

EXERCISE 1

Kolmogorov-Smirnov

$sig > \alpha$
0.823 > 0.05 → There is normality

Levene

$sig > \alpha$ → There is homoscedasticity
0.306 > 0.05

Linearity

This is not necessary in this case (relationship qualitative-quantitative)

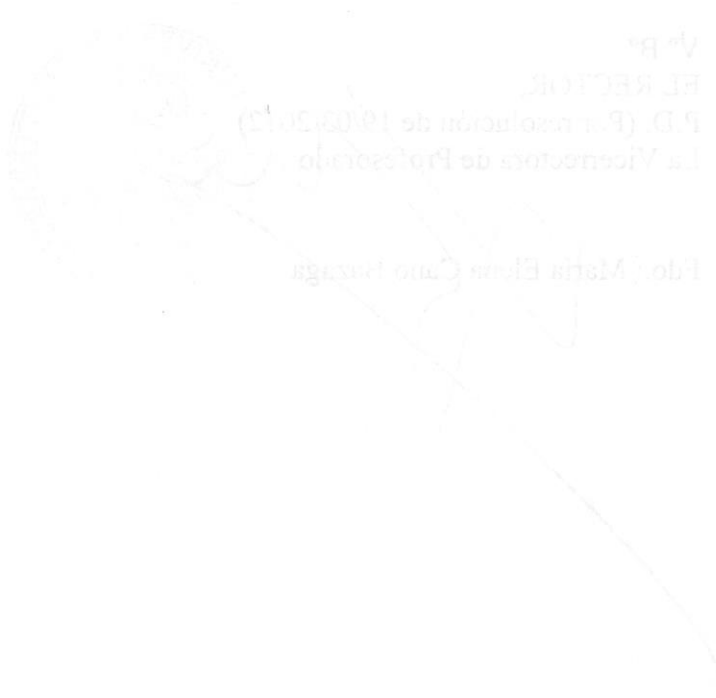
Durbin-Watson

$1.5 < d < 2.5$ → 1.44 is not in the interval, so there is not independence of errors

Linearity	TP13 op.Doc+6h.TDT + 1 h. Ours	1 h. de h/a	Profesora Susana Esteban	10/05/2009	10/05/2009
Durbin-Watson	8h.D+6h.TDT + 1 h. Ours	1 h. de h/a	Profesora Susana Esteban	10/05/2009	10/05/2009

LA SECRETARIA GENERAL

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EX. 2

A ₁	A ₂	A ₃
7	5	2
4	5	4
6	3	7
8	4	1
6	4	2
6	7	1
2	2	5
9	2	5
Σ 48	32	27

(a)

RESIDUAL	SS	df	MS	F
BETWEEN	30.08	$k-1=2$	15.04	3.598
WITHIN	87.875	$k(n-1)=21$	4.18	
TOTAL		$N-1=23$		

$$SSB = n \sum (\bar{y}_{.j} - \bar{y}_{..})^2 = 8 \cdot [(6 - 4.458)^2 + (4 - 4.458)^2 + (3.375 - 4.458)^2] = 30.08$$

$$\bar{y}_{.1} = \frac{48}{8} = 6$$

$$\bar{y}_{.2} = \frac{32}{8} = 4$$

$$\bar{y}_{.3} = \frac{27}{8} = 3.375$$

$$\bar{y}_{..} = \frac{6+4+3.375}{3} = 4.458$$

$$SSW = (7-6)^2 + (4-6)^2 + (6-6)^2 + (8-6)^2 + (6-6)^2 + (6-6)^2 + (2-6)^2 + (9-6)^2 + (5-4)^2 + (5-4)^2 + (3-4)^2 + (4-4)^2 + (4-4)^2 + (7-4)^2 + (2-4)^2 + (2-4)^2 + (2-3.375)^2 + (4-3.375)^2 + (7-3.375)^2 + (1-3.375)^2 + (2-3.375)^2 + (1-3.375)^2 + (5-3.375)^2 + (5-3.375)^2 = 87.875$$

$$F_{\alpha}(k-1, k(n-1)) = F(0.05, 2, 21) = 3.47$$

$3.598 > 3.47$ — ~~H₀~~ There were statistical differences between groups

(b) $|\bar{y}_{12} - \bar{y}_{31}| = |5 - 3.375| = 1.625$

$$\bar{y}_{12} = \frac{6+4}{2} = 5$$

	Y ₁	Y ₂	Y ₃	Σ
a	-1	-1	+2	0
a ²	1	1	4	6

$$\sqrt{(k-1) F(\alpha, k-1, k(n-1))} \sqrt{MSE \frac{\Sigma a^2}{n}} = \sqrt{2 \cdot 3.47} \sqrt{4.18 \frac{6}{8}} = 4.66$$

$1.625 < 4.66$ — ~~H₀~~ There were not differences between hearing some sound and no sound at all.

EXERCISE 3

Yes, because in Greenhouse-Geisser, $\text{sig} < \alpha$
 $0.003 < 0.05$ — We reject the null hypothesis

HOJA DE SERVICIOS

SECRETARÍA GENERAL DE LA UNIVERSIDAD DE SEVILLA
 DE CONCILIACIÓN HORGE BARRA, PROFESORA DE UNIVERSIDAD Y
 CERTIFICADA. Que la presente hoja de servicios se halla conforme con los antecedentes que obran en el
 Servicio de Gestión de Personal Docente de esta Universidad.
 Datos del empleado:

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Fecha desde	Fecha hasta	Centro	Organismo	Régimen de dedicación	Régimen jurídico
07/07/2004	7/09/2004	Universidad de Sevilla	Universidad de Sevilla	30 Doc-6h TUT + 23,5 h. Ocas. Activo	Laboral
01/09/2004	1/02/2005	Universidad de Sevilla	Universidad de Sevilla	30 Doc-6h TUT + 1 h. Ocas. Activo	Laboral
05/09/2005	28/02/2006	Universidad de Sevilla	Universidad de Sevilla	30 Doc-6h TUT + 1 h. Ocas. Activo	Laboral
10/09/2006	11/09/2007	Universidad de Sevilla	Universidad de Sevilla	30 Doc-6h TUT + 23,5 h. Ocas. Activo	Laboral
16/01/2008	16/07/2008	Universidad de Sevilla	Universidad de Sevilla	30 Doc-6h TUT + 23,5 h. Ocas. Activo	Laboral

EXERCISE 4

	SS	df	MS	F
BETWEEN	3405.778	$k-1 = 2$	1702.889	6.324
WITHIN	3231.166	12	269.264	
TOTAL	6636.944	14		

b) Yes because $sig < \alpha$
 $0.005 < 0.01$

c) $R^2 = \frac{SS_{BETWEEN}}{SS_{TOTAL}} = \frac{3405.778}{6636.944} = 0,513$

d) $0.005 < 0.01$ — ~~No~~ — significant effect
 $R^2 = 0.513$ close to 0.67 — high effect size

The effect probably exists

e) 1-3

Year	1992	1993	1994	1995
1992	100	100	100	100
1993	100	100	100	100
1994	100	100	100	100
1995	100	100	100	100

Year	1992	1993	1994	1995
1992	100	100	100	100
1993	100	100	100	100
1994	100	100	100	100
1995	100	100	100	100