



INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL

» Operação Estatística - IUT

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DMSI / ME



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OE



» Fases da Operação Estatística

- **Concepção**
- **Operação**
- **Difusão**



OE/Concepção



» Concepção

Objectivo Compreender a realidade a partir de dados.

Tipo Recenseamento, Amostragem, Estudo estatístico.

Fonte Questionários, Dados administrativos.

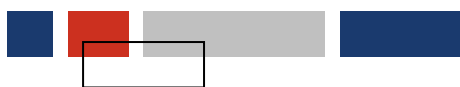


OE/Operação



» Operação

- **Recolha:** Directa (Presencial, Telefónica, Web) ou Indirecta.
- **Tratamento:** Formatação, Validação, *Outliers*, Imputação.
- **Análise:** Gráficos, Medidas descritivas, Modelos.



OE/Operação/Análise



» Análise

Gráficos *Pie chart, Barplot, Boxplot, Histogram, Countplot.*

Medidas descritivas Tendência central, Dispersão.

Modelos Regressão linear, Regressão logística.



» Difusão

Indicadores Resultados dos inquéritos, para público em geral.

Microdados Base de dados dos inquéritos, para investigadores.

Destaques *Press release* curta, harmonizada, calendarizada.

Publicações/Boletins Documento longo, calendarizado.

Estudos Documento longo, não-calendarizado.



» Inquérito à Utilização do Telemóvel

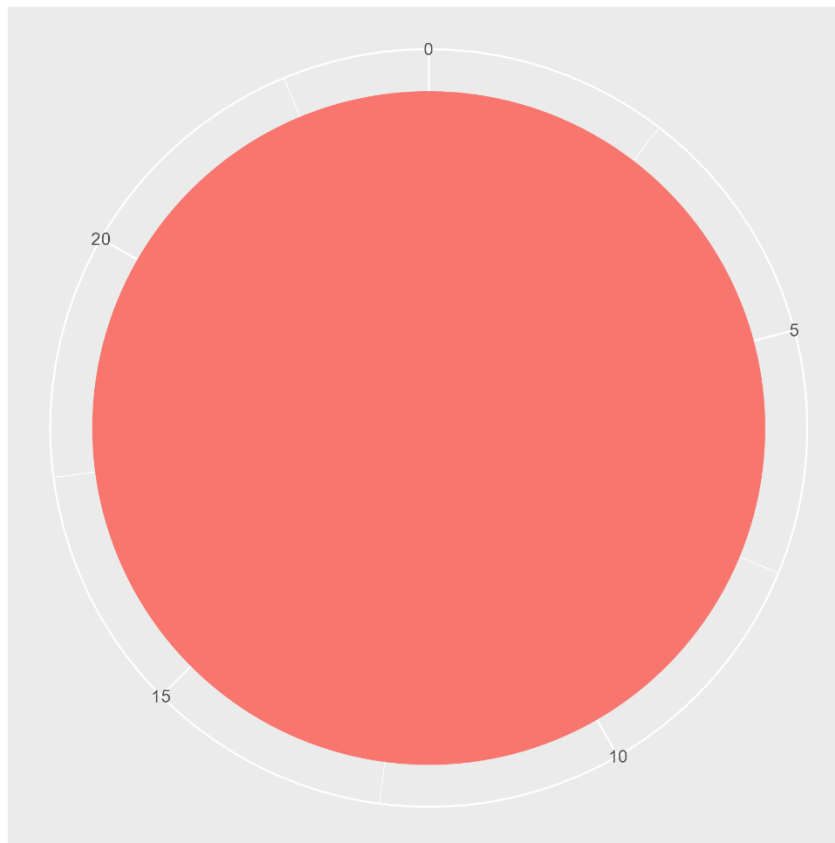
- Vídeo: ..\media\OE-IUT_20180411.mp4
- Questionário: <https://docs.google.com/forms/.../viewform>
- Análise: <https://r2.ine.pt/>

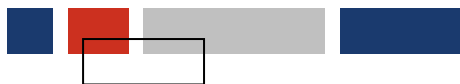


IUT/Análise/Exploração

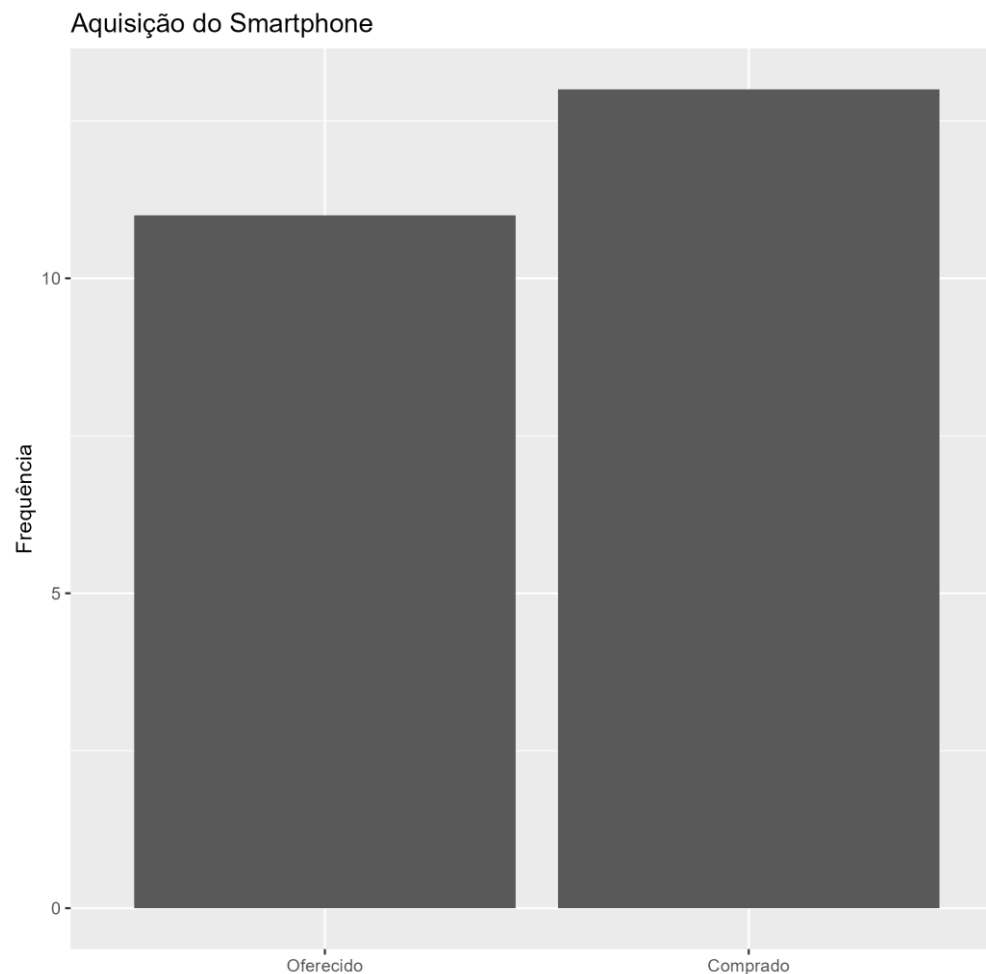


Tem Smartphone?





IUT/Análise/Exploração

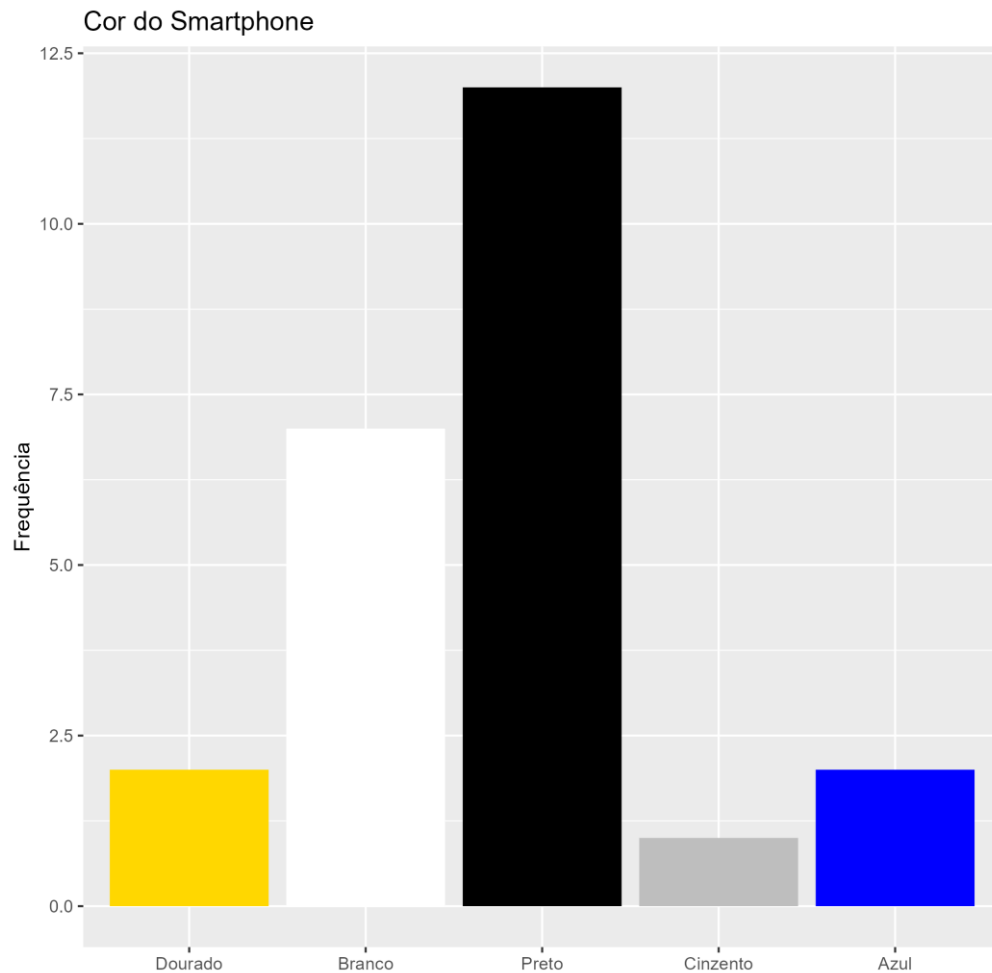


IUT/Analise/Exploração

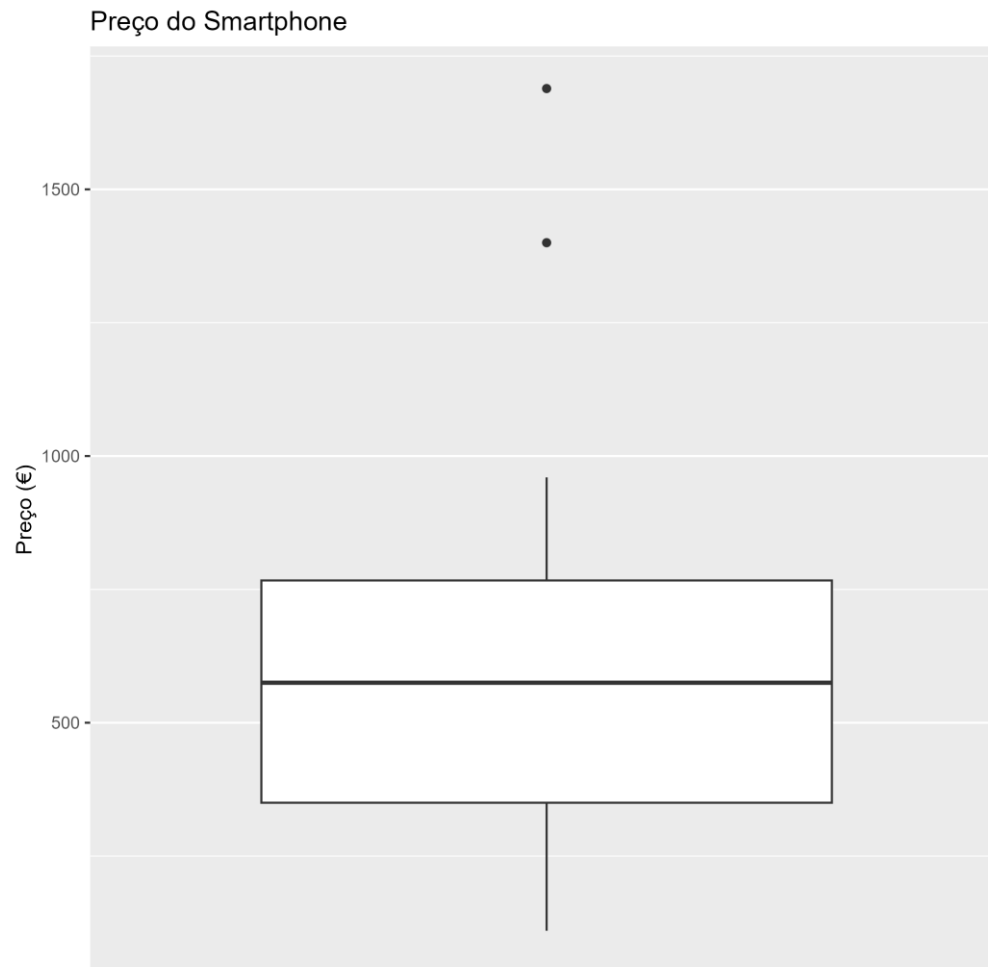


AGE_FIRST	Freq	Cumul	Rel	RelCumul
6	1	1	4%	4%
8	3	4	13%	17%
9	1	5	4%	22%
10	9	14	39%	61%
11	2	16	9%	70%
12	3	19	13%	83%
13	1	20	4%	87%
14	2	22	9%	96%
17	1	23	4%	100%

IUT/Análise/Exploração

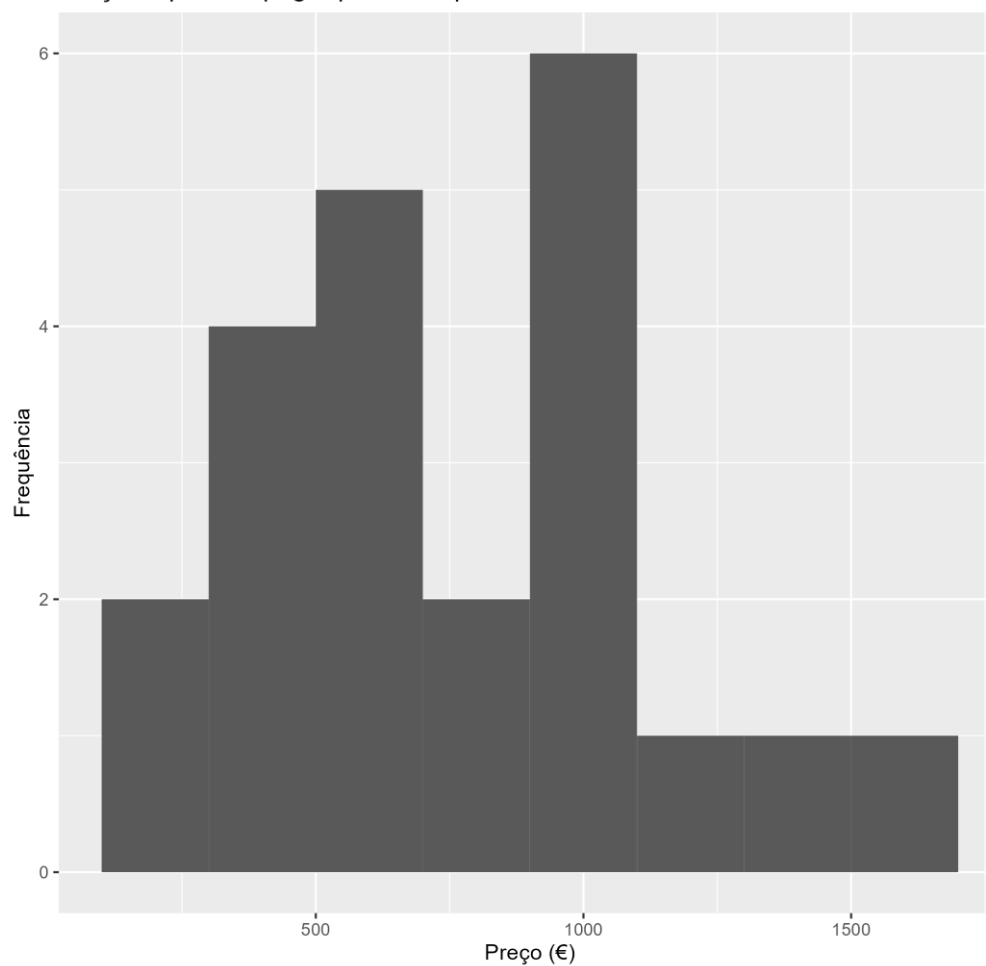


IUT/Análise/Exploração

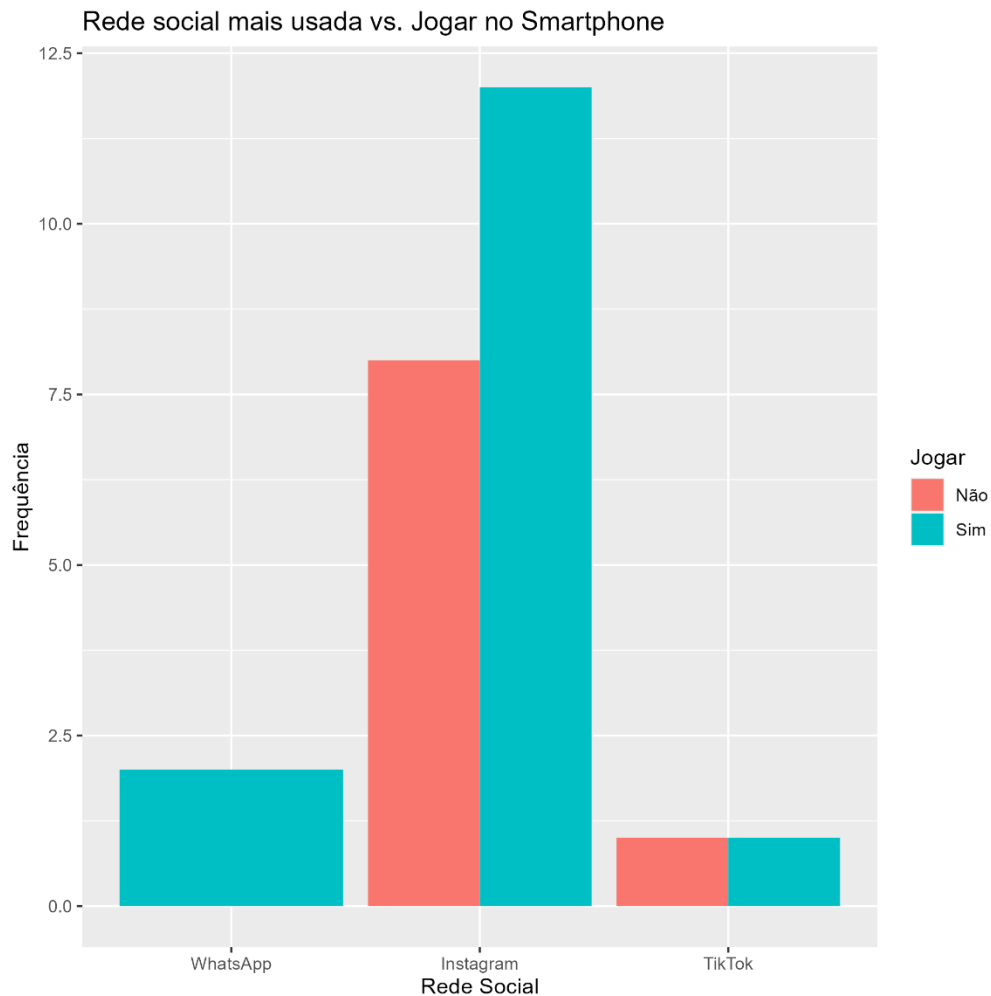


IUT/Análise/Exploração

Preço disposto a pagar por Smartphone

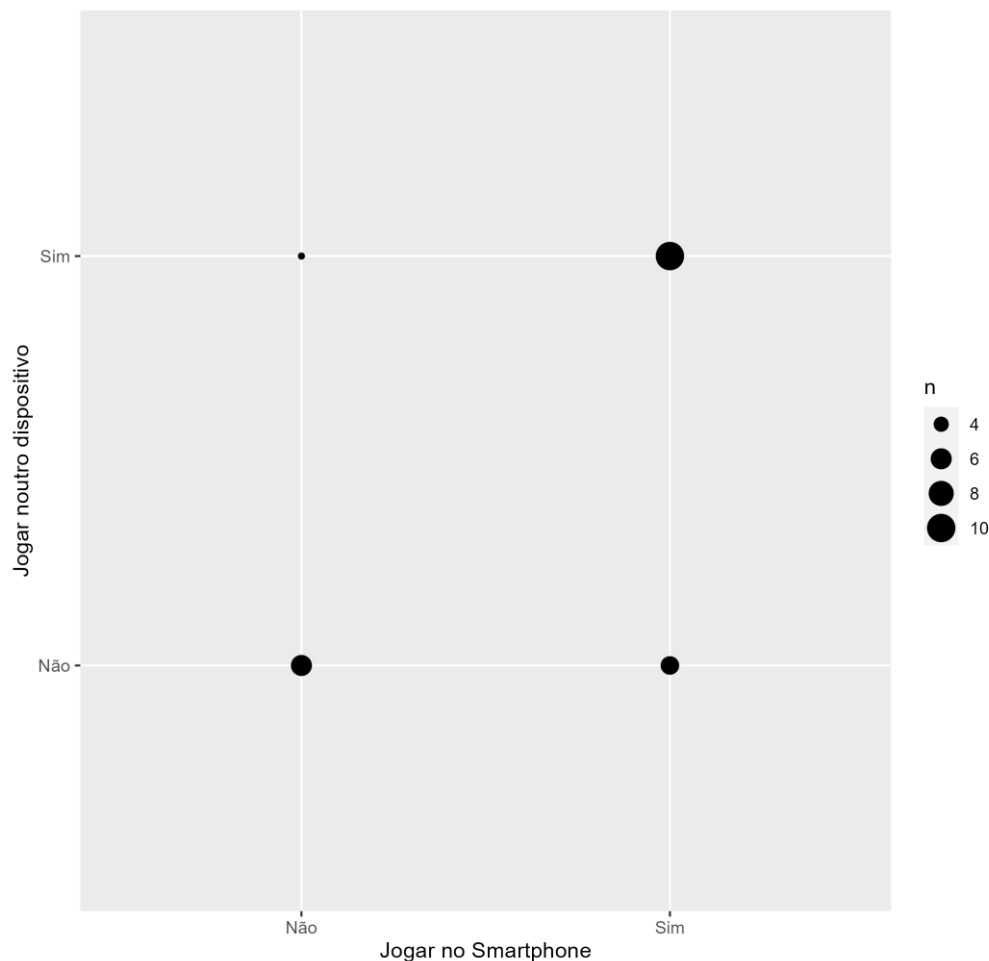


IUT/Análise/Exploração

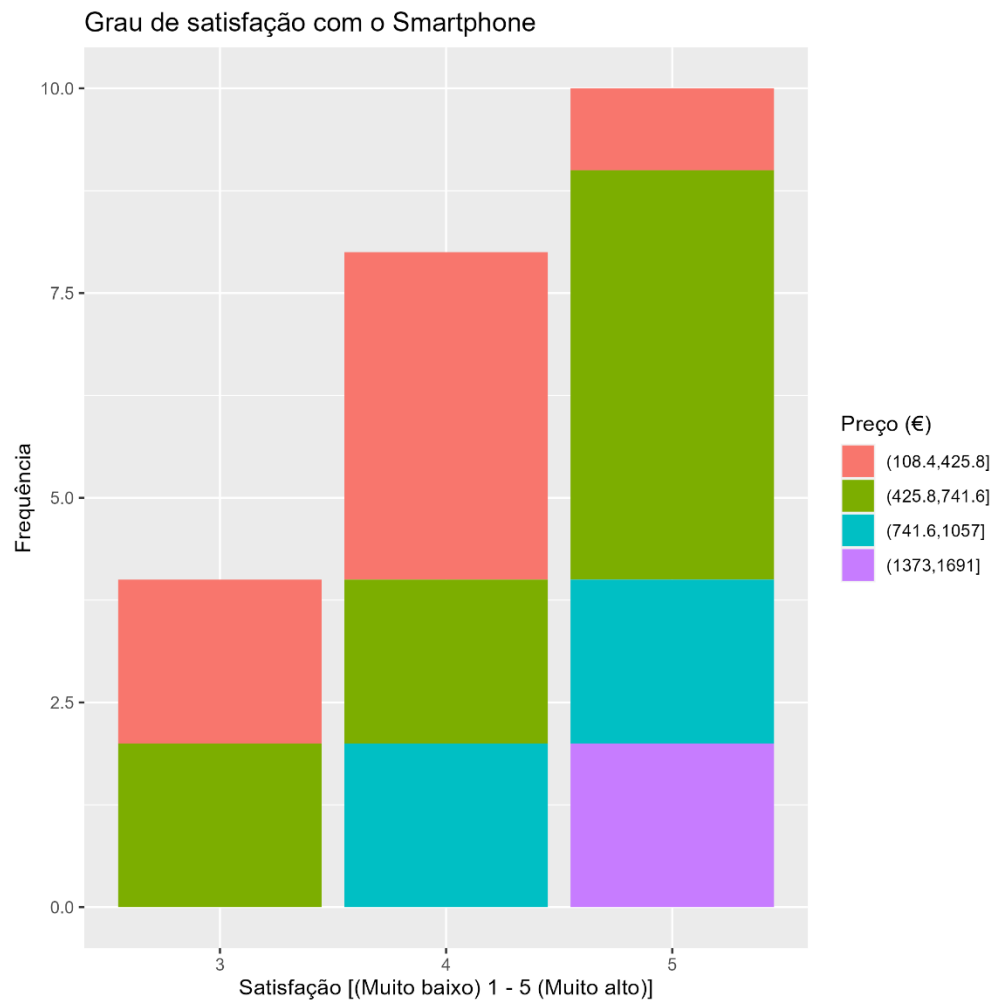


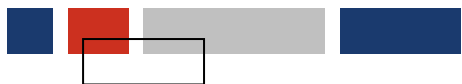
IUT/Análise/Exploração

Jogar no Smartphone vs. Jogar noutro dispositivo



IUT/Análise/Exploração





IUT/Analise/Exploração



	Mean	Median	Mode	StDev	IQR	Range
AGE_FIRST	10.65	10	10	2.37	2	11
PRICE	608.23	575.00	350.00	379.85	416.75	1579.00
PRICE_NEW	797.73	750.00	1000.00	373.68	475.00	1500.00



IUT/Analise/Modelos



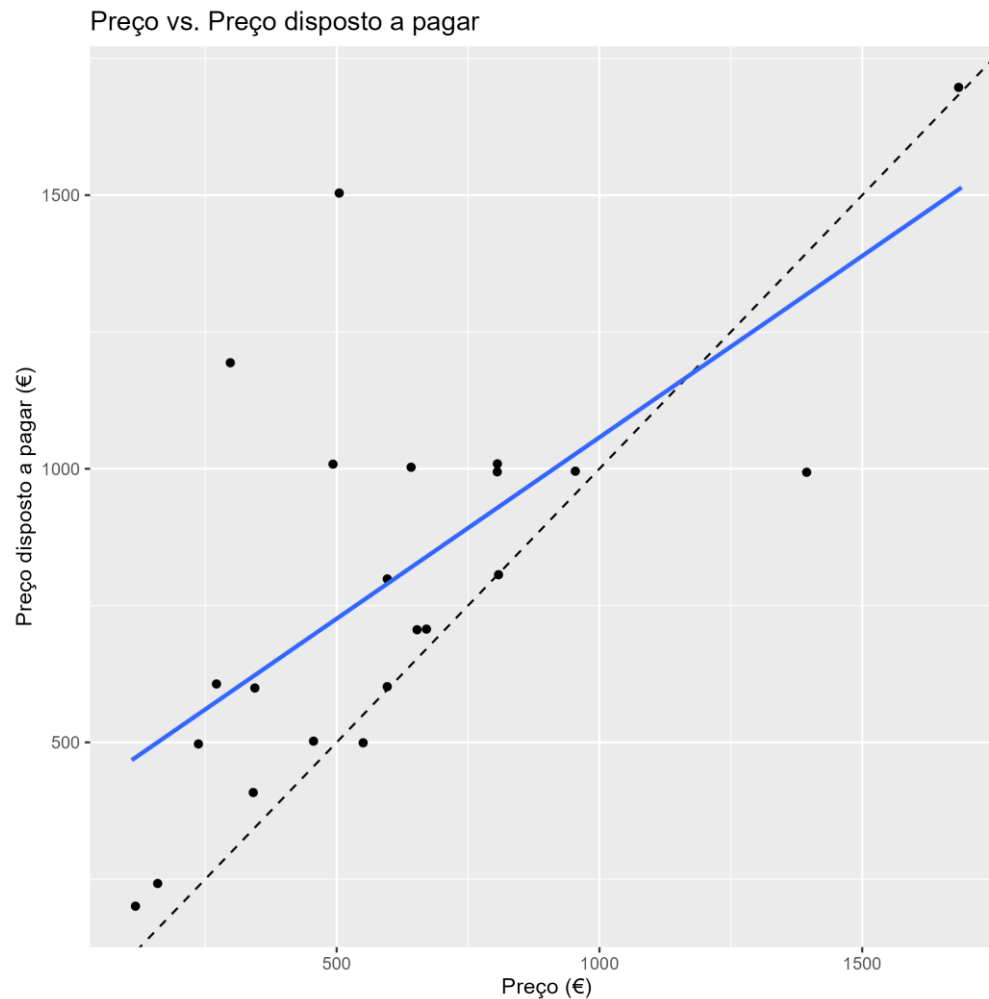
```
lm(formula = PRICE_NEW ~ PRICE, data = d5)
```

	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	394.5636	115.8153	3.407	0.002797	**
PRICE	0.6629	0.1625	4.078	0.000586	***

Multiple R-squared: 0.45, Adjusted R-squared: 0.43



IUT/Analise/Modelos





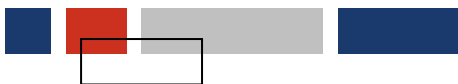
IUT/Analise/Modelos



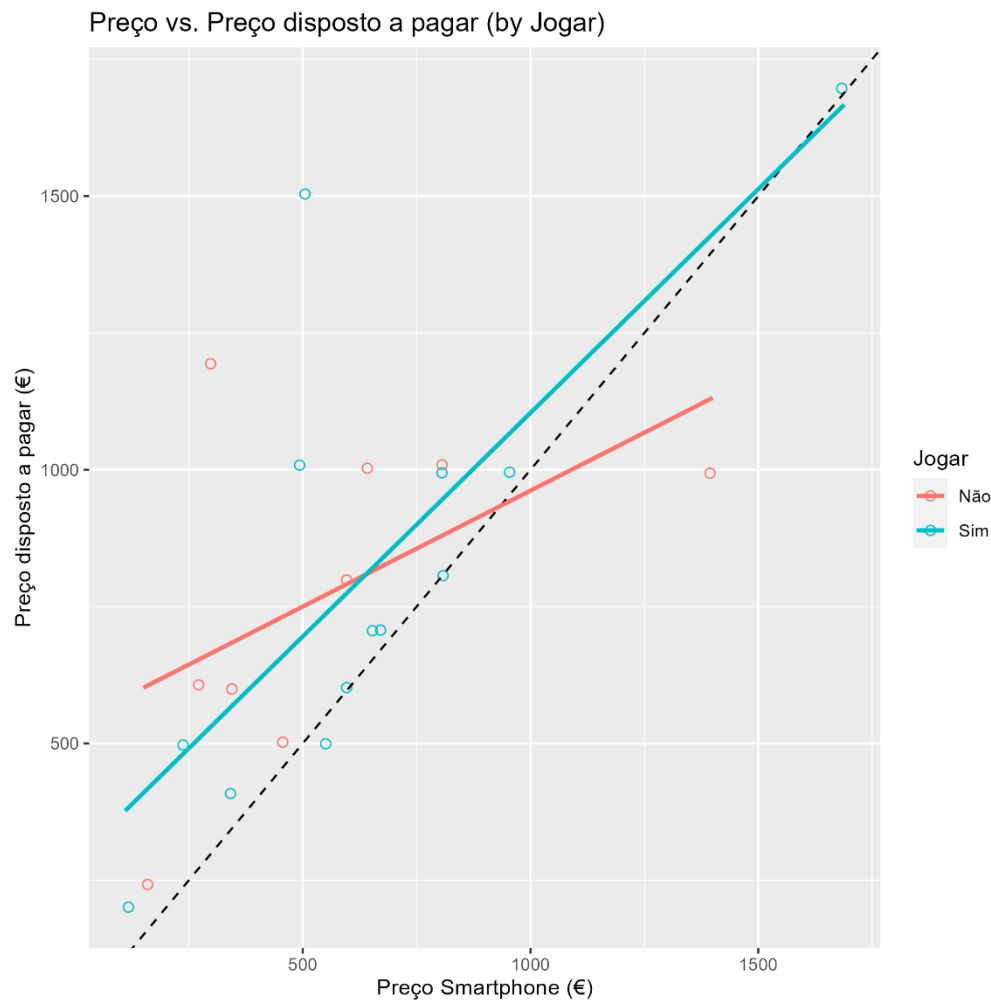
```
lm(formula = PRICE_NEW ~ PRICE + PLAY_PHONE, data = d5)
```

	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	404.1704	134.0391	3.015	0.007116	**
PRICE	0.6661	0.1680	3.965	0.000829	***
PLAY_PHONETRUE	-19.5924	126.7912	-0.155	0.878825	

Multiple R-squared: 0.45, Adjusted R-squared: 0.40



IUT/Análise/Modelos





IUT/Analise/Modelos

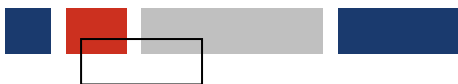


```
glm(formula = PLAY_PHONE ~ PRICE, family = "binomial", data = d5)
```

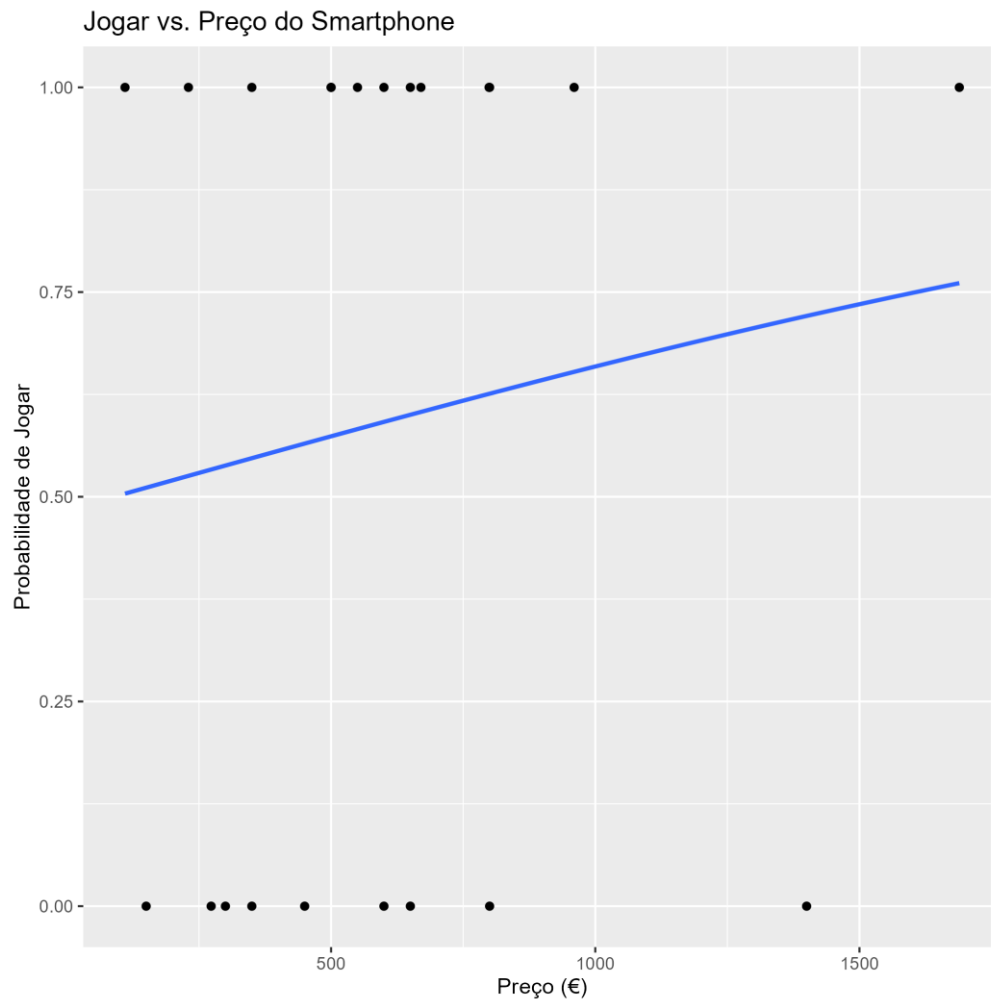
	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-0.0641579	0.8515698	-0.075	0.940
PRICE	0.0007234	0.0012513	0.578	0.563

AIC: 33.41

	OR	2.5 %	97.5 %
PRICE	1.00	1.00	1.00



IUT/Analise/Modelos





IUT/Analise/Modelos

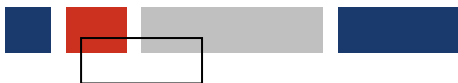


```
glm(formula = PLAY_PHONE ~ PRICE + SOCIALNET, family = "binomial", data = d5)
```

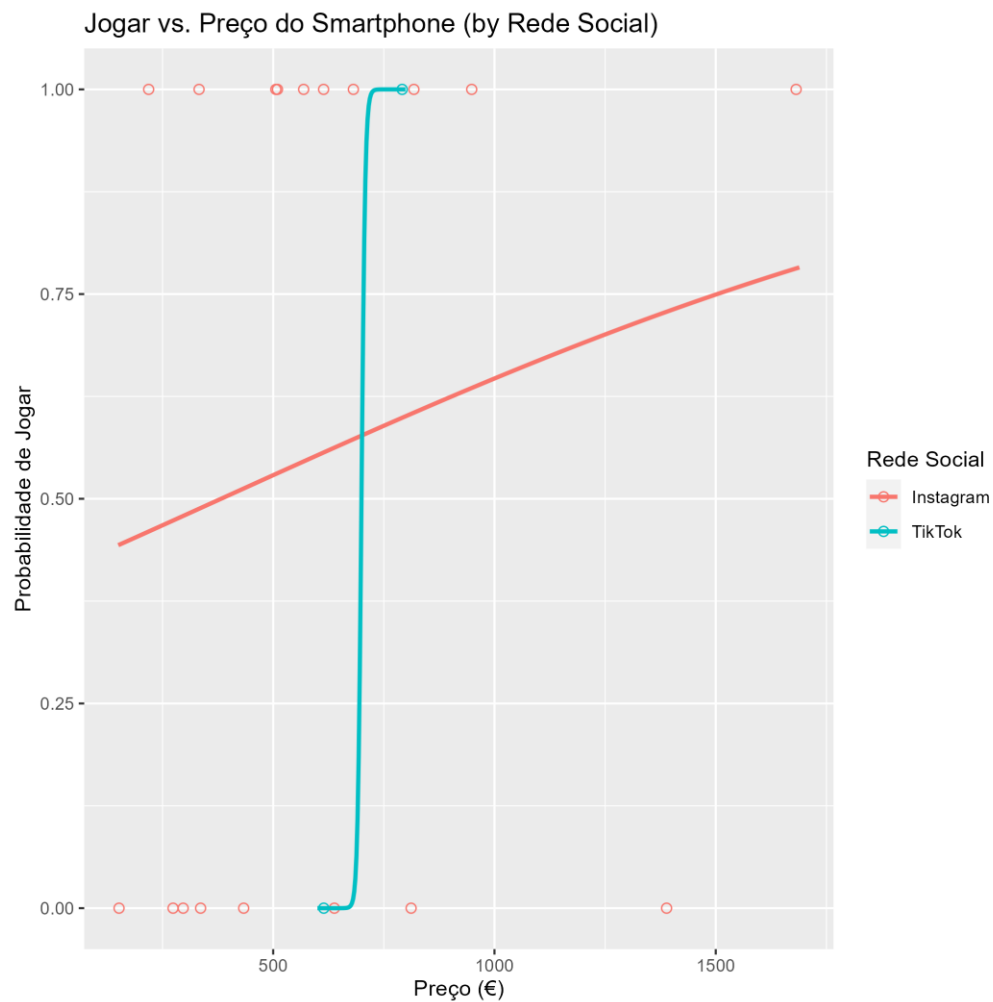
	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-0.477224	0.940716	-0.507	0.612
PRICE	0.001154	0.001378	0.838	0.402
SOCIALNETTikTok	-0.330225	1.505384	-0.219	0.826

AIC: 32.71

	OR	2.5 %	97.5 %
PRICE	1.00	1.00	1.00
SOCIALNETInstagram	0.72	0.04	13.74



IUT/Analise/Modelos





OE-IUT



Obrigado

<https://www.r-project.org/>

<https://rstudio.com/>

<https://github.com/jsollari/OE-IUT2020>