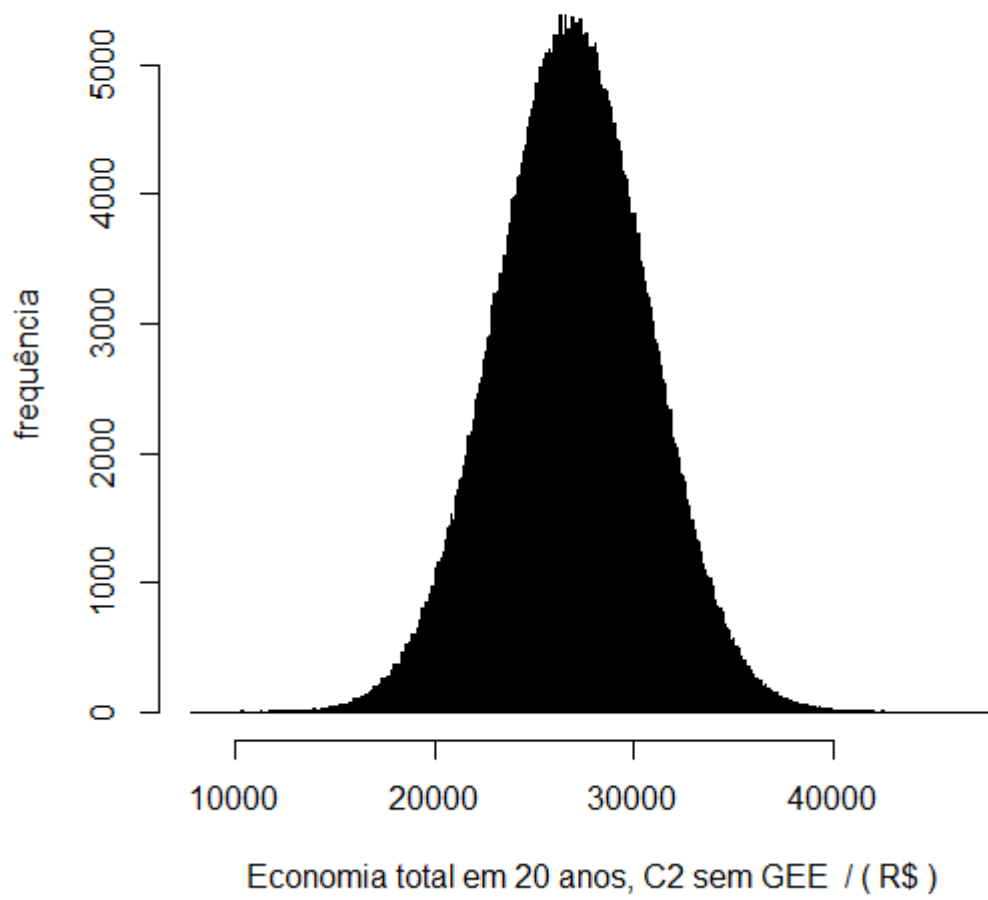
### Histograma da Economia total em 20 anos, C2 com GEE



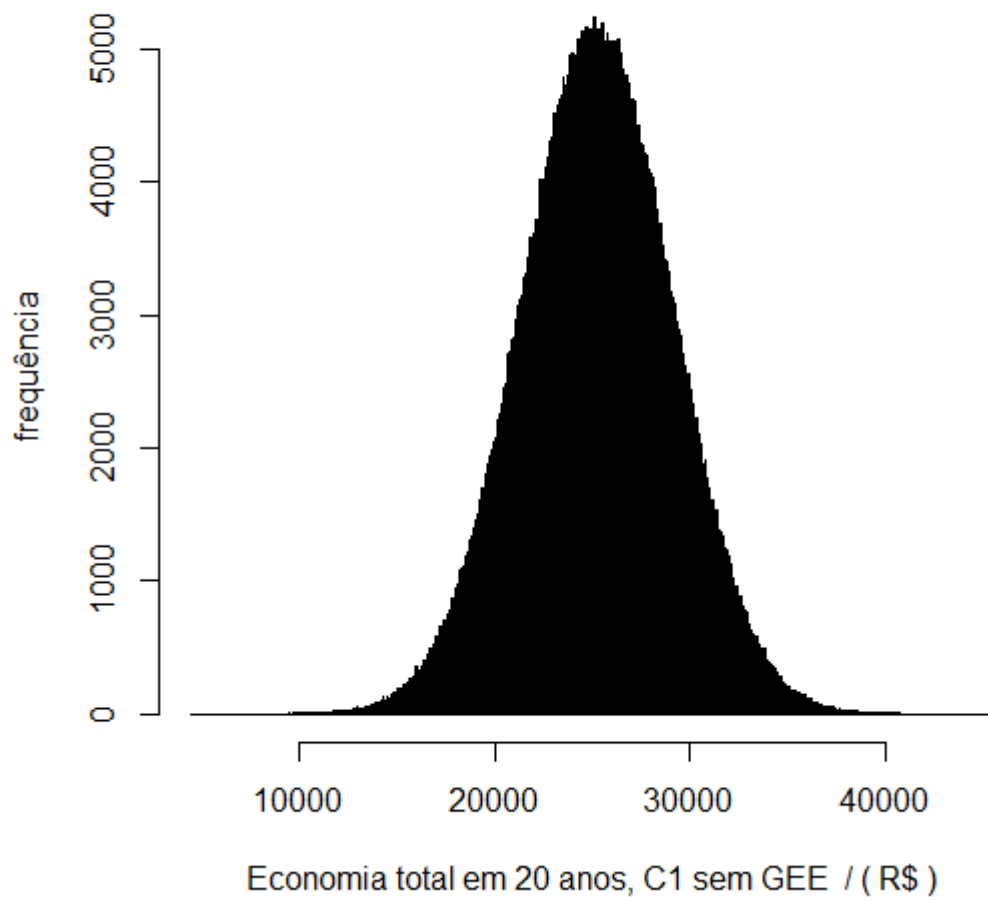
### Histograma da Economia total em 20 anos, C1 com GEE



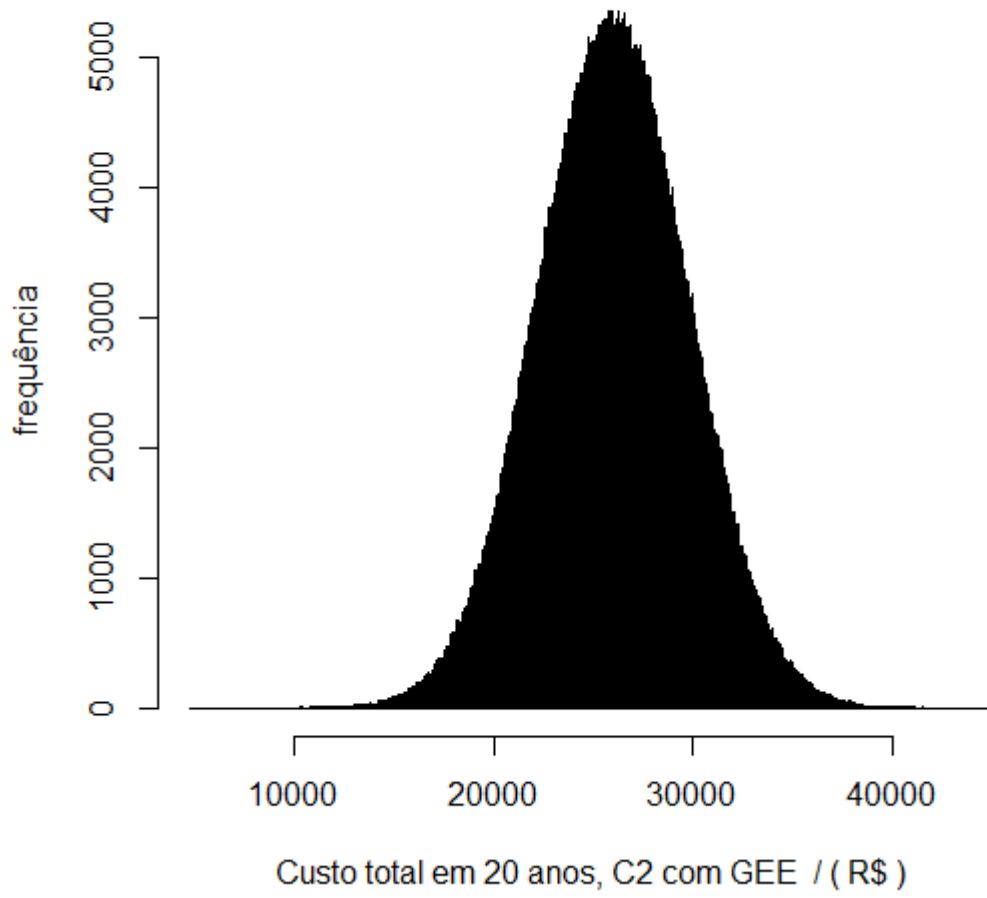
### Histograma da Economia total em 20 anos, C2 sem GEE



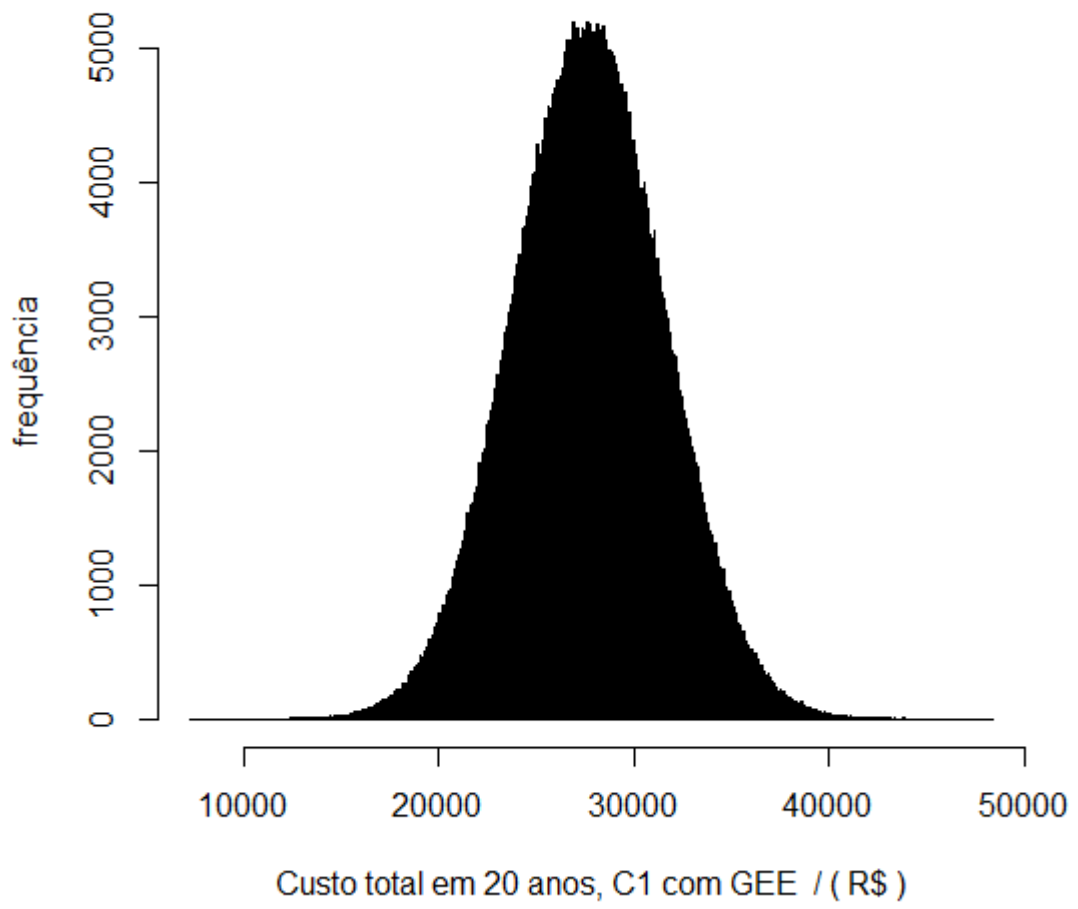
### Histograma da Economia total em 20 anos, C1 sem GEE



### Histograma da Custo total em 20 anos, C2 com GEE

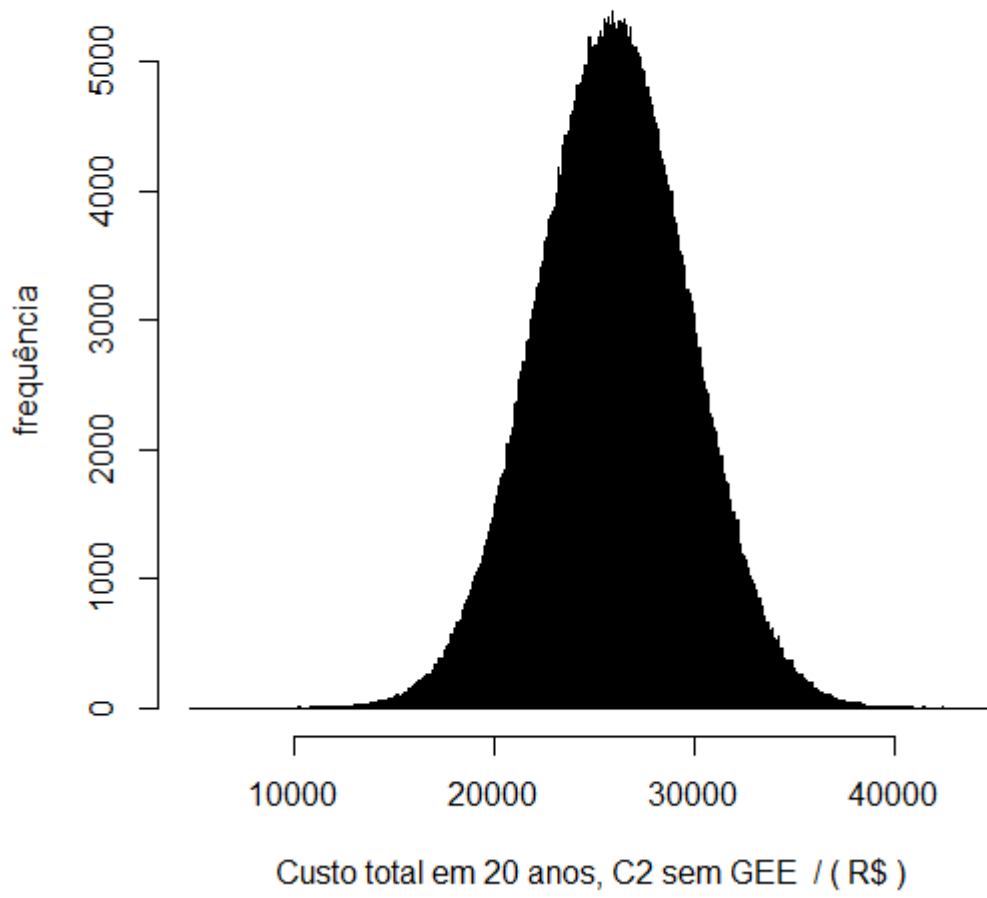


### Histograma da Custo total em 20 anos, C1 com GEE

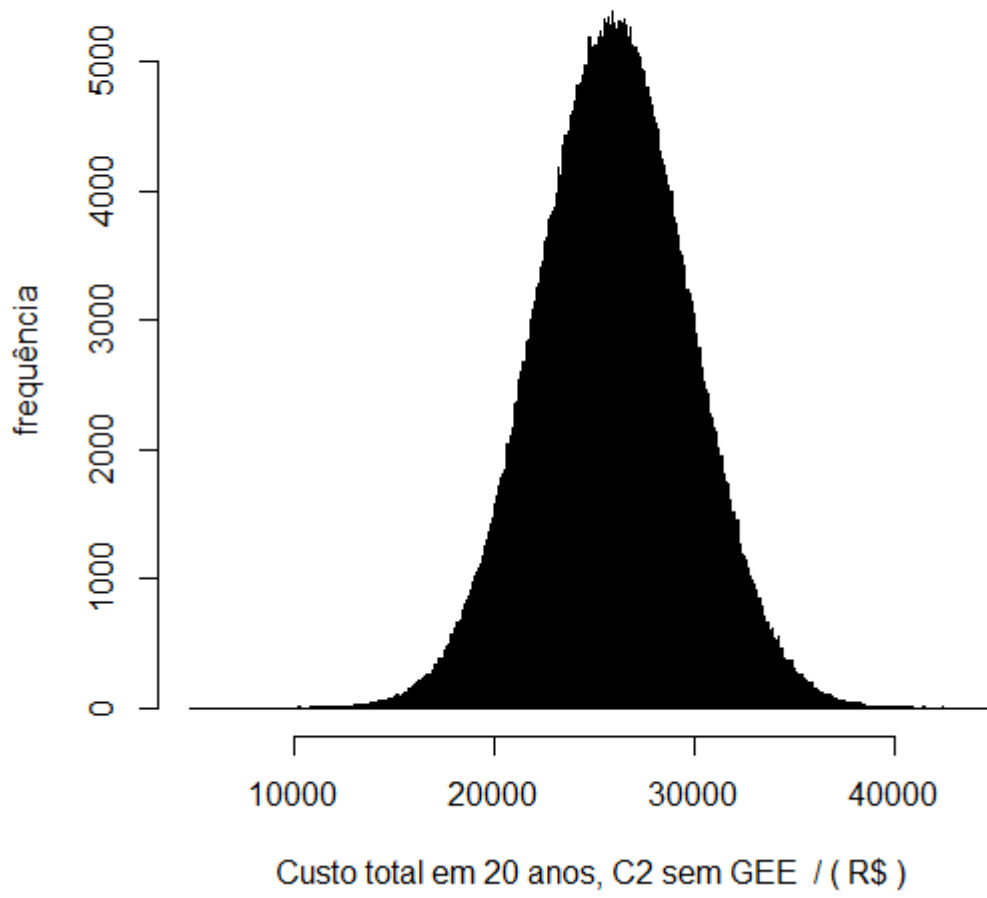




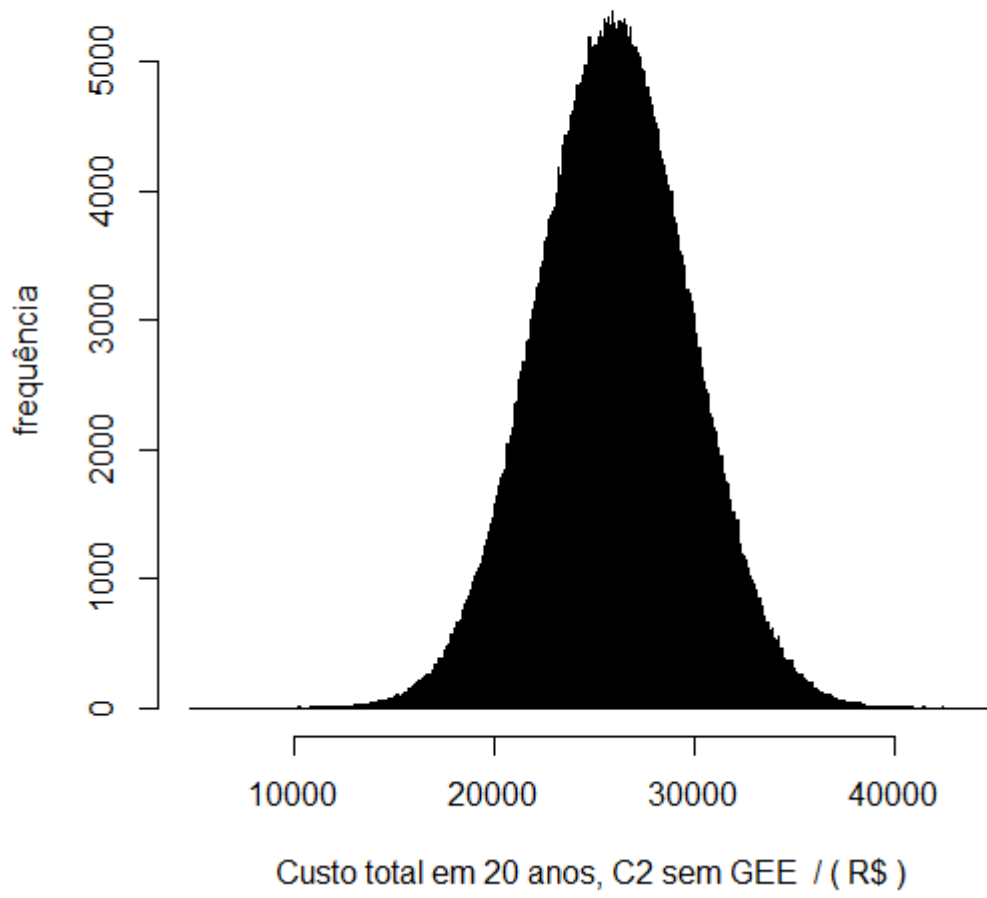
### Histograma da Custo total em 20 anos, C2 sem GEE



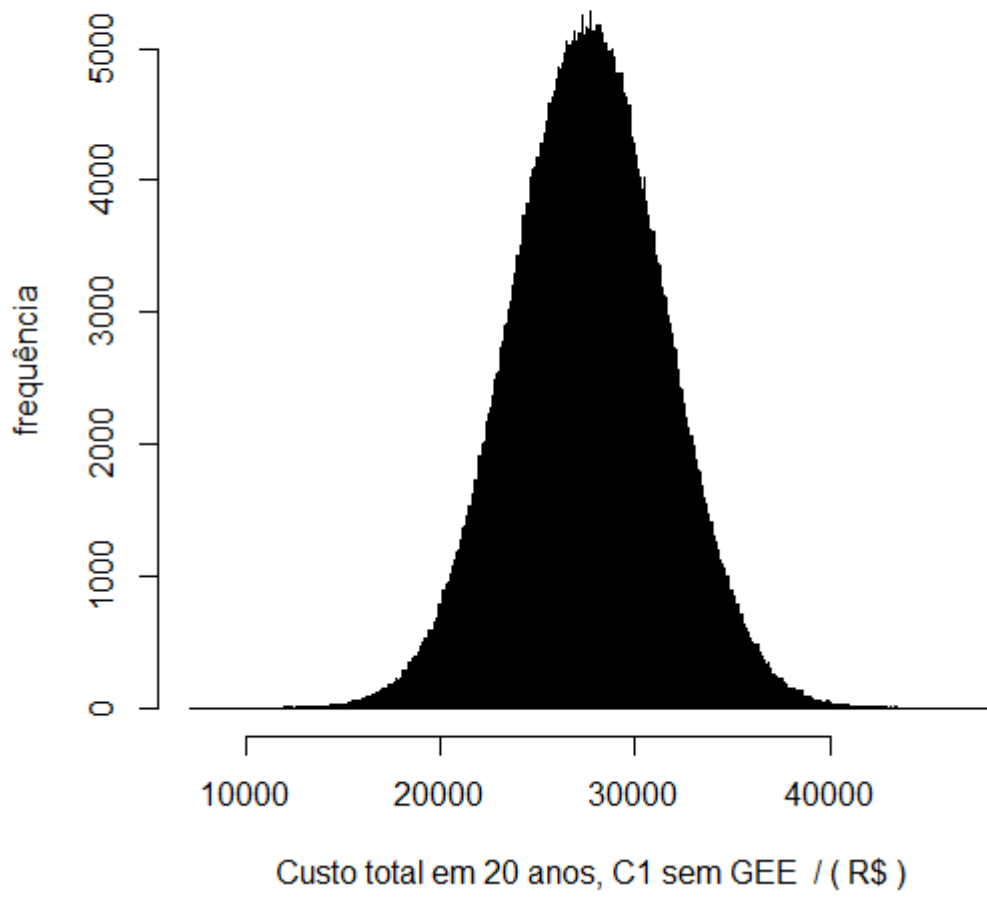
### Histograma da Custo total em 20 anos, C2 sem GEE



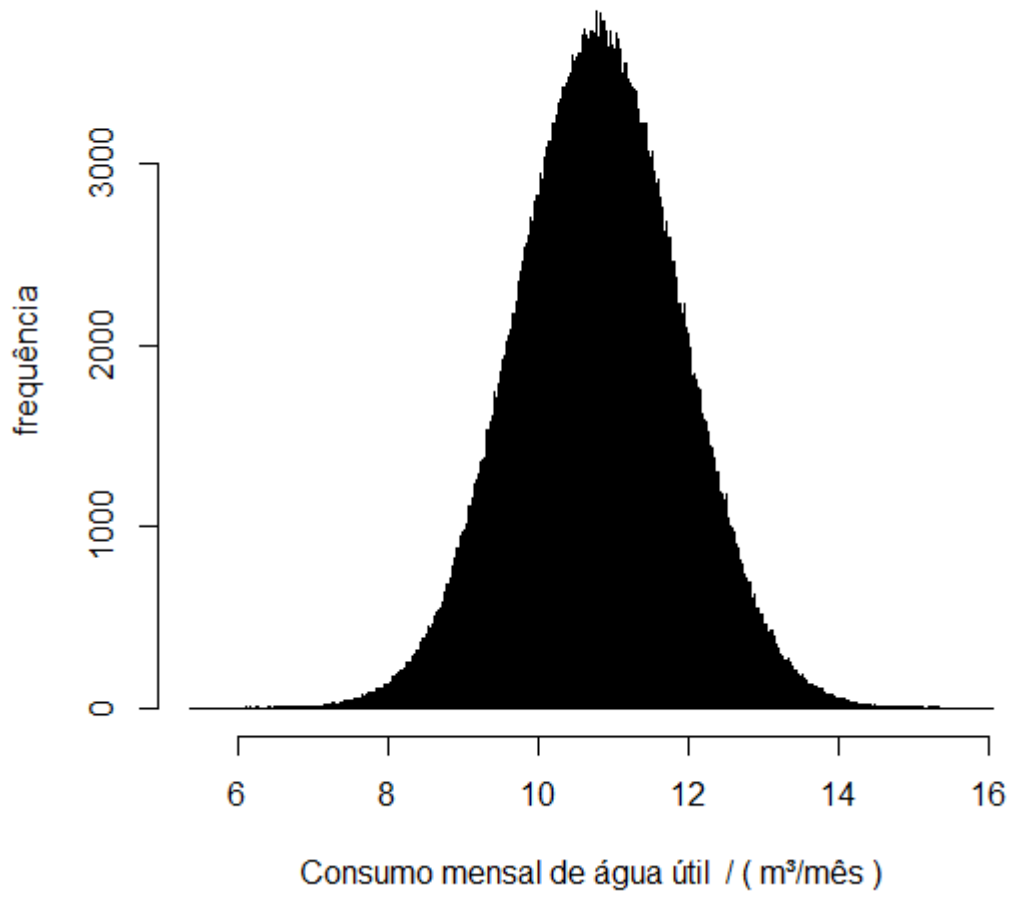
### Histograma da Custo total em 20 anos, C2 sem GEE



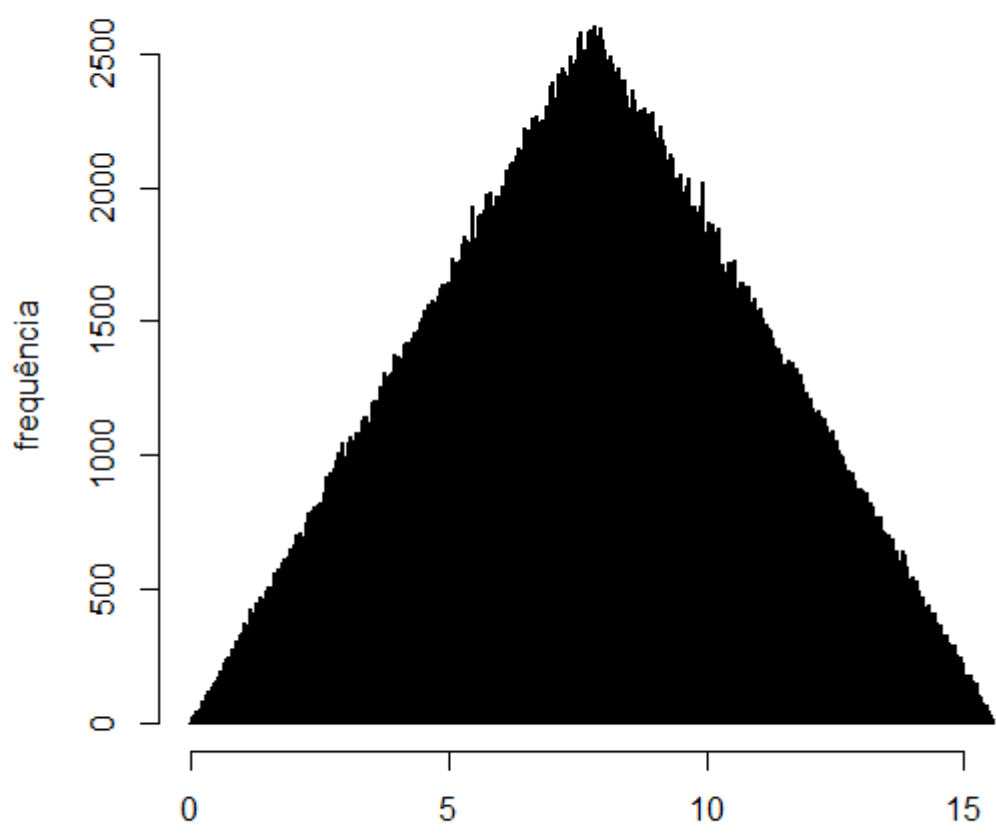
### Histograma da Custo total em 20 anos, C1 sem GEE



## Histograma da Consumo mensal de água útil

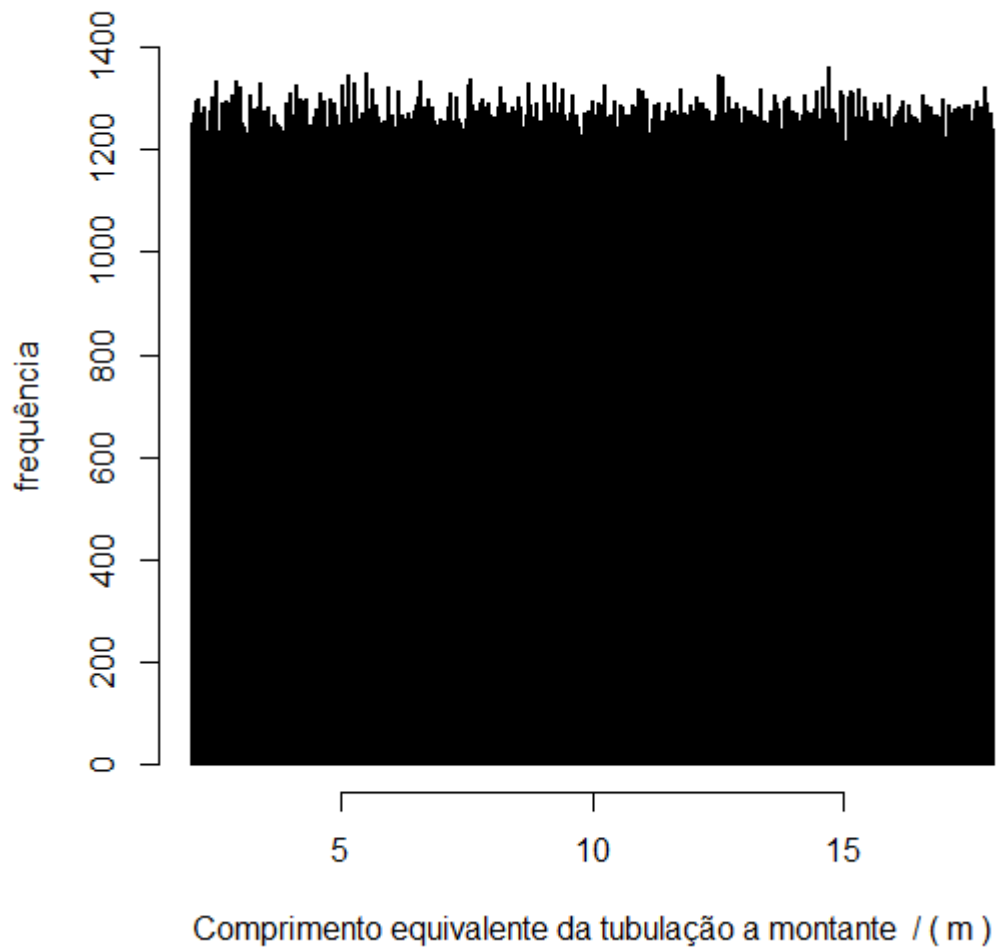


da Consumo mensal de energia com base num chuveiro el

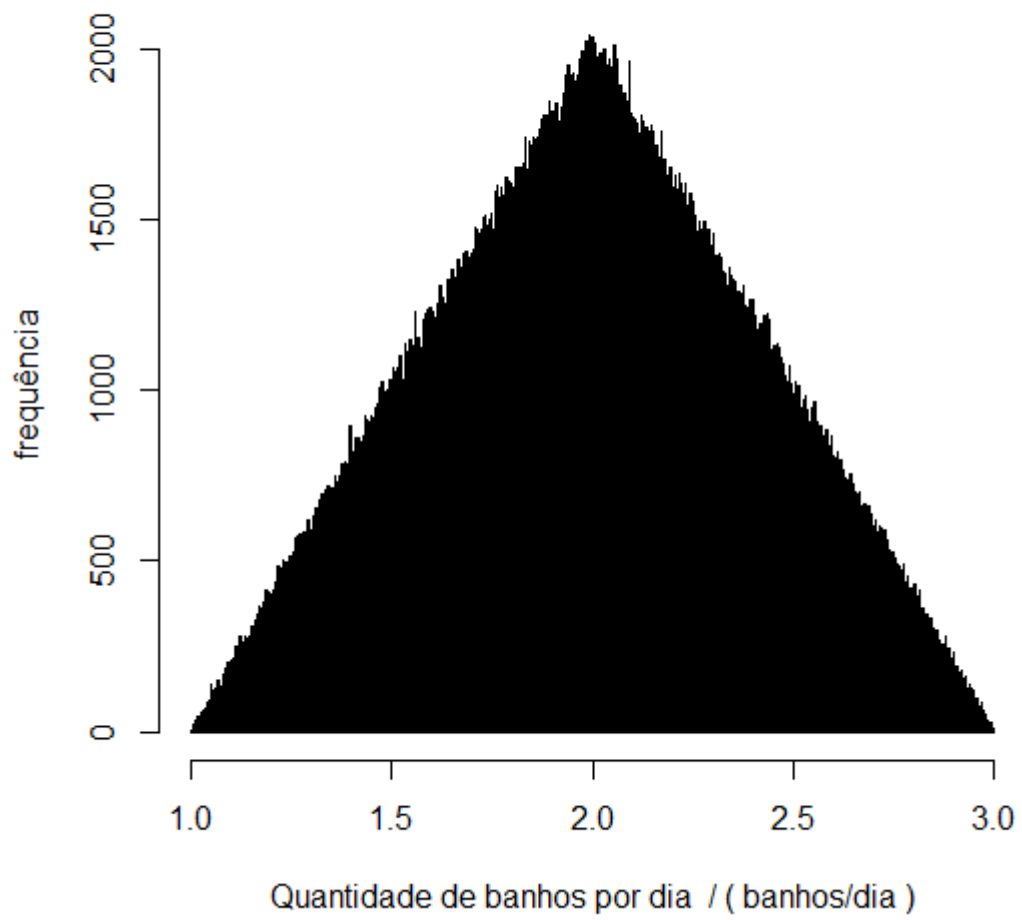


Consumo mensal de energia com base num chuveiro elétrico de 3,5 kW / ( kWh

### istograma da Comprimento equivalente da tubulação a mor

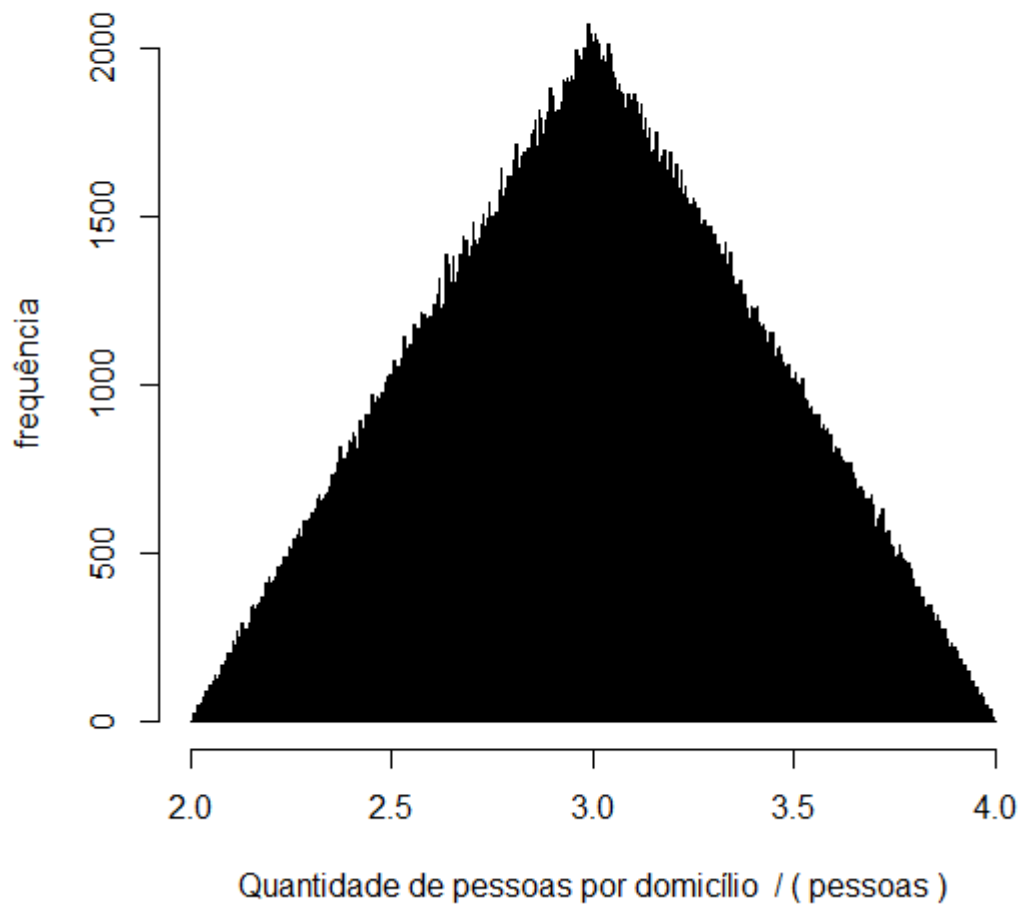


### Histograma da Quantidade de banhos por dia

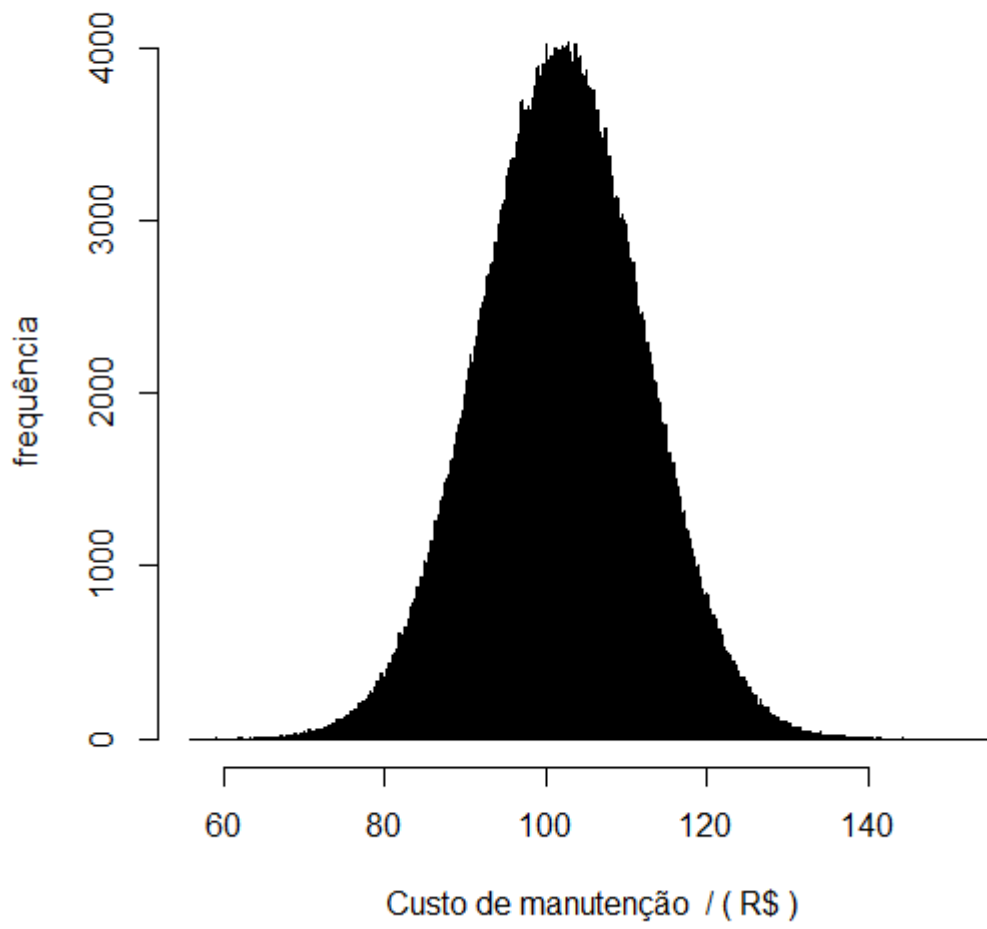




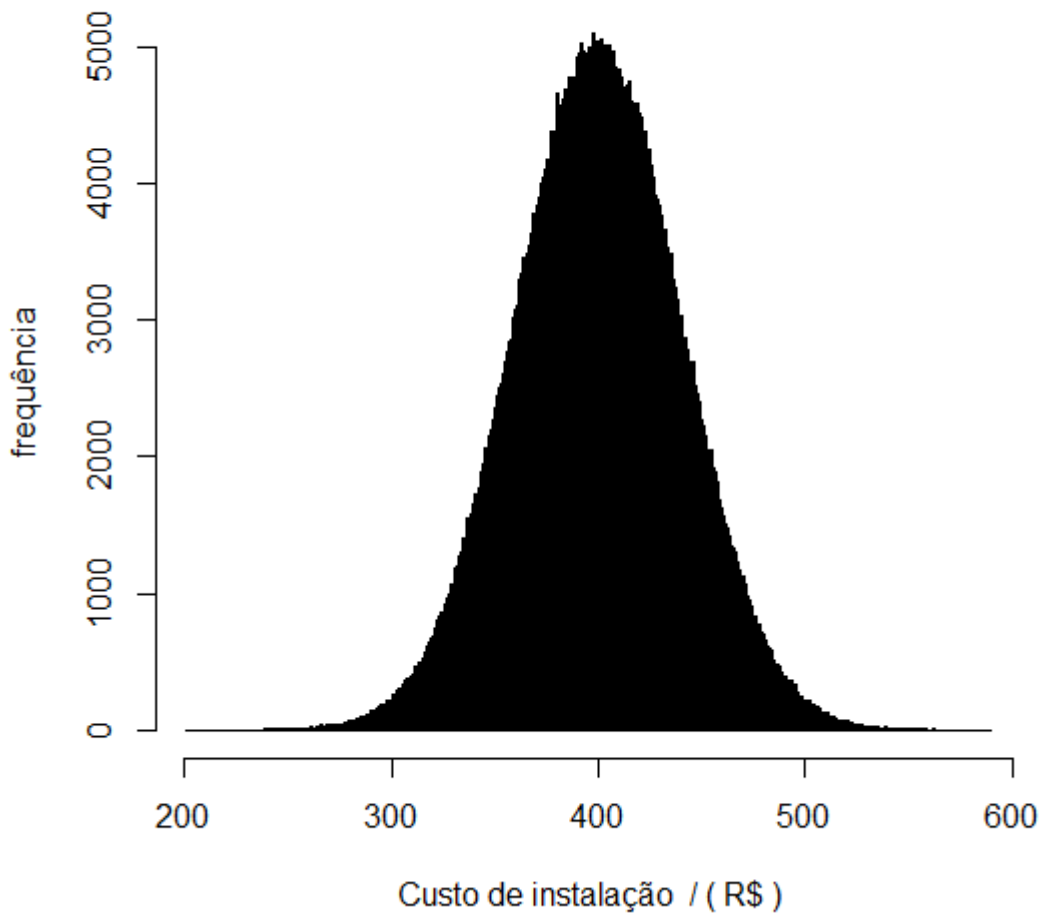
## Histograma da Quantidade de pessoas por domicílio



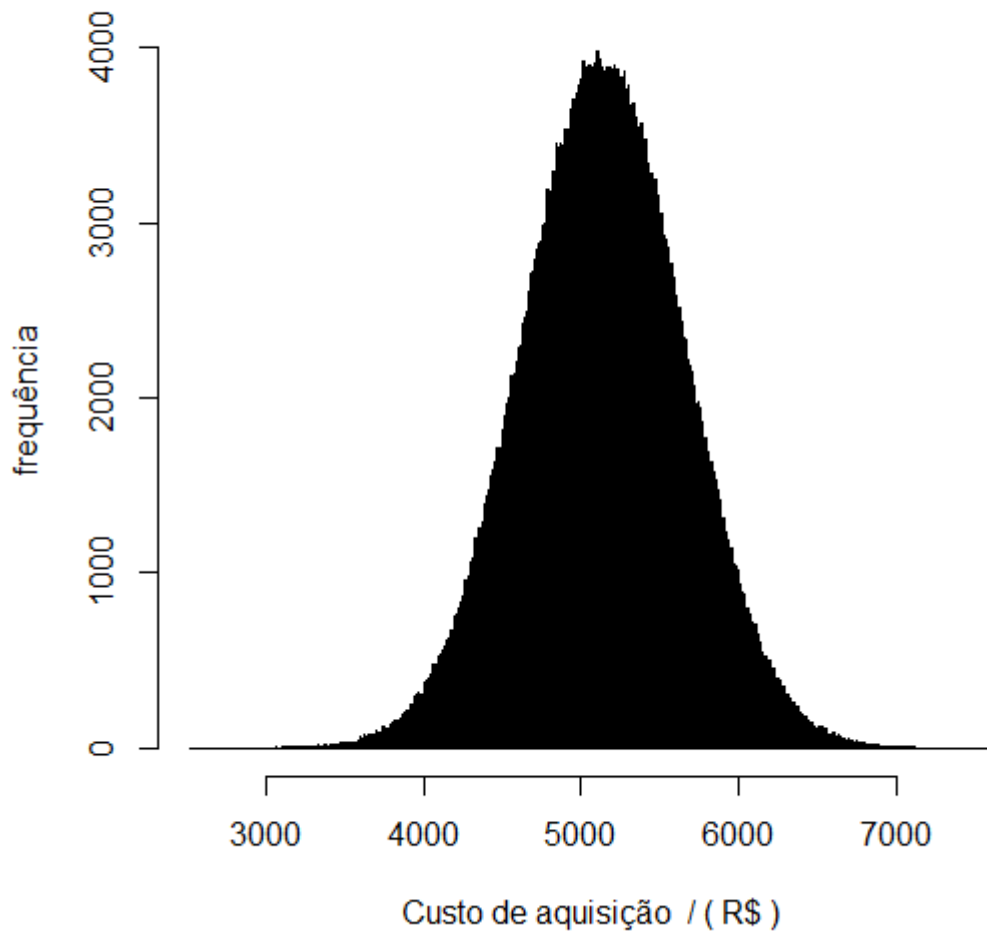
### Histograma da Custo de manutenção



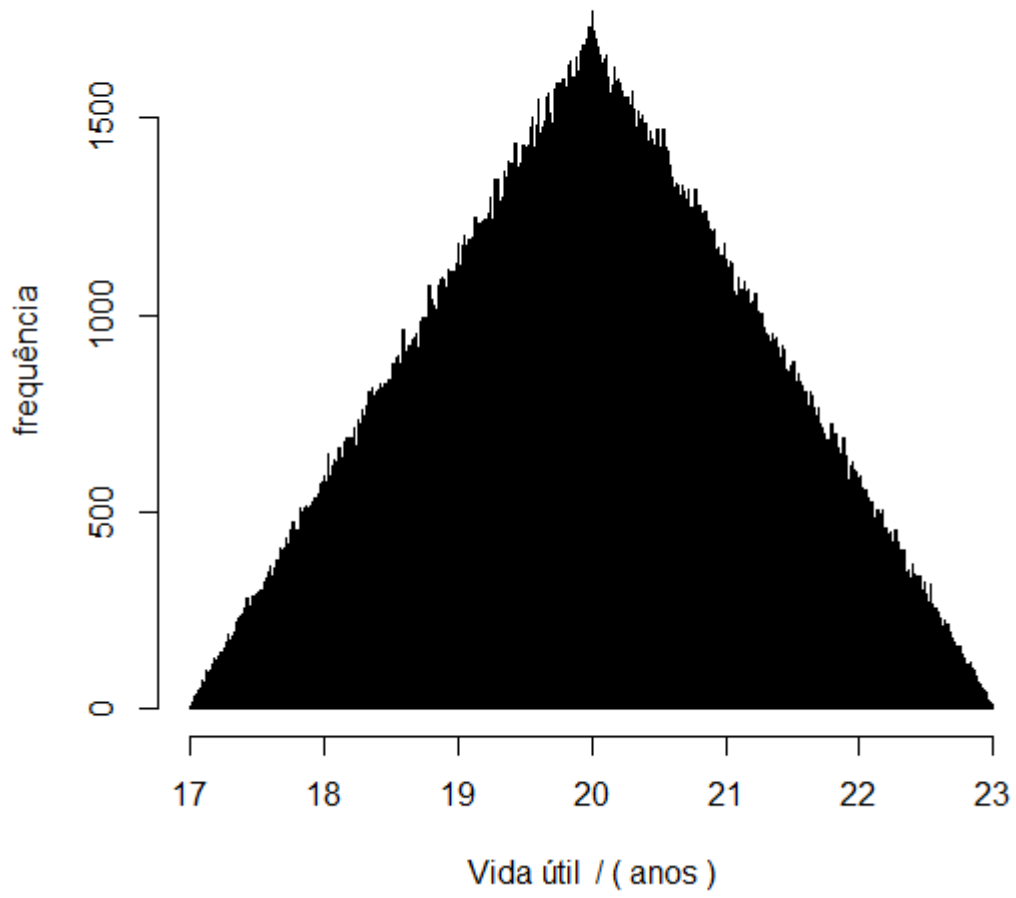
### Histograma da Custo de instalação



### Histograma da Custo de aquisição

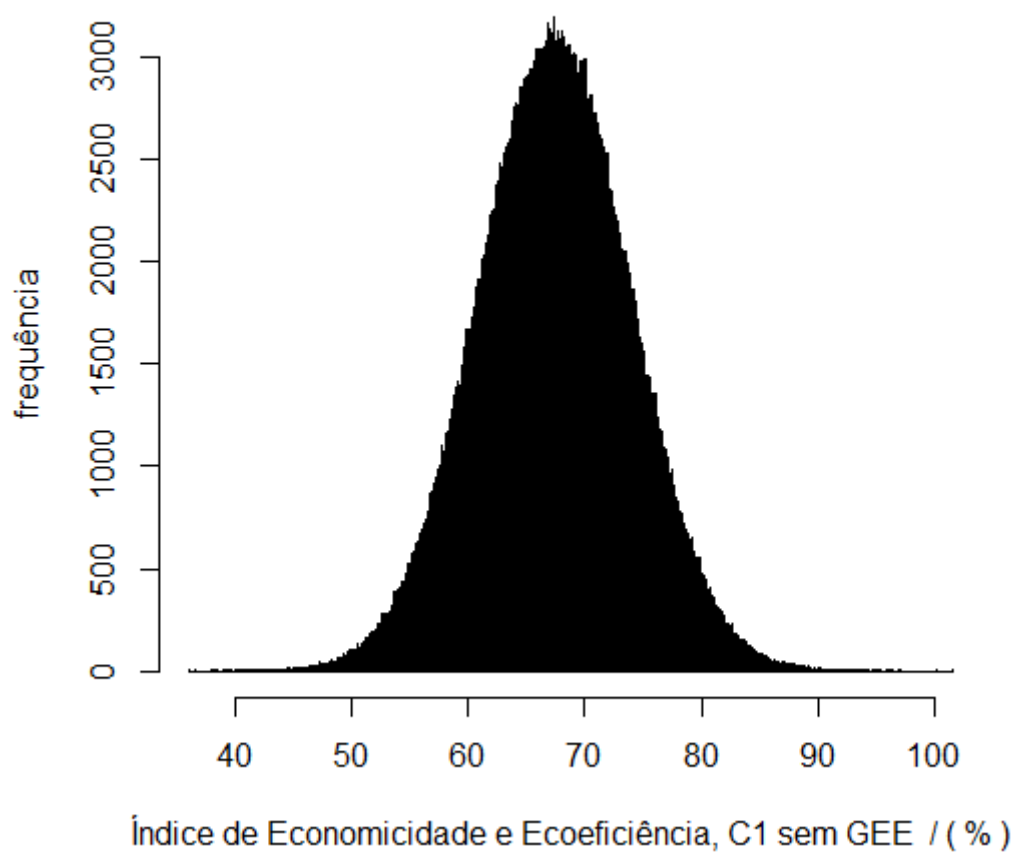


### Histograma da Vida útil

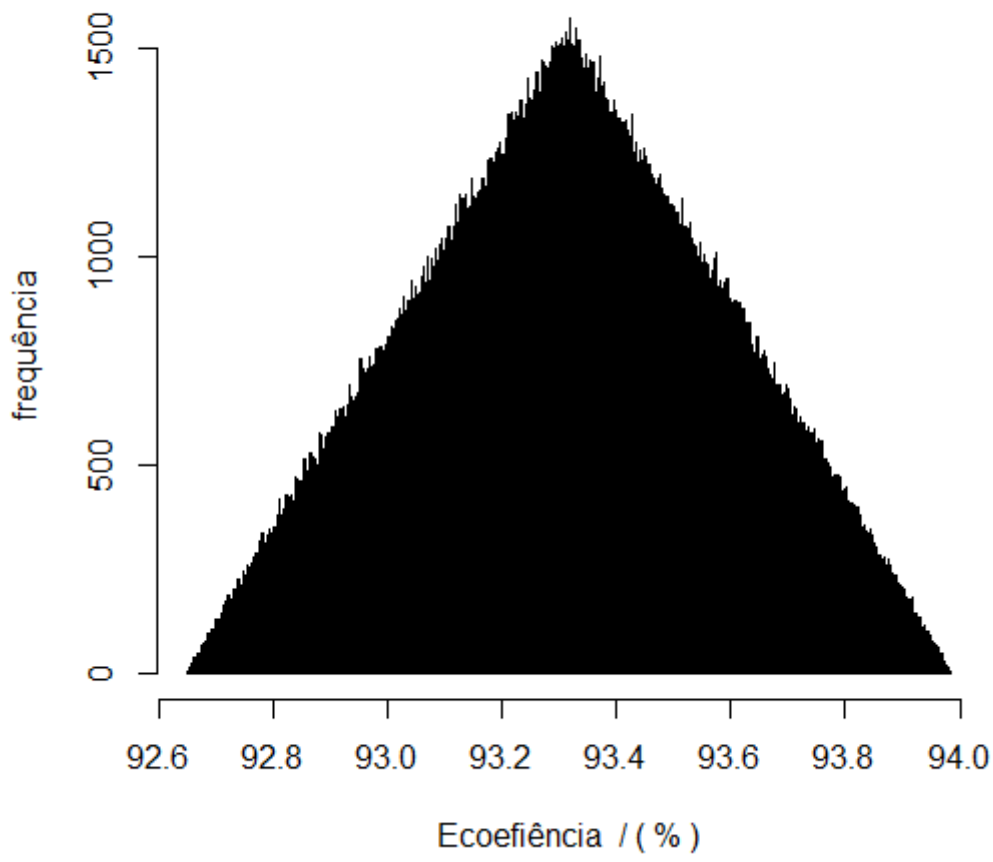


### 3. ASBC – PVC

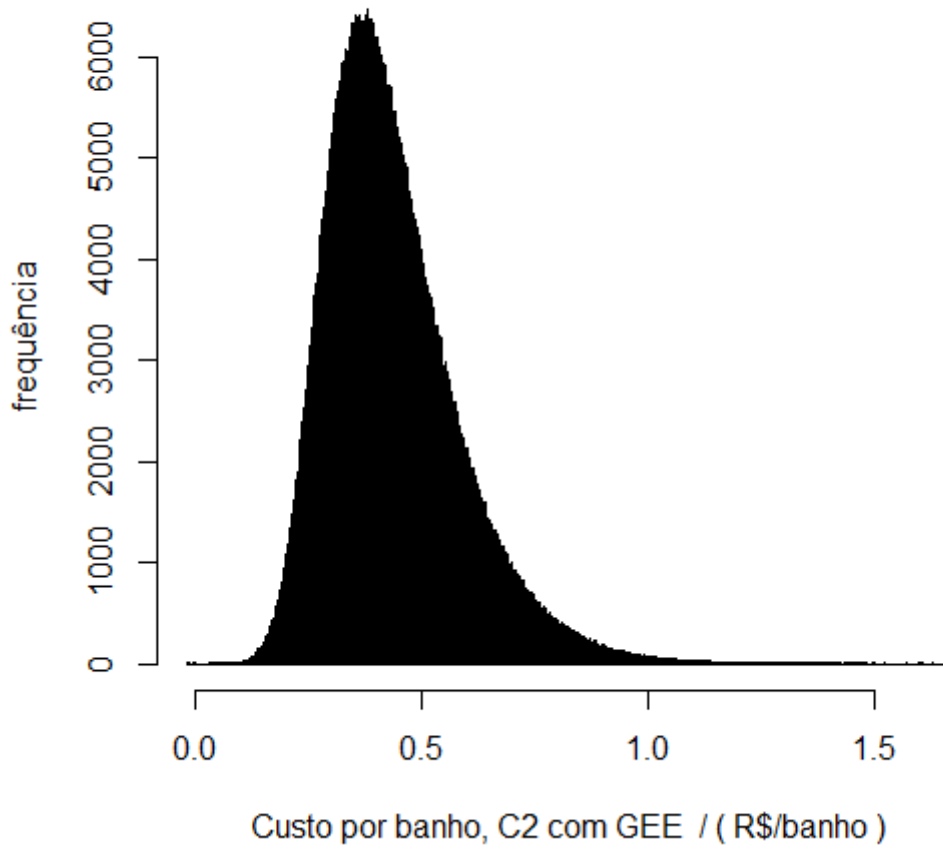
#### Programa da Índice de Economicidade e Ecoeficiência, C1 s



### Histograma da Ecoeficiência

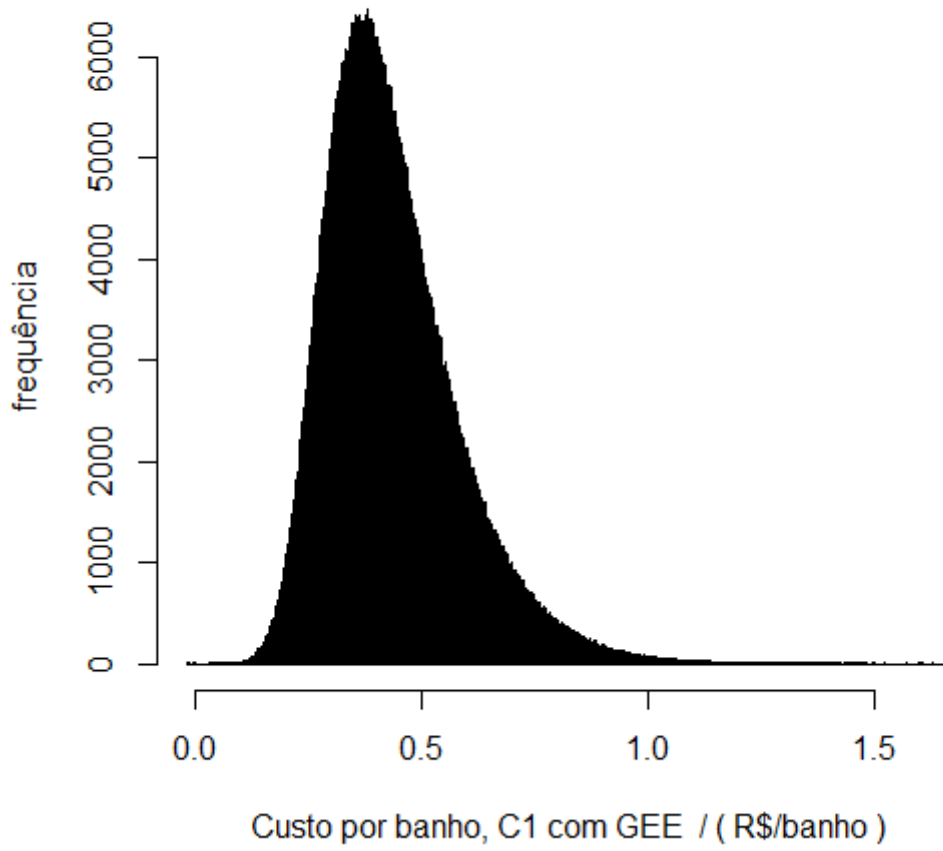


### Histograma da Custo por banho, C2 com GEE

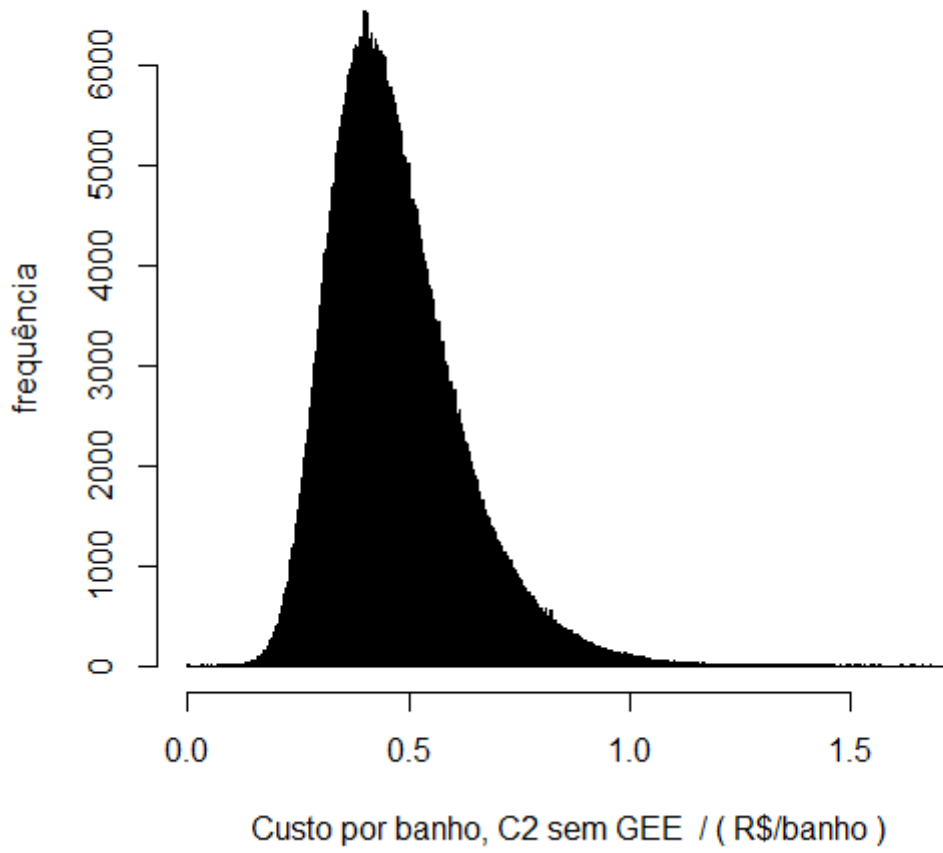




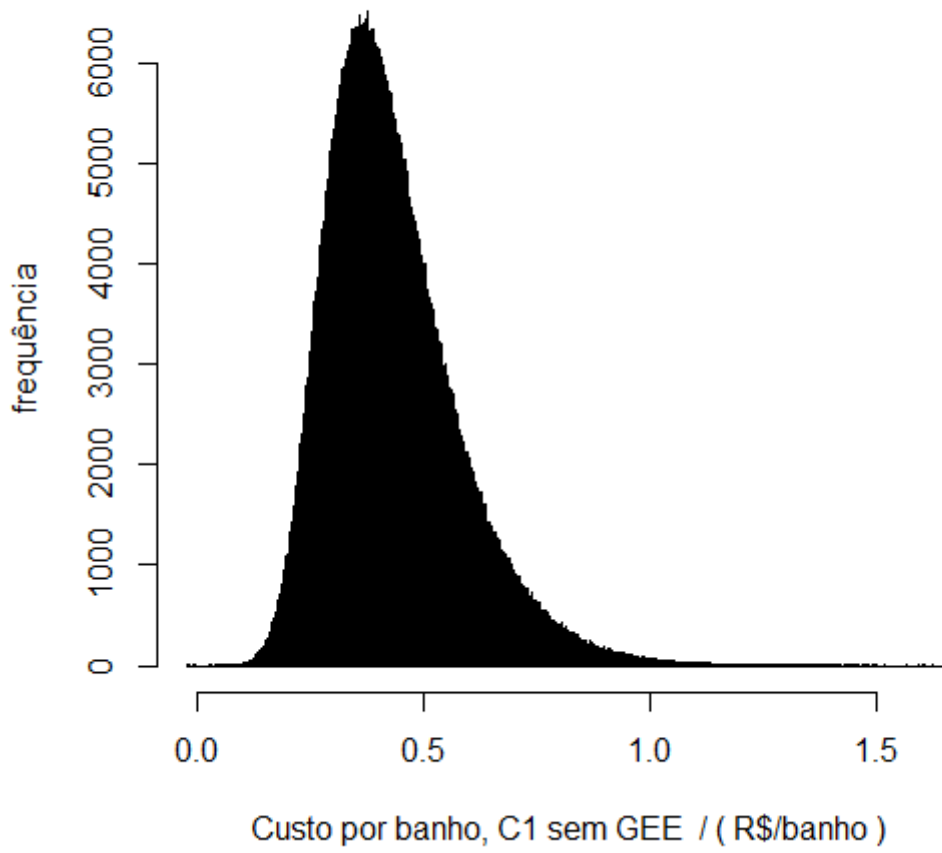
### Histograma da Custo por banho, C1 com GEE



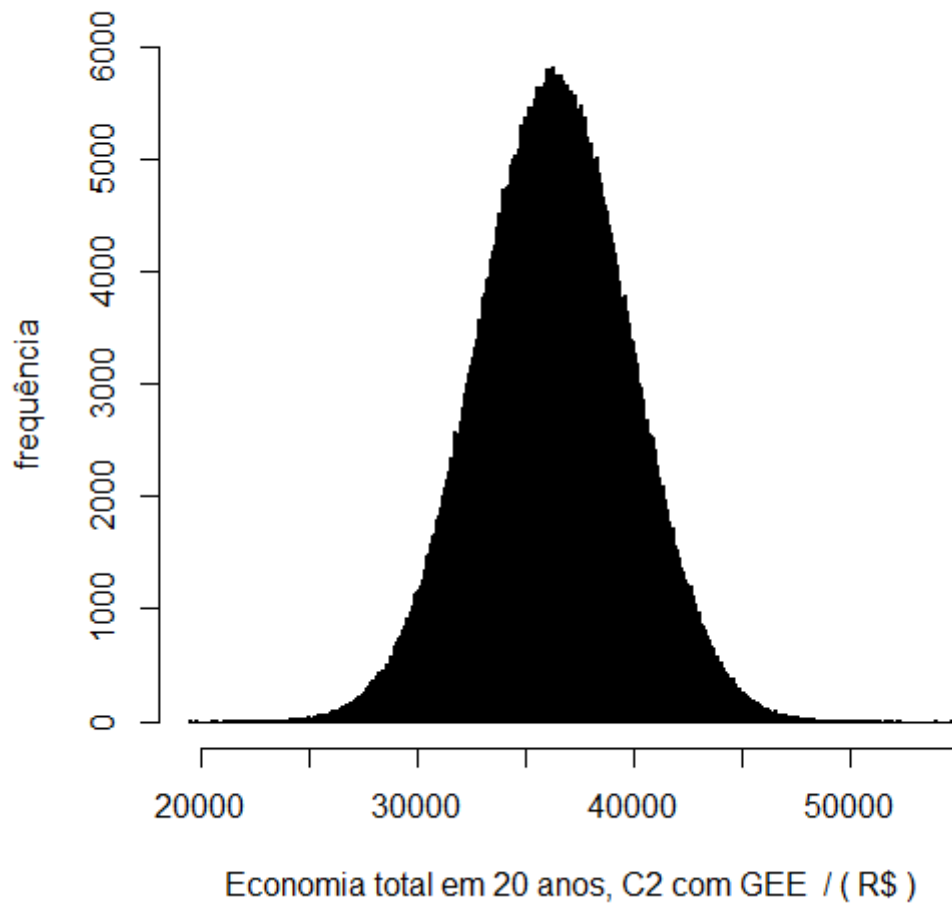
### Histograma da Custo por banho, C2 sem GEE



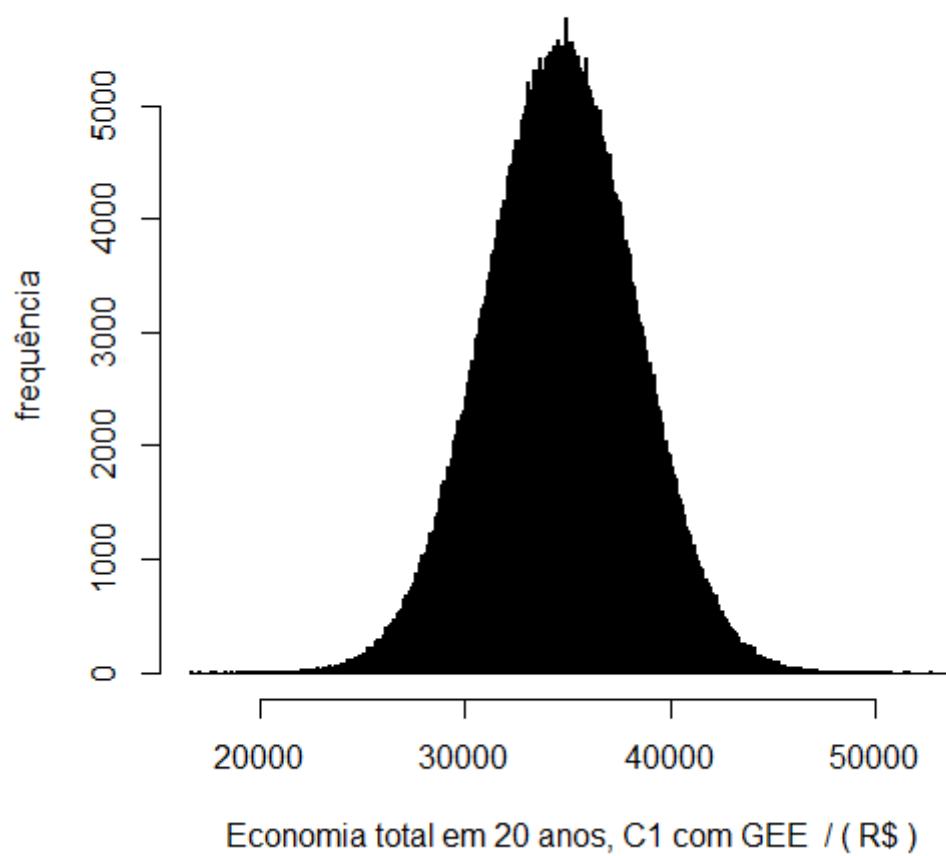
### Histograma da Custo por banho, C1 sem GEE



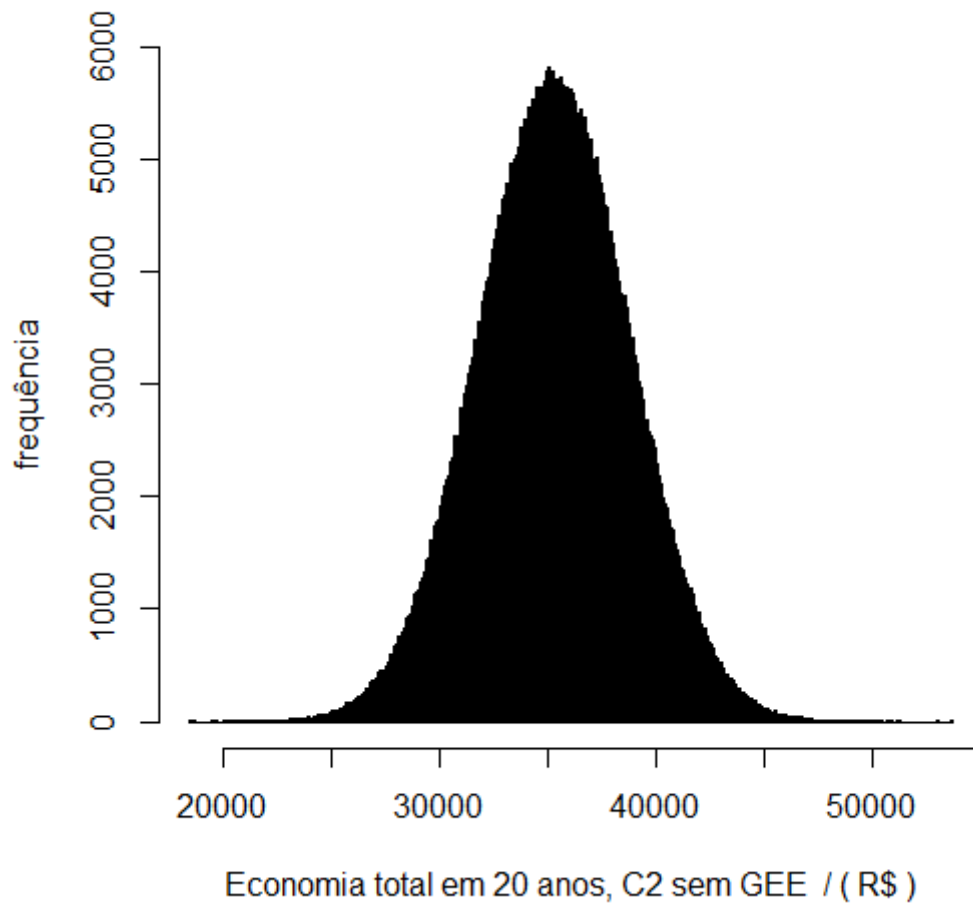
### Histograma da Economia total em 20 anos, C2 com GE



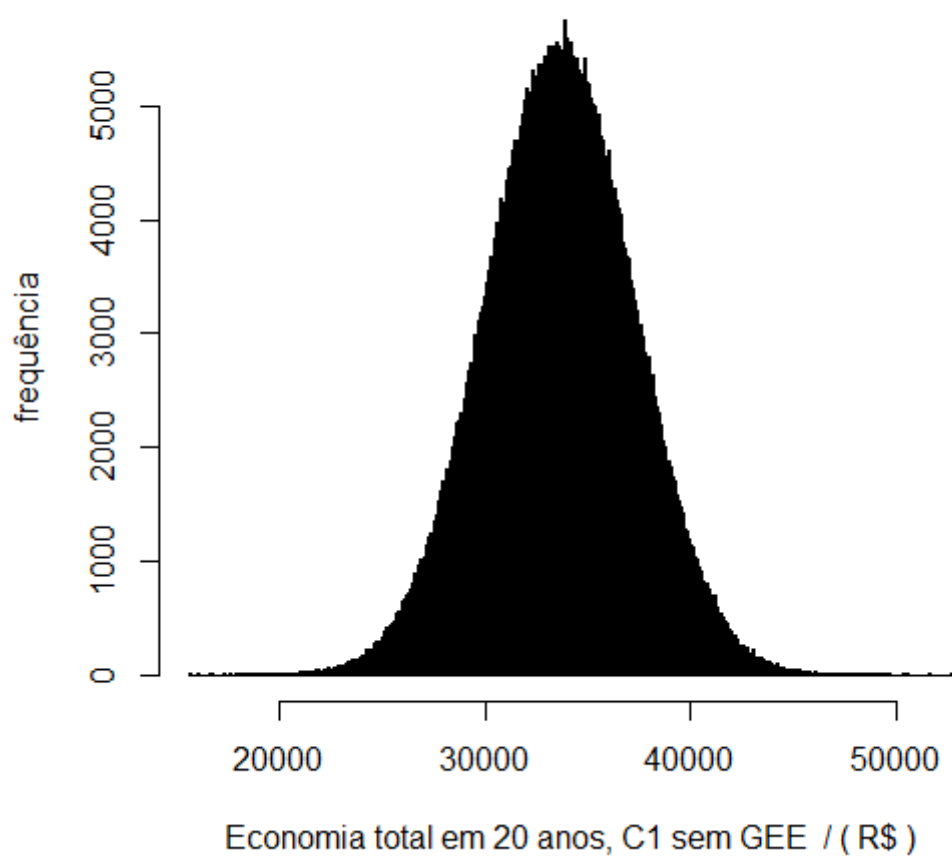
### Histograma da Economia total em 20 anos, C1 com GE



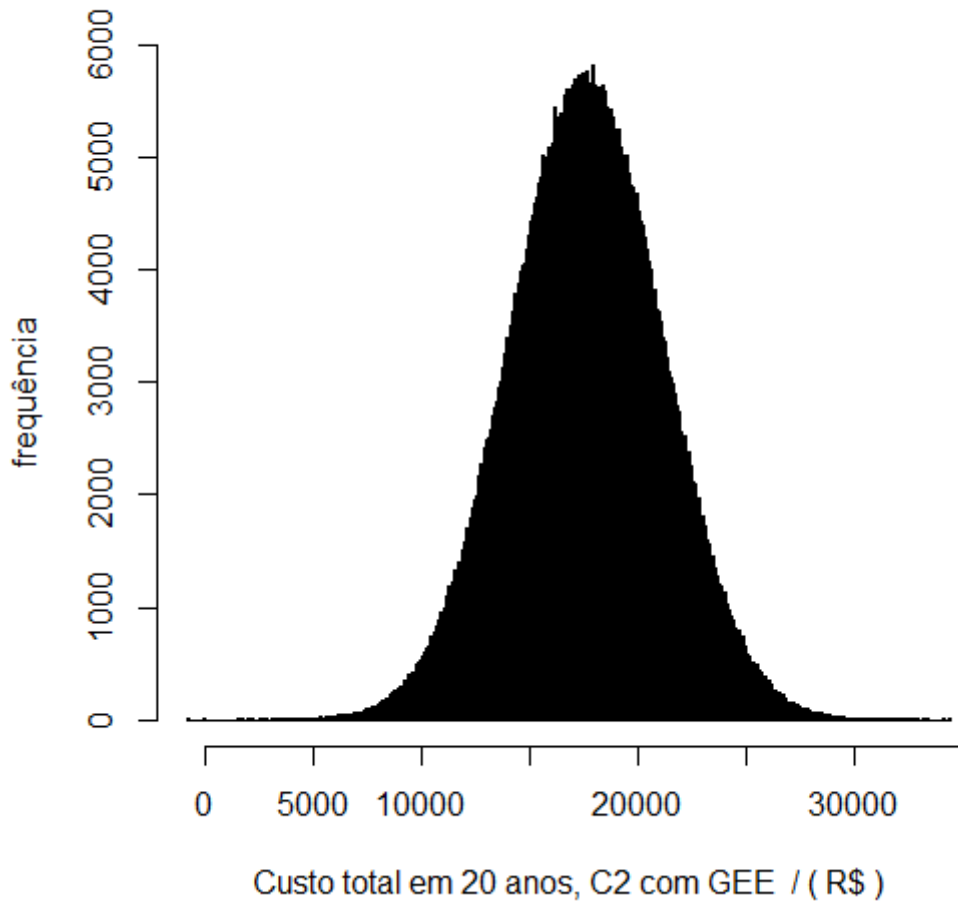
### Histograma da Economia total em 20 anos, C2 sem GE



## Histograma da Economia total em 20 anos, C1 sem GE

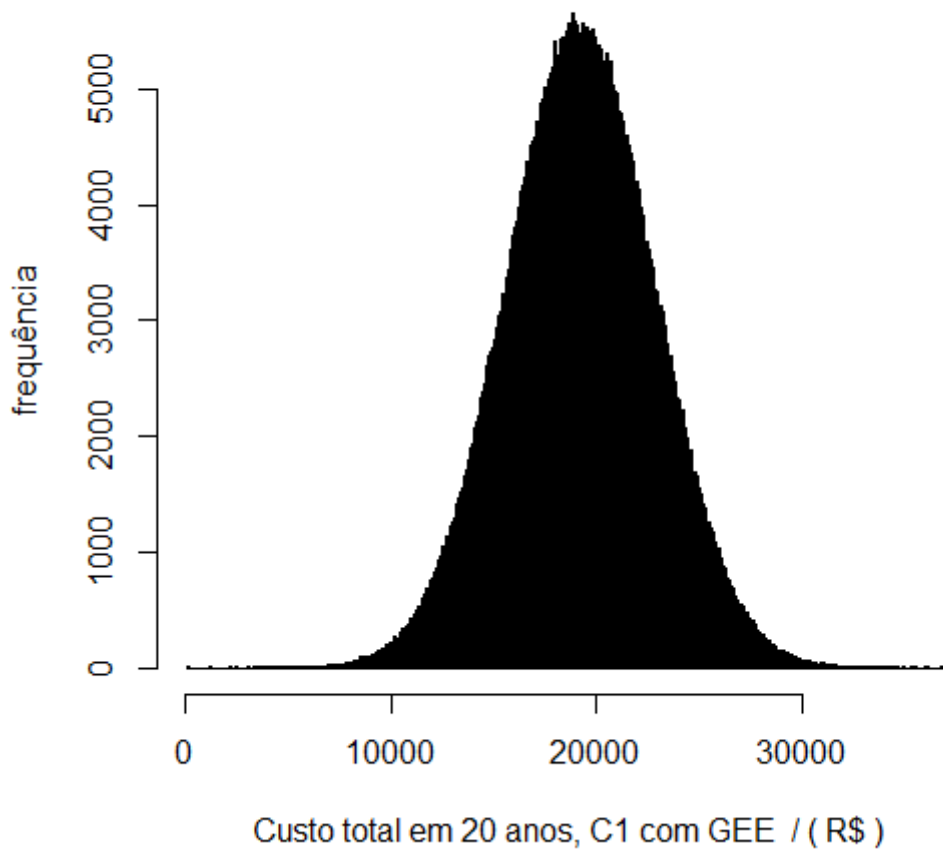


### Histograma da Custo total em 20 anos, C2 com GEE

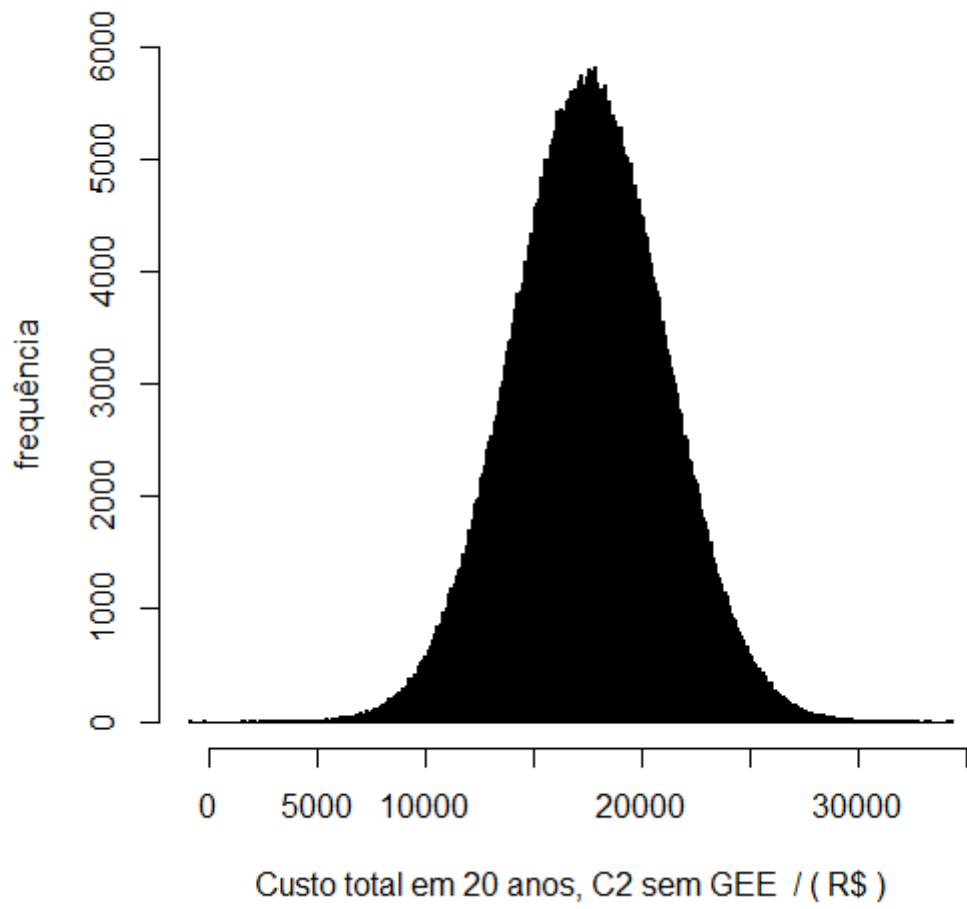




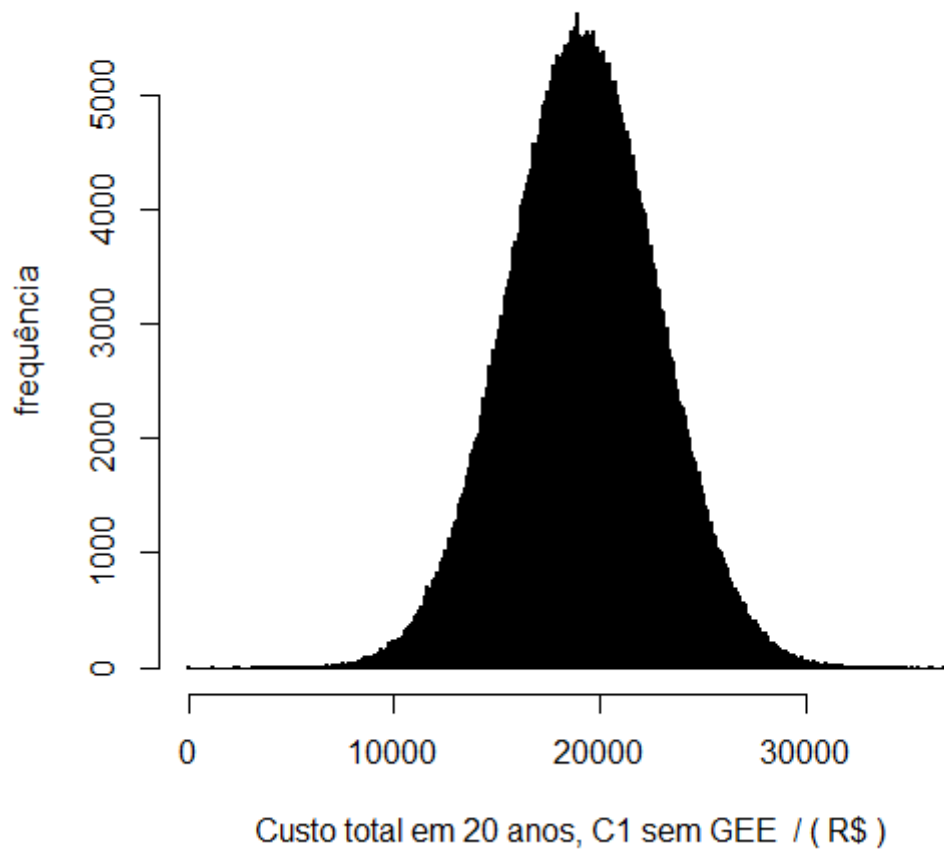
### Histograma da Custo total em 20 anos, C1 com GEE



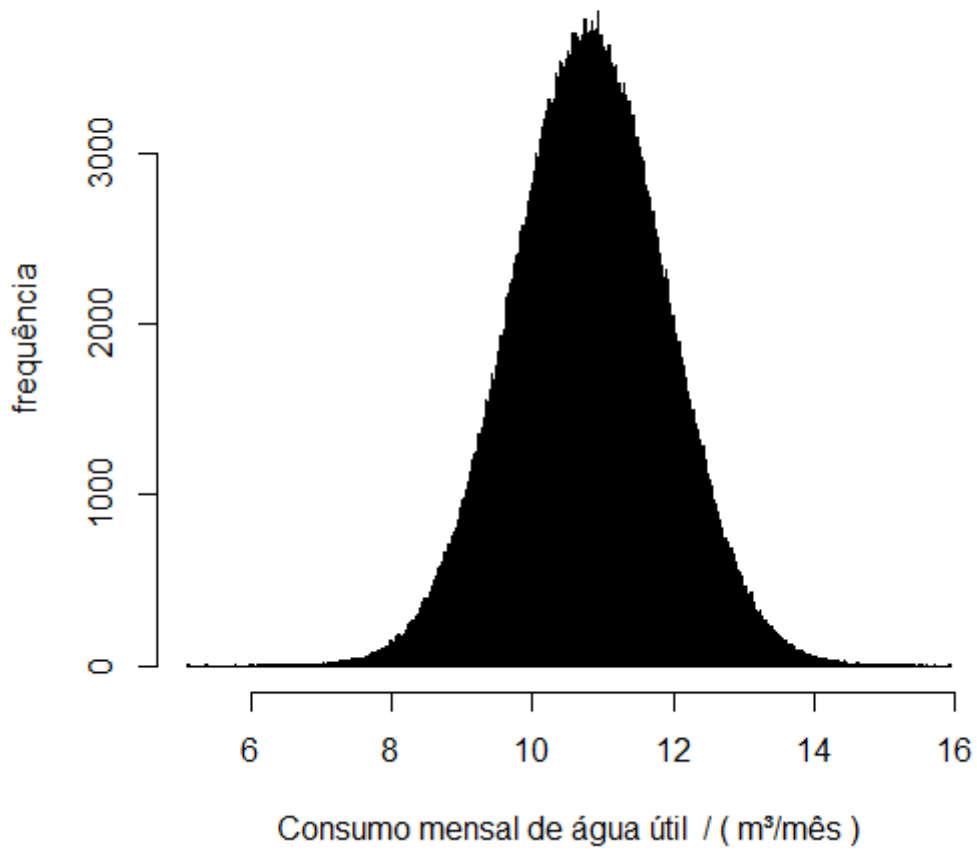
### Histograma da Custo total em 20 anos, C2 sem GEE



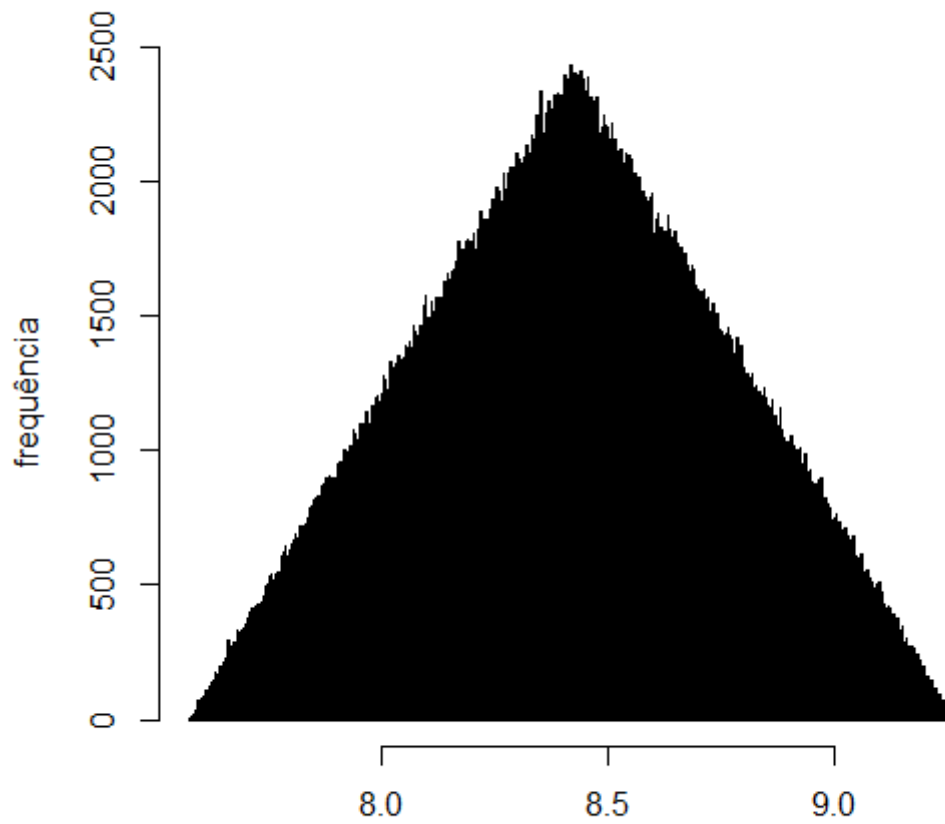
## Histograma da Custo total em 20 anos, C1 sem GEE



## Histograma da Consumo mensal de água útil

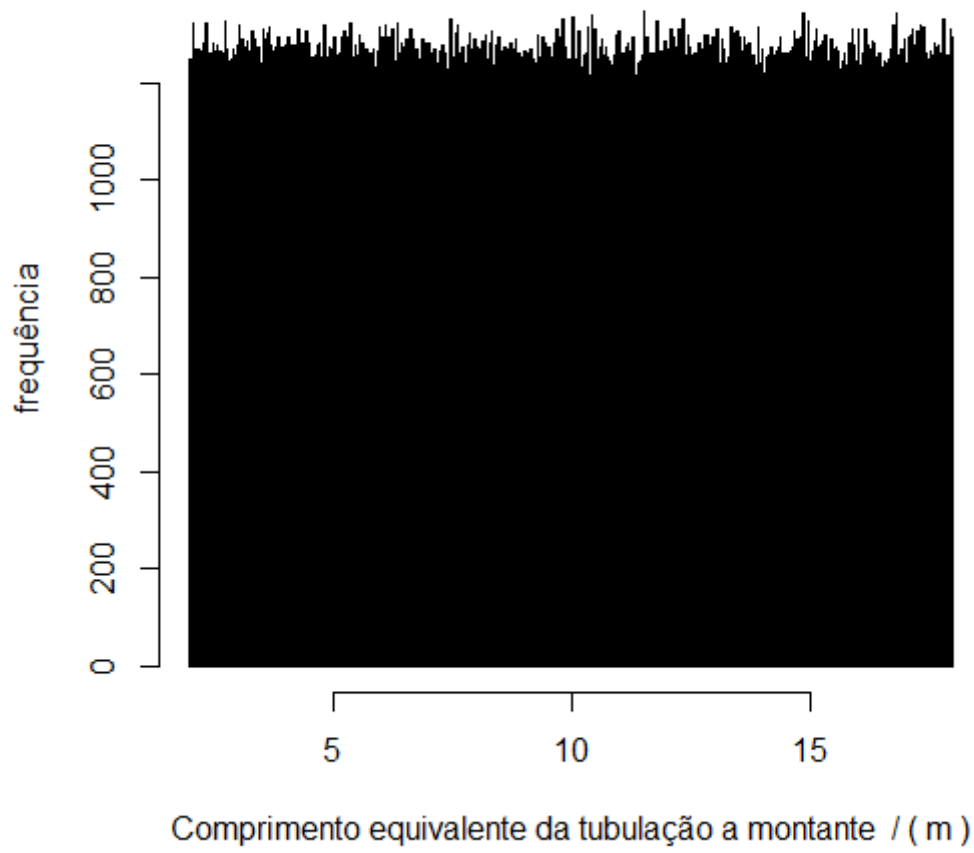


**1a Consumo mensal de energia com base num chuveiro €**

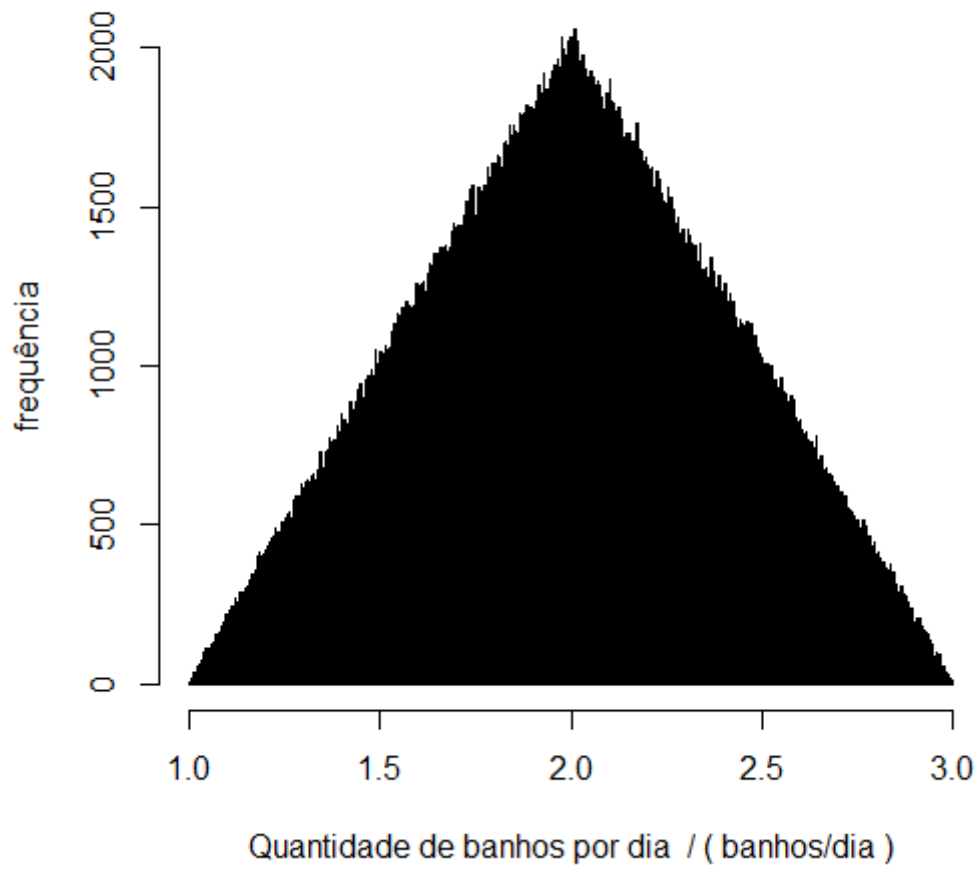


Consumo mensal de energia com base num chuveiro elétrico de 3,5 kW / ( k

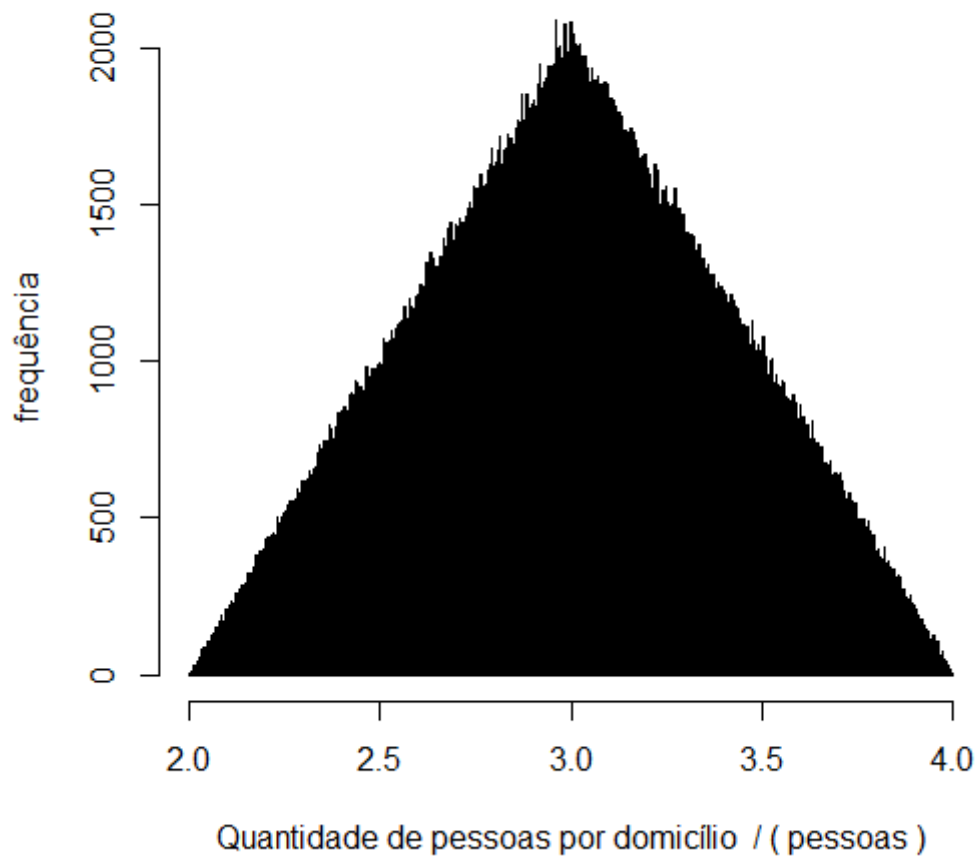
### Histograma da Comprimento equivalente da tubulação a montante



## Histograma da Quantidade de banhos por dia

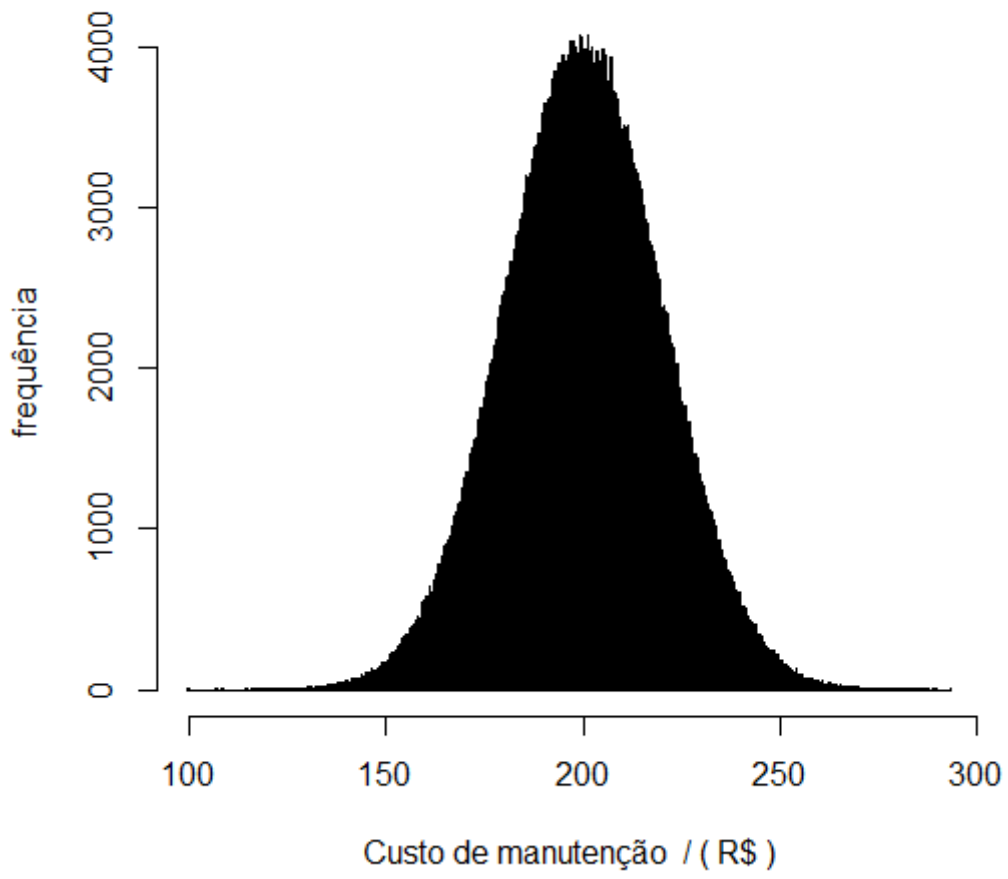


## Histograma da Quantidade de pessoas por domicílio

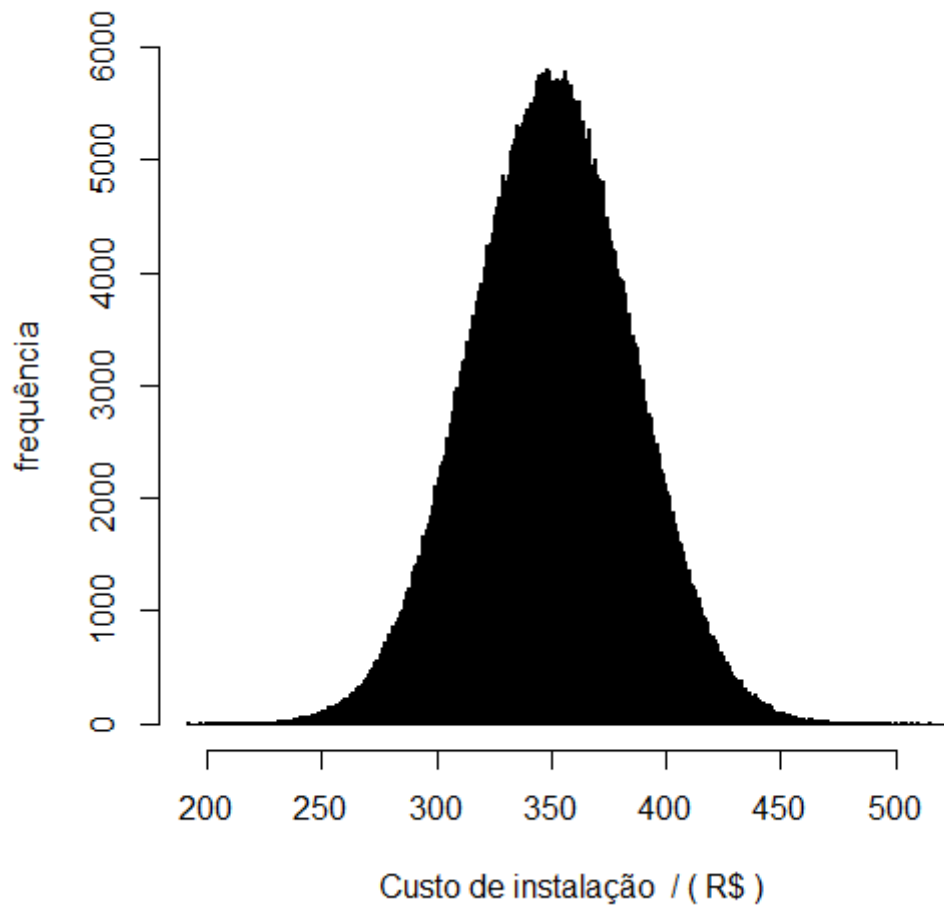




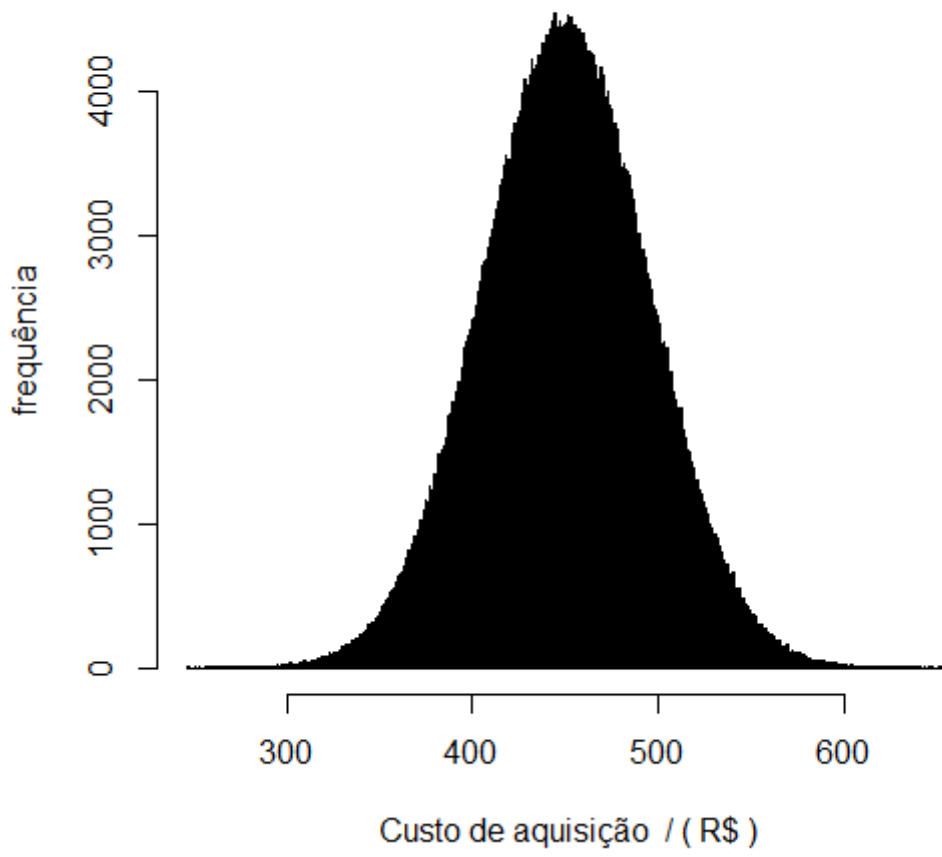
### Histograma da Custo de manutenção



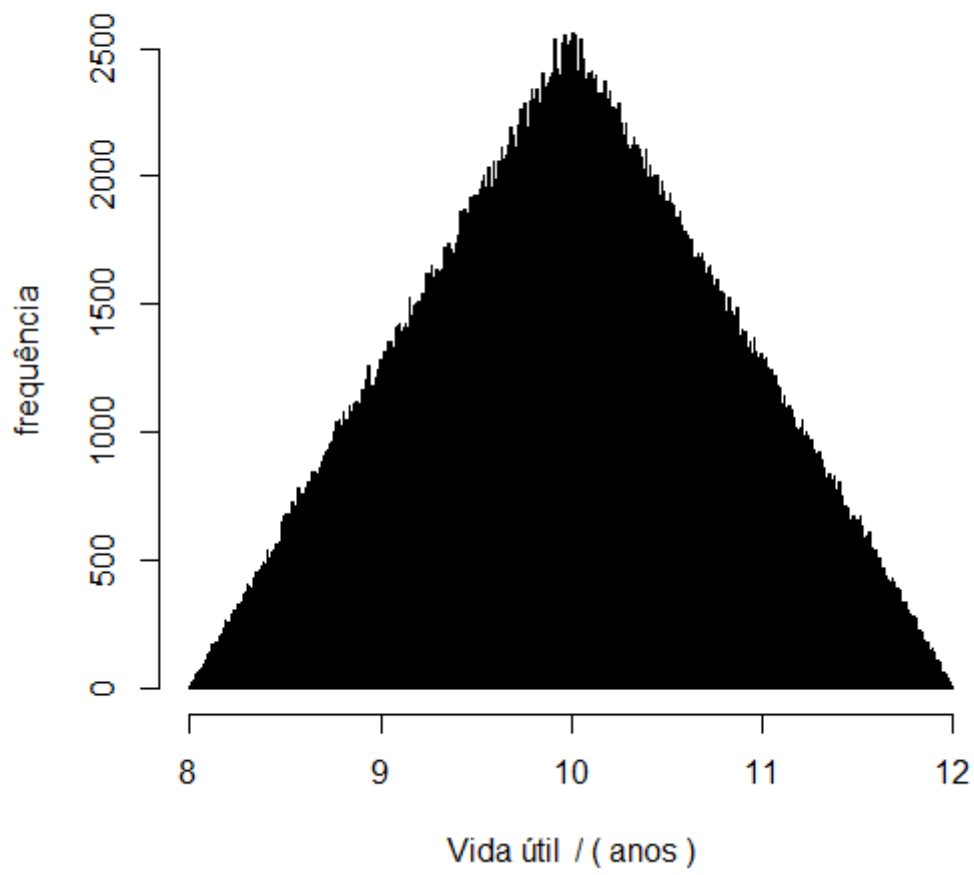
### Histograma da Custo de instalação



## Histograma da Custo de aquisição

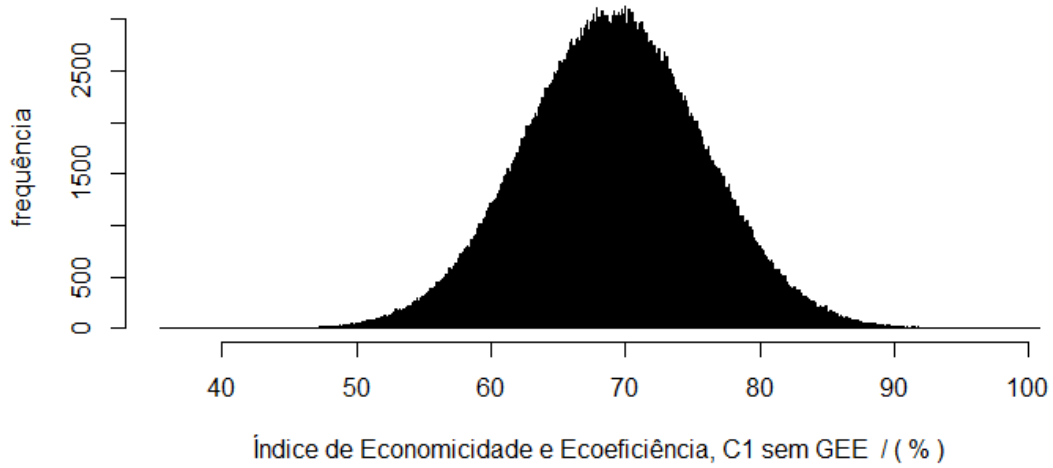


### Histograma da Vida útil

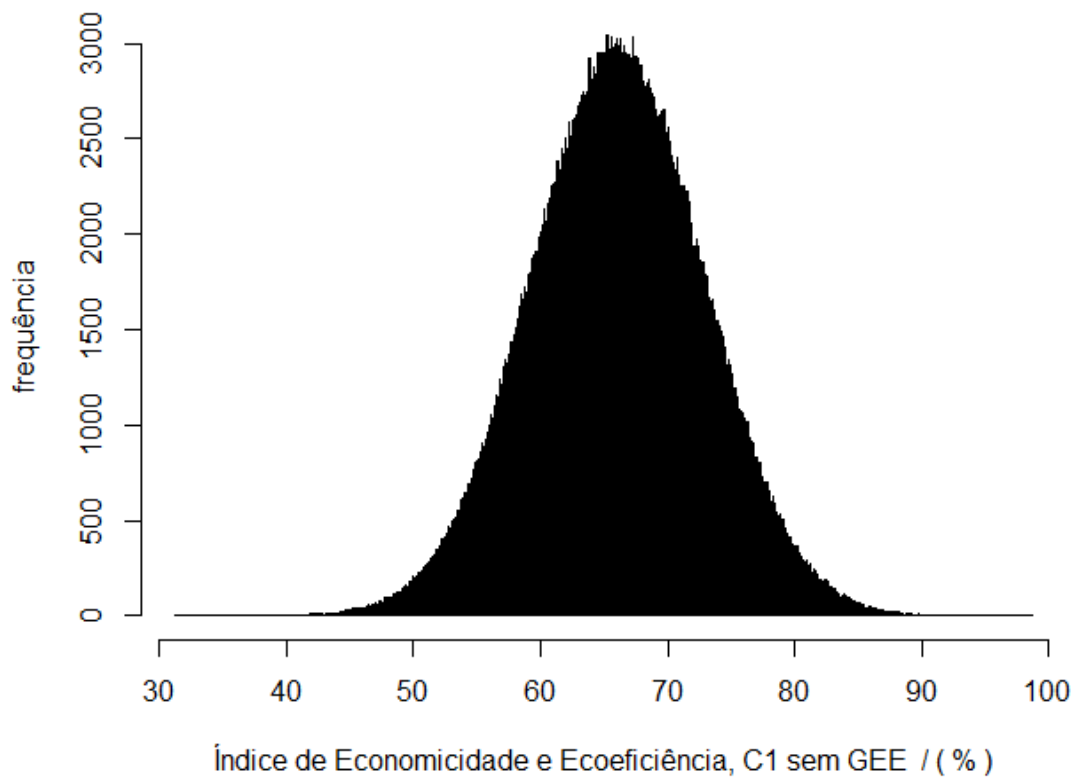


#### 4. ASBC PP

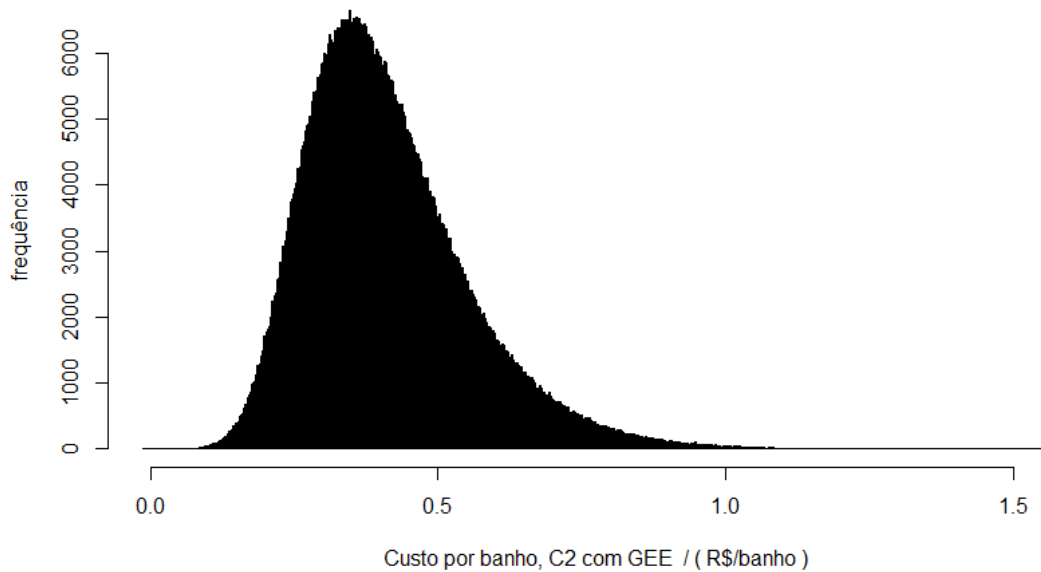
**Histograma da Índice de Economicidade e Ecoeficiência, C1 sem GEE**



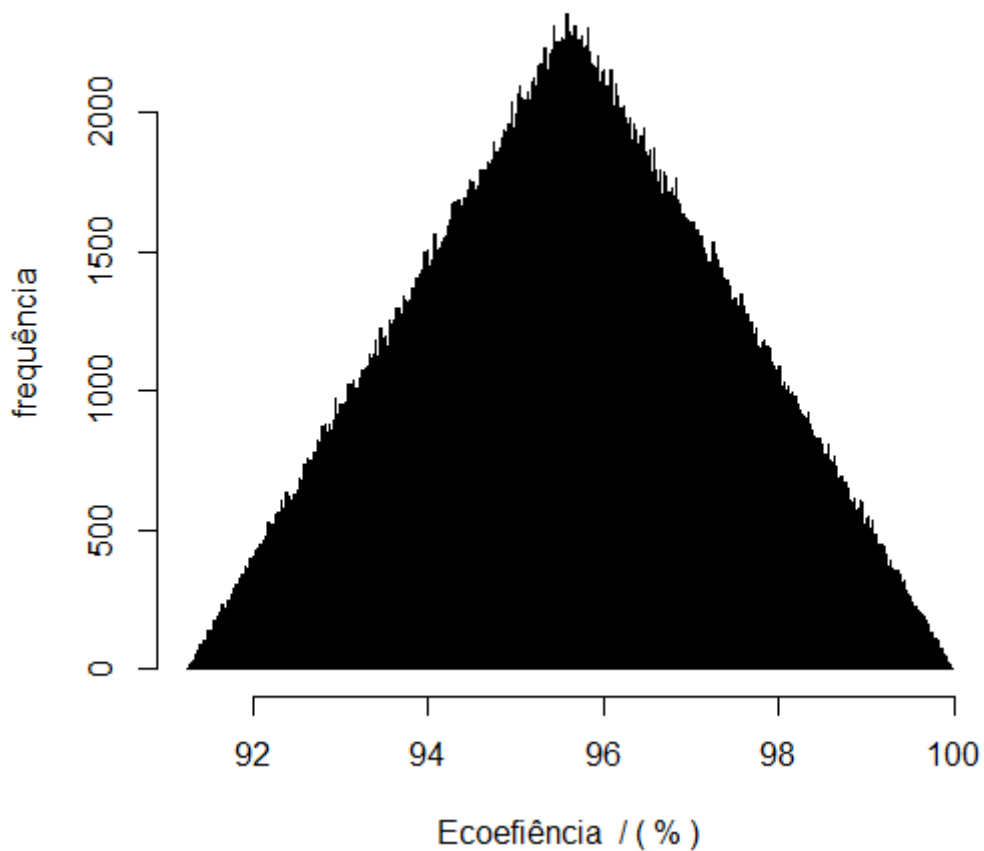
**Histograma da Índice de Economicidade e Ecoeficiência, C1 sem GI**



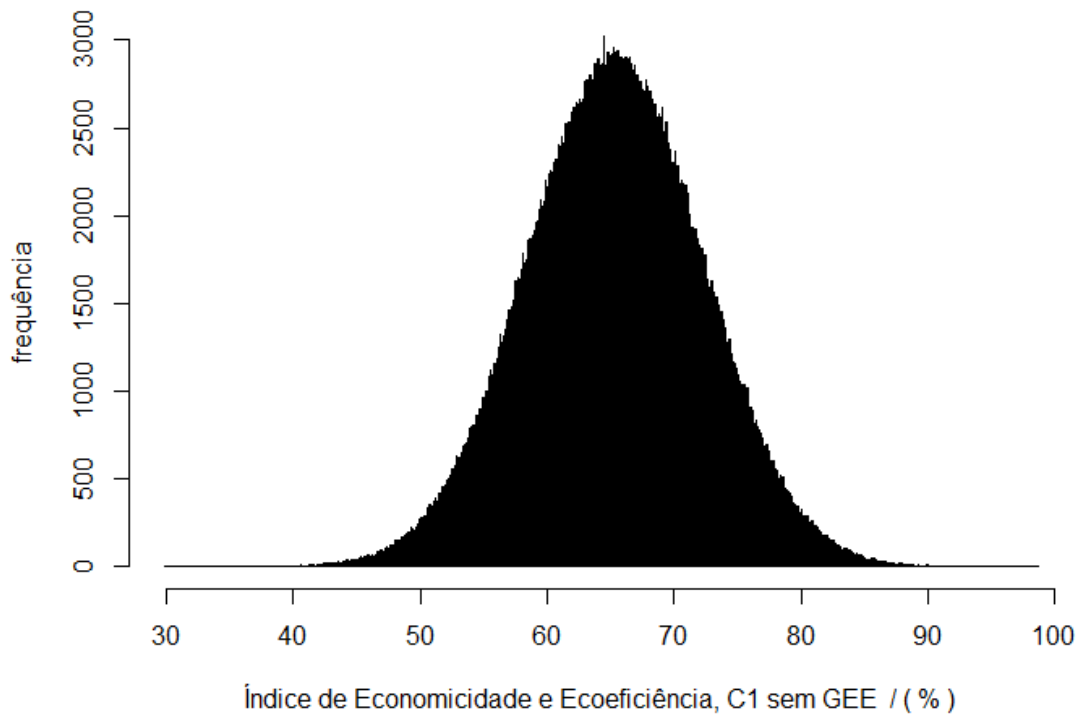
**Histograma da Custo por banho, C2 com GEE**



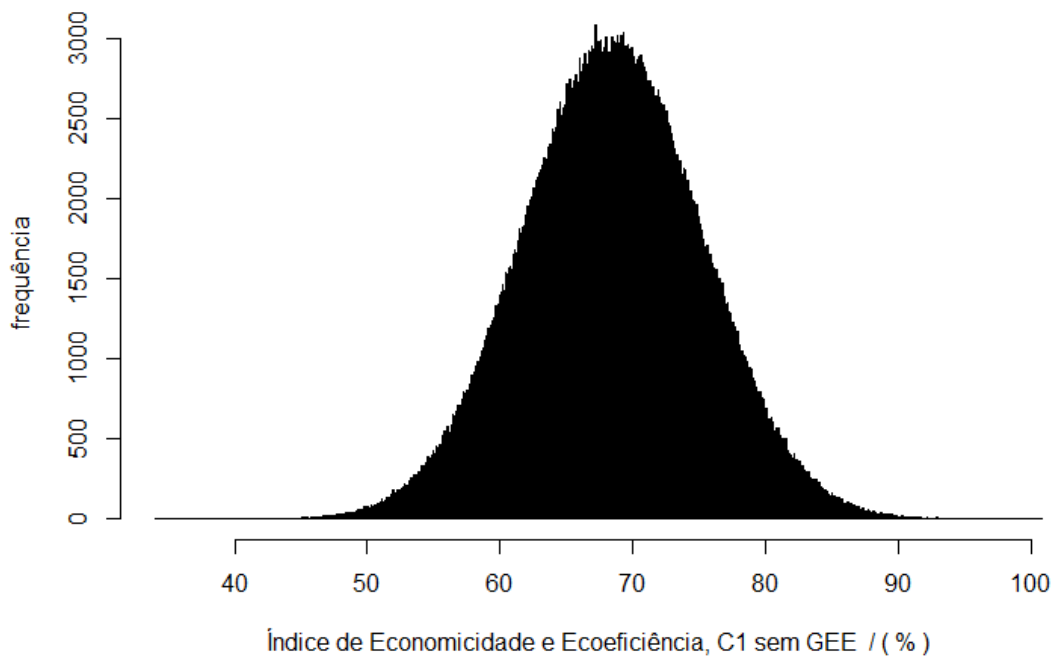
**Histograma da Ecoeficiência**



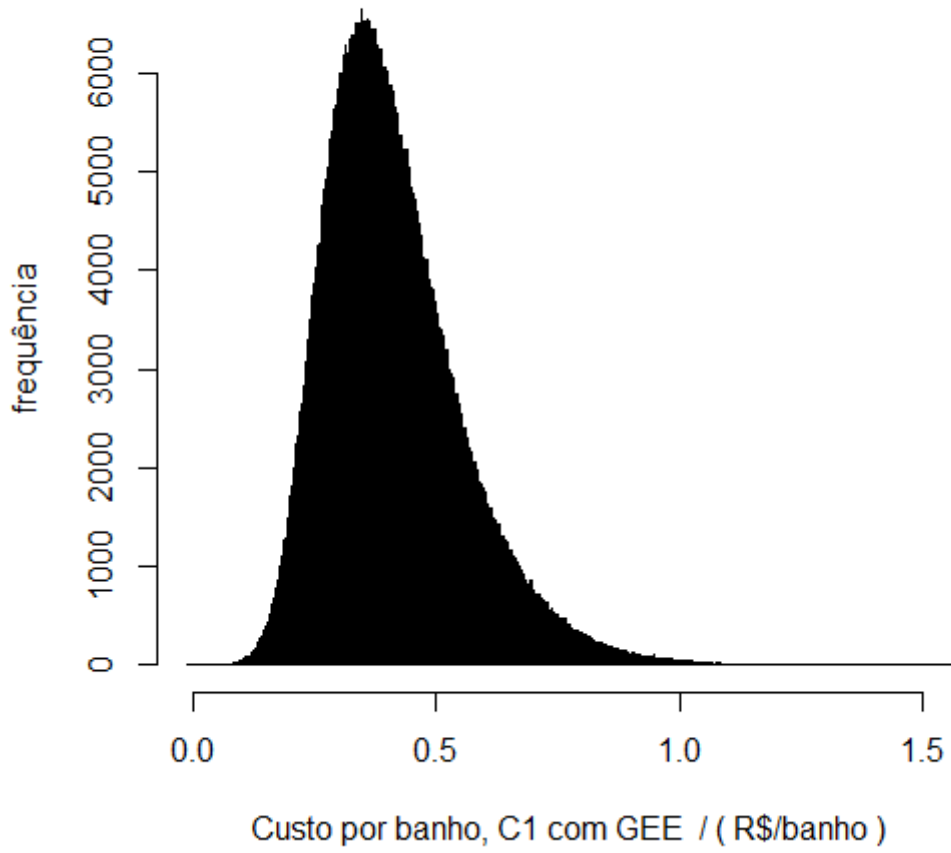
**Histograma da Índice de Economicidade e Ecoeficiência, C1 sem GEE**



**Histograma da Índice de Economicidade e Ecoeficiência, C1 sem GEE**

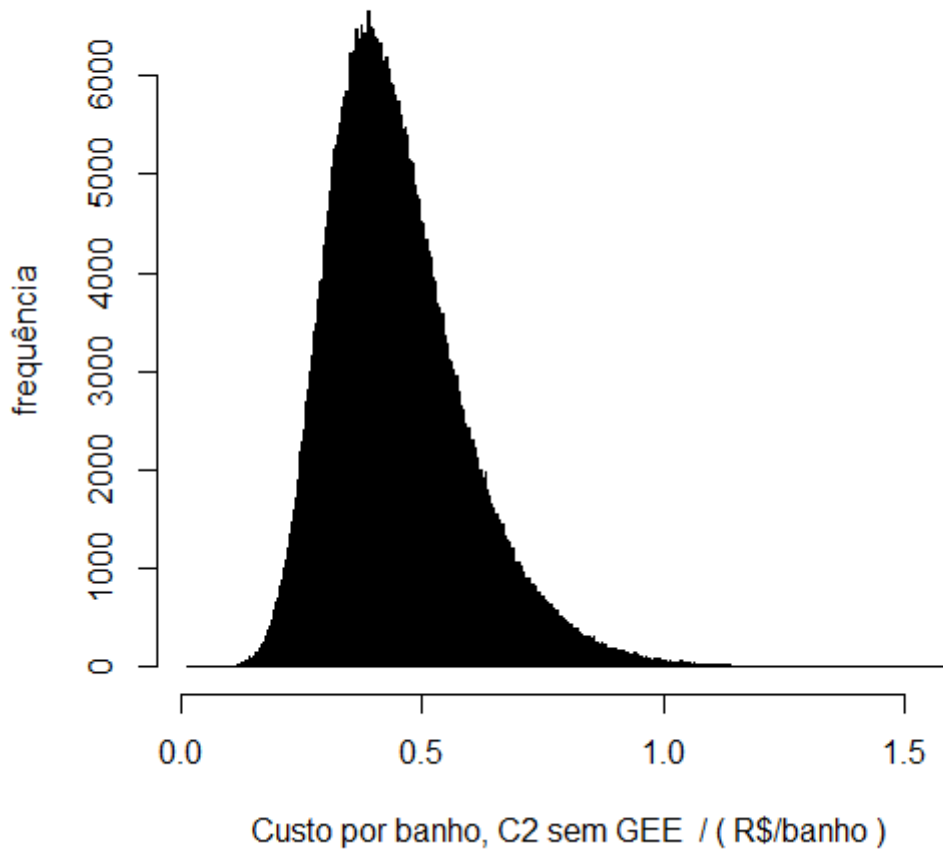


### Histograma da Custo por banho, C1 com GEE

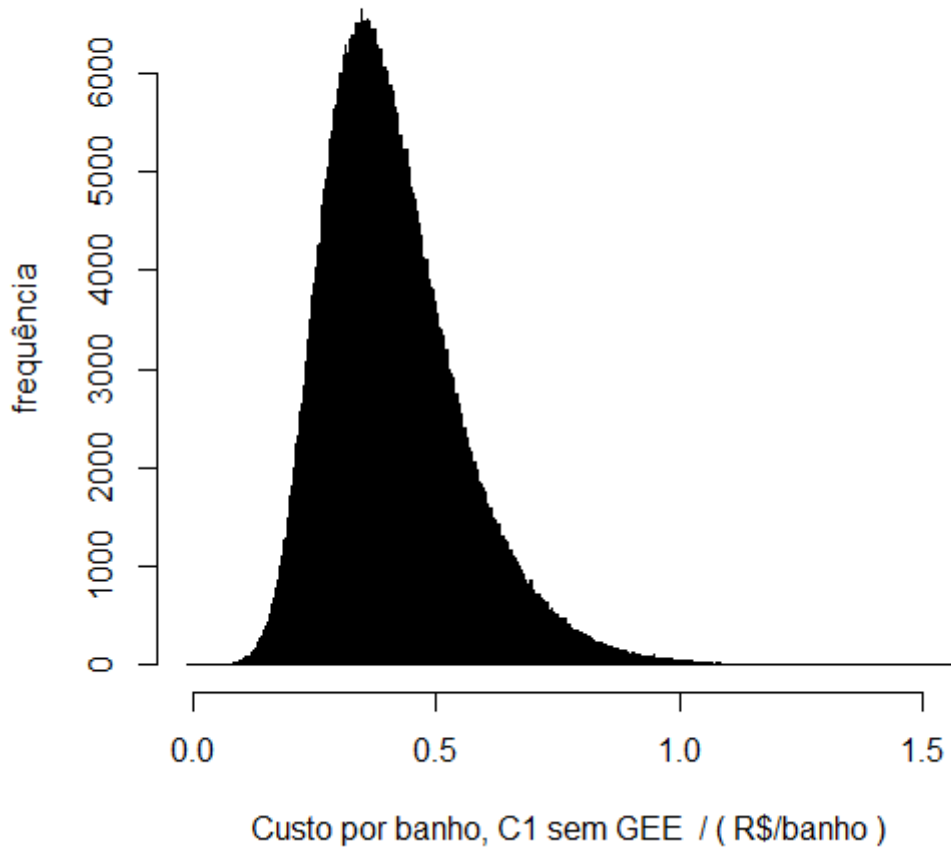




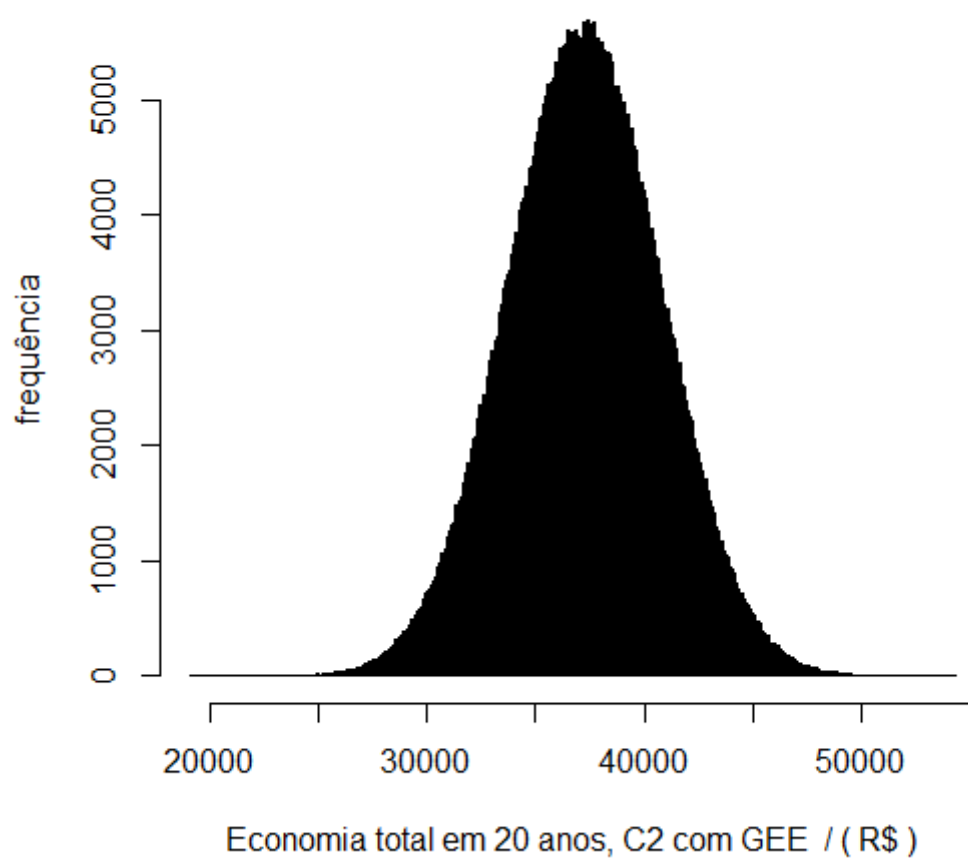
### Histograma da Custo por banho, C2 sem GEE



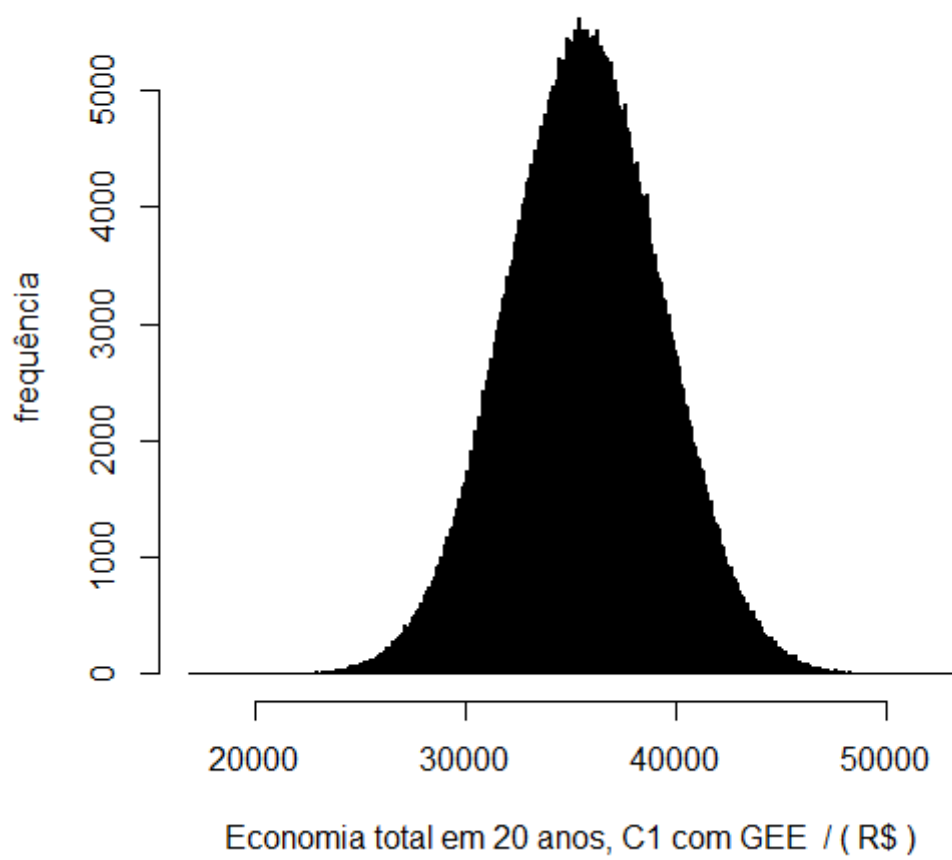
### Histograma da Custo por banho, C1 sem GEE



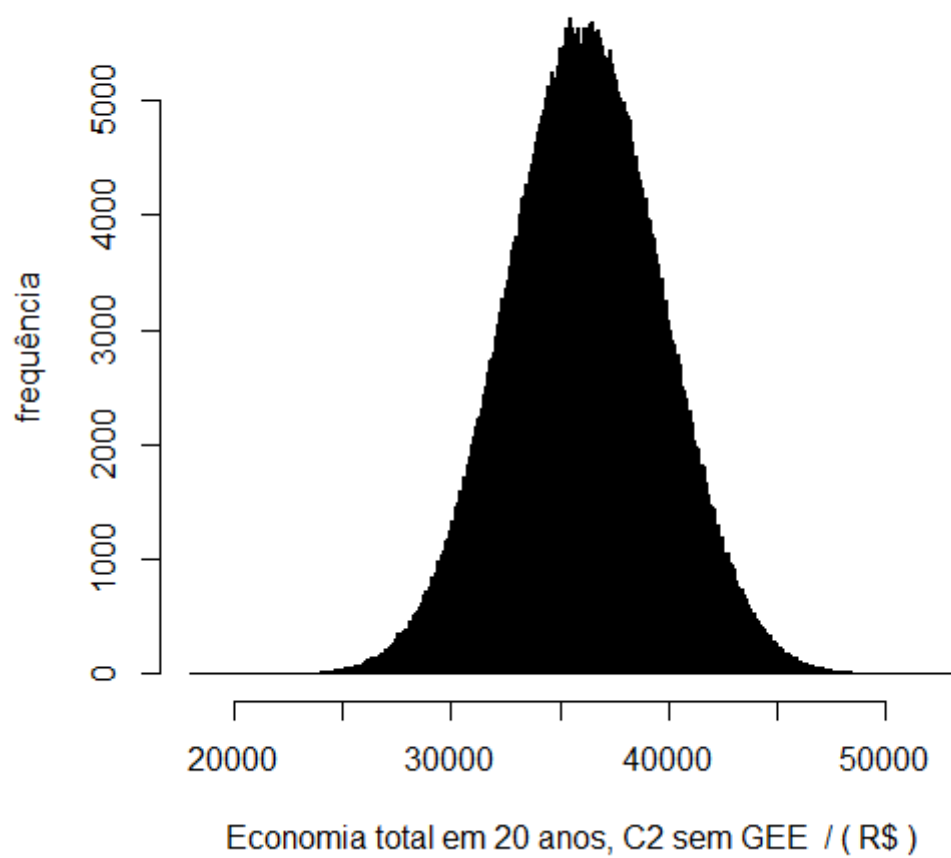
### Histograma da Economia total em 20 anos, C2 com GE



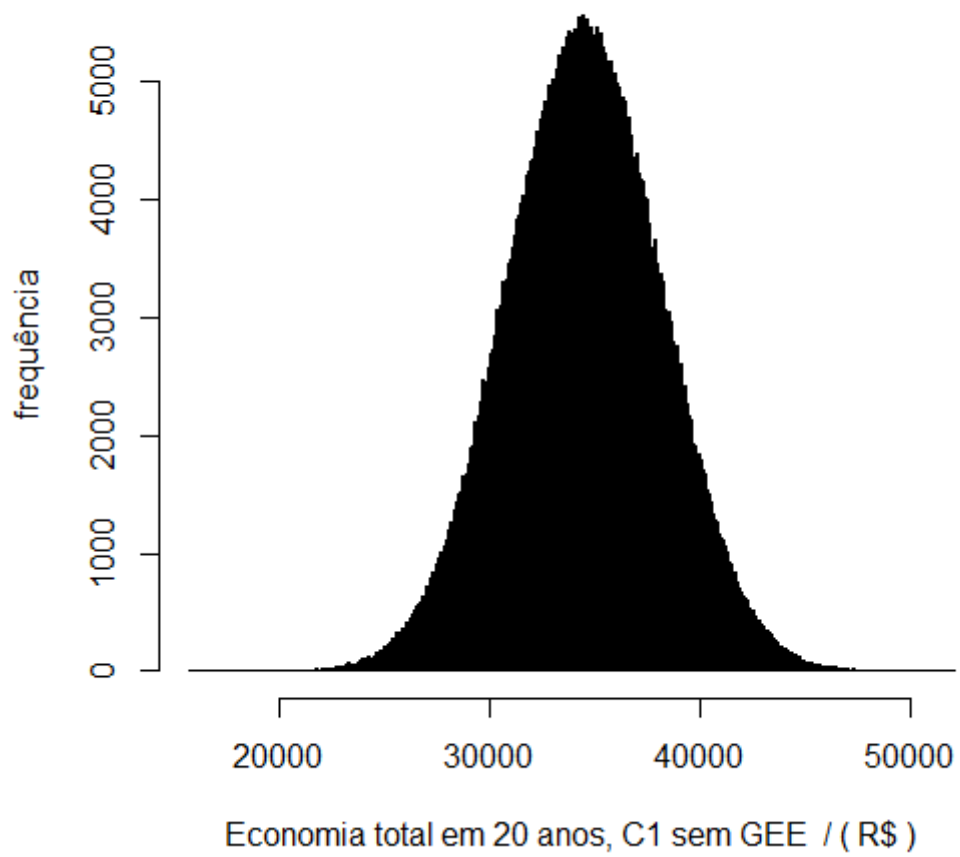
### Histograma da Economia total em 20 anos, C1 com GE



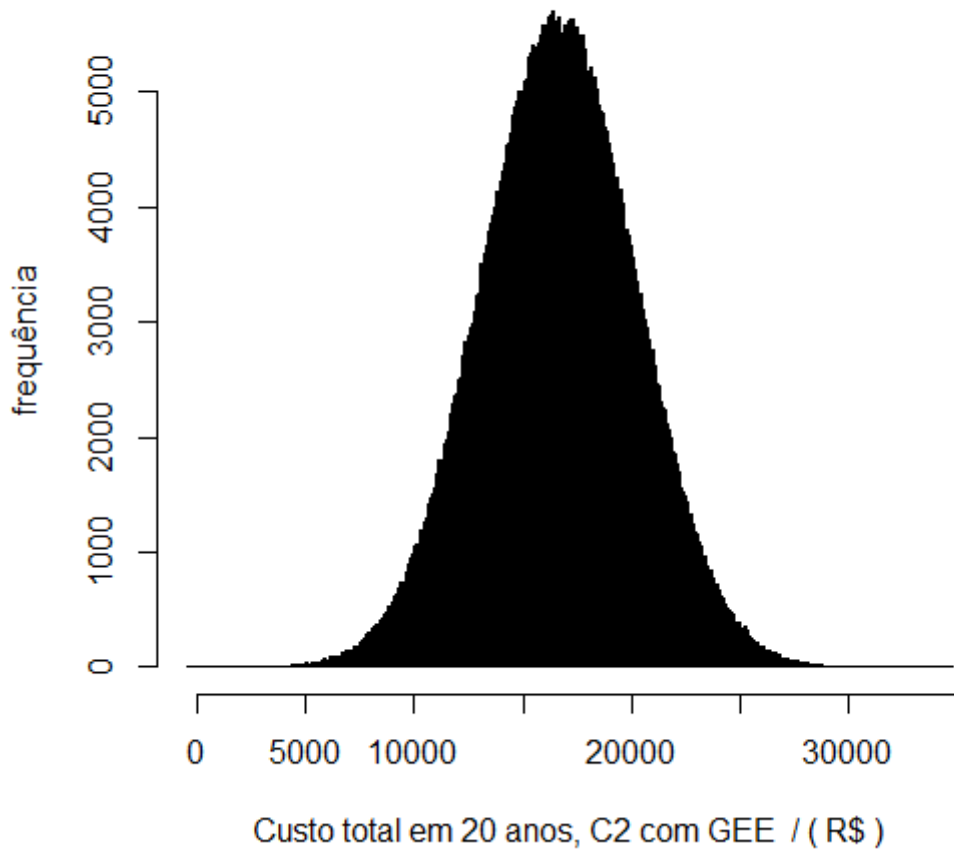
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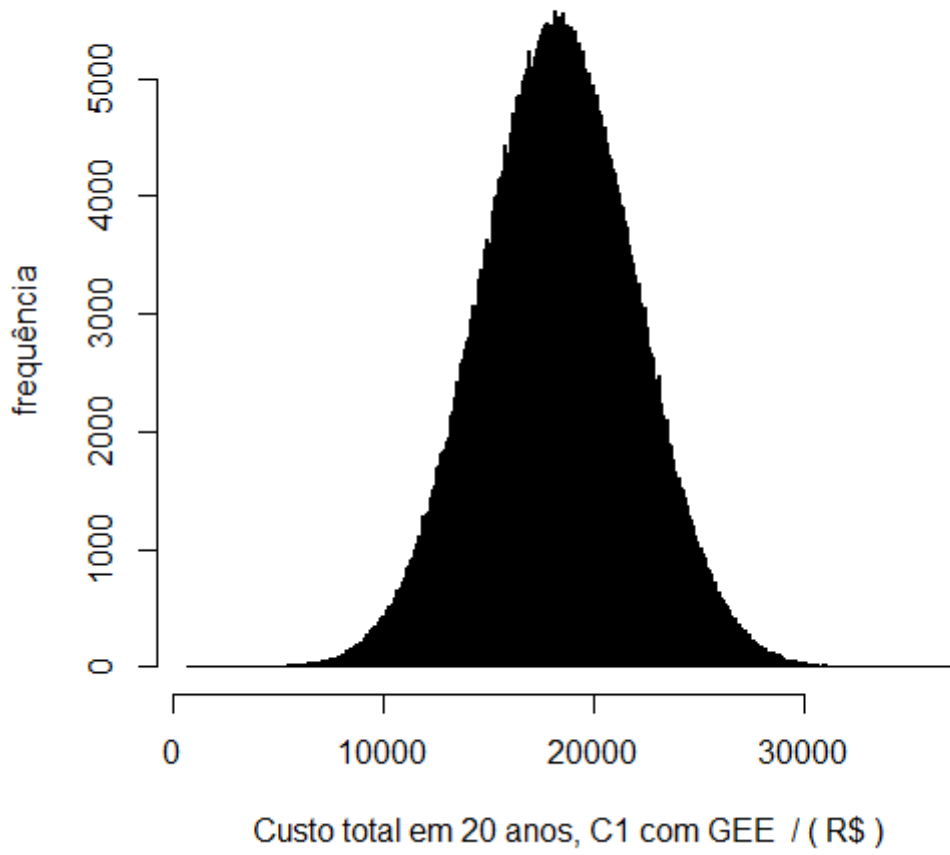
## Histograma da Economia total em 20 anos, C1 sem GE



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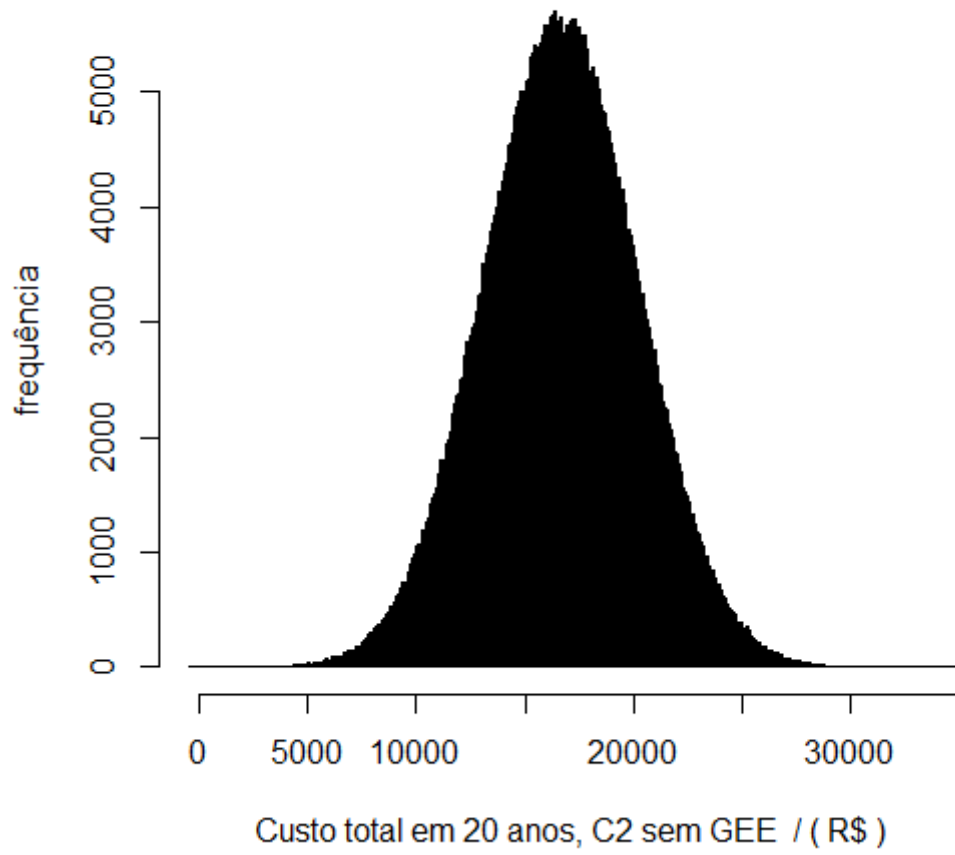


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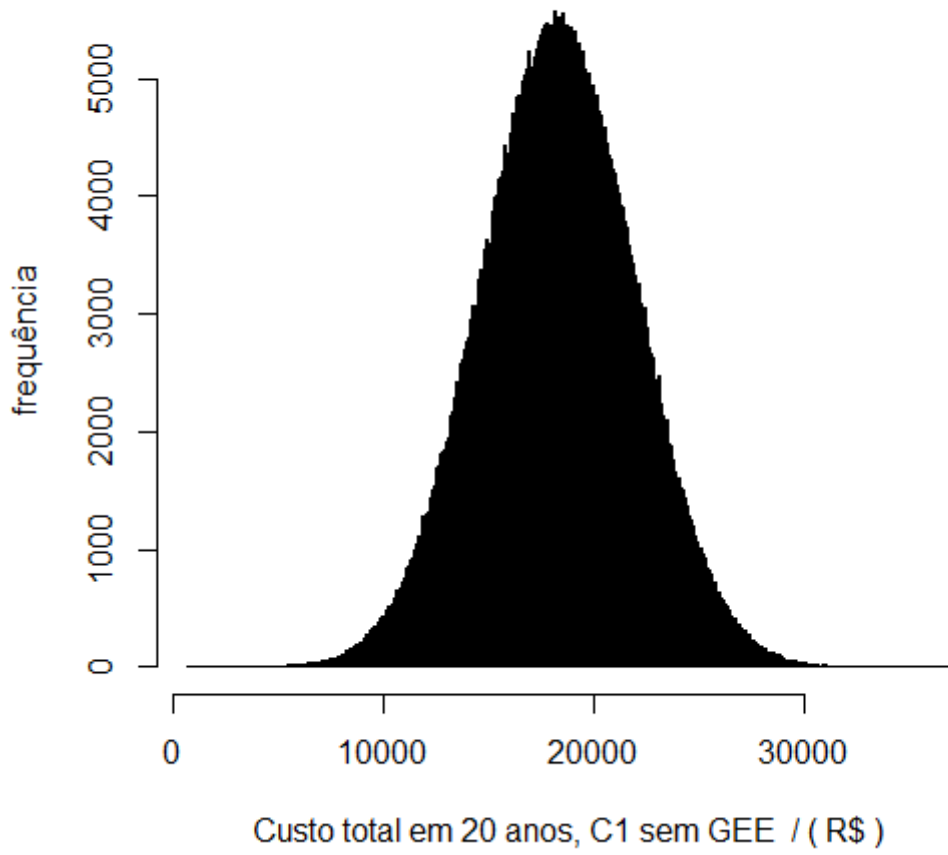




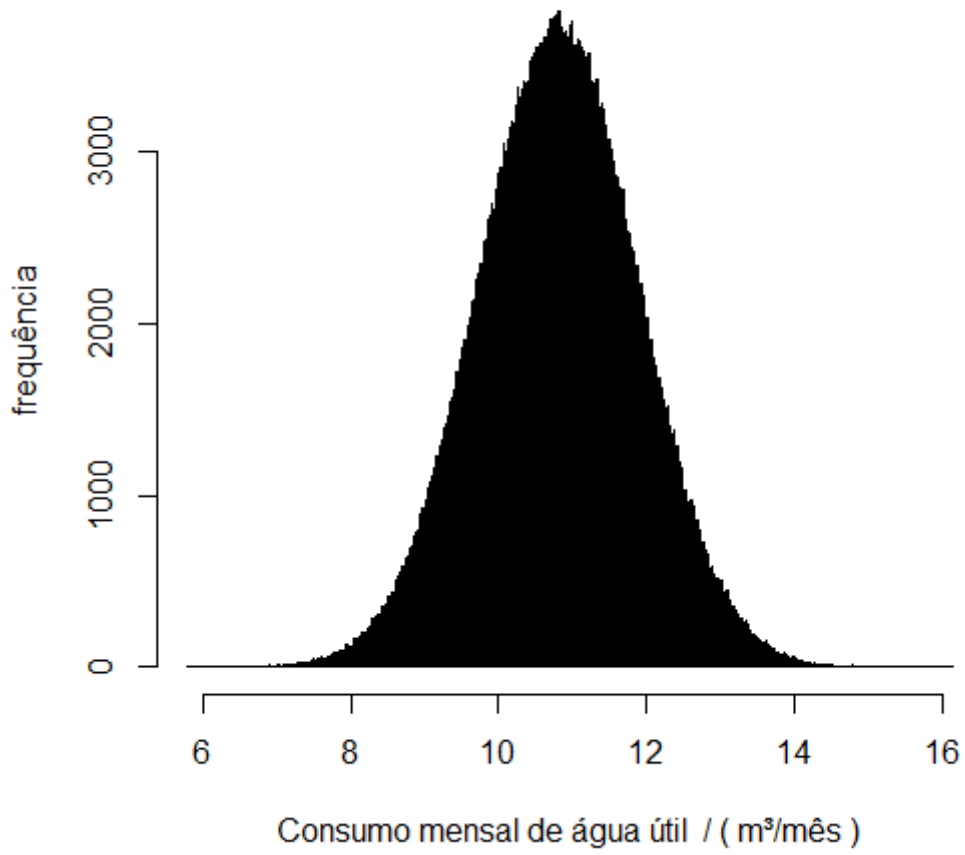
### Histograma da Custo total em 20 anos, C2 sem GEE



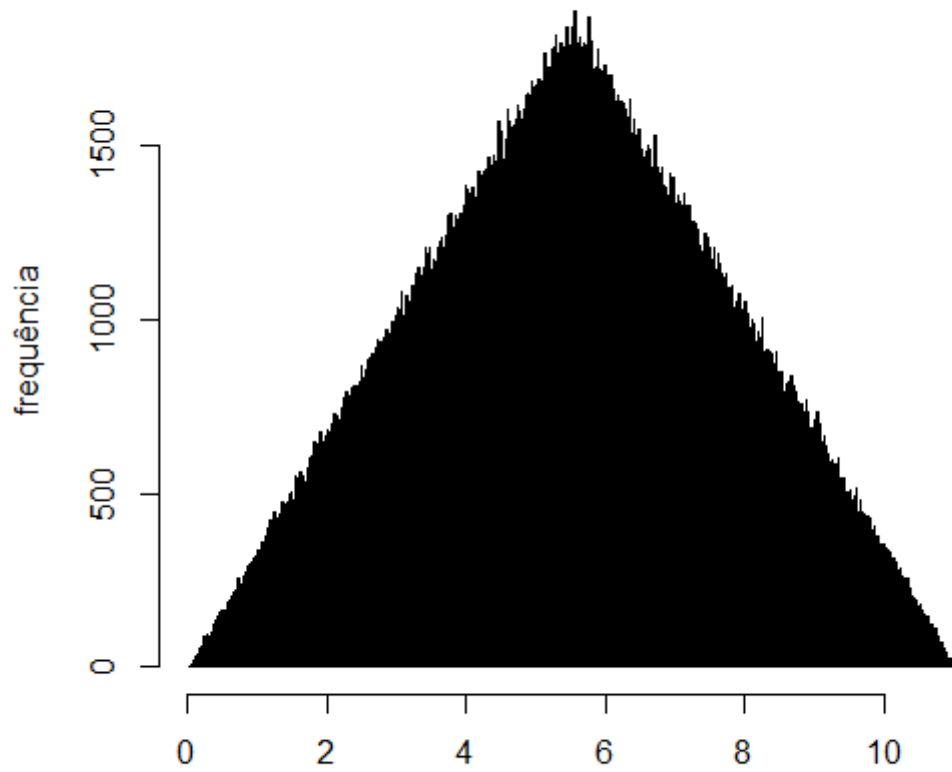
### Histograma da Custo total em 20 anos, C1 sem GEE



## Histograma da Consumo mensal de água útil

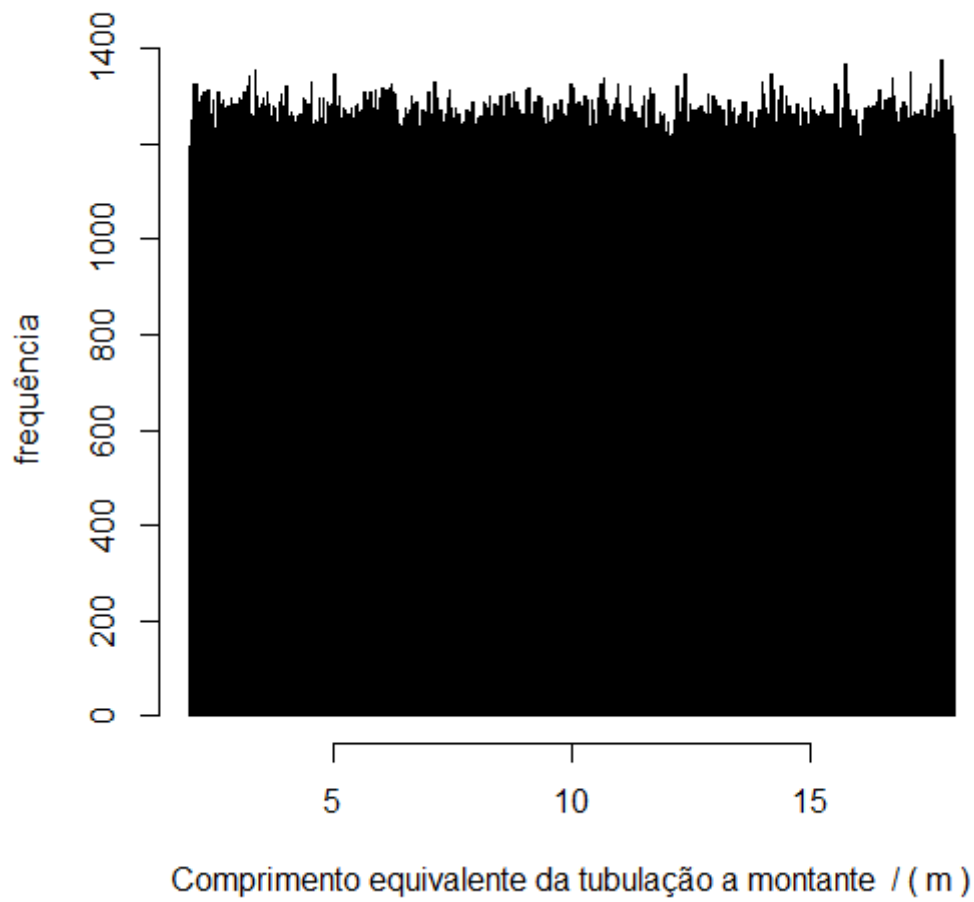


**1a Consumo mensal de energia com base num chuveiro e**

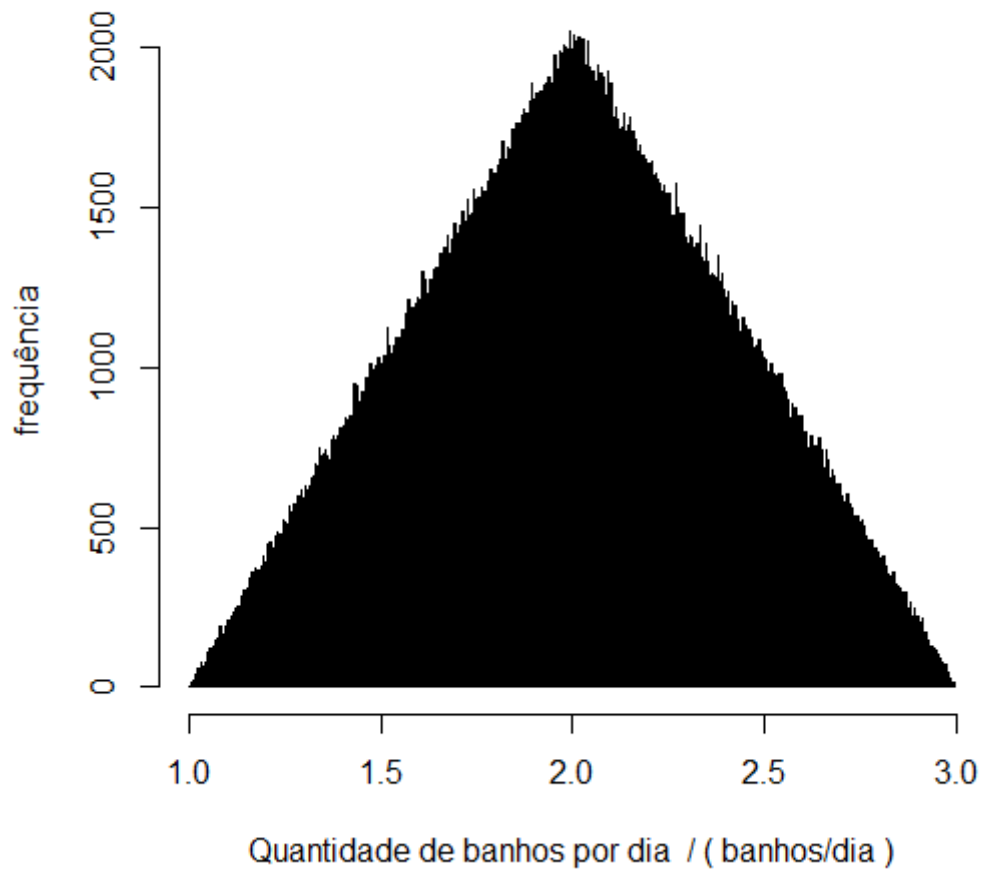


Consumo mensal de energia com base num chuveiro elétrico de 3,5 kW / ( k

### istograma da Comprimento equivalente da tubulação a mo



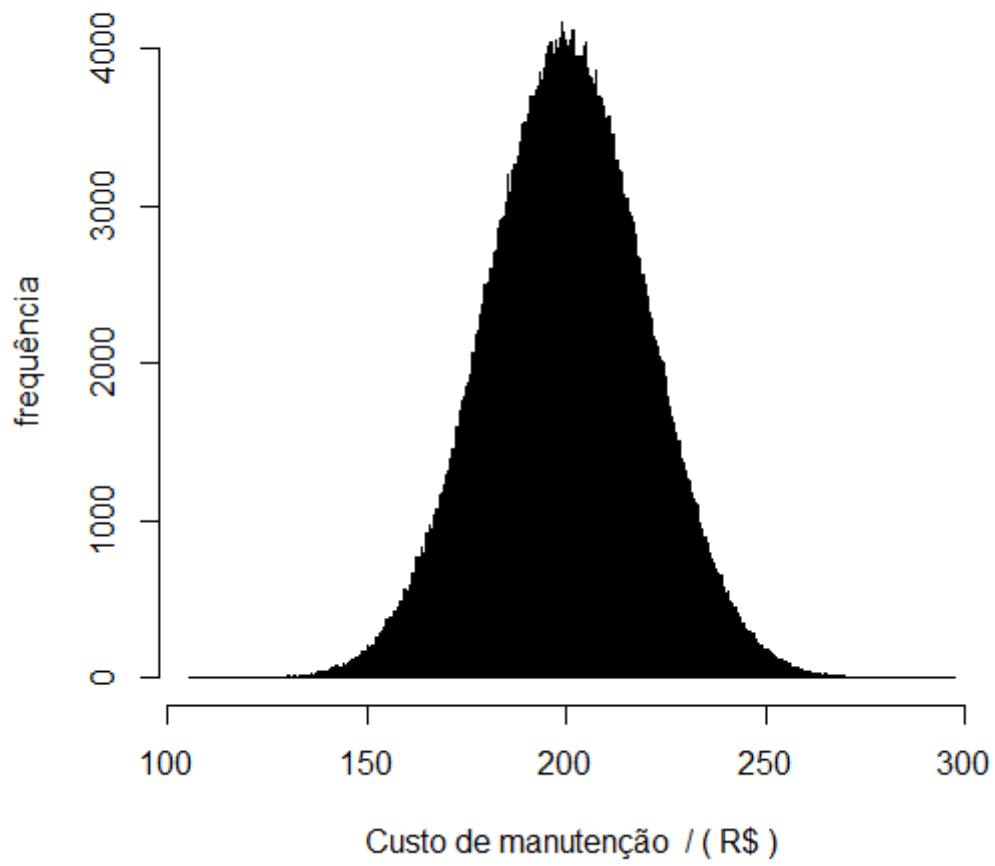
## Histograma da Quantidade de banhos por dia



## Histograma da Quantidade de pessoas por domicílio

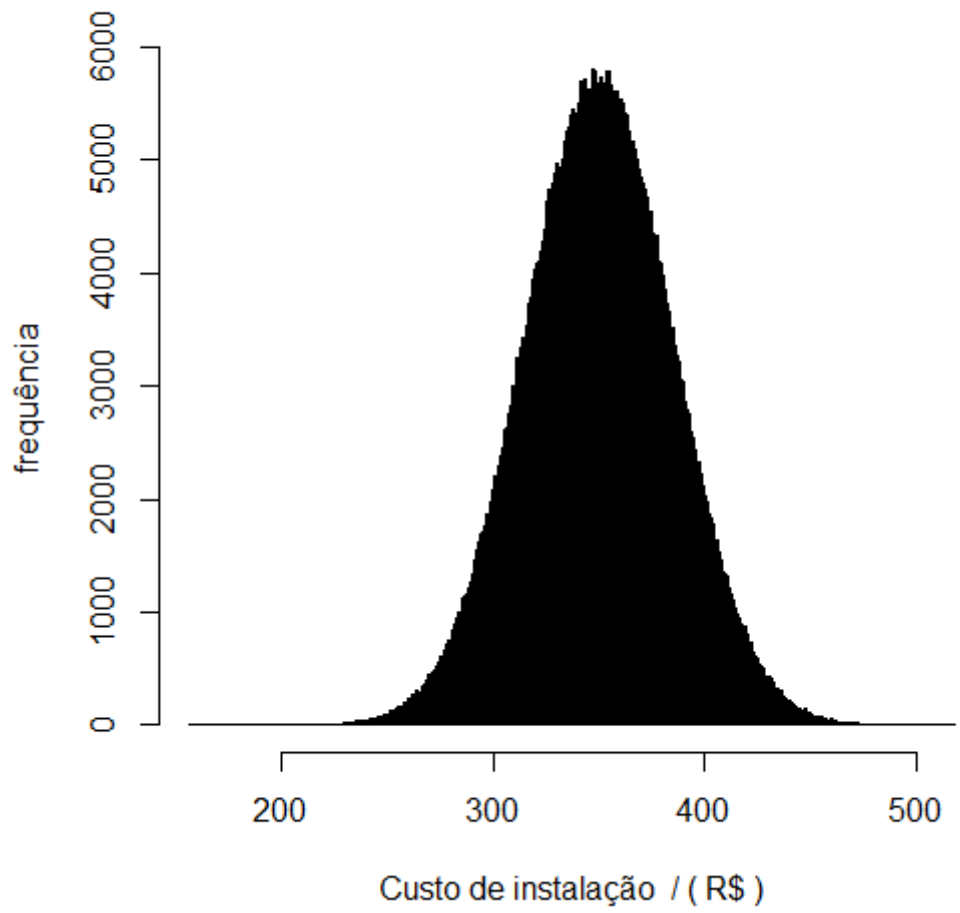


## Histograma da Custo de manutenção

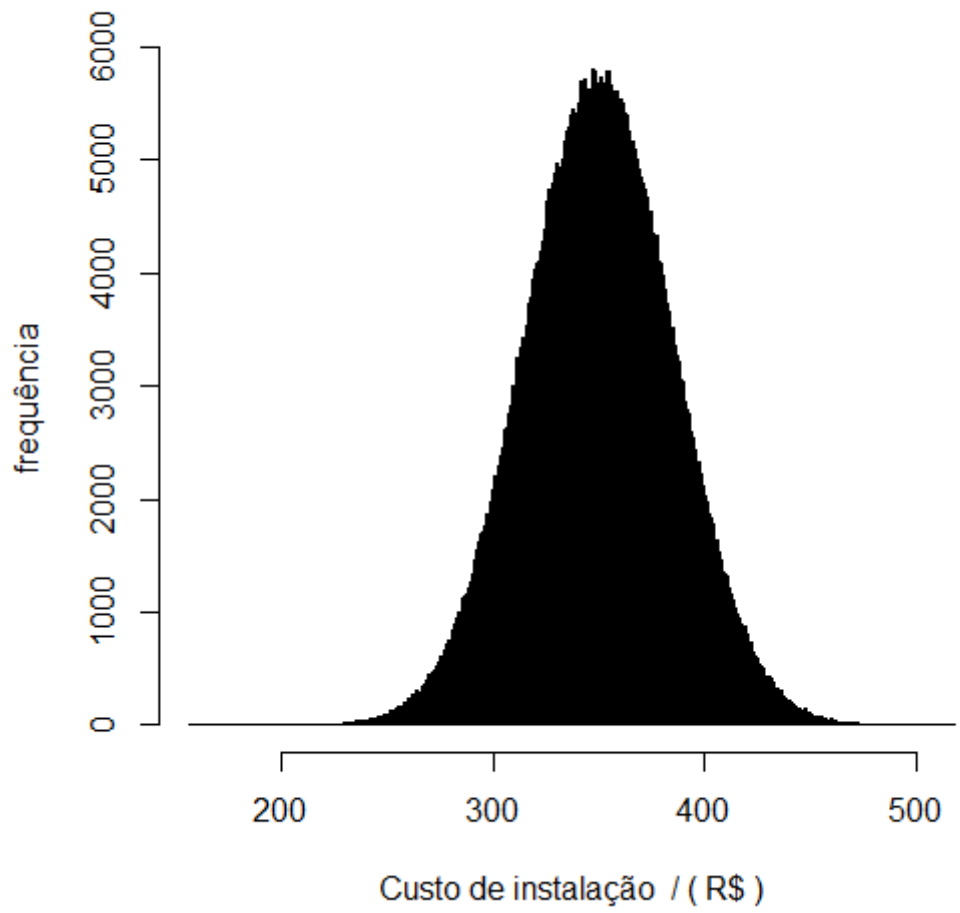




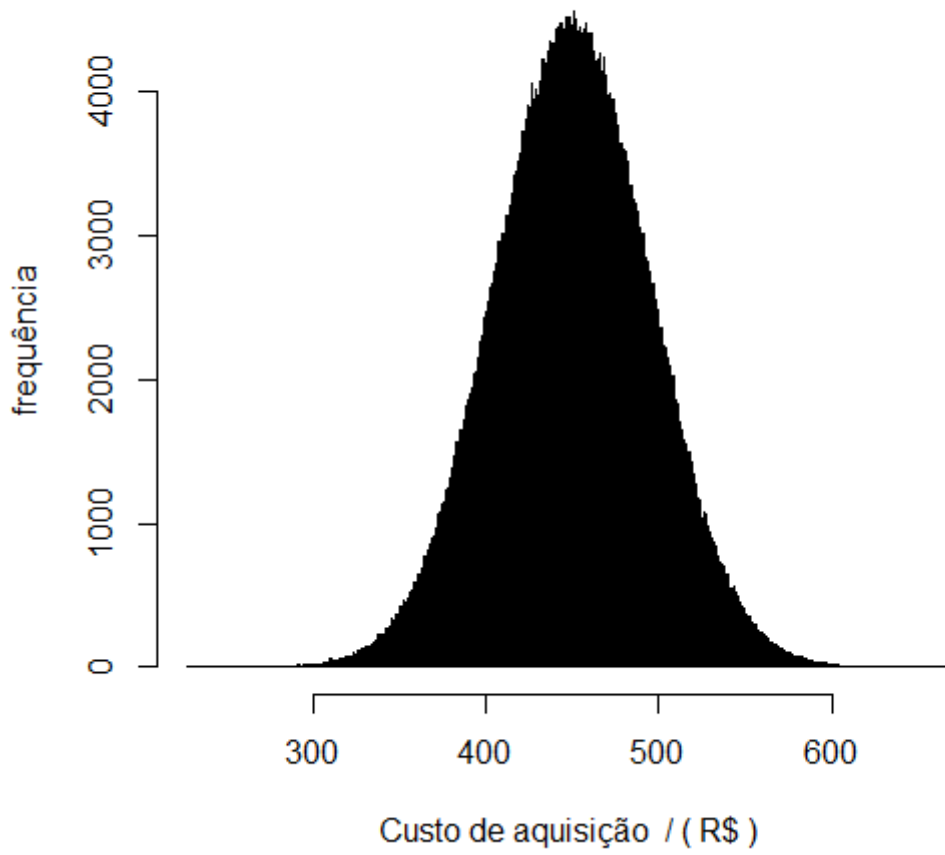
### Histograma da Custo de instalação



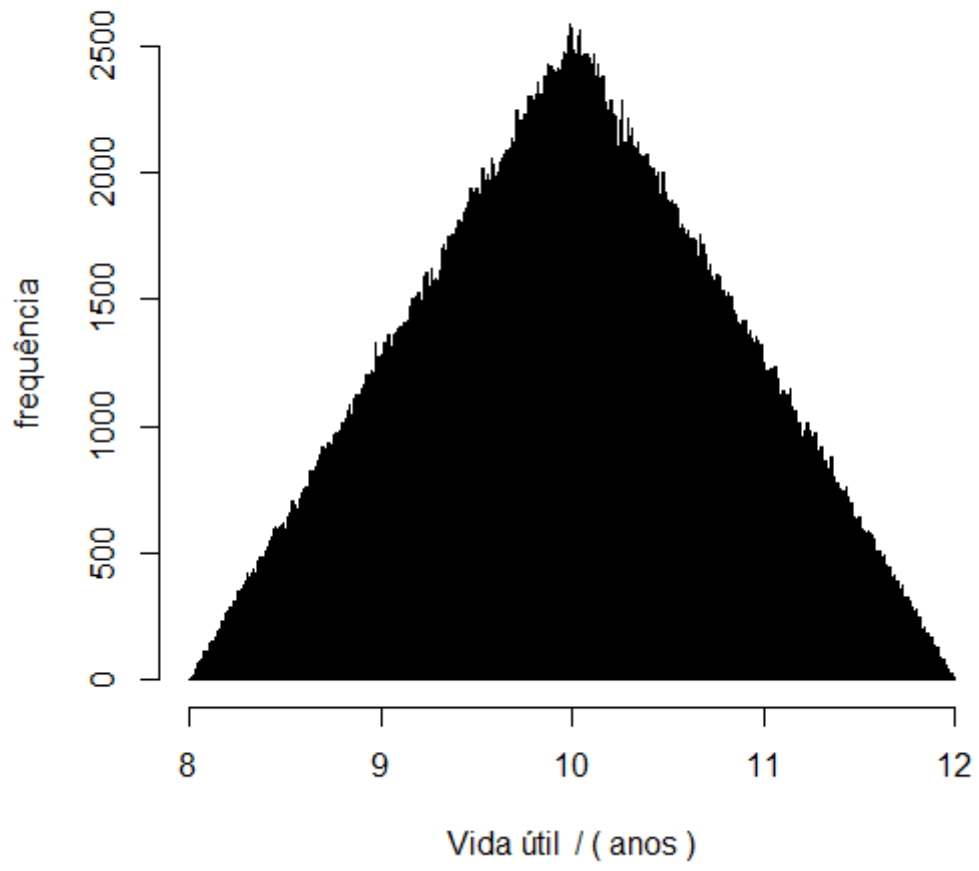
### Histograma da Custo de instalação



## Histograma da Custo de aquisição

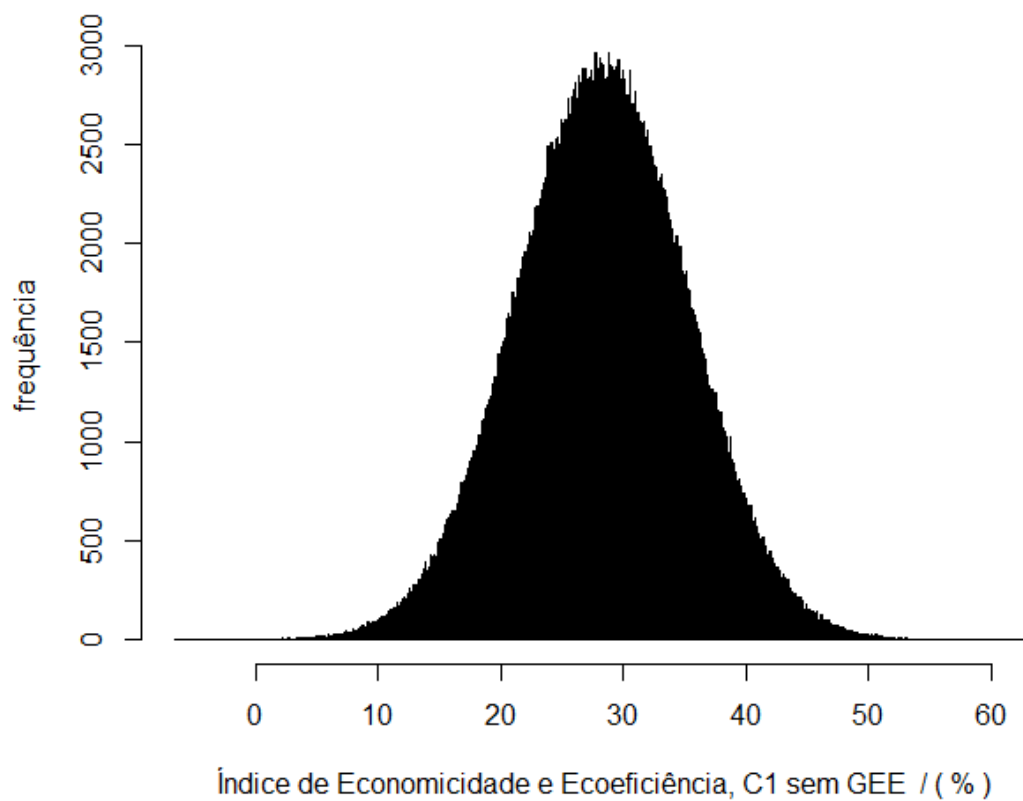


### Histograma da Vida útil

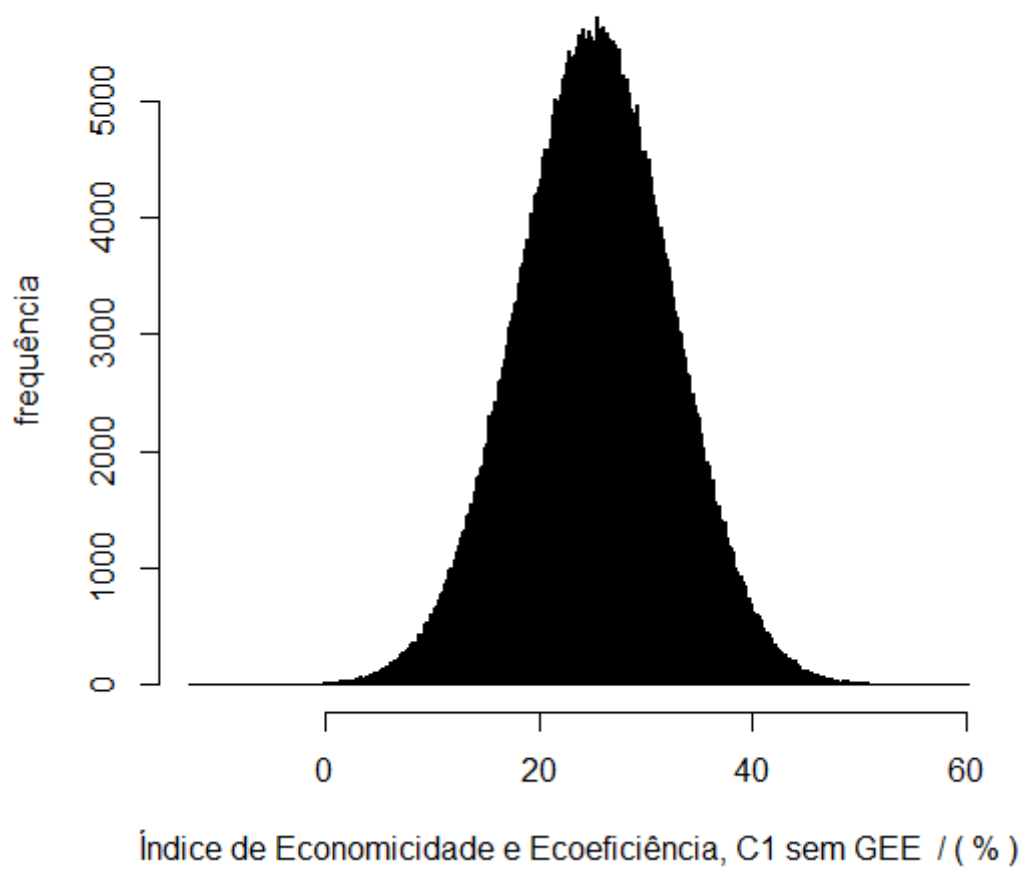


## 5. SHPS

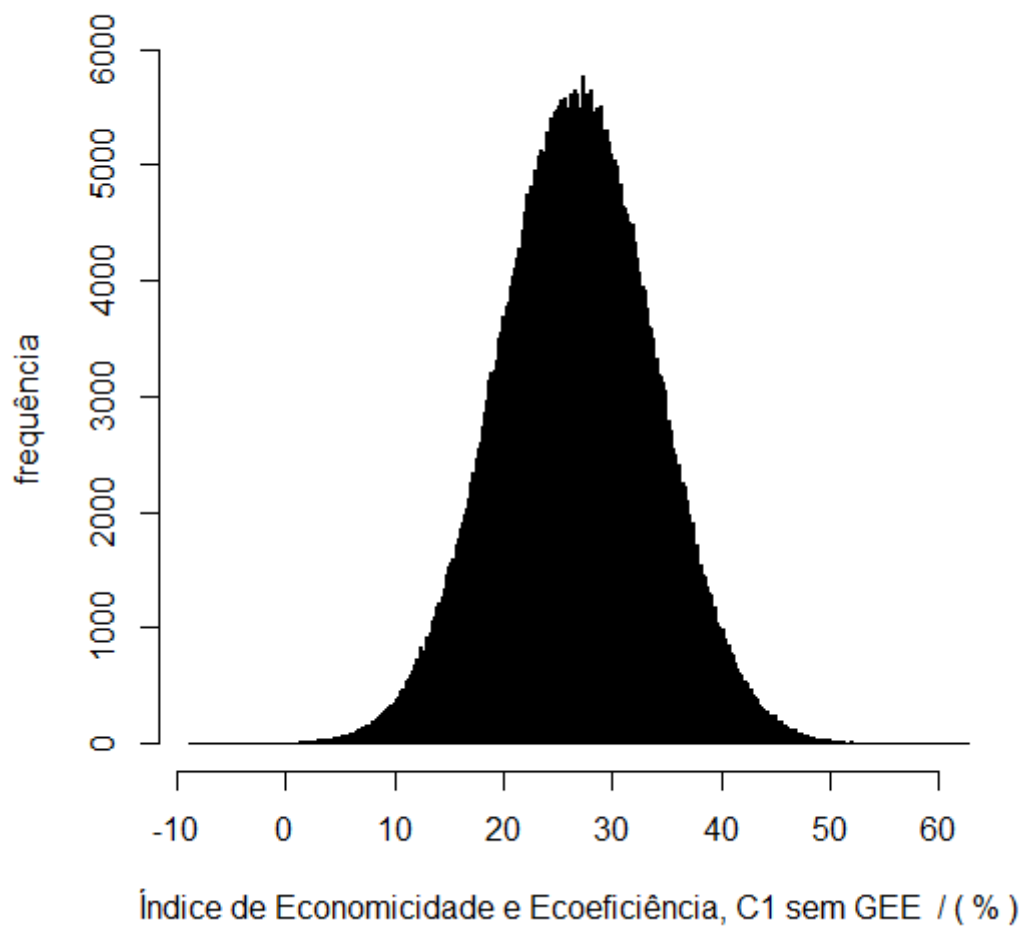
**Histograma da Índice de Economicidade e Ecoeficiência, C1 sem GE**



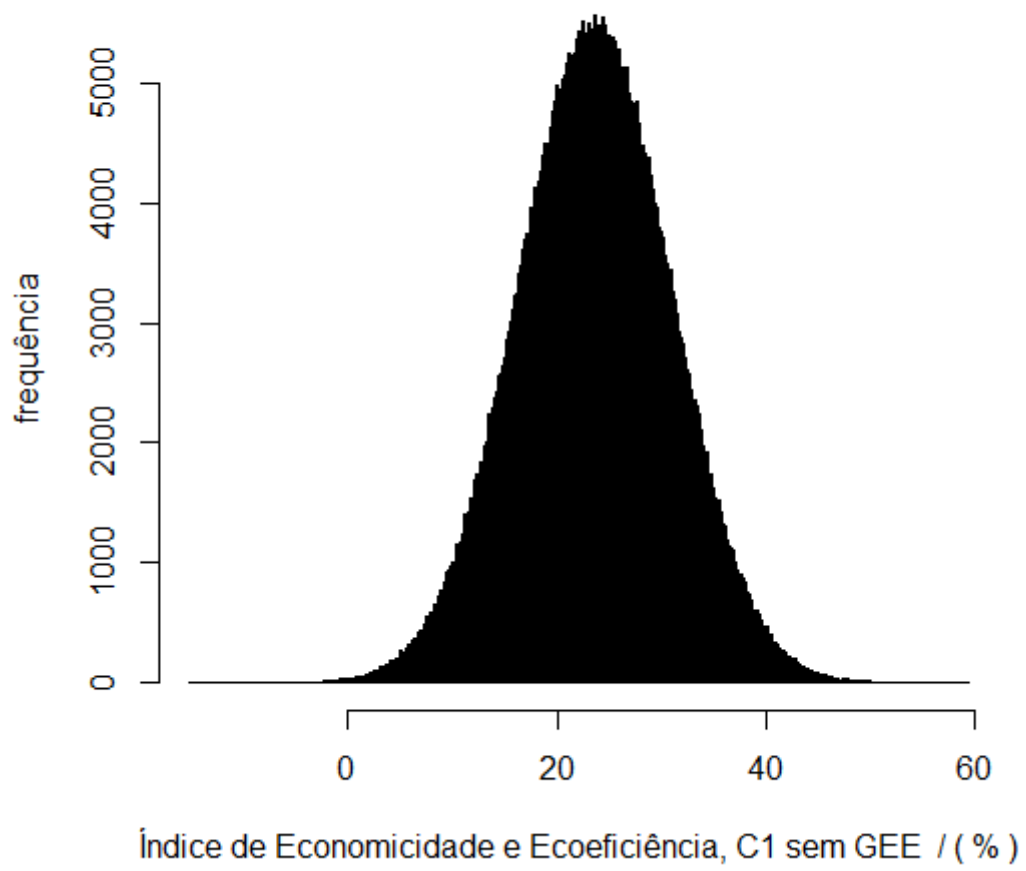
## ograma da Índice de Economicidade e Ecoeficiência, C1 s



### ograma da Índice de Economicidade e Ecoeficiência, C1 s

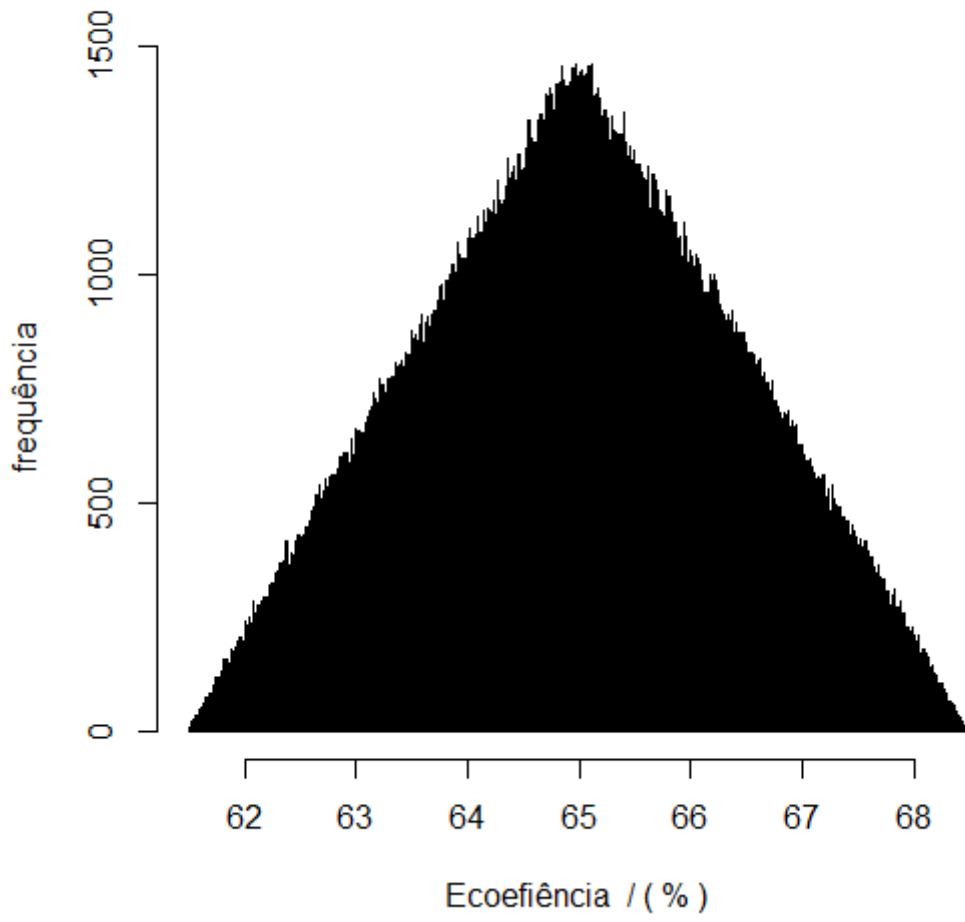


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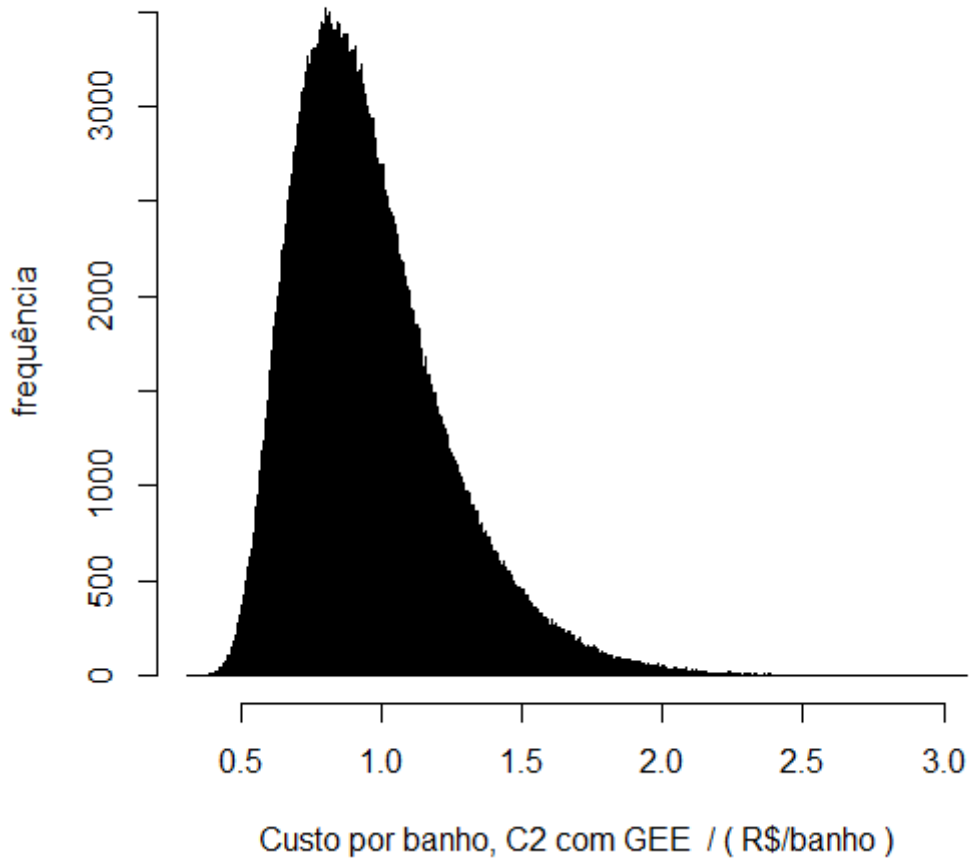




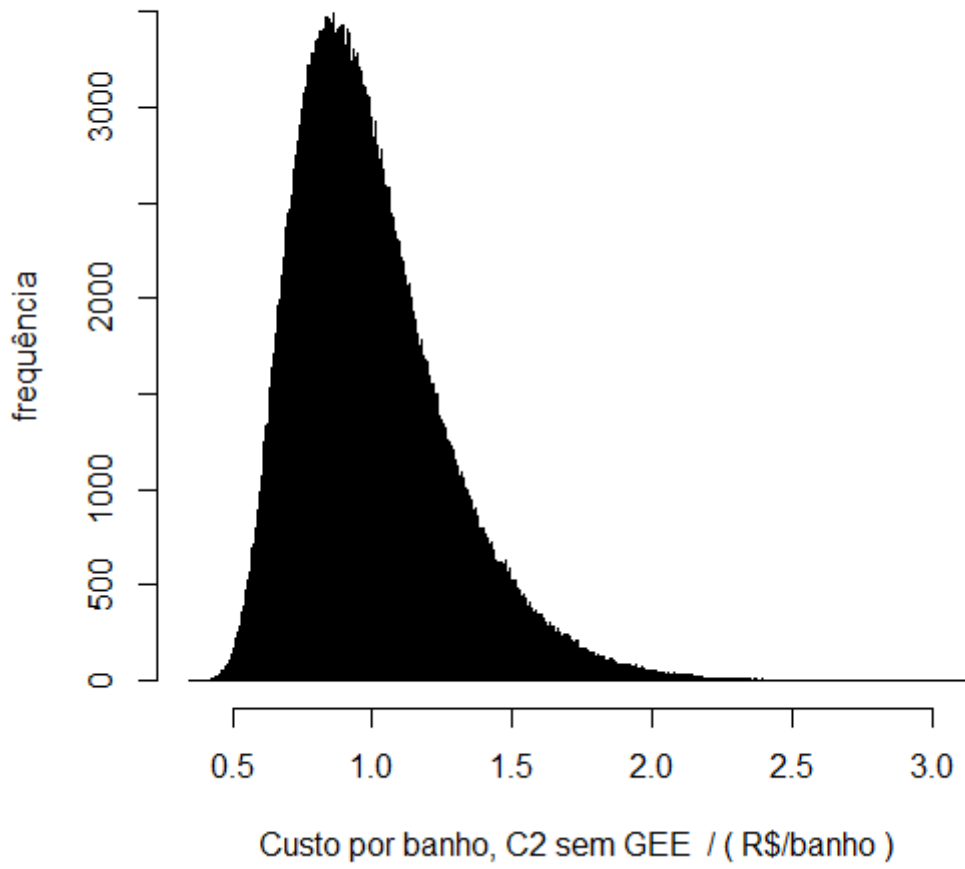
### Histograma da Ecoeficiência



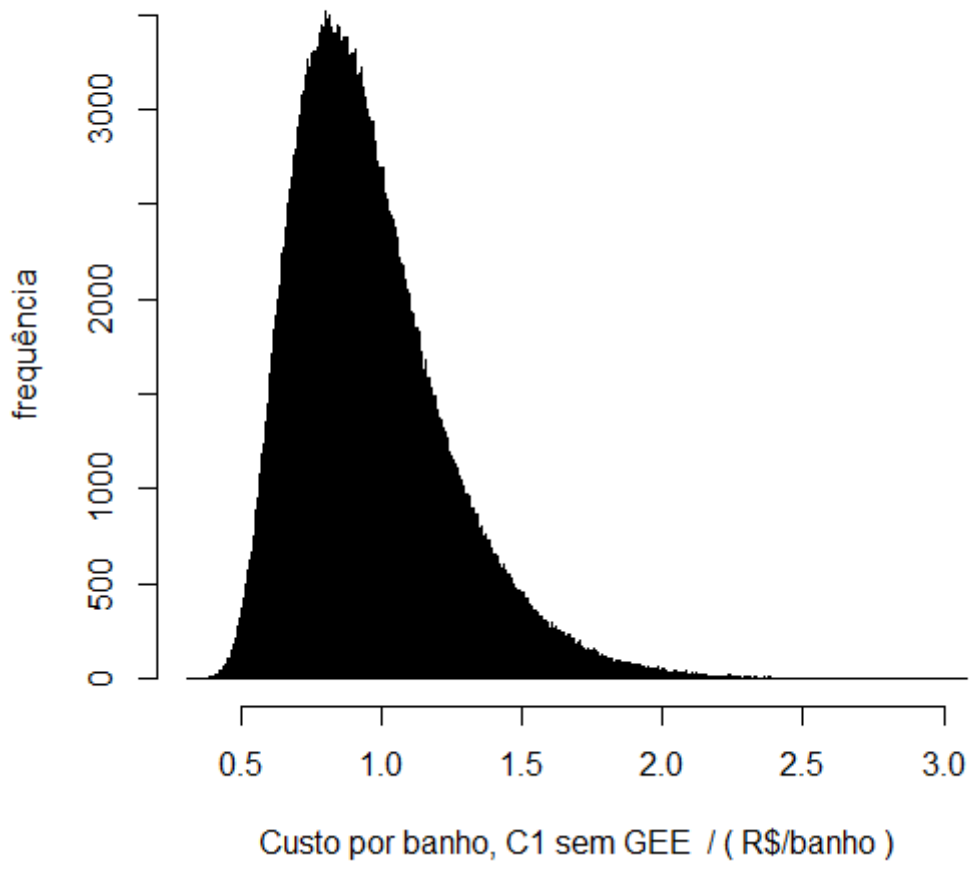
### Histograma da Custo por banho, C2 com GEE



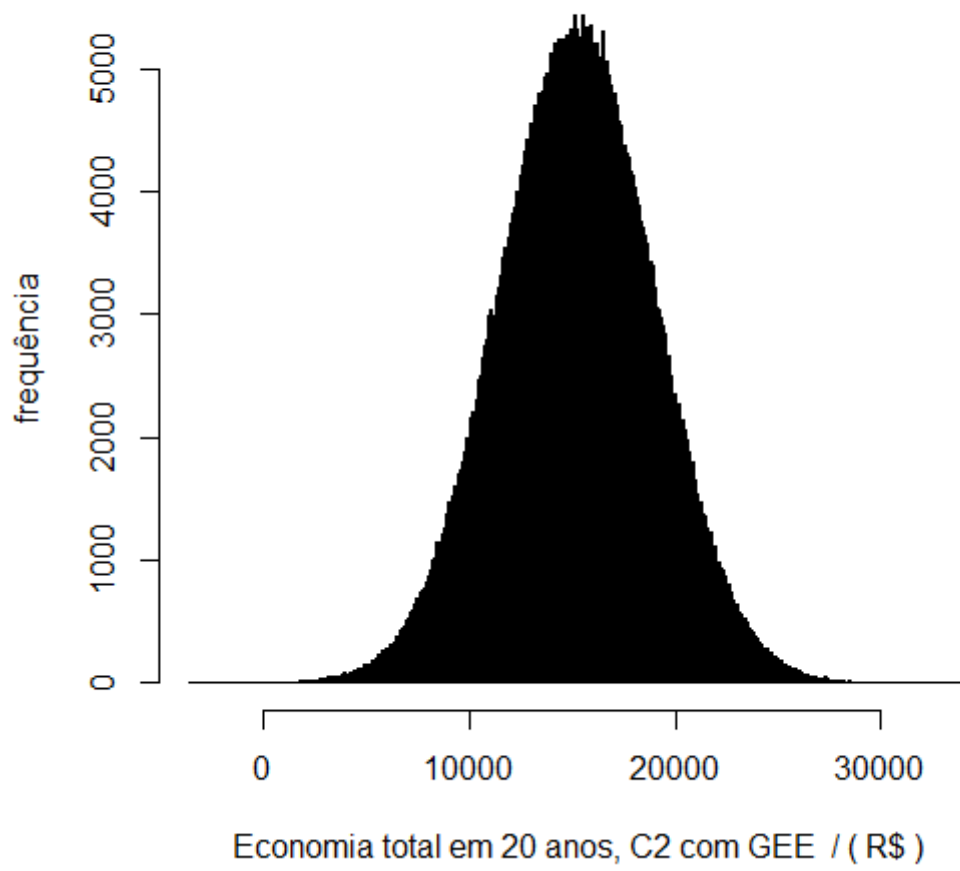
### Histograma da Custo por banho, C2 sem GEE



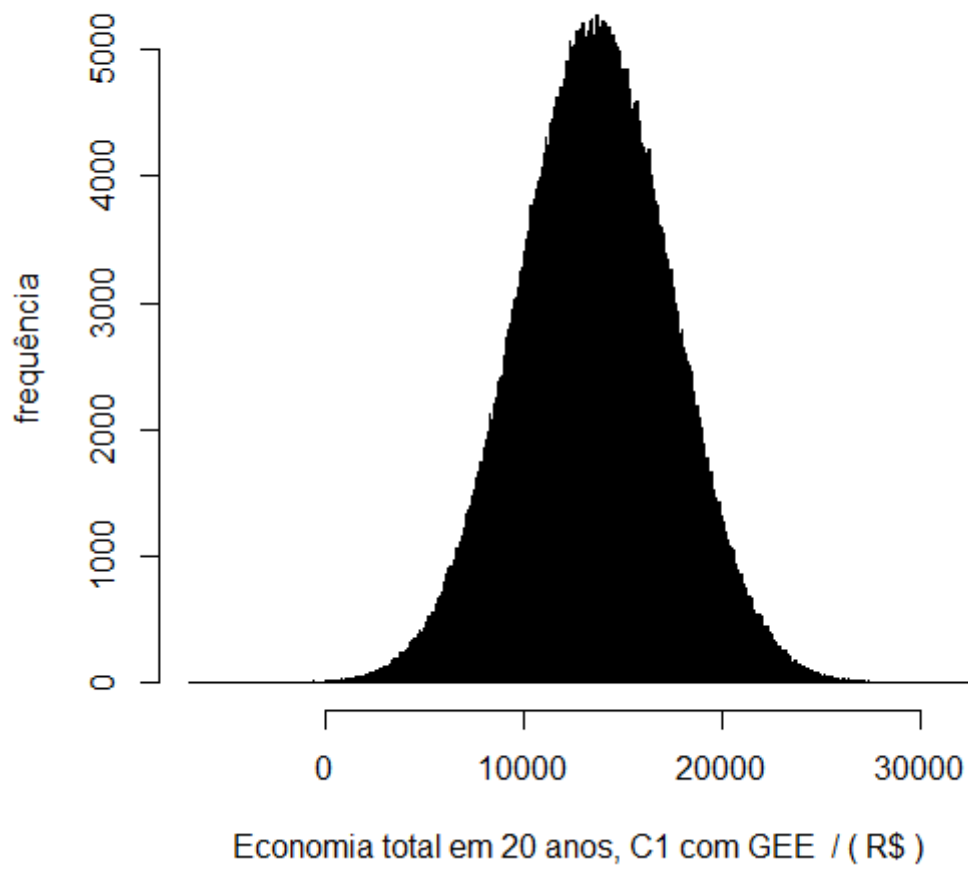
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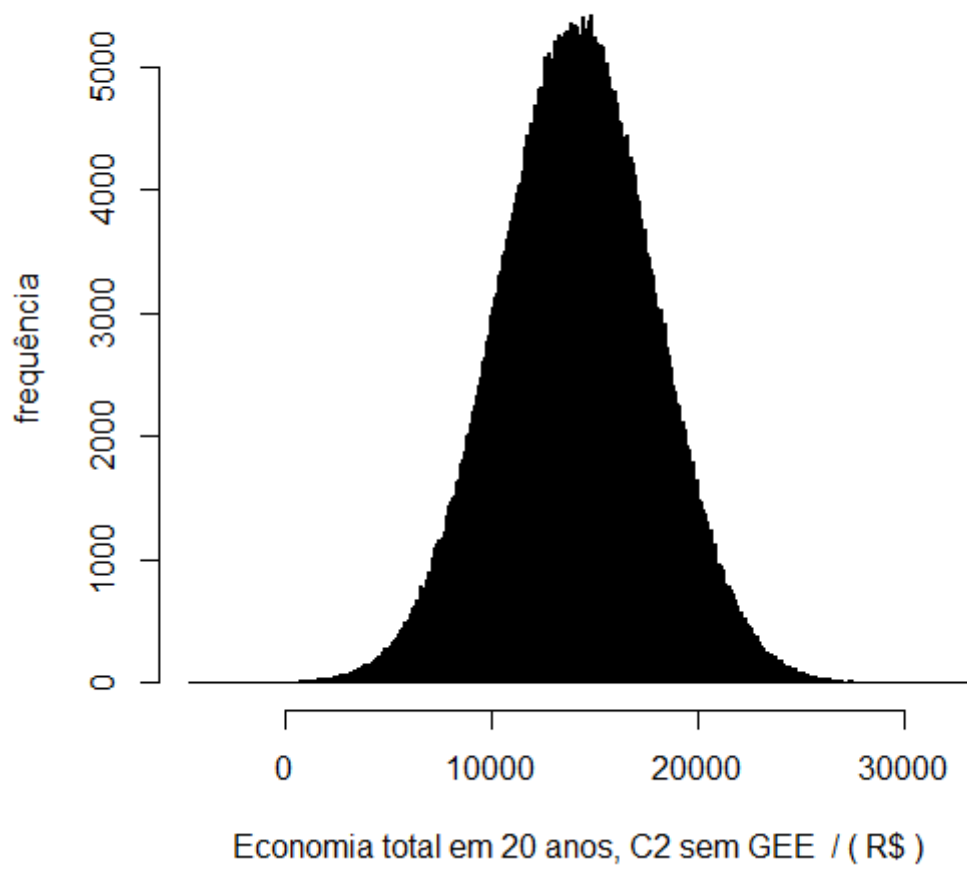
## Histograma da Economia total em 20 anos, C2 com GEI



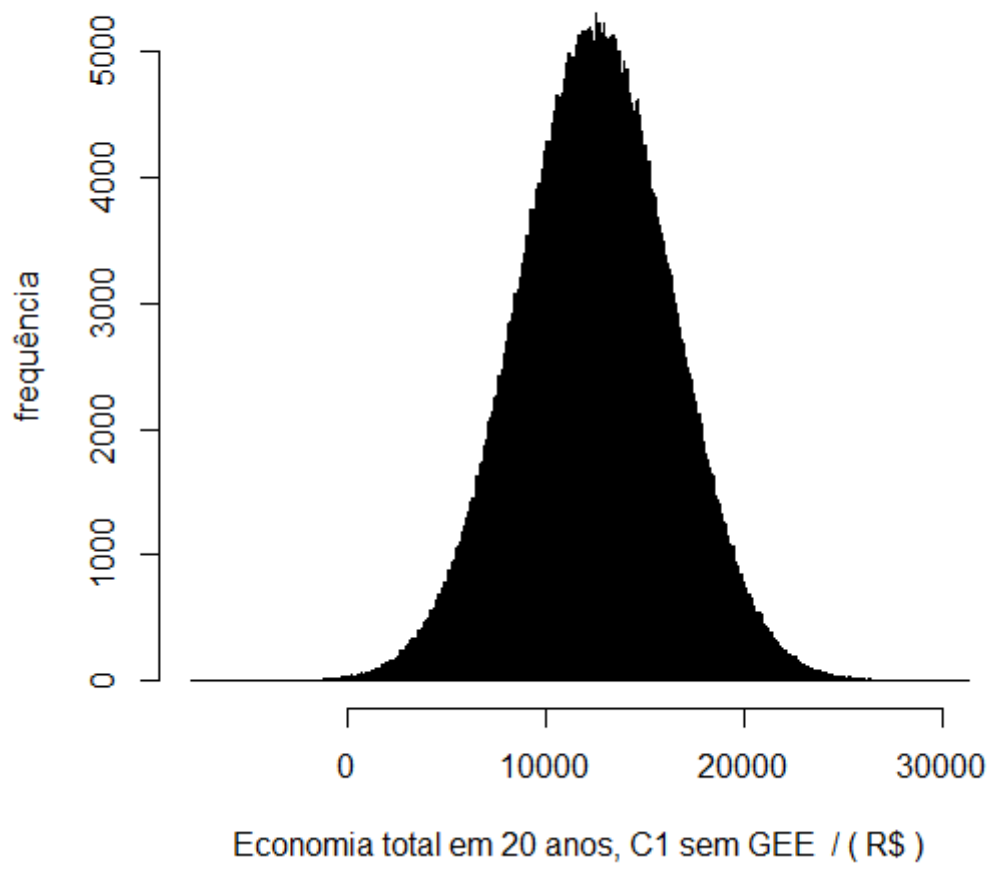
## Histograma da Economia total em 20 anos, C1 com GEI



## Histograma da Economia total em 20 anos, C2 sem GEI

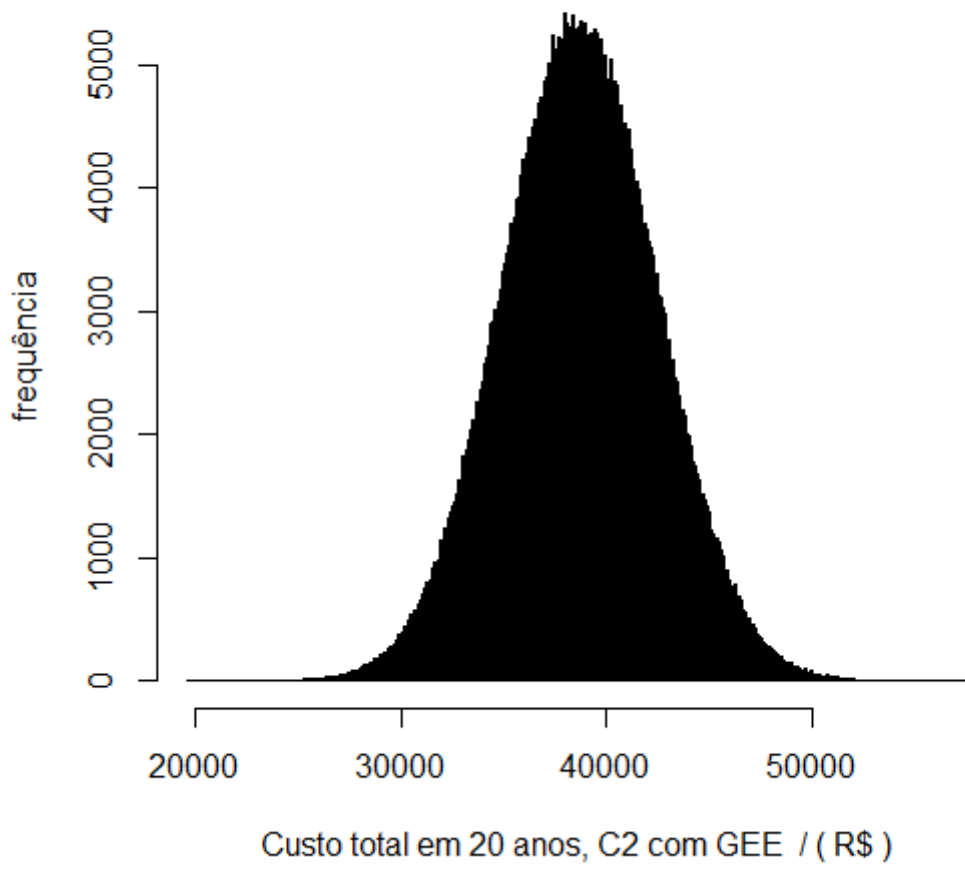


## Histograma da Economia total em 20 anos, C1 sem GEI

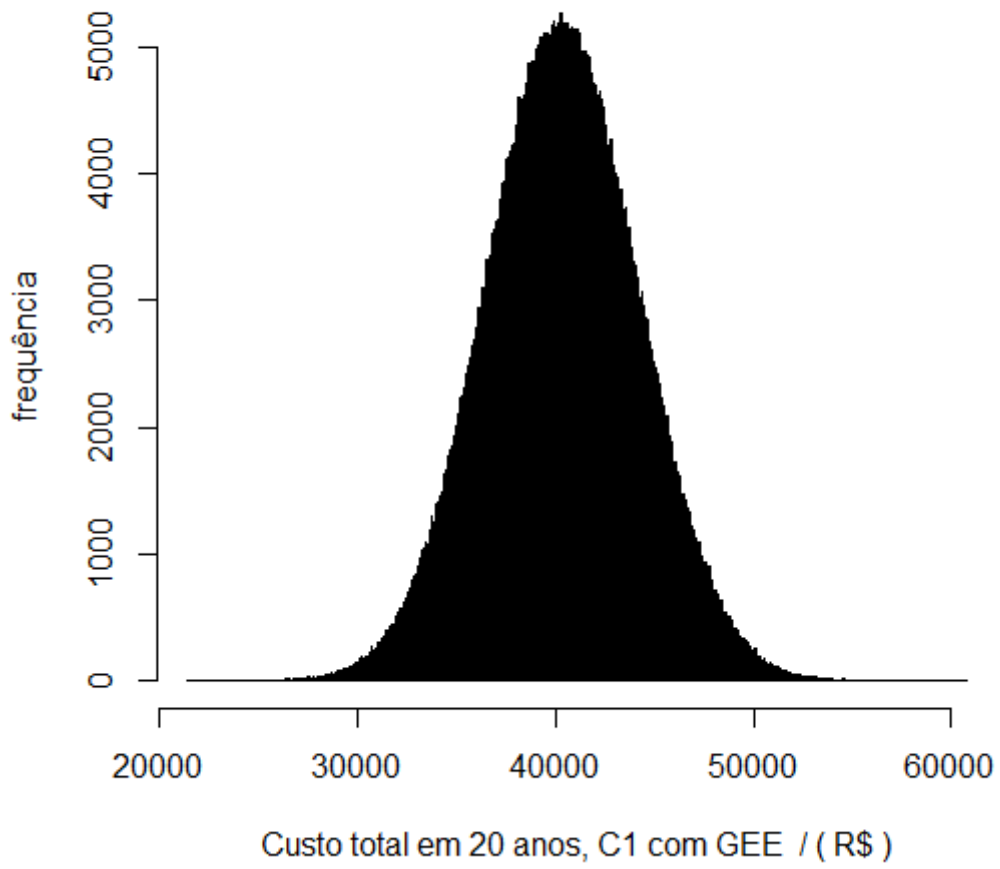




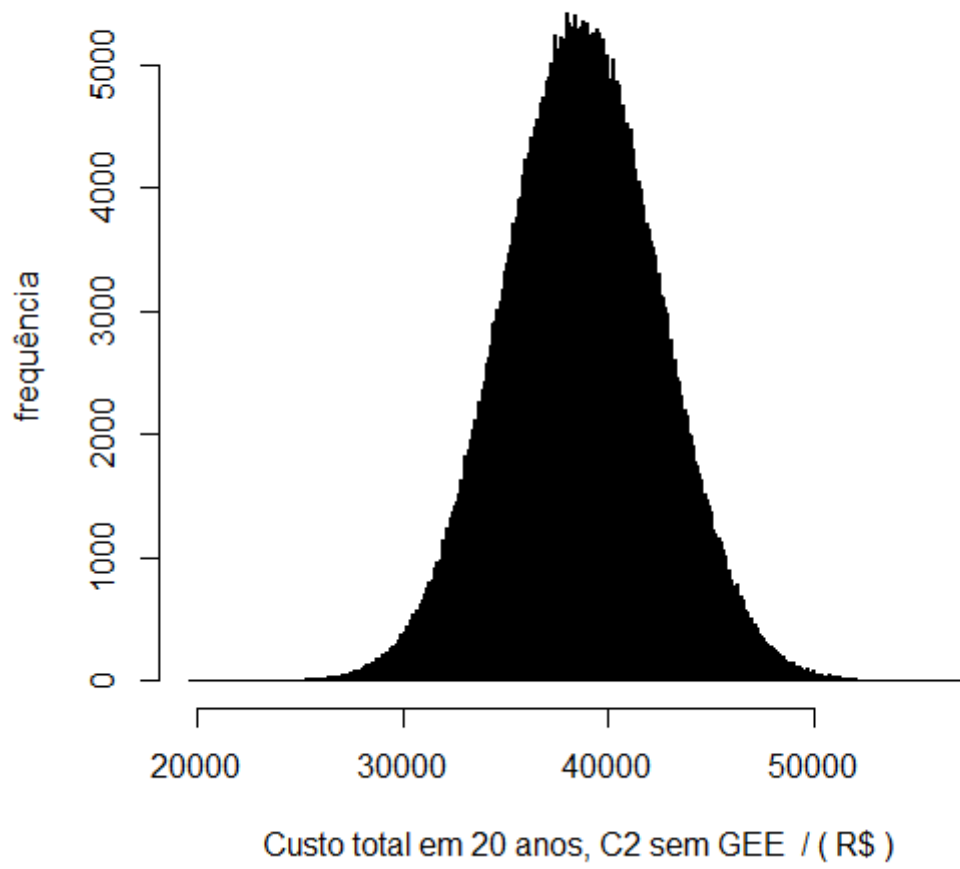
### Histograma da Custo total em 20 anos, C2 com GEE



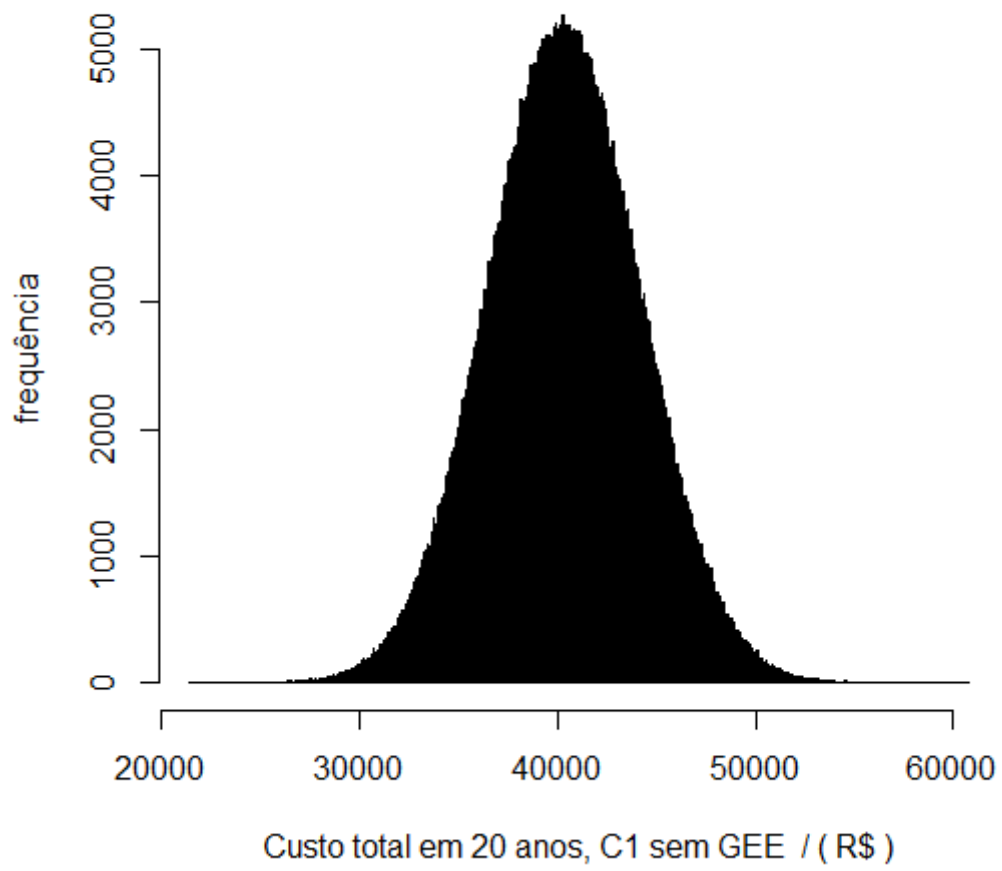
### Histograma da Custo total em 20 anos, C1 com GEE



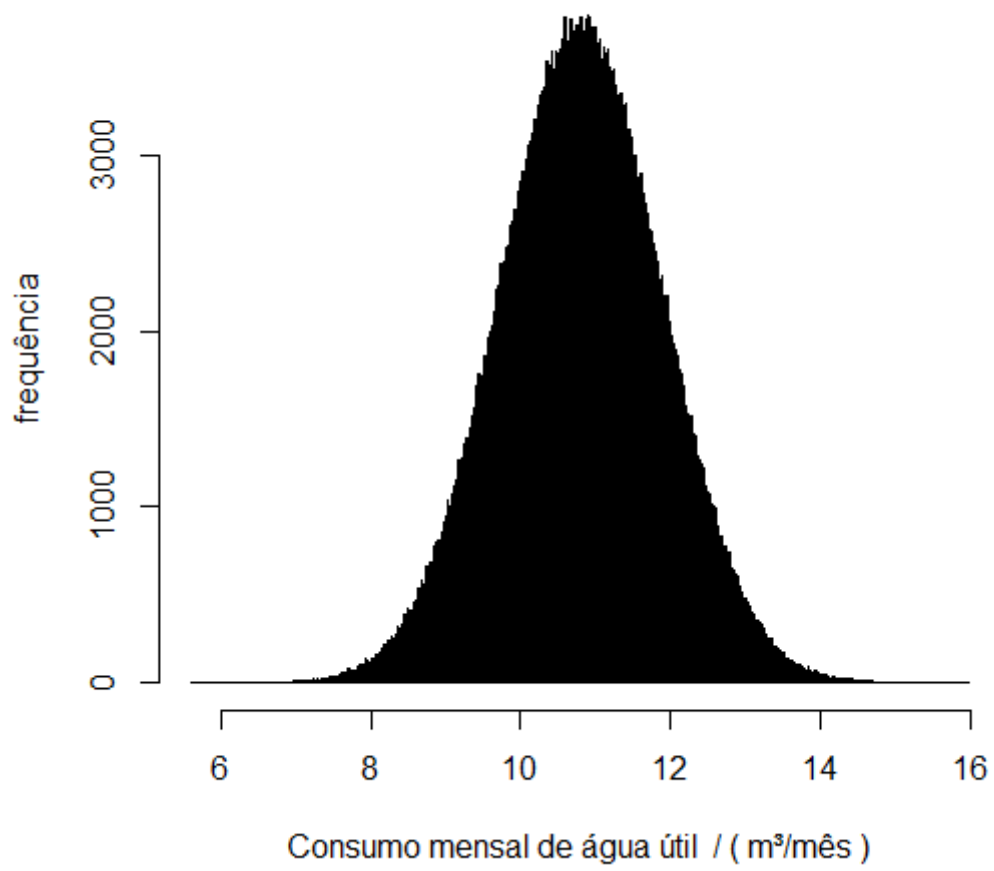
### Histograma da Custo total em 20 anos, C2 sem GEE



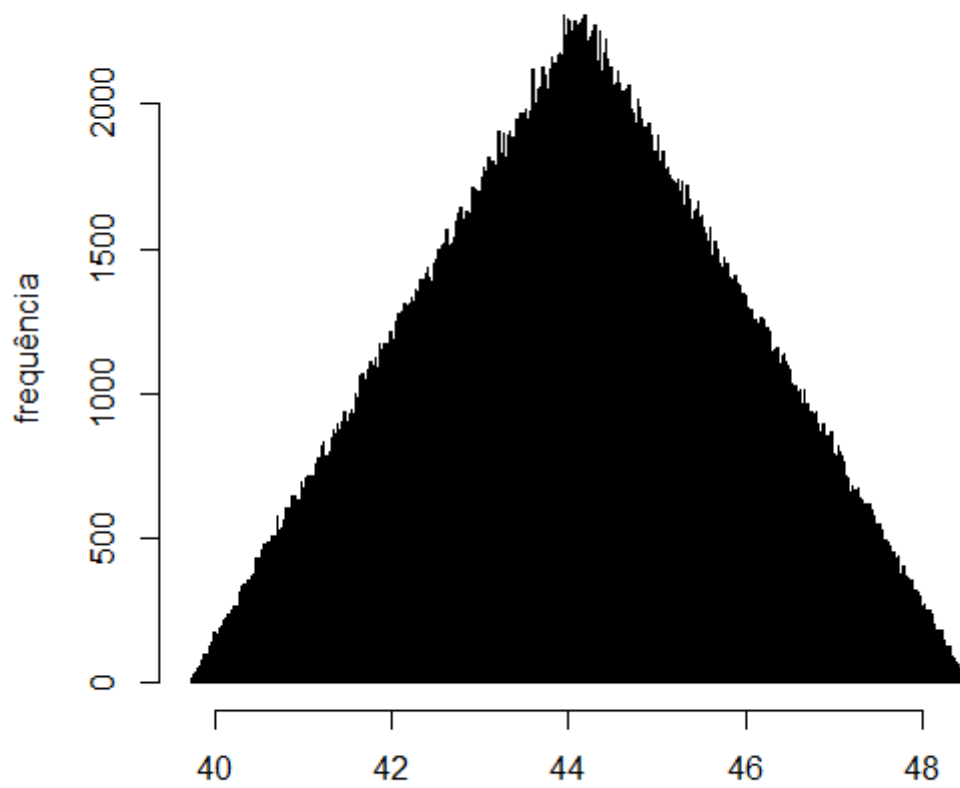
### Histograma da Custo total em 20 anos, C1 sem GEE



## Histograma da Consumo mensal de água útil

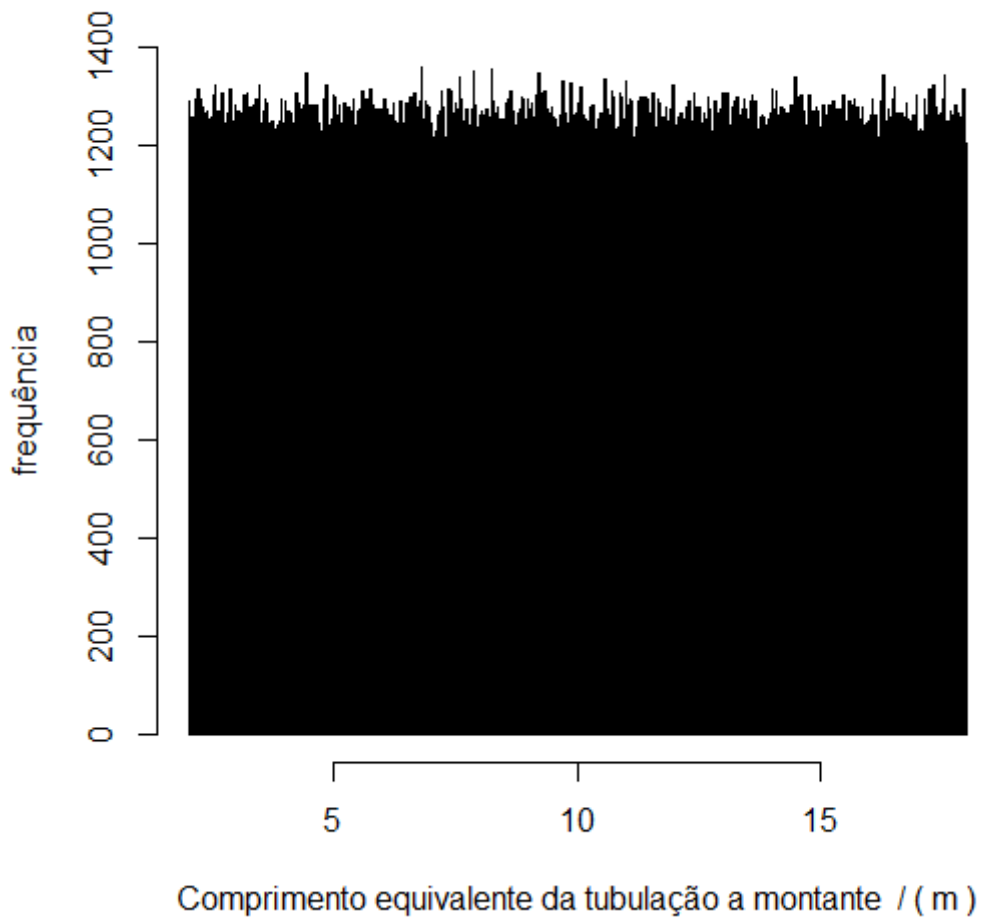


da Consumo mensal de energia com base num chuveiro e

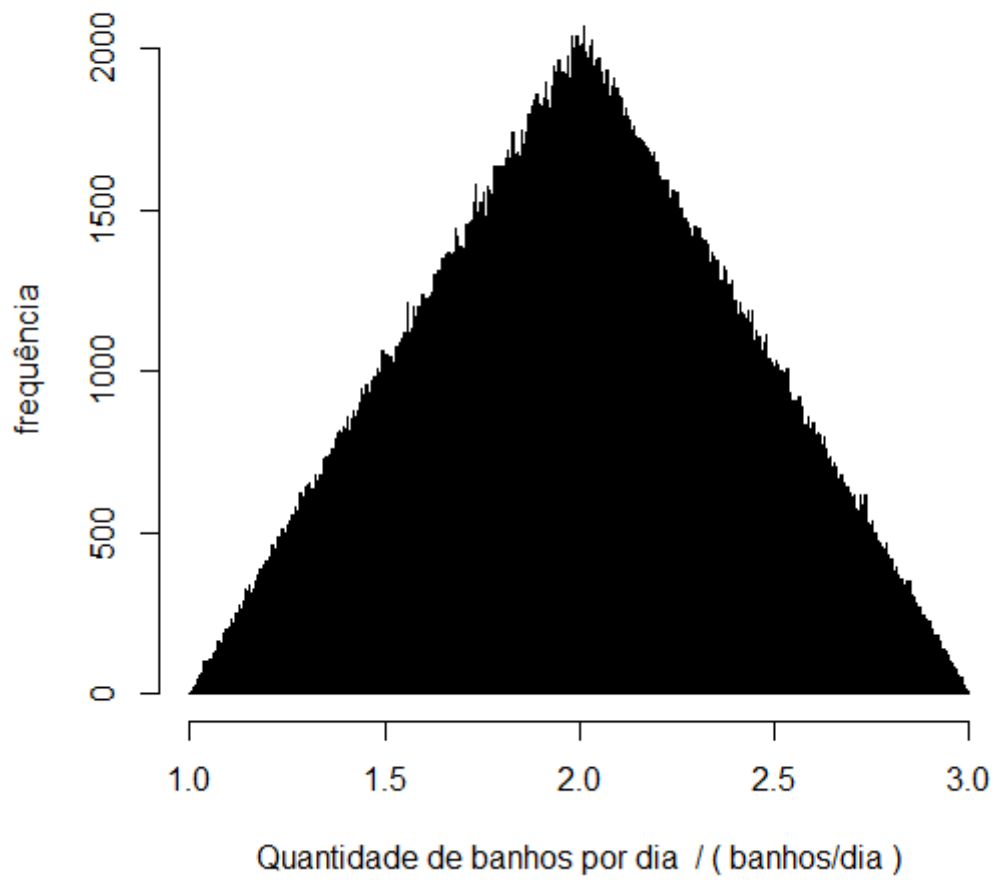


Consumo mensal de energia com base num chuveiro elétrico de 3,5 kW / (k)

### stograma da Comprimento equivalente da tubulação a mo



## Histograma da Quantidade de banhos por dia

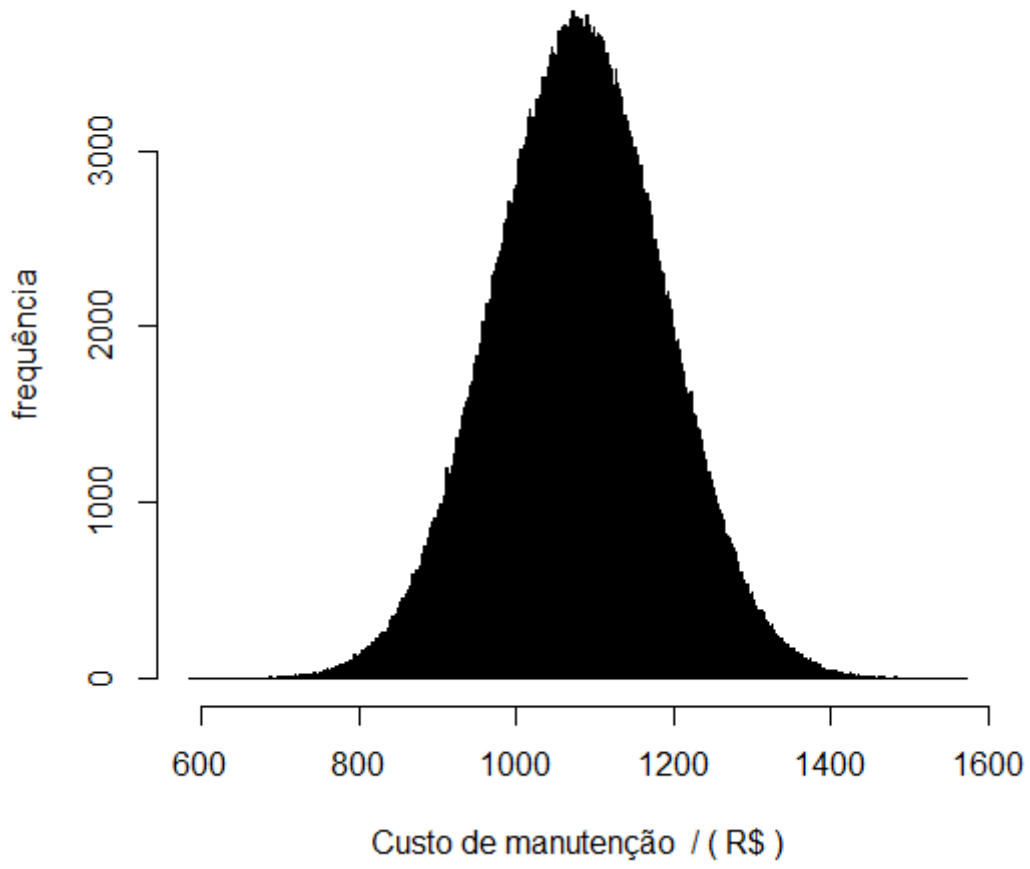




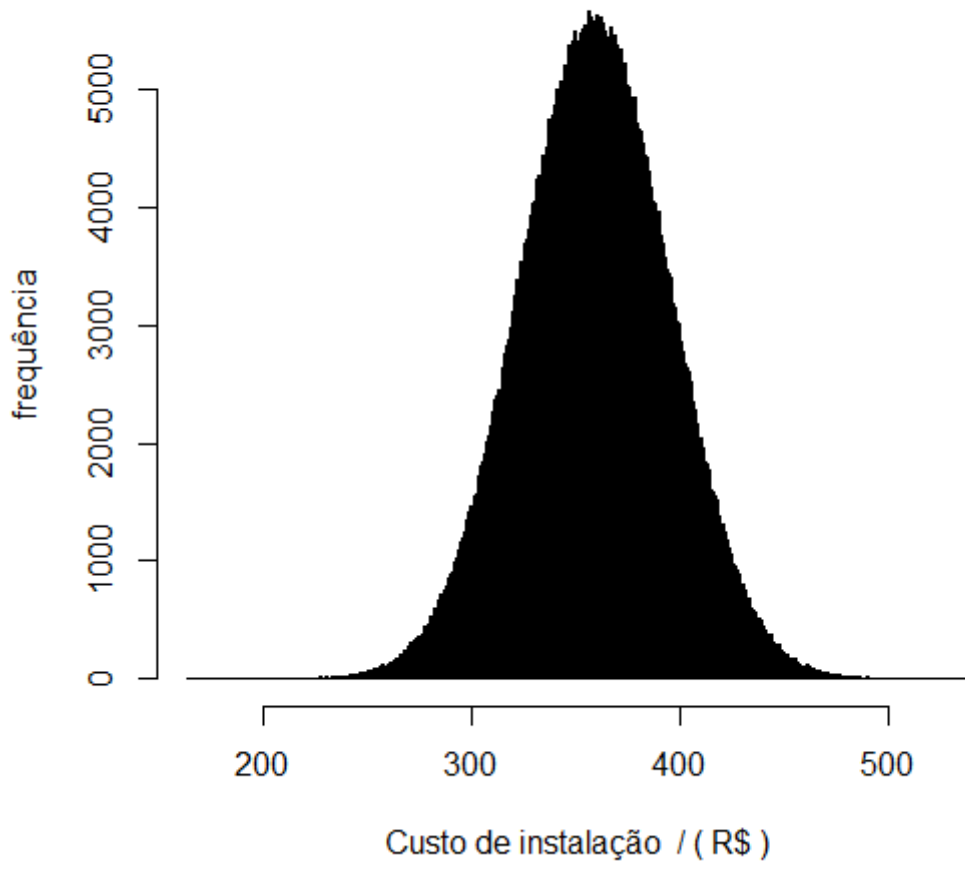
## Histograma da Quantidade de pessoas por domicílio



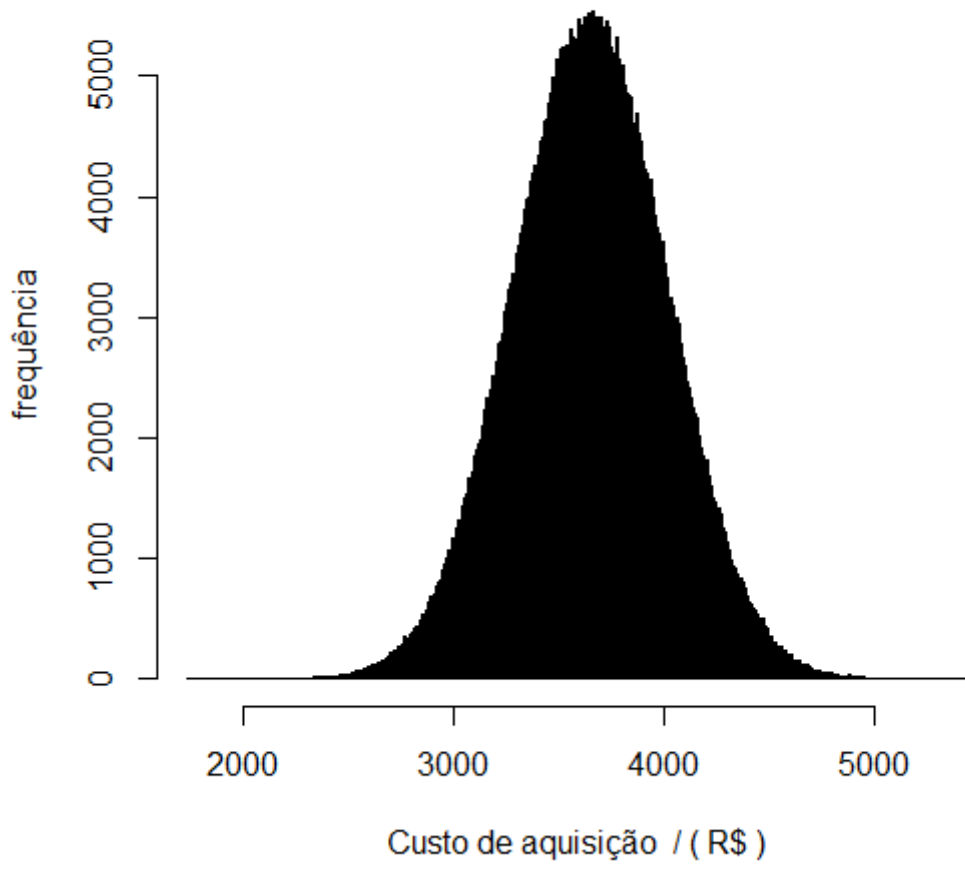
### Histograma da Custo de manutenção



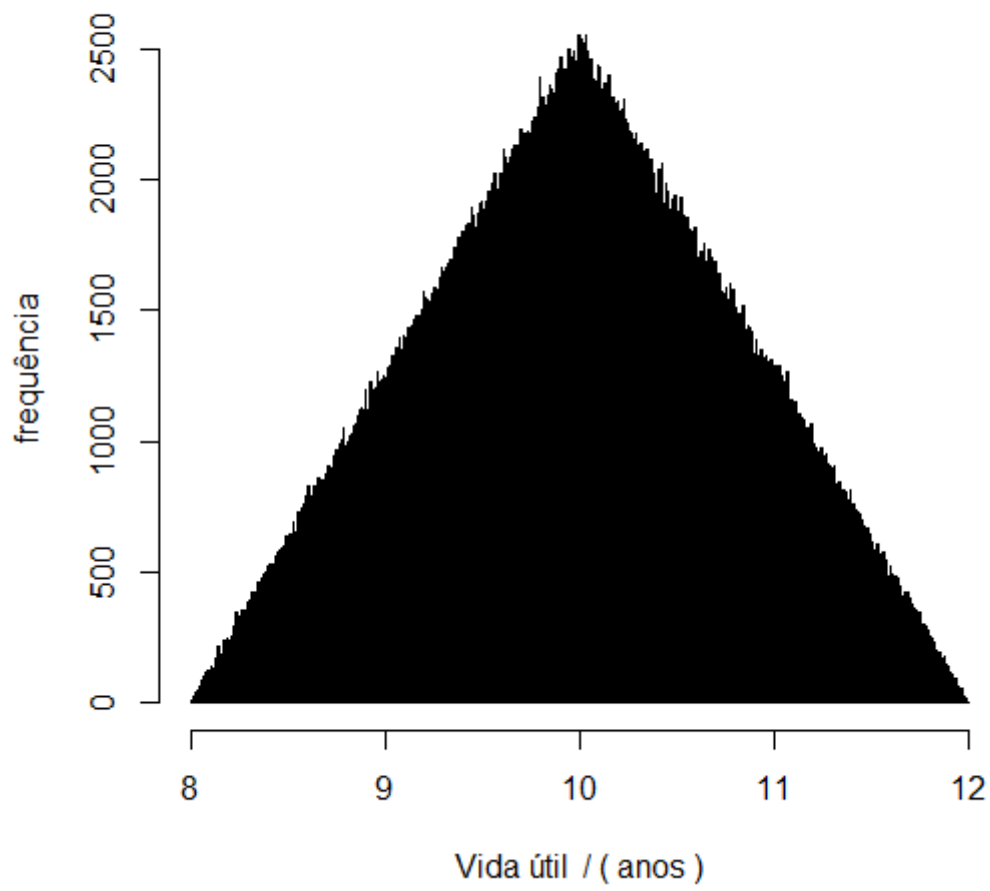
### Histograma da Custo de instalação



### Histograma da Custo de aquisição

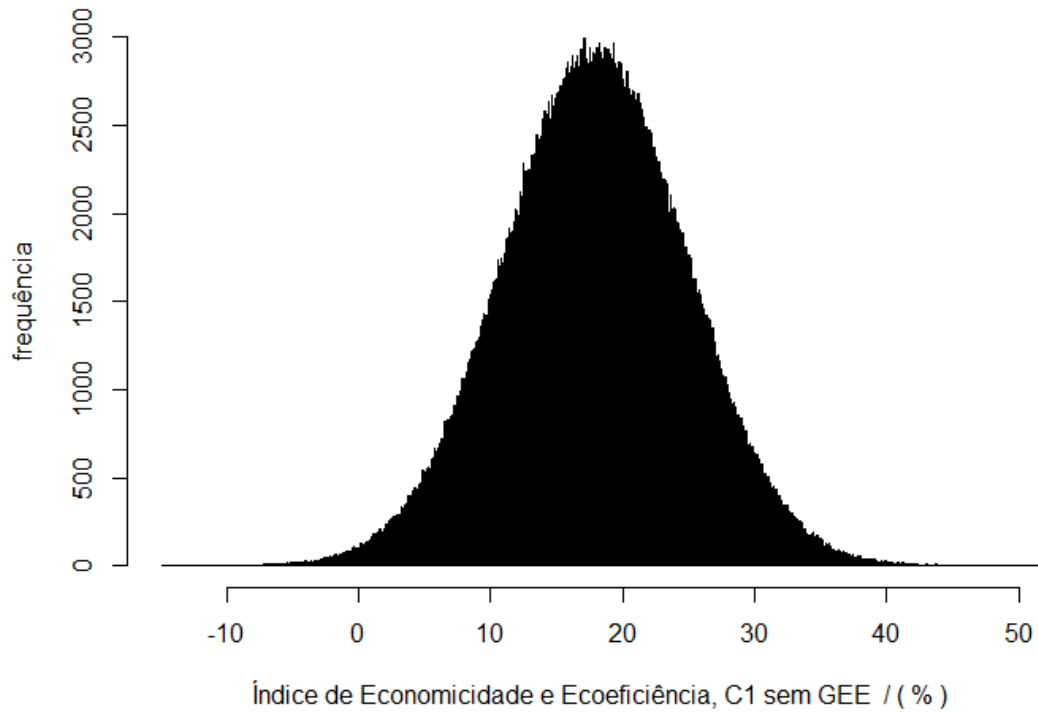


### Histograma da Vida útil

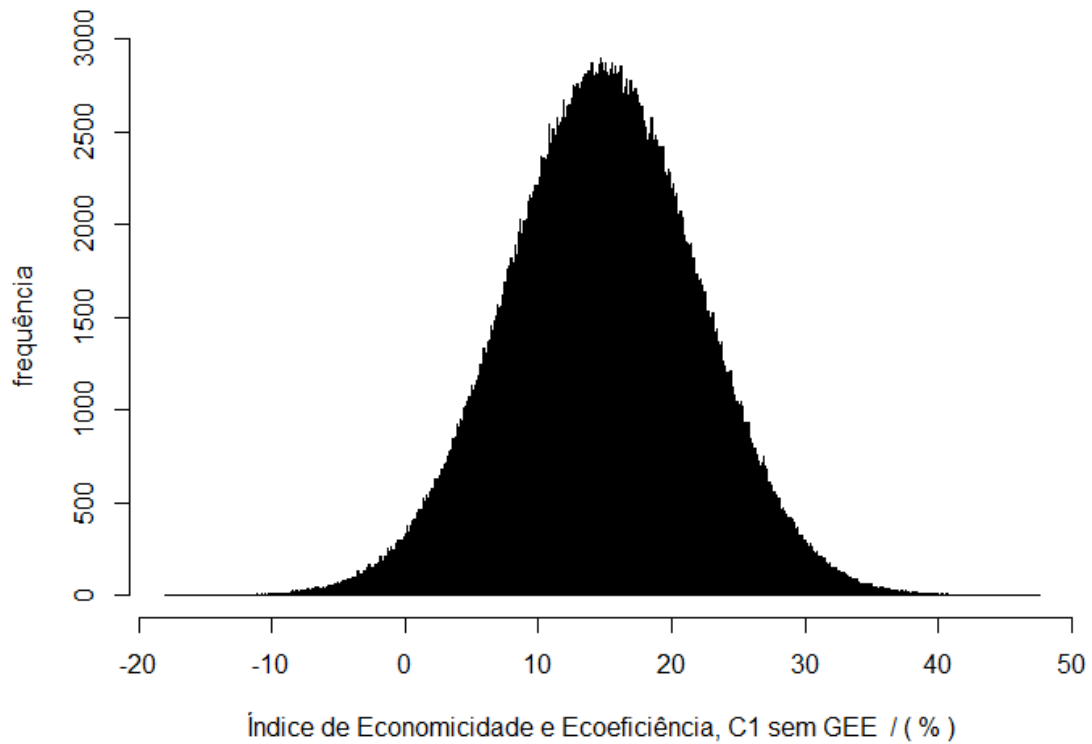


## 6. ASHP

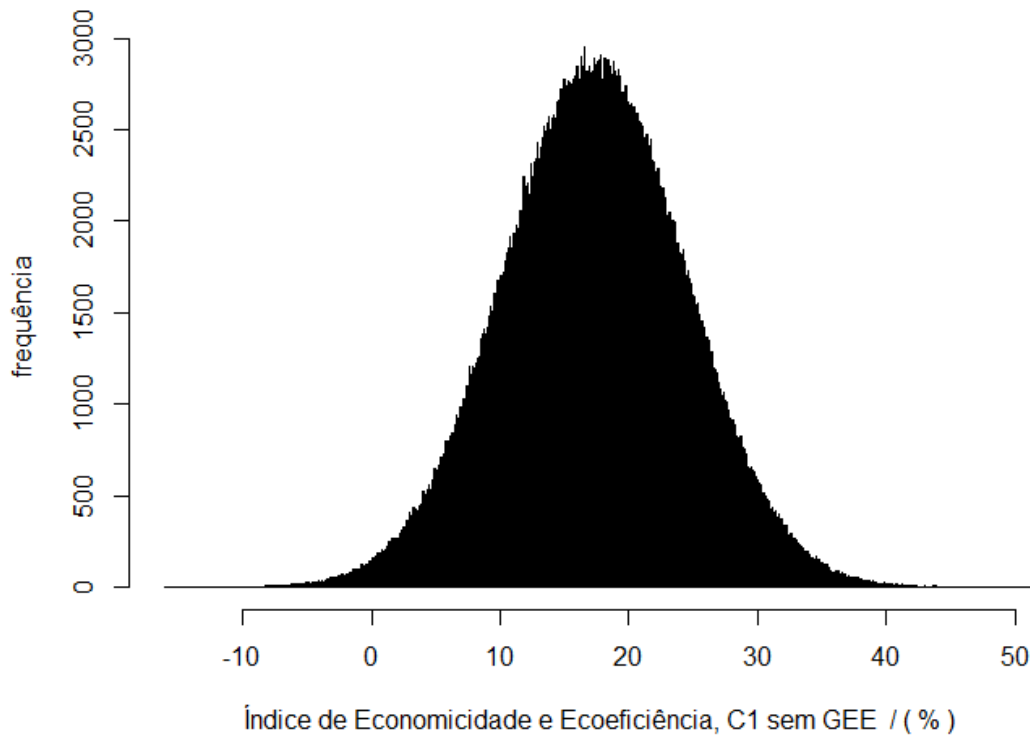
**Histograma da Índice de Economicidade e Ecoeficiência, C1 sem GEE**



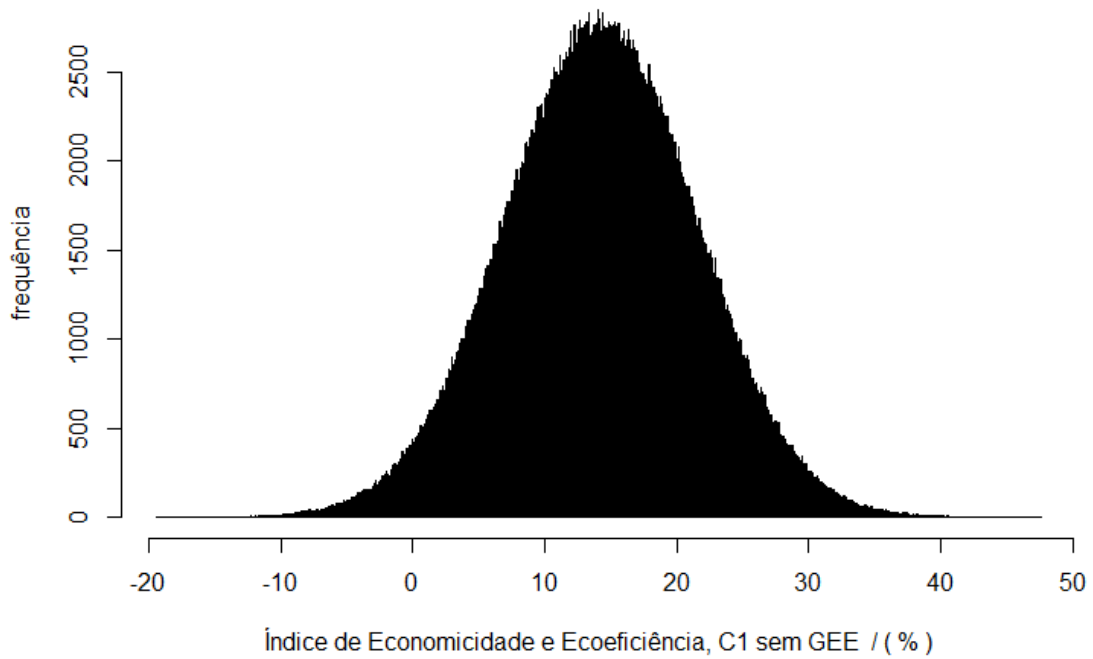
**Histograma da Índice de Economicidade e Ecoeficiência, C1 sem GEE**



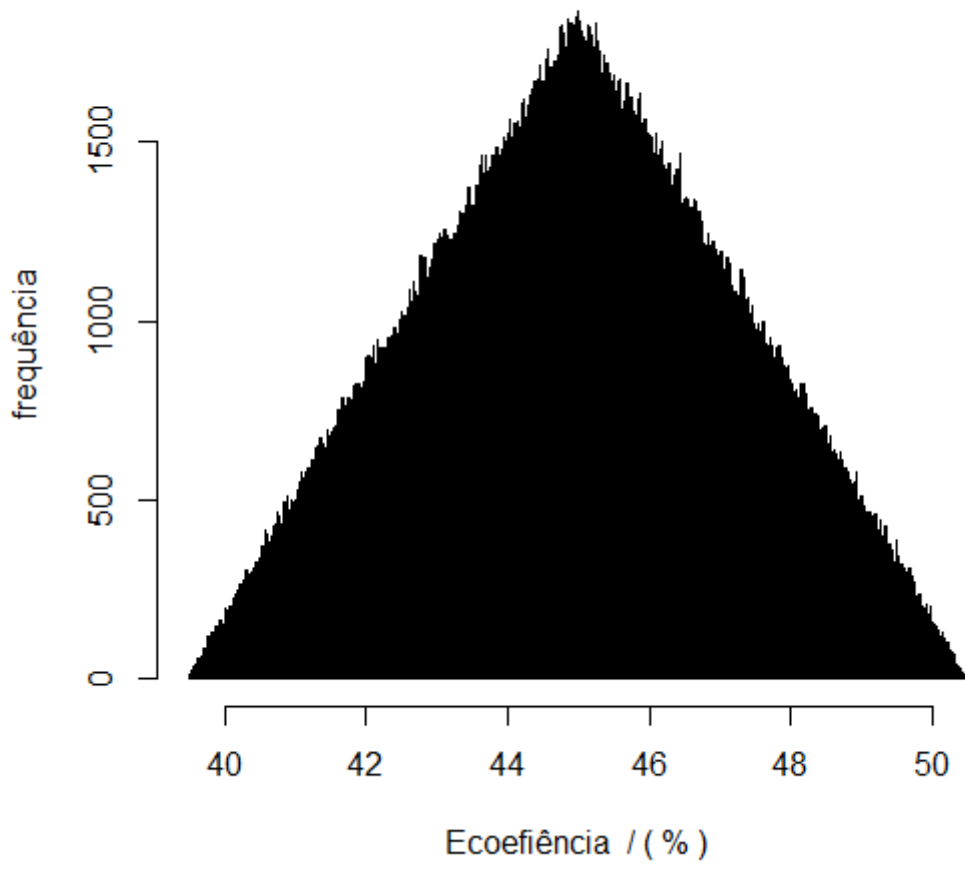
**Histograma da Índice de Economicidade e Ecoeficiência, C1 sem GEE**



**Histograma da Índice de Economicidade e Ecoeficiência, C1 sem GEE**

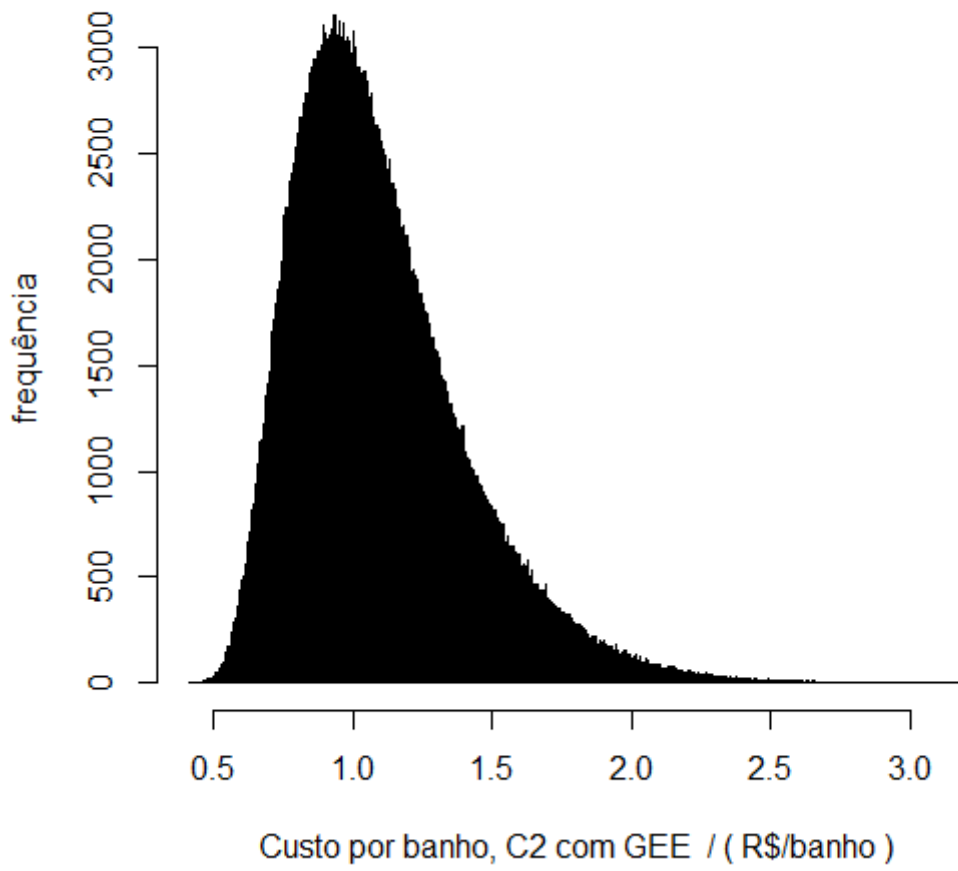


## Histograma da Ecoeficiência

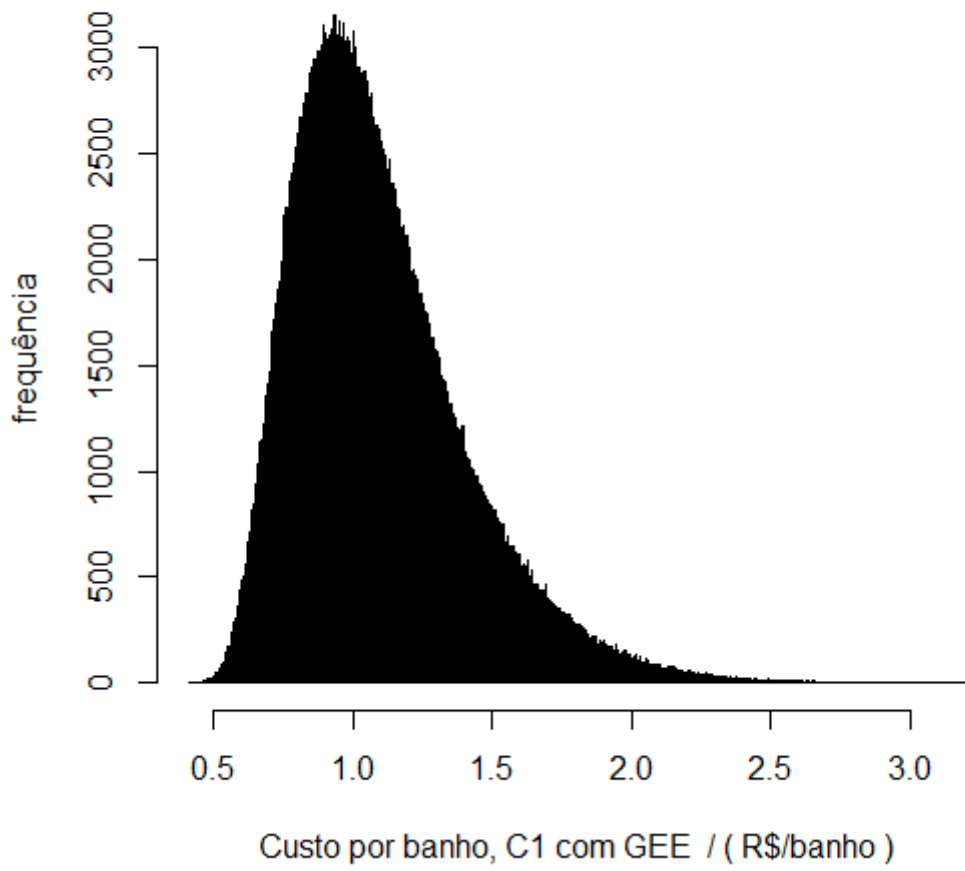




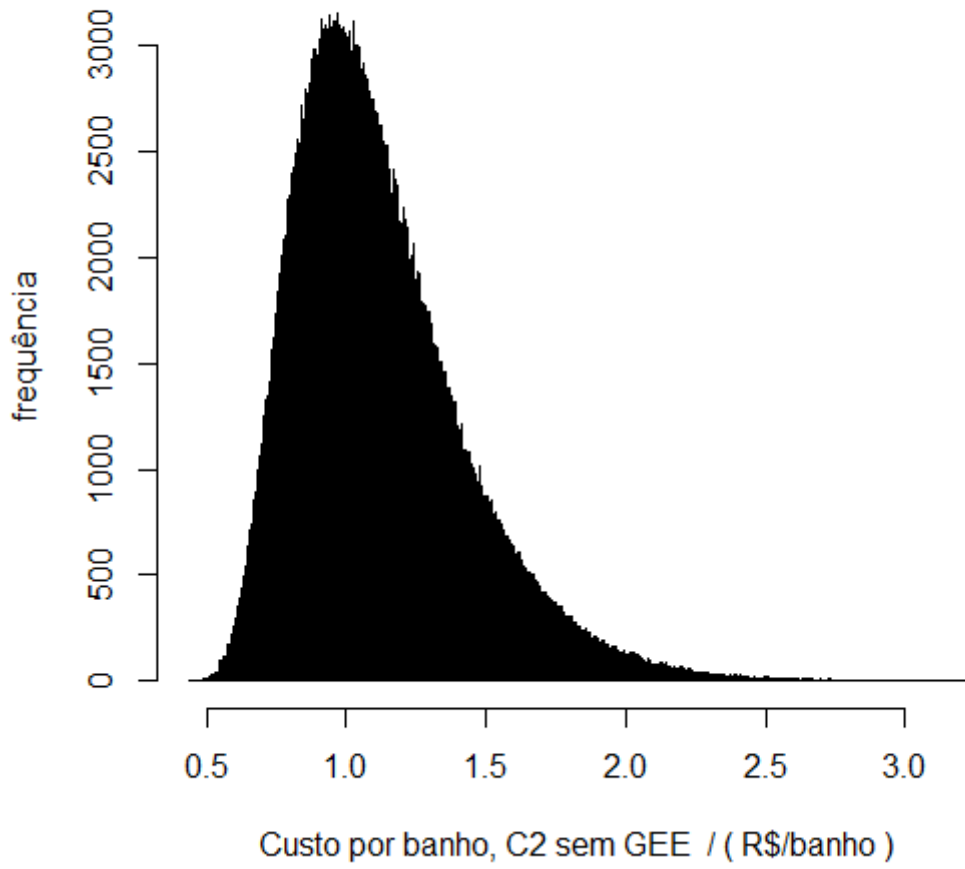
### Histograma da Custo por banho, C2 com GEE



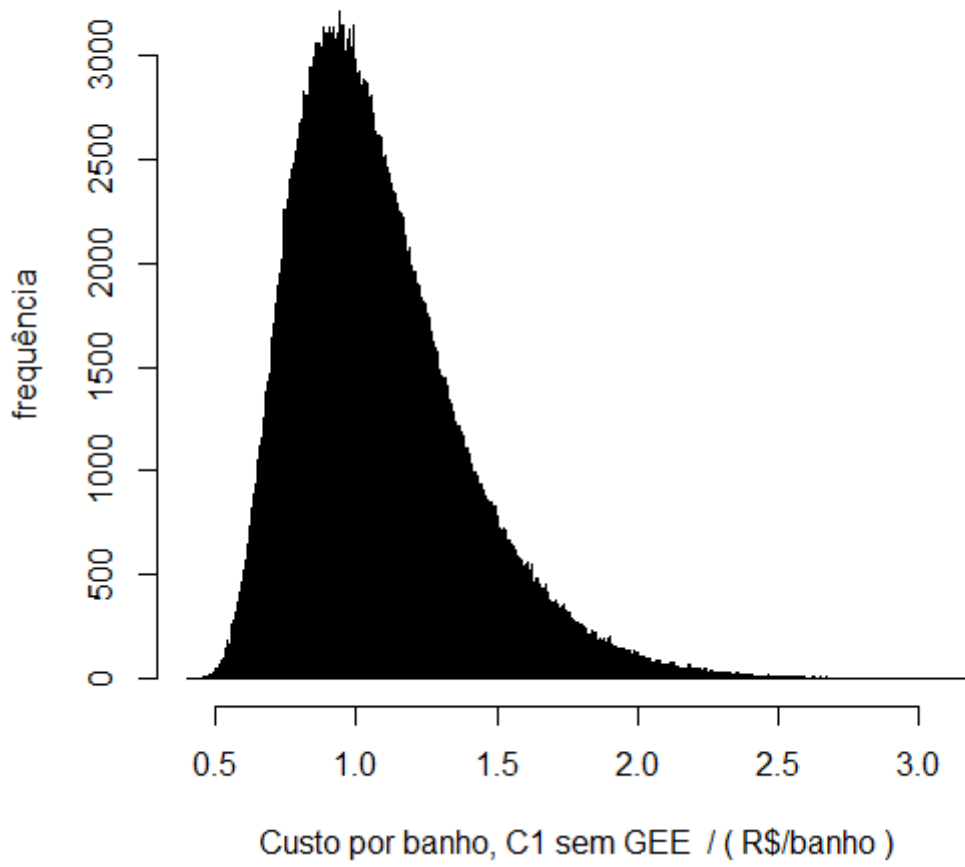
### Histograma da Custo por banho, C1 com GEE



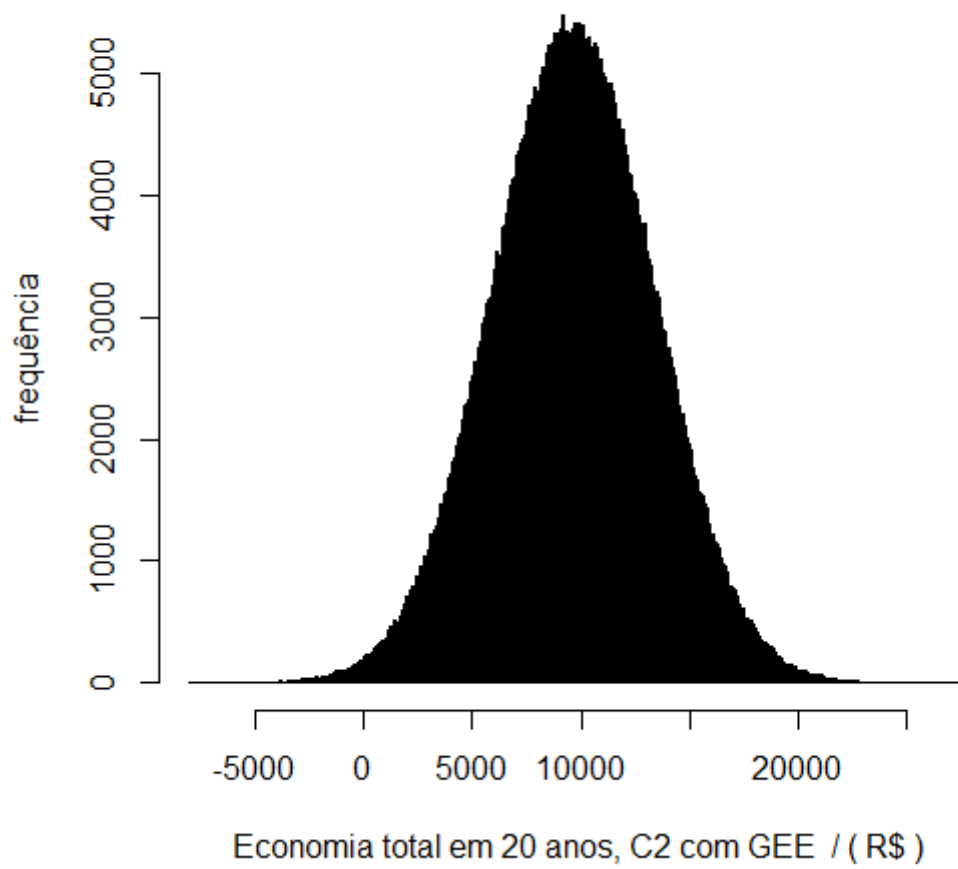
### Histograma da Custo por banho, C2 sem GEE



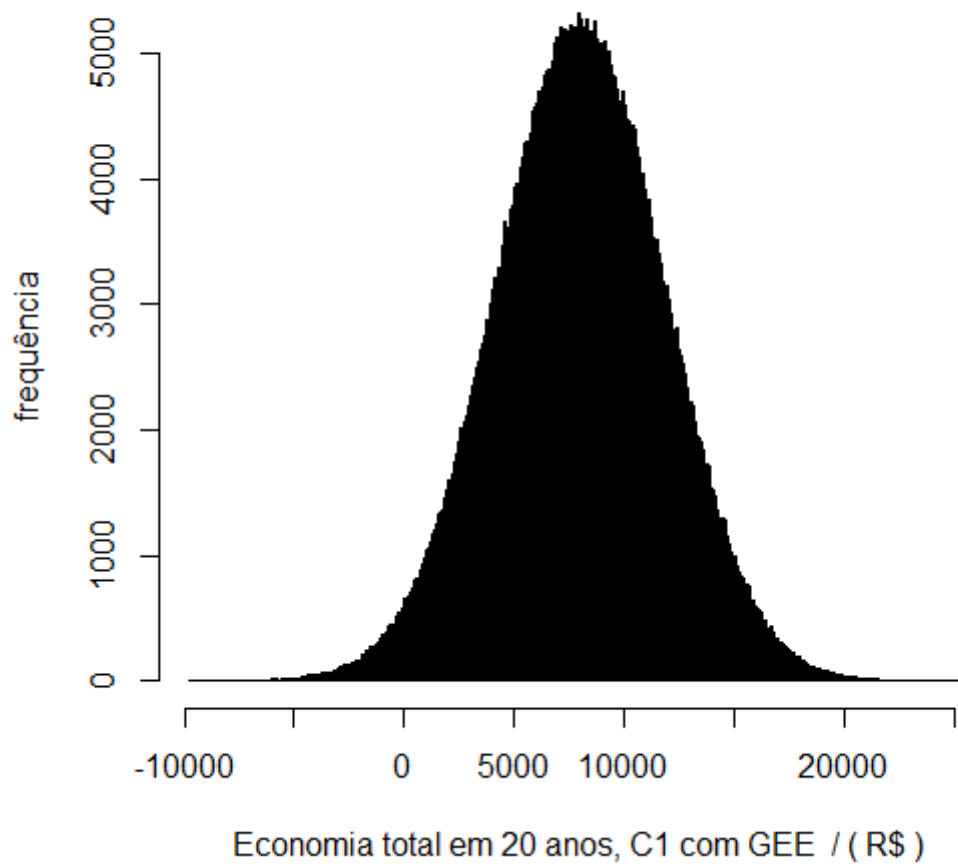
### Histograma da Custo por banho, C1 sem GEE



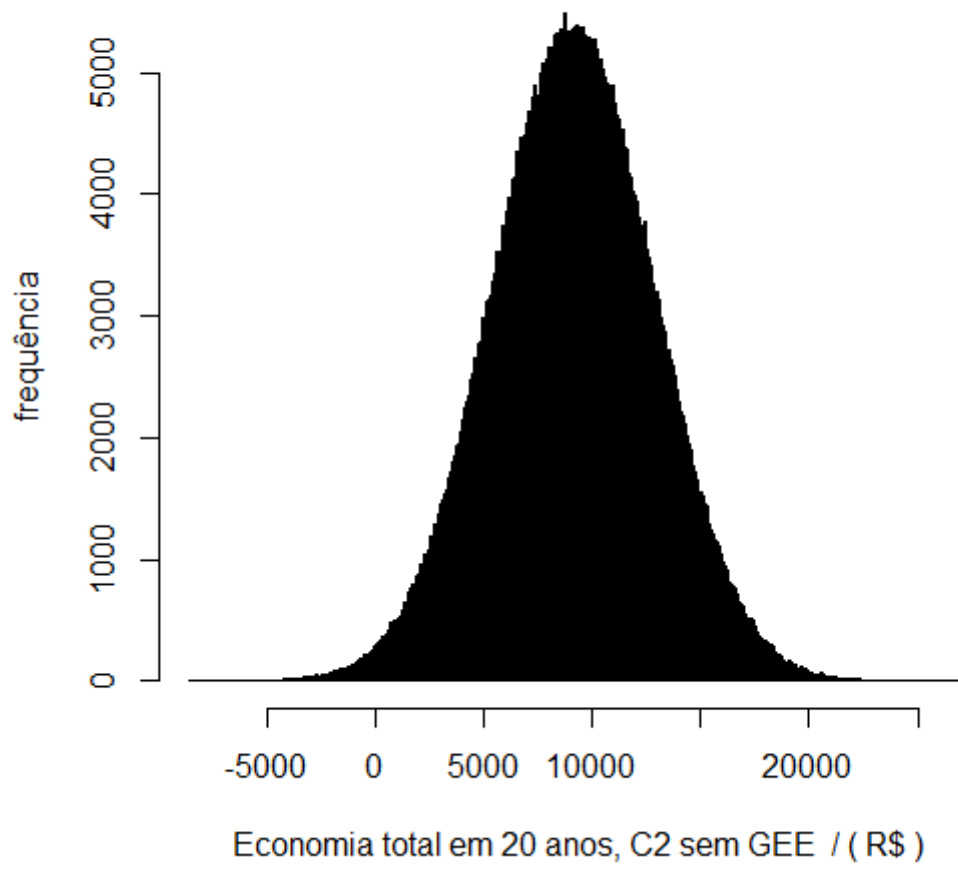
## Histograma da Economia total em 20 anos, C2 com GEI



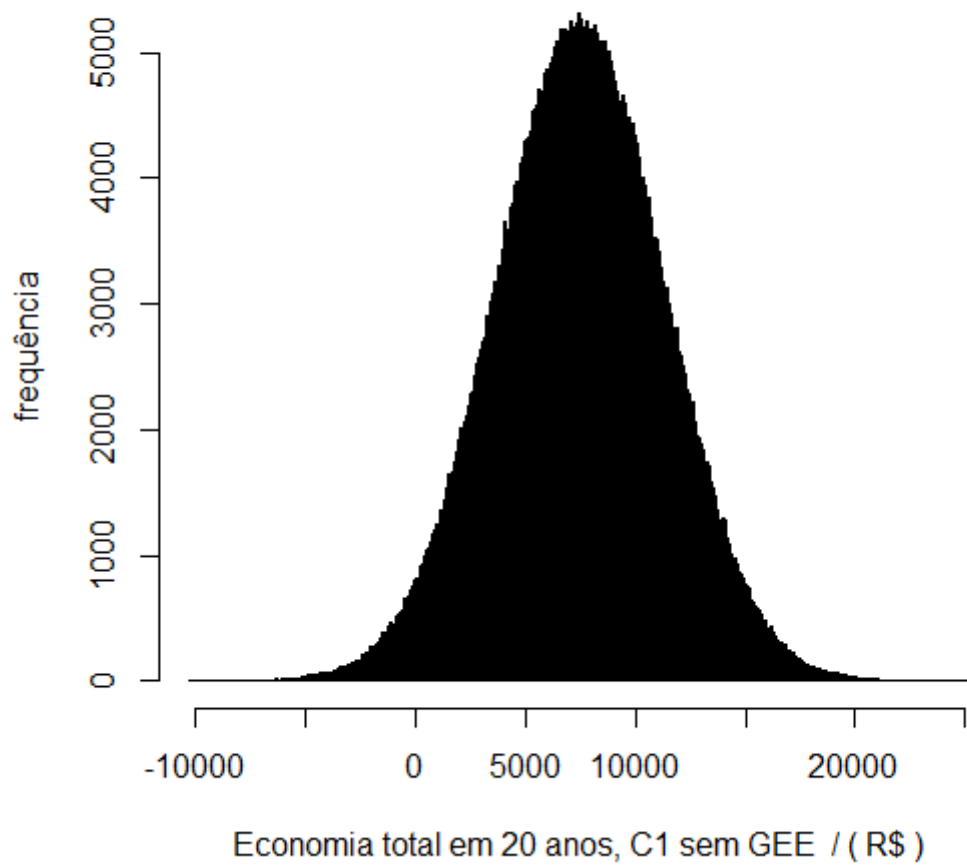
## Histograma da Economia total em 20 anos, C1 com GEI



## Histograma da Economia total em 20 anos, C2 sem GEI

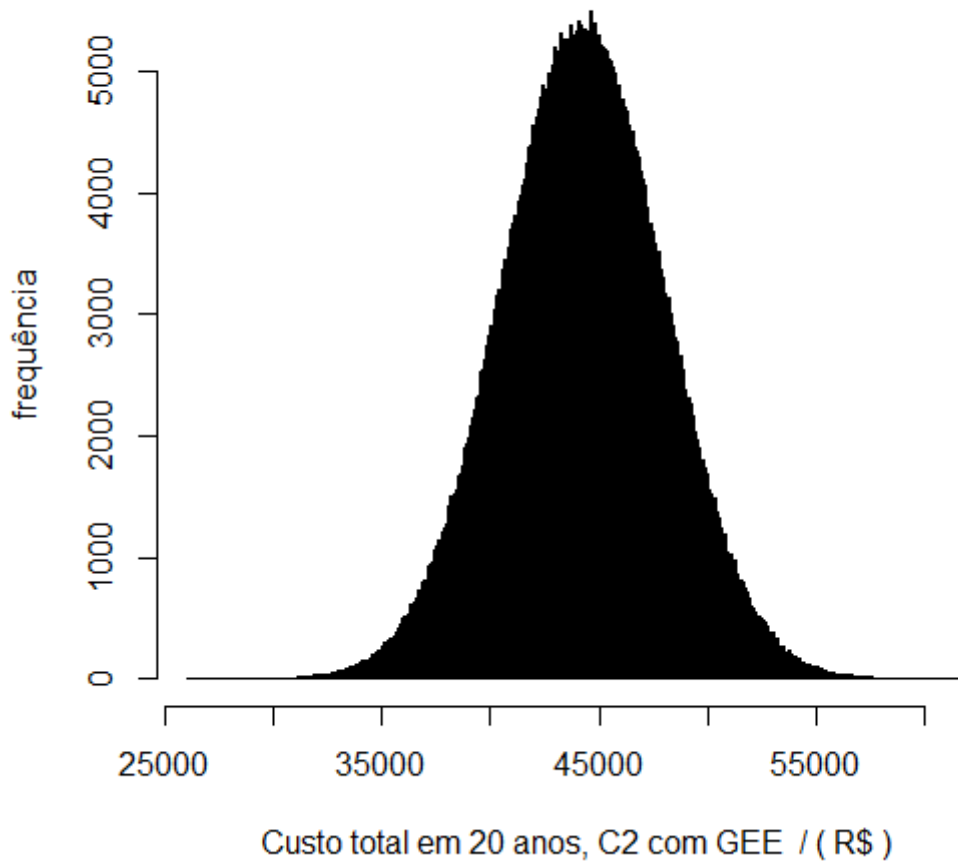


### Histograma da Economia total em 20 anos, C1 sem GEI

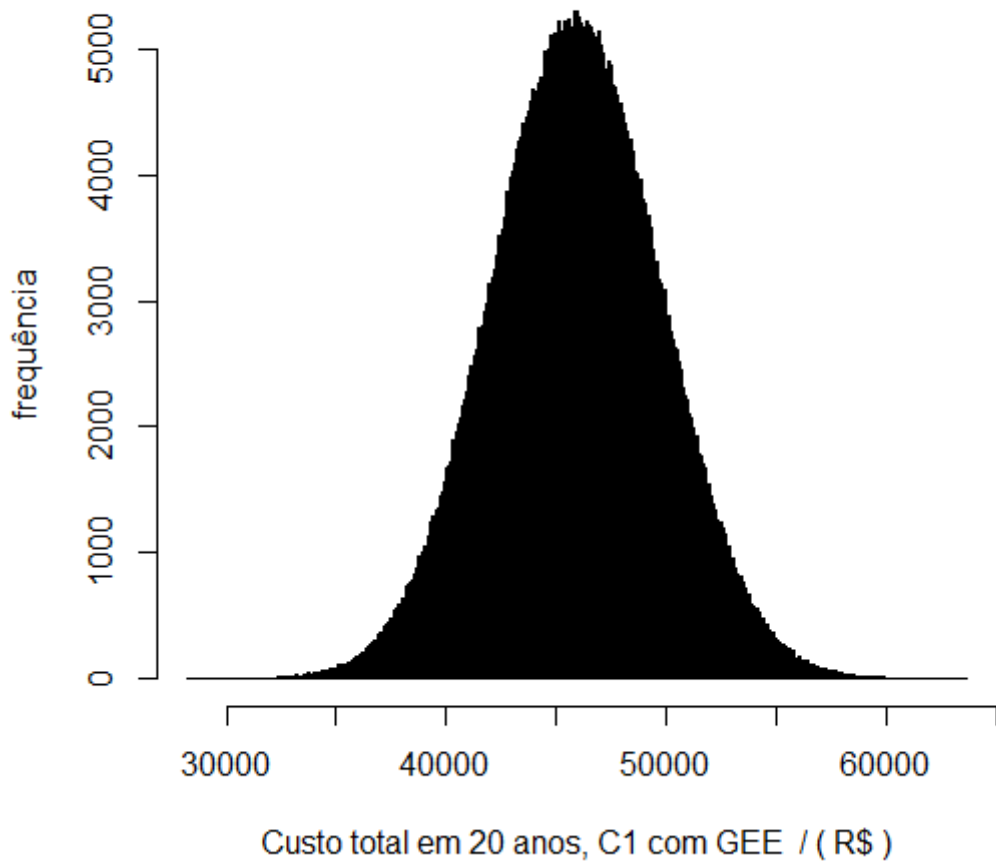




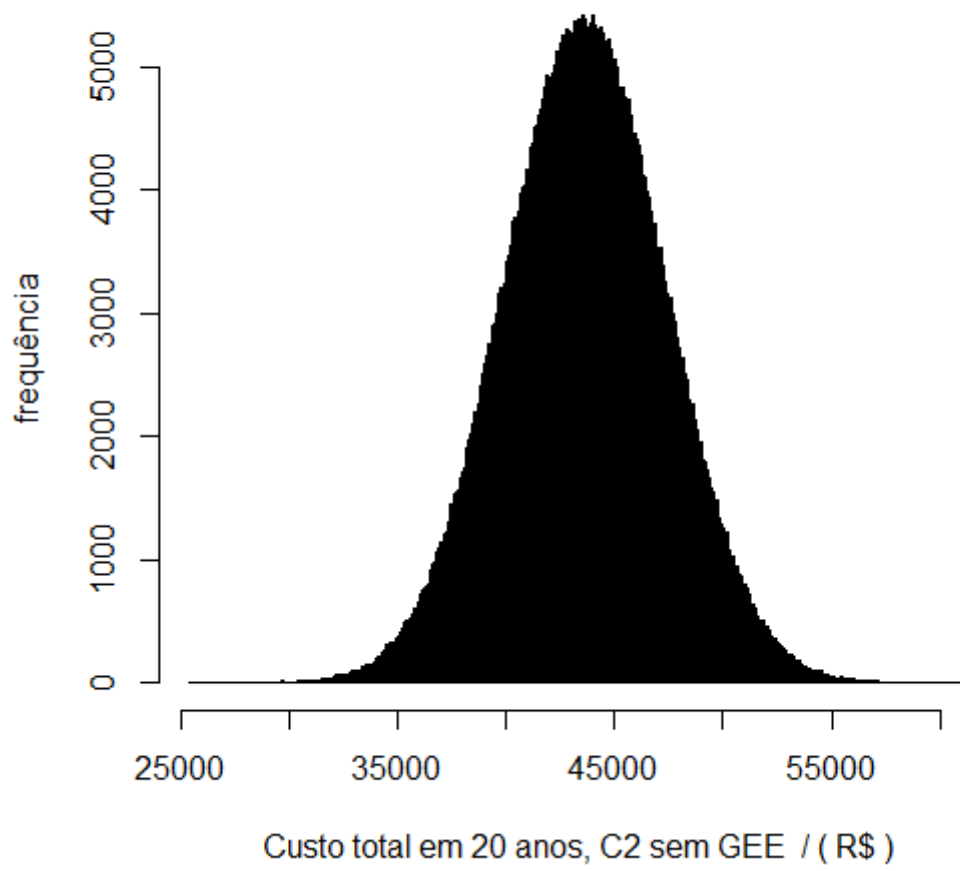
### Histograma da Custo total em 20 anos, C2 com GEE



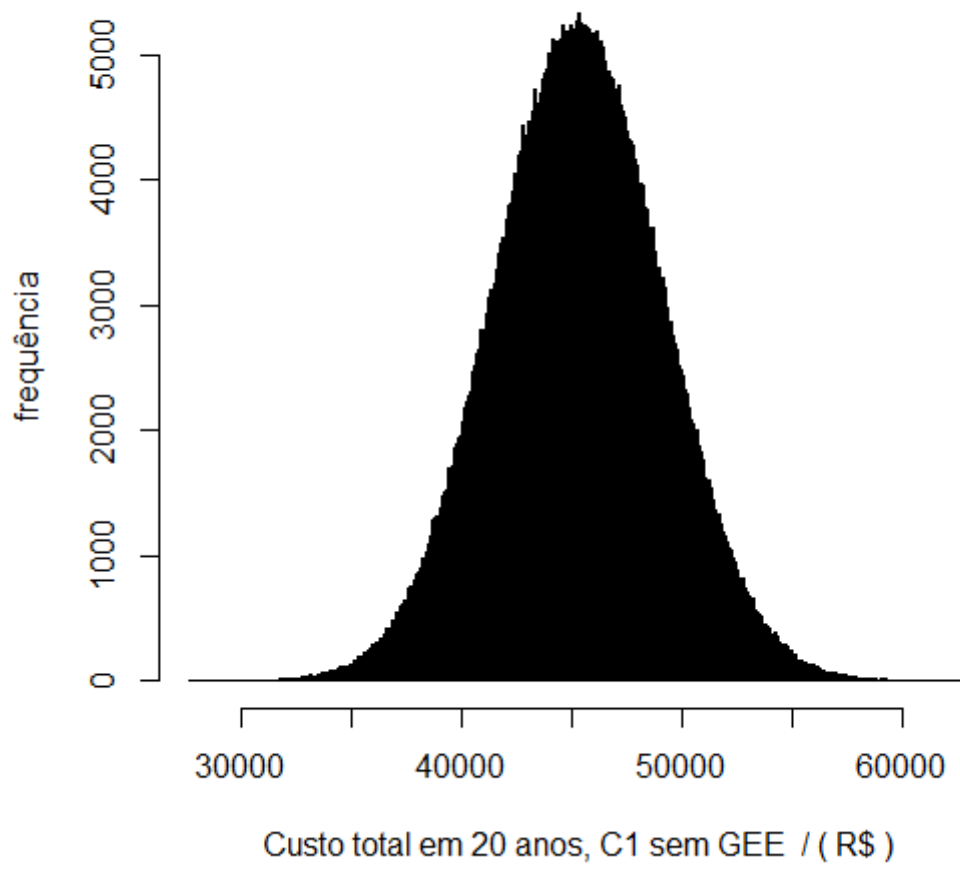
### Histograma da Custo total em 20 anos, C1 com GEE



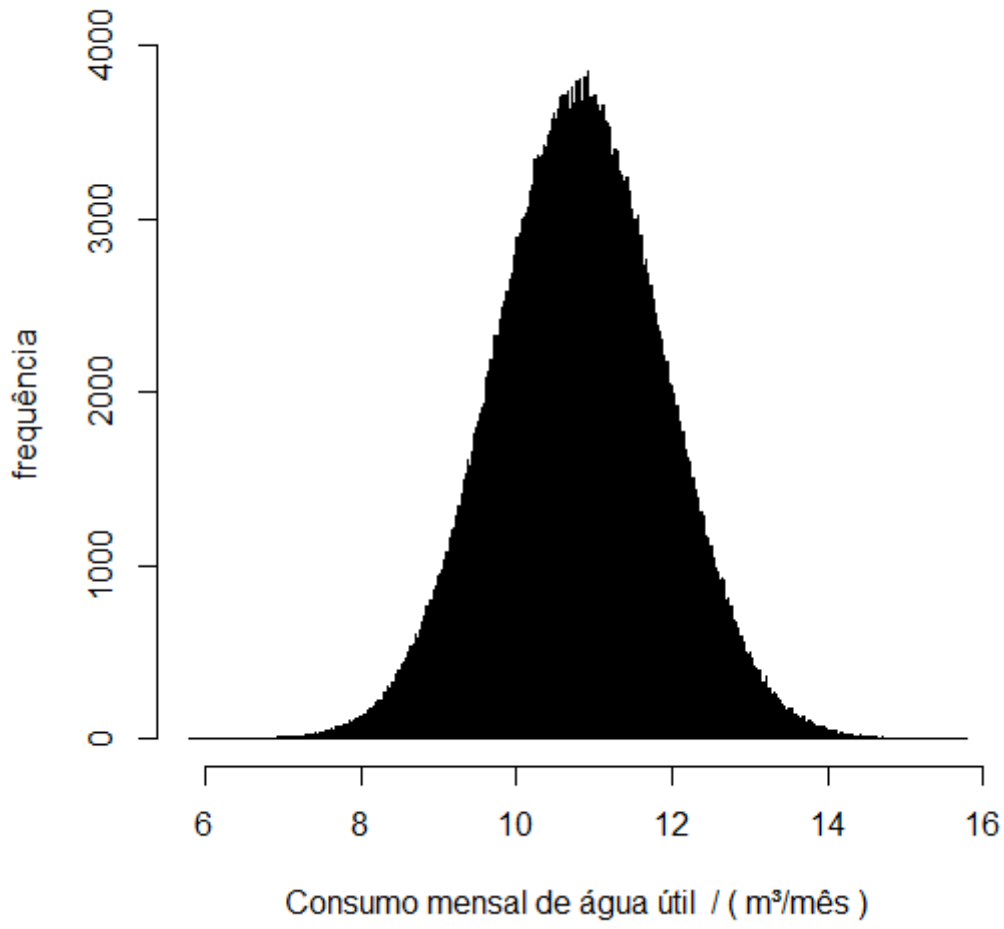
### Histograma da Custo total em 20 anos, C2 sem GEE



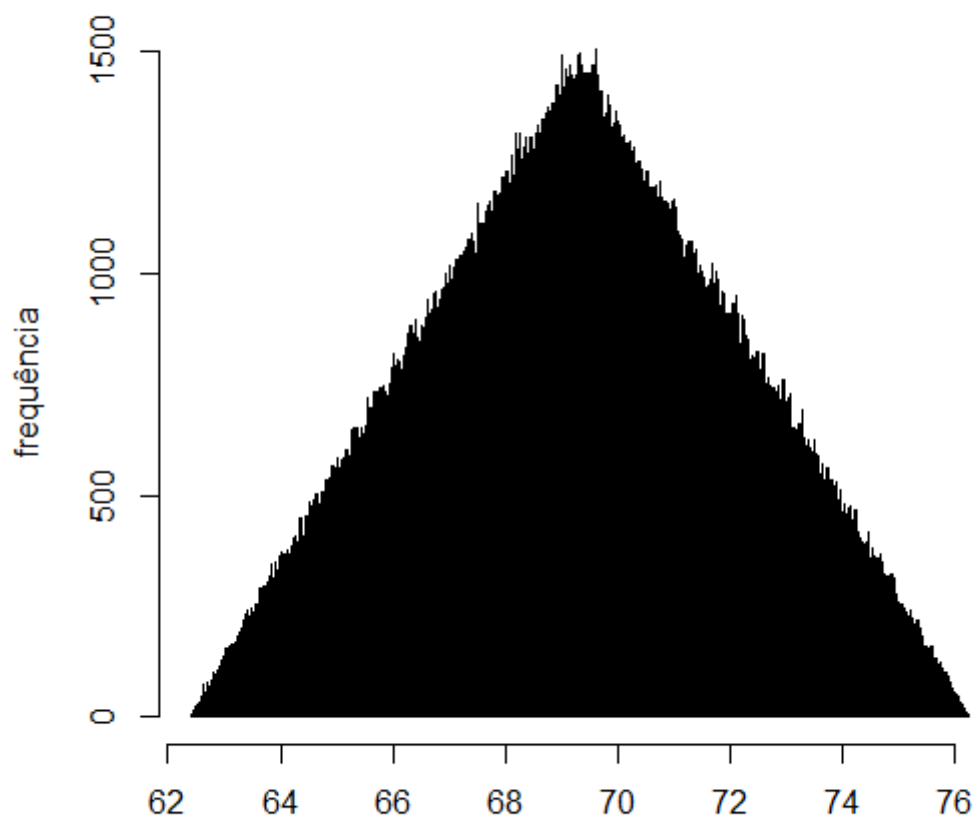
### Histograma da Custo total em 20 anos, C1 sem GEE



**Histograma da Consumo mensal de água útil**

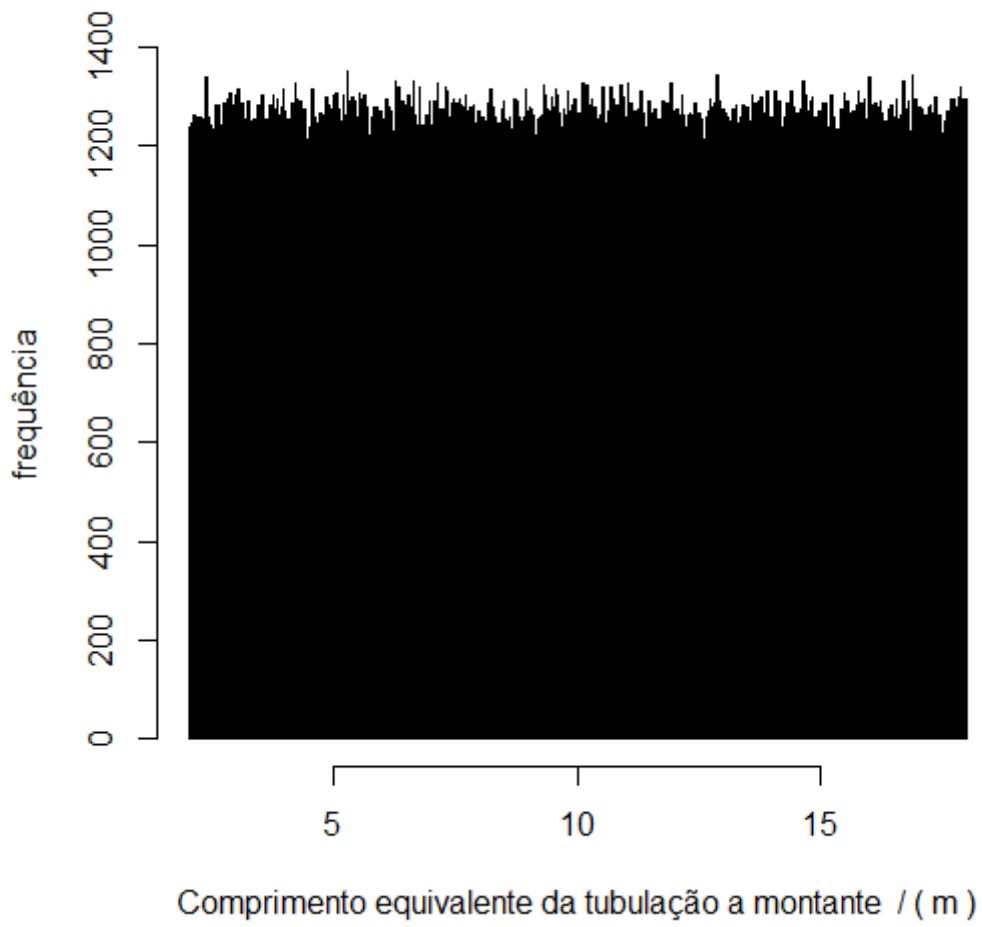


da Consumo mensal de energia com base num chuveiro e

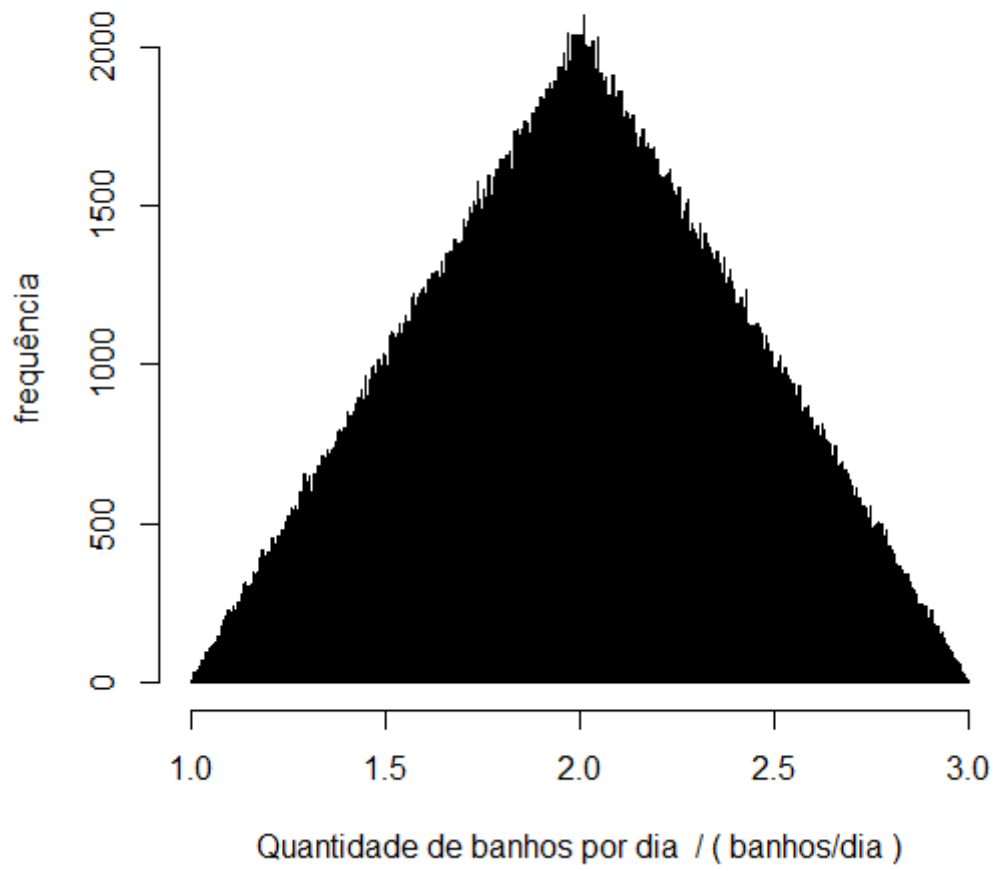


Consumo mensal de energia com base num chuveiro elétrico de 3,5 kW / (k)

### stograma da Comprimento equivalente da tubulação a mo

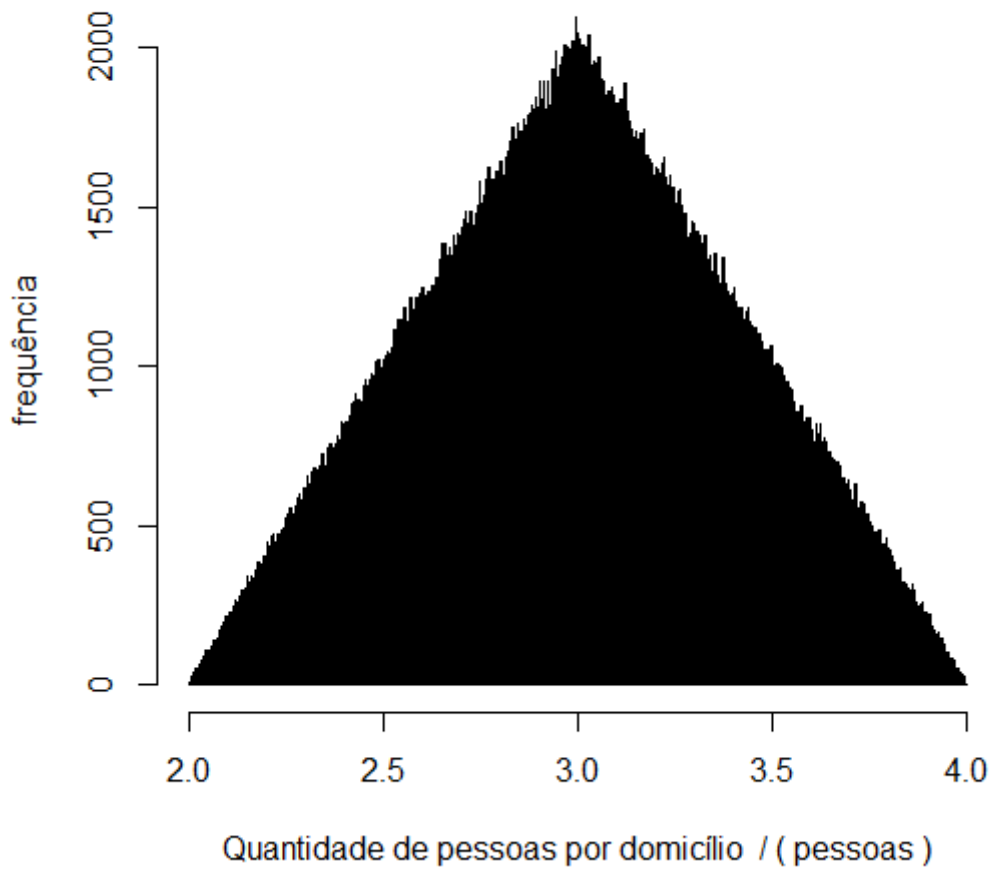


## Histograma da Quantidade de banhos por dia

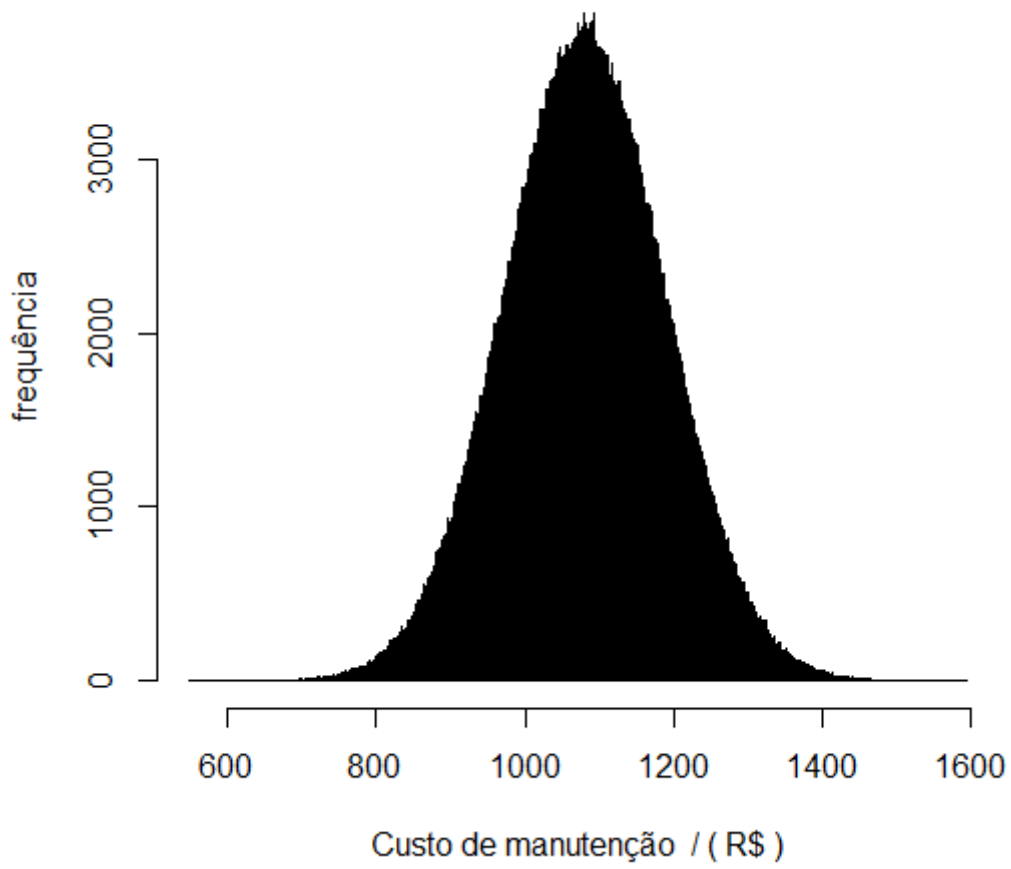




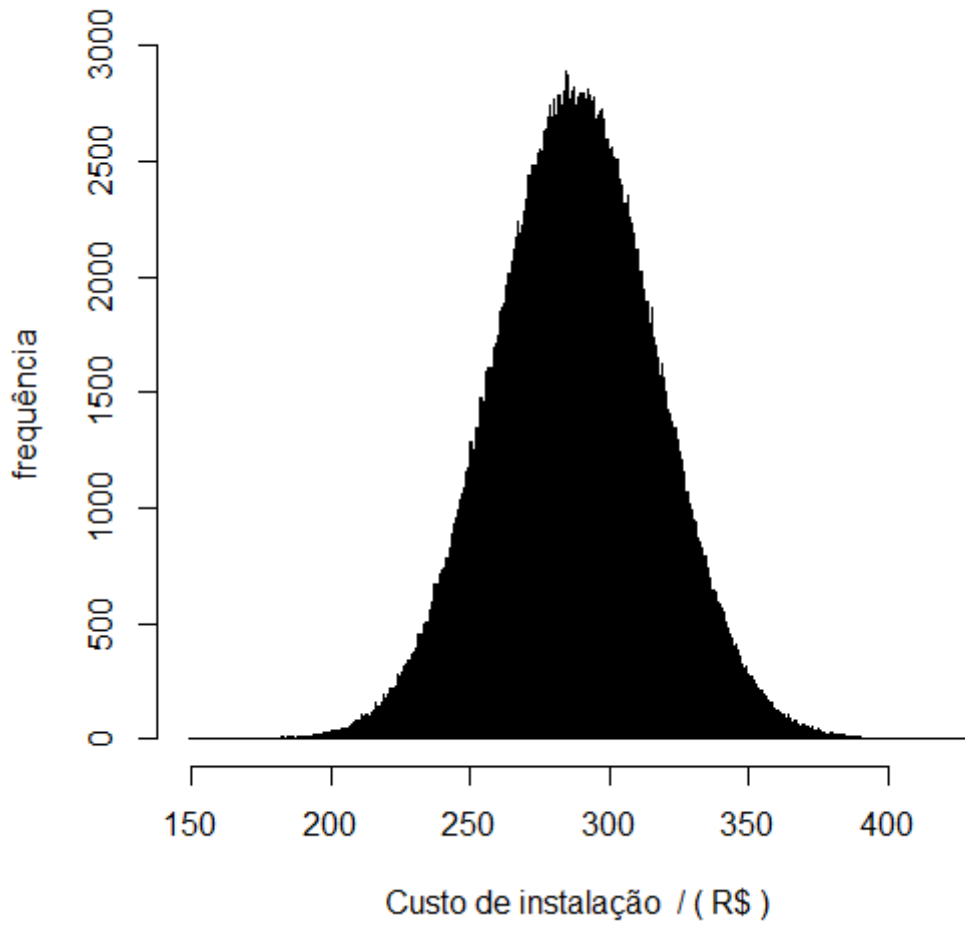
## Histograma da Quantidade de pessoas por domicílio



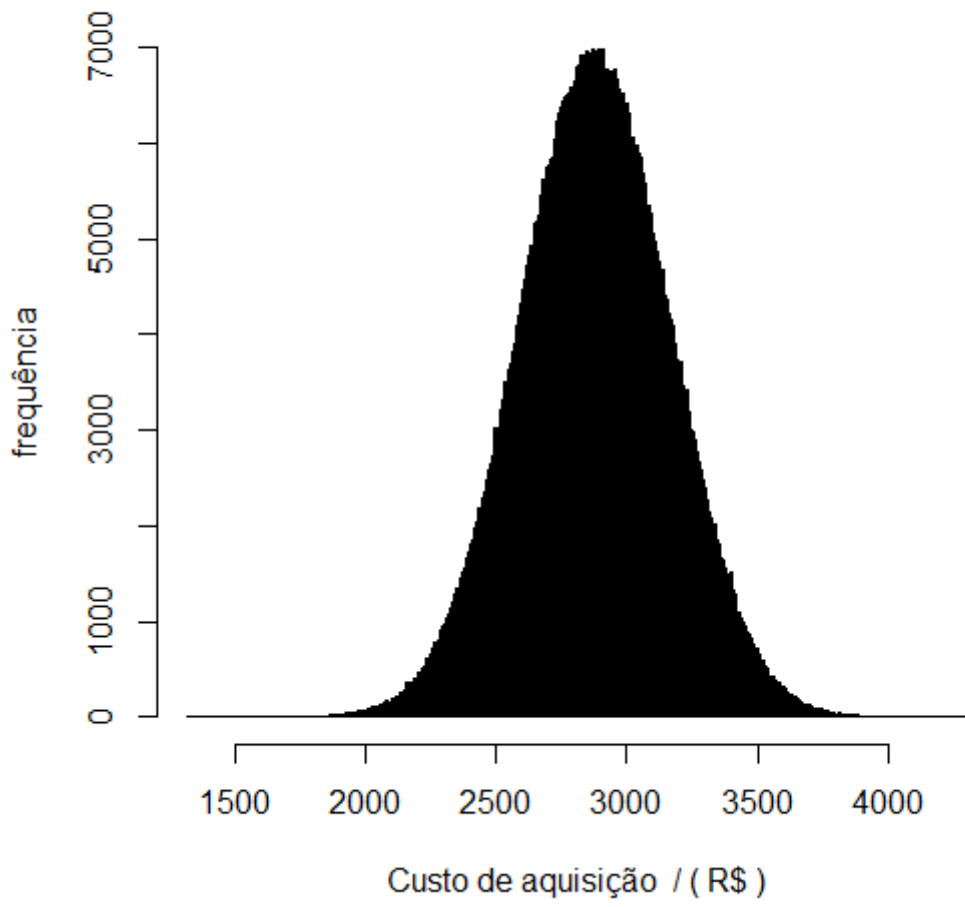
### Histograma da Custo de manutenção



### Histograma da Custo de instalação



### Histograma da Custo de aquisição



### Histograma da Vida útil

