

**RESUMEN DE LA SINTAXIS UTILIZADA PARA  
LA EJECUCIÓN DE LOS EJERCICIOS DE  
CADA CAPÍTULO DEL LIBRO “DISEÑOS DE  
INVESTIGACIÓN EN PSICOLOGÍA” CON EL  
PROGRAMA SPSS**

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**/\*TEMA 1: El modelado estadístico\*/**

DATA LIST FREE /id wais dcog ssen nerr.

VALUE LABELS ssen 0 "no" 1 "si" .

BEGIN DATA

```
1 9 4 0 0
2 11 6 0 1
3 12 6 0 0
4 8 5 0 0
5 10 6 0 2
6 7 3 0 0
7 9 6 0 1
8 11 7 0 3
9 10 5 0 5
10 8 6 0 0
11 14 5 1 2
12 10 6 1 0
13 11 7 1 1
14 16 9 1 0
15 12 8 1 0
16 17 6 1 2
17 14 10 1 4
18 15 7 1 4
19 13 8 1 3
20 12 9 1 5
END DATA .
```

**/\*Salidas 1.1 y 1.2\*/**

REGRESSION

/DEPENDENT dcog

/METHOD=ENTER wais .

**/\*Salidas 1.4 y 1.5 y Cuadro 1.4\*/**

GENLIN nerr with wais

/MODEL wais INTERCEPT=YES

DISTRIBUTION=POISSON LINK=LOG

/CRITERIA COVB=ROBUST

/PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION

/SAVE XBPRED DEVIANCERESID MEANPRED.

**/\*Salidas 1.7 y 1.8 y Cuadro 1.5\*/**

LOGISTIC REGRESSION VARIABLES ssen

/METHOD = ENTER wais

/PRINT = ALL

/SAVE PRED DEV.

**/\*TEMA 2: Modelos de regresión\*/**

DATA LIST FREE /caso voca inte adap auto sexo nsoc comp.

VALUE LABELS sexo 1"m" 2"v" .

VALUE LABELS nsoc 1"a" 2"b" 3"c" .

BEGIN DATA

|    |    |    |   |    |   |   |    |
|----|----|----|---|----|---|---|----|
| 1  | 28 | 43 | 9 | 15 | 1 | 1 | 29 |
| 2  | 30 | 29 | 7 | 10 | 1 | 1 | 19 |
| 3  | 22 | 33 | 5 | 13 | 1 | 1 | 26 |
| 4  | 27 | 30 | 8 | 14 | 1 | 1 | 30 |
| 5  | 24 | 19 | 3 | 13 | 0 | 1 | 23 |
| 6  | 16 | 15 | 2 | 9  | 0 | 1 | 16 |
| 7  | 23 | 23 | 5 | 15 | 0 | 1 | 21 |
| 8  | 20 | 25 | 4 | 14 | 0 | 1 | 26 |
| 9  | 14 | 18 | 6 | 5  | 1 | 2 | 3  |
| 10 | 14 | 26 | 7 | 7  | 1 | 2 | 12 |
| 11 | 14 | 22 | 4 | 9  | 1 | 2 | 21 |
| 12 | 18 | 22 | 8 | 6  | 1 | 2 | 12 |
| 13 | 15 | 20 | 7 | 10 | 0 | 2 | 19 |
| 14 | 18 | 20 | 6 | 7  | 0 | 2 | 8  |
| 15 | 18 | 28 | 7 | 8  | 0 | 2 | 11 |
| 16 | 12 | 20 | 3 | 9  | 0 | 2 | 7  |
| 17 | 14 | 19 | 4 | 12 | 1 | 3 | 7  |
| 18 | 9  | 13 | 4 | 9  | 1 | 3 | 5  |
| 19 | 10 | 18 | 5 | 10 | 1 | 3 | 10 |
| 20 | 14 | 17 | 3 | 7  | 1 | 3 | 6  |
| 21 | 5  | 12 | 1 | 5  | 0 | 3 | 9  |
| 22 | 7  | 24 | 5 | 4  | 0 | 3 | 12 |
| 23 | 8  | 11 | 1 | 6  | 0 | 3 | 8  |
| 24 | 8  | 14 | 1 | 4  | 0 | 3 | 9  |

END DATA .

**/\*Salidas 2.1, 2.2 y 2.3 \*/**

DESCRIPTIVES

/VARIABLES=voca inte adap auto comp

/STATISTICS = MEAN VARIANCE .

CORRELATIONS

/VARIABLES=voca inte adap auto comp

/STATISTICS DESCRIPTIVES XPROD .

**/\*Salidas 2.4 y 2.5\*/**

GLM comp

/METHOD = SSTYPE(3)

/PRINT = PARAMETER .

**/\*Salidas 2.6 y 2.7\*/**

GLM comp WITH voca

/METHOD = SSTYPE(3)

/PRINT = PARAMETER

/DESIGN = voca .

**/\*Figura 2.1\*/**

IGRAPH

/VIEWNAME='Diagrama de dispersión'

/X1 = VAR(voca) TYPE = SCALE

/Y = VAR(comp) TYPE = SCALE

```

/COLOR = VAR(sexo) TYPE = CATEGORICAL
/COORDINATE = VERTICAL
/FITLINE METHOD = REGRESSION LINEAR LINE = MEFFECT
/CATORDER VAR(sexo) (ASCENDING VALUES OMITEMPTY)
/SCATTER COINCIDENT = NONE.

```

**/\*Figura 2.2\*/**

```

IGRAPH
/VIEWNAME='Diagrama de dispersión'
/X1=VAR(voca) TYPE=SCALE
/X2=VAR(inte) TYPE=SCALE
/Y=VAR(comp) TYPE=SCALE
/COORDINATE = THREE
/FITLINE METHOD = REGRESSION LINEAR LINE = MEFFECT
/SCATTER COINCIDENT = NONE.

```

**/\*Salidas 2.9 y 2.10\*/**

```

GLM comp WITH voca inte
/METHOD = SSTYPE(3)
/PRINT = PARAMETER
/DESIGN = voca inte .

```

**/\*Salidas 2.13 y 2.14\*/**

```

GLM comp WITH voca inte adap
/METHOD = SSTYPE(3)
/PRINT = PARAMETER
/DESIGN = voca inte adap.

```

**/\*Evaluación de un modelo de regresión\*/**

```

GLM comp WITH voca
/SAVE = PRED RESID ZRESID SRESID DRESID COOK LEVER
/DESIGN = voca .

```

**/\*Figura 2.5a\*/**

```

IGRAPH
/VIEWNAME='Diagrama de dispersión'
/X1=VAR(PRE_1) TYPE=SCALE
/Y=VAR(RES_1) TYPE=SCALE
/SCATTER COINCIDENT = NONE.
EXECUTE.

```

**/\*Figura 2.5b\*/**

```

PPLOT
/VARIABLES=SRE_1
/TYPE=Q-Q
/DIST=NORMAL.

```

```

COMPUTE SQRTSRE = SQRT(ABS(SRE_1)) .
EXECUTE.

```

**/\*Figura 2.5c\*/**

```

IGRAPH
/VIEWNAME='Diagrama de dispersión'
/X1=VAR(PRE_1) TYPE=SCALE
/Y=VAR(SQRTSRE) TYPE=SCALE
/SCATTER COINCIDENT = NONE.

```

EXECUTE.

**/\*Figura 2.5d\*/**

```
IGRAPH
/VIEWNAME='Diagrama de dispersión'
/X1=VAR(COO_1) TYPE=SCALE
/Y=VAR(SRE_1) TYPE=SCALE
/SCATTER COINCIDENT = NONE.
EXECUTE.
```

**/\*Salida 2.19\*/**

```
GLM comp WITH voca inte adap
/METHOD = SSTYPE(1)
/PRINT = PARAMETER
/DESIGN = voca inte adap.
```

**/\*Salida 2.20\*/**

```
GLM comp WITH inte adap voca
/METHOD = SSTYPE(1)
/PRINT = PARAMETER
/DESIGN = inte adap voca.
```

**/\*Evaluación de la multicolinealidad\*/**

```
REGRESSION
/STATISTICS COEFF OUTS R ANOVA COLLIN TOL
/DEPENDENT comp
/METHOD=ENTER inte voca adap .
```

**/\*regresión con variables categóricas\*/**

```
RECODE nsoc (1=1) (2=0) (3=0) INTO nsoca .
EXECUTE .
RECODE nsoc (1=0) (2=1) (3=0) INTO nsocb .
EXECUTE .
```

**/\*Salida 2.21\*/**

```
GLM comp WITH nsoca nsocb
/PRINT=PARAMETER
/DESIGN = nsoca nsocb.
```

**/\*Salida 2.22\*/**

```
GLM comp BY nsoc
/DESIGN = nsoc.
```

```
RECODE nsoc (1=1) (2=0) (3=-1) INTO nsocan .
EXECUTE .
RECODE nsoc (1=0) (2=1) (3=-1) INTO nsocbn .
EXECUTE .
```

**/\*Salida 2.23\*/**

```
GLM comp WITH nsocan nsocbn
/PRINT=PARAMETER
/DESIGN = nsocan nsocbn .
```

**/\*Salida 2.26\*/**

```
GLM comp BY nsoc
/DESIGN = nsoc.
```

**/\*Codificación ortogonal\*/**

```
RECODE nsoc (1=0.701) (2=0) (3=-0.701) INTO nsocL .
EXECUTE .
RECODE nsoc (1=0.408) (2=-0.816) (3=0.408) INTO nsocQ .
EXECUTE.
GLM comp WITH nsocL nsocQ
/PRINT=PARAMETER
/DESIGN = nsocL nsocQ .
```

**/\*Selección de variables. FORWARD\*/**

```
REGRESSION
/STATISTICS COEFF OUTS CHANGE
/DEPENDENT comp
/METHOD=FORWARD voca inte adap sexo nsoca nsocb .
```

**/\*Selección de variables. BACKWARD\*/**

```
REGRESSION
/STATISTICS COEFF OUTS
/DEPENDENT comp
/METHOD=BACKWARD voca inte adap sexo nsoca nsocb.
```

**/\*Selección de variables. STEPWISE\*/**

```
REGRESSION
/STATISTICS COEFF OUTS
/DEPENDENT comp
/METHOD=STEPWISE voca inte adap sexo nsoca nsocb.
```

**/\*Salidas 2.26 y 2.27\*/**

```
REGRESSION
/STATISTICS COEFF OUTS R ANOVA
/DEPENDENT comp
/METHOD=ENTER sexo nsoca nsocb /METHOD=ENTER voca inte adap .
```

**/\*Salida 2.28\*/**

```
REGRESSION
/STATISTICS COEFF OUTS R ANOVA
/DEPENDENT comp
/METHOD=ENTER nsocan nsocbn /METHOD=ENTER inte .
```

**/\*Modelos de mediación\*/**

```
GLM comp WITH voca
/PRINT = PARAMETER
/DESIGN = voca .
```

**/\*Salida 2.29\*/**

```
GLM auto WITH voca
/PRINT = PARAMETER
/DESIGN = voca .
```

**/\*Salida 2.30\*/**

```
GLM comp WITH voca auto
/PRINT = PARAMETER
/DESIGN = voca auto.
```

**/\*Modelos de moderación\*/**

```
COMPUTE cvoca = voca-(16.1667) .  
EXECUTE.
```

```
COMPUTE cauto = auto-(9.2083) .  
EXECUTE.
```

```
COMPUTE inter =cvoca*cauto .  
EXECUTE.
```

```
/*Salidas 2.31, 2.32 y 2.33*/
```

```
REGRESSION
```

```
/STATISTICS COEFF OUTS R ANOVA
```

```
/DEPENDENT comp
```

```
/METHOD=ENTER cvoca cauto /METHOD=ENTER cvoca cauto inter .
```

**/\*TEMA 3: Modelos ANOVA de efectos fijos \*/**

**/\*Modelo ANOVA de un factor\*/**

```
DATA LIST FREE / dificultad rendimiento .
VALUE LABELS dificultad 1 'baja' 2 'media' 3 'baja' .
BEGIN DATA
1 5 1 6 1 7 1 6 1 8 1 7 1 7 1 6
2 5 2 4 2 5 2 7 2 6 2 5 2 4 2 4
3 7 3 5 3 3 3 6 3 2 3 4 3 5 3 3
END DATA .
```

**/\*Cuadro 3.5\*/**

```
MEANS TABLES=rendimiento BY dificultad
/CELLS MEAN SUM VAR COUNT .
```

**/\*Figura 3.1\*/**

```
IGRAPH /VIEWNAME='Line Chart'
/X1 = VAR(DIFICULTAD) TYPE = CATEGORICAL
/Y = VAR(RENDIMIENTO) TYPE = SCALE /COORDINATE = VERTICAL
/X1LENGTH=3.0
/YLENGTH=3.0
/X2LENGTH=3.0 /CHARTLOOK='NONE'
/CATORDER VAR(DIFICULTAD) (ASCENDING VALUES OMITEMPTY)
/LINE(MEAN) KEY=ON STYLE = LINE DROPLINE = OFF INTERPOLATE =STRAIGHT BREAK =
MISSING
/ERRORBAR CI(95.0) DIRECTION = BOTH CAPWIDTH (45) CAPSTYLE = T.
EXECUTE.
```

**/\*Salida 3.1\*/**

```
GLM rendimiento BY dificultad
/METHOD = SSTYPE(3)
/PRINT = ETASQ OPOWER
/DESIGN = dificultad .
```

**/\*Diagnóstico del modelo ANOVA de un factor\*/**

```
GLM rendimiento BY dificultad
/SAVE = PRED RESID ZRESID SRESID DRESID COOK LEVER
/DESIGN = dificultad .
```

**/\*Figura 3.2a\*/**

```
IGRAPH
/VIEWNAME='Diagrama de dispersión'
/X1=VAR(PRE_1) TYPE=SCALE
/Y=VAR(RES_1) TYPE=SCALE
/SCATTER COINCIDENT = NONE.
EXECUTE.
```

**/\*Figura 3.2b\*/**

```
PLOT
/VARIABLES=SRE_1
/TYPE=Q-Q
/DIST=NORMAL.
```

```
COMPUTE SQRTSRE = SQRT(ABS(SRE_1)) .
EXECUTE.
```

**/\*Figura 3.2c\*/**

```
IGRAPH
/VIEWNAME='Diagrama de dispersión'
/X1=VAR(PRE_1) TYPE=SCALE
/Y=VAR(SQRTSRE) TYPE=SCALE
/SCATTER COINCIDENT = NONE.
EXECUTE.
```

**/\*Figura 3.2d\*/**

```
IGRAPH
/VIEWNAME='Diagrama de dispersión'
/X1=VAR(DIFICULTAD) TYPE=CATEGORICAL
/Y=VAR(SRE_1) TYPE=SCALE
/SCATTER COINCIDENT = NONE.
EXECUTE.
```

**/\*Los estadísticos de Welch y Brown-Forsythe\*/**

```
ONEWAY rendimiento BY dificultad
/STATISTICS HOMOGENEITY BROWNFORSYTHE WELCH .
```

**/\*Transformación de potencia para la variable de respuesta \*/**

```
COMPUTE nrend = rendimiento**1.4 .
EXECUTE.
```

```
EXAMINE VARIABLES=nrend BY dificultad
/PLOT BOXPLOT NPLOT SPREADLEVEL
/COMPARE GROUP.
```

```
ONEWAY nrend BY dificultad
/STATISTICS HOMOGENEITY.
```

**/\*Salidas 3.3 y 3.4\*/**

```
GLM rendimiento BY dificultad
/POSTHOC = dificultad ( TUKEY SCHEFFE )
/DESIGN=dificultad .
```

**/\*Análisis de tendencias\*/**

```
DATA LIST FREE / tiempo recuerdo .
VALUE LABELS/ tiempo 1 't1' 2 't2' 3 't3' 4 't4' .
BEGIN DATA
1 2 2 6 3 6 4 11
1 3 2 8 3 8 4 10
1 1 2 5 3 10 4 7
1 2 2 3 3 5 4 9
1 0 2 7 3 10 4 8
1 4 2 7 3 9 4 9
END DATA .
```

**/\*Salida 3.5\*/**

```
MEANS TABLES=recuerdo BY tiempo
/CELLS MEAN SUM VAR COUNT .
```

**/\*Figura 3.4\*/**

```
IGRAPH /VIEWNAME='Line Chart'
/X1 = VAR(TIEMPO) TYPE = CATEGORICAL
/Y = VAR(RECUERDO) TYPE = SCALE /COORDINATE = VERTICAL
```

```

/X1LENGTH=3.0
/YLENGTH=3.0
/X2LENGTH=3.0 /CHARTLOOK='NONE'
/CATORORDER VAR(TIEMPO) (ASCENDING VALUES OMIT EMPTY)
/LINE(MEAN) KEY=ON STYLE = LINE DROPLINE = OFF INTERPOLATE =STRAIGHT BREAK =
MISSING
/ERRORBAR CI(95.0) DIRECTION = BOTH CAPWIDTH (45) CAPSTYLE = T.
EXECUTE

```

**/\*Salida 3.6\*/**

```

GLM recuerdo BY tiempo
/CONTRAST ( tiempo) = Polynomial
/DESIGN = tiempo .

```

**/\*Salida 3.7\*/**

```

ONEWAY recuerdo BY tiempo /POLYNOMIAL =3.

```

**/\*ANOVA con dos factores fijos \*/**

```

DATA LIST FREE / A B rend .
VALUE LABELS A 1 'a1' 2 'a2' 3 'a3' .
VALUE LABELS B 1 'b1' 2 'b2' 3 'b3' .
BEGIN DATA
1 1 8 1 1 7 1 1 7 1 1 6 1 1 7
1 2 4 1 2 6 1 2 5 1 2 4 1 2 6
1 3 9 1 3 7 1 3 8 1 3 8 1 3 10
2 1 5 2 1 7 2 1 6 2 1 7 2 1 5
2 2 6 2 2 5 2 2 3 2 2 6 2 2 3
2 3 4 2 3 5 2 3 7 2 3 4 2 3 5
3 1 8 3 1 5 3 1 6 3 1 5 3 1 6
3 2 7 3 2 3 3 2 5 3 2 4 3 2 5
3 3 7 3 3 4 3 3 3 3 3 4 3 3 6
END DATA .

```

**/\*Salida 3.8\*/**

```

MEANS TABLES=rend BY A BY B
/CELLS MEAN SUM VAR COUNT .

```

**/\*Salida 3.9 y Figura 3.8\*/**

```

GLM rend BY A B
/PRINT = HOMOGENEITY ETASQ
/PLOT = PROFILE (A*B)
/DESIGN = A B A*B .

```

**/\*Salidas 3.11 y 3.12\*/**

```

GLM rend BY A B
/PLOT = PROFILE (A*B)
/EMMEANS = TABLES(A*B)COMPARE(A)ADJ(BONFERRONI)
/EMMEANS = TABLES(A*B)COMPARE(B)ADJ(BONFERRONI)
/DESIGN = A B A*B .

```

**/\*ANOVA factorial con tres factores fijos\*/**

```

DATA LIST FREE / ansiedad tension dificultad rendim .
VALUE LABELS ansiedad 1 'a1' 2 'a2'.
VALUE LABELS tension 1 'b1' 2 'b2'.
VALUE LABELS dificultad 1 'c1' 2 'c2'.
BEGIN DATA

```

```

1 1 1 14 1 1 1 12 1 1 1 12 1 1 2 18 1 1 2 14 1 1 2 16
1 2 1 12 1 2 1 10 1 2 1 08 1 2 2 14 1 2 2 10 1 2 2 15
2 1 1 09 2 1 1 12 2 1 1 08 2 1 2 12 2 1 2 10 2 1 2 07
2 2 1 06 2 2 1 02 2 2 1 08 2 2 2 10 2 2 2 11 2 2 2 08
END DATA .

```

**/\*Salida 3.13\*/**

```

MEANS TABLES=rendim BY ansiedad BY tension BY dificultad
/CELLS MEAN SUM VAR COUNT .

```

**/\*Figura 3.9 y Salida 3.14\*/**

```

GLM rendim BY ansiedad tension dificultad
/PLOT = PROFILE( tension*dificultad*ansiedad )
/PRINT = ETASQ
/DESIGN = ansiedad tension dificultad ansiedad*tension ansiedad*dificultad tension*dificultad
ansiedad*tension*dificultad .

```

**/\*Salida 3.15\*/**

```

GLM rendim BY ansiedad tension dificultad
/DESIGN = ansiedad tension dificultad ansiedad*tension ansiedad*dificultad tension*dificultad .

```

**/\*Salida 3.16\*/**

```

GLM rendim BY ansiedad tension dificultad
/DESIGN = ansiedad tension dificultad .

```

**/\*MANOVA con dos factores fijos\*/**

```

DATA LIST FREE / A B Y1 Y2.
VALUE LABELS A 1 'a1' 2 'a2' .
VALUE LABELS B 1 'b1' 2 'b2' 3 'b3' .
BEGIN DATA
1 1 14 19 1 1 07 17 1 1 08 19 1 1 09 18 1 1 10 18
2 1 10 15 2 1 09 15 2 1 11 15 2 1 13 13 2 1 14 17
1 2 11 16 1 2 10 17 1 2 12 18 1 2 11 15 1 2 07 16
2 2 15 14 2 2 22 14 2 2 19 13 2 2 13 13 2 2 28 15
1 3 12 13 1 3 09 12 1 3 12 13 1 3 15 11 1 3 10 13
2 3 21 10 2 3 21 10 2 3 16 12 2 3 32 11 2 3 43 11
END DATA.

```

**/\*Salida 3.17. Modelo interactivo\*/**

```

GLM y1 y2 BY a b
/METHOD = SSTYPE(3)
/DESIGN = a b a*b .

```

**/\*Salida 3.17. Modelo aditivo\*/**

```

GLM y1 y2 BY a b
/METHOD = SSTYPE(3)
/DESIGN = a b .

```

**/\*TEMA 4: Modelos ANOVA con efectos aleatorios y mixtos\*/**

**/\*ANOVA de un factor Modelo II\*/**

```
DATA LIST FREE / dificultad rendimiento .
VALUE LABELS dificultad 1 'baja' 2 'media' 3 'baja' .
BEGIN DATA
1 5 1 6 1 7 1 6 1 8 1 7 1 7 1 6
2 5 2 4 2 5 2 7 2 6 2 5 2 4 2 4
3 7 3 5 3 3 3 6 3 2 3 4 3 5 3 3
END DATA .
```

**/\*Salida 4.1\*/**

```
GLM rendimiento BY dificultad
/RANDOM = dificultad
/METHOD = SSTYPE(3)
/DESIGN = dificultad .
```

**/\*Cálculo de la potencia retrospectiva\*/**

```
Compute alpha = 0.05.
Compute a=3.
Compute n =8.
Compute MC_A=9.542.
Compute MC_E =1.613.
Compute sig_a=(a/(a*n))*(mc_a-mc_e).
Compute gla =(a-1).
Compute gle =a*(n-1).
Compute EMSratio = (1+((n*sig_a)/mc_e)).
Compute F_crit = idf.F ((1-alpha), gla, gle).
Compute power = 1-cdf.F (F_crit/EMRatio, gla, gle).
EXECUTE.
```

**/\*Salida 4.2\*/**

```
MIXED rendimiento BY dificultad
/FIXED = | SSTYPE(3)
/METHOD = REML
/RANDOM dificultad | COVTYPE(VC) .
```

**/\*ANOVA de dos factores Modelo II \*/**

```
DATA LIST FREE / orden experto respuesta .
VALUE LABELS orden 1 'a1' 2 'a2' 3 'a3' 4 'a4' .
VALUE LABELS experto 1 'b1' 2 'b2' 3 'b3' 4 'b4' .
BEGIN DATA
1 1 26 1 1 25 1 2 30 1 2 33 1 3 25 1 3 23 1 4 28 1 4 30
2 1 26 2 1 24 2 2 25 2 2 33 2 3 27 2 3 17 2 4 27 2 4 26
3 1 33 3 1 27 3 2 26 3 2 32 3 3 30 3 3 24 3 4 31 3 4 26
4 1 36 4 1 28 4 2 37 4 2 42 4 3 37 4 3 33 4 4 39 4 4 25
END DATA .
```

**/\*Salida 4.3\*/**

```
MEANS TABLES=respuesta BY orden BY experto
/CELLS MEAN SUM VAR COUNT .
```

**/\*Salida 4.4\*/**

```
GLM respuesta BY orden experto
/RANDOM = orden experto
/PLOT = PROFILE ( orden*experto )
```

/DESIGN = orden experto orden\*experto .

**/\*Salida 4.5\*/**

MIXED respuesta BY orden experto  
/FIXED = | SSTYPE(3)  
/RANDOM orden experto orden\*experto | COVTYPE(VC) .

**/\*Salida 4.6\*/**

GLM respuesta BY orden experto  
/RANDOM = orden experto  
/DESIGN = orden experto .

**/\*Salida 4.7\*/**

MIXED respuesta BY orden experto  
/FIXED = | SSTYPE(3)  
/RANDOM orden experto |COVTYPE(VC) .

**/\*ANOVA de dos factores modelos III \*/**

DATA LIST FREE / clases tareas tenmusc .  
VALUE LABELS clases 1 'a1' 2 'a2' 3 'a3' 4 'a4' 5 'a5' 6 'a6'.  
VALUE LABELS tareas 1 'b1' 2 'b2' 3 'b3'.  
BEGIN DATA  
1 1 7,80 1 1 8,70 1 2 11,1 1 2 12,0 1 3 11,7 1 3 10,0  
2 1 8,00 2 1 9,20 2 2 11,3 2 2 10,6 2 3 9,80 2 3 11,9  
3 1 4,00 3 1 6,90 3 2 9,80 3 2 10,1 3 3 11,7 3 3 12,6  
4 1 10,3 4 1 9,40 4 2 11,4 4 2 10,5 4 3 7,90 4 3 8,10  
5 1 9,30 5 1 10,6 5 2 13,0 5 2 11,7 5 3 8,30 5 3 7,90  
6 1 9,50 6 1 9,80 6 2 12,2 6 2 12,3 6 3 8,60 6 3 10,5  
END DATA .

**/\*Salida 4.8\*/**

MEANS TABLES=tenmusc BY clases BY tareas  
/CELLS MEAN SUM VAR COUNT .

**/\*Salidas 4.9 y 4.10\*/**

GLM tenmusc BY clases tareas  
/RANDOM = clases  
/PLOT = PROFILE( clases\*tareas )  
/PRINT = ETASQ  
/EMMEANS = TABLES(clases\*tareas)COMPARE(clases) ADJ (BONFERRONI).  
/DESING =tareas clases tareas\*clases .

**/\*Salida 4.11\*/**

MIXED tenmusc BY clases tareas  
/FIXED = tareas | SSTYPE(3)  
/RANDOM clases clases\*tareas | COVTYPE(VC) .

**/\*ANOVA de tres factores modelos III \*/**

DATA LIST FREE / conductor carretera condición rendim .  
VALUE LABELS conductor 1 'a1' 2 'a2'.  
VALUE LABELS carretera 1 'b1' 2 'b2' 3 'b3'.  
VALUE LABELS condición 1 'c1' 2 'c2'.  
BEGIN DATA  
1 1 1 4 1 1 1 18 1 1 1 8 1 1 1 10  
1 2 1 23 1 2 1 15 1 2 1 21 1 2 1 13  
1 3 1 16 1 3 1 27 1 3 1 23 1 3 1 14

```

1 1 2 21 1 1 2 14 1 1 2 19 1 1 2 26
1 2 2 25 1 2 2 33 1 2 2 30 1 2 2 20
1 3 2 32 1 3 2 42 1 3 2 46 1 3 2 40
2 1 1 6 2 1 1 4 2 1 1 13 2 1 1 7
2 2 1 2 2 2 1 6 2 2 1 8 2 2 1 12
2 3 1 20 2 3 1 15 2 3 1 8 2 3 1 17
2 1 2 11 2 1 2 17 2 1 2 16 2 1 2 16
2 2 2 23 2 2 2 14 2 2 2 13 2 2 2 12
2 3 2 17 2 3 2 16 2 3 2 25 2 3 2 12
END DATA .

```

**/\*Salida 4.12\*/**

```

MEANS TABLES=rendim BY conductor BY carretera BY condición
/CELLS MEAN SUM VAR COUNT .

```

**/\*Salida 4.13\*/**

```

GLM rendim BY conductor carretera condición
/RANDOM = carretera
/DESIGN = conductor carretera condición conductor*carretera conductor*condición
carretera*condición conductor*carretera*condición .

```

**/\*Salida 4.14\*/**

```

MIXED rendim BY conductor carretera condición
/FIXED = conductor condición conductor*condición | SSTYPE(3)
/RANDOM carretera conductor*carretera carretera*condición conductor*carretera*condición|
COVTYPE(VC) .

```

**/\*TEMA 5. Modelos ANCOVA y regresión multinivel\*/**

**/\* Datos del diseño ANCOVA con una covariante\*/**

DATA LIST FREE / metodo auto auto2 rend .

VALUE LABELS metodo 1 'a1' 2 'a2' 3 'a3'.

BEGIN DATA

1 3 1 8  
 1 7 1 12  
 1 10 2 16  
 1 8 2 14  
 1 14 3 19  
 1 8 2 12  
 1 13 3 17  
 2 13 3 15  
 2 17 3 20  
 2 10 2 14  
 2 9 2 12  
 2 4 1 8  
 2 6 1 9  
 2 4 1 6  
 3 14 3 24  
 3 10 2 22  
 3 8 2 20  
 3 4 1 16  
 3 5 1 14  
 3 8 2 18  
 3 7 1 12  
 END DATA .

**/\*Salida 5.1\*/**

MEANS TABLES=rend auto BY metodo

/CELLS mean var count .

CORRELATIONS

/VARIABLES=auto rend

/PRINT=TWOTAIL NOSIG

/STATISTICS XPROD.

**/\*Salidas 5.2a y 5.2b\*/**

REGRESSION

/STATISTICS COEFF OUTS CI R ANOVA

/DEPENDENT rend

/METHOD=ENTER auto .

**/\*Salida 5.3\*/**

GLM rend BY metodo

/PRINT=ETASQ

/DESIGN = metodo .

**/\*Salidas 5.4a y 5.4b\*/**

GLM rend BY metodo WITH auto

/METHOD = SSTYPE(3)

/INTERCEPT = EXCLUDE

/PRINT = PARAMETER

/DESIGN = metodo metodo\*auto .

**/\*Salida 5.5\*/**

```
GLM rend BY metodo WITH auto
/METHOD = SSTYPE(2)
/INTERCEPT = INCLUDE
/PRINT = PARAMETER
/DESIGN = metodo auto metodo*auto .
```

**/\*Salidas 5.6a y 5.6b\*/**

```
GLM rend BY metodo WITH auto
/METHOD = SSTYPE(2)
/INTERCEPT = INCLUDE
/PRINT = PARAMETER
/DESIGN = metodo auto .
```

**/\*Salidas 5.9 y 5.10\*/**

```
GLM rend BY metodo WITH auto
/EMMEANS=TABLES(metodo) WITH(auto=MEAN) COMPARE ADJ(BONFERRONI)
/PRINT = PARAMETER ETASQ
/DESIGN = metodo auto .
```

**/\*Datos de un diseño ANCOVA con pendientes no paralelas\*/**

```
DATA LIST FREE /ID grupo ansi moti .
VALUE LABELS grupo 1 'a1' 2 'a2' .
BEGIN DATA
```

```
1 1 6 26
2 1 7 18
3 1 15 15
4 1 8 23
5 1 16 13
6 1 17 9
7 1 13 12
8 1 10 17
9 1 20 7
10 1 5 25
11 1 21 5
12 1 12 17
13 1 10 20
14 1 19 10
15 1 15 7
16 2 18 24
17 2 18 20
18 2 15 17
19 2 7 9
20 2 6 7
21 2 13 12
22 2 17 17
23 2 19 21
24 2 23 26
25 2 20 23
26 2 15 19
27 2 20 21
28 2 16 15
29 2 9 9
30 2 9 11
END DATA .
```

**/\*Salida 5.10\*/**

MEANS TABLES=moti ansi BY grupo  
/CELLS mean var count .

**/\*Salidas 5.11\*/**

GLM moti BY grupo WITH ansi  
/METHOD = SSTYPE(2)  
/INTERCEPT = INCLUDE  
/PRINT = PARAMETER  
/DESIGN = grupo ansi grupo\*ansi.

**/\*Datos del diseño ANCOVA con dos covariantes\*/**

DATA LIST FREE /A X1 X2 Y .  
VALUE LABELS A 1 'a1' 2 'a2' .  
BEGIN DATA  
1 1 3 18 1 1 5 24  
1 3 7 33 1 5 1 20  
1 2 6 34 1 2 2 16  
1 4 1 12 1 3 3 26  
1 2 6 34 1 5 1 20  
1 6 1 22 1 7 3 35  
2 2 3 29 2 1 3 19  
2 2 1 15 2 3 5 34  
2 4 3 26 2 5 4 33  
2 6 5 42 2 3 4 30  
2 5 2 26 2 3 4 34  
2 1 6 33 2 5 2 20  
END DATA .

**/\*Salida 5.12\*/**

MEANS TABLES= Y X1 X2 BY a  
/CELLS MEAN VAR COUNT .

CORRELATIONS  
/VARIABLES=X1 X2 Y  
/PRINT=TWOTAIL NOSIG  
/STATISTICS XPROD .

**/\*Modelo interactivo\*/**

GLM Y BY A WITH X1 X2  
/METHOD = SSTYPE(3)  
/INTERCEPT = INCLUDE  
/CRITERIA = ALPHA(.05)  
/DESIGN = X1 X2 A A\*X1 A\*X2.

**/\*Salidas 5.15a y 5.15b. Modelo aditivo\*/**

GLM Y BY A WITH X1 X2  
/METHOD = SSTYPE(3)  
/INTERCEPT = INCLUDE  
/PRINT = PARAMETER  
/CRITERIA = ALPHA(.05)  
/DESIGN = X1 X2 A .

**/\*Salida 5.16\*/**

GLM Y BY A WITH X1 X2  
/EMMEANS=TABLES(A) WITH(X1=MEAN X2=MEAN) COMPARE ADJ(BONFERRONI)

```
/PRINT = PARAMETER ETASQ
/DESIGN = X1 X2 A.
```

**/\*Datos de modelo multinivel de Núñez et al. (2014) \*/**

```
DATA LIST FREE /
ID TE cTE CP DE AC cAC GS GP ED RB TC EP EE EA CLASE .
BEGIN DATA
  1  3 -1.42  1  0  0 -5.50  0  0 16  8 25  4  0  0  1
  2  2 -1.42  1  1 10  4.50  1  0 16  9 25  3  0  0  1
(985 líneas de datos)
988 24 15.21  3  0  0 -1.07  0  0  3 18 14  3  1  1 57
END DATA.
```

**/\*GET FILE='MULTINIVEL.sav'\*/**

```
AGGREGATE OUTFILE=TEmeans.sav
/BREAK=clase
/meanTE=MEAN(TE).
SORT CASES BY clase .
MATCH FILES
/TABLE=TEmeans.sav
/FILE*
/BY clase .
COMPUTE cTE =TE-meanTE .
EXECUTE .
```

**/\*GET FILE='MULTINIVEL.sav'\*/**

```
AGGREGATE OUTFILE=ACmeans.sav
/BREAK=clase
/meanAC=MEAN(AC).
SORT CASES BY clase .
MATCH FILES
/TABLE=ACmeans.sav
/FILE*
/BY clase .
COMPUTE cAC =AC-meanAC .
EXECUTE .
```

**/\*Salida 5.17\*/**

```
MIXED
  RB
  /FIXED = | SSTYPE(3)
  /METHOD = ML
  /PRINT = SOLUTION TESTCOV
  /RANDOM INTERCEPT | SUBJECT(CLASE) COVTYPE(VC).
```

**/\*Salida 5.18. Modelo A\*/**

```
MIXED
  RB WITH EE GP TC ED
  /FIXED = EE GP TC ED| SSTYPE(3)
  /METHOD = ML
  /PRINT = SOLUTION TESTCOV
  /RANDOM INTERCEPT | SUBJECT(CLASE) COVTYPE(VC).
```

**/\*Salida 5.18. Modelo B\*/**

```
MIXED
  RB WITH EE
```

```

/FIXED = EE | SSTYPE(3)
/METHOD = ML
/PRINT = SOLUTION TESTCOV
/RANDOM INTERCEPT | SUBJECT(CLASE) COVTYPE(VC).

```

**/\*Salida 5.19. Modelo A\*/**

```

MIXED
RB WITH EA cTE CP DE cAC GS EP
/FIXED = EA cTE CP DE cAC GS EP | SSTYPE(3)
/METHOD = ML
/PRINT = SOLUTION TESTCOV
/RANDOM INTERCEPT EA | SUBJECT(CLASE) COVTYPE(UN).

```

**/\*Salida 5.19. Modelo B\*/**

```

MIXED
RB WITH EA CP cAC EP
/FIXED = EA CP cAC EP | SSTYPE(3)
/METHOD = ML
/PRINT = SOLUTION TESTCOV
/RANDOM INTERCEPT EA | SUBJECT(CLASE) COVTYPE(VC).

```

**/\*Salida 5.20\*/**

```

MIXED
RB WITH EE EA CP cAC EP
/FIXED = EE EA CP cAC EP EE*EA | SSTYPE(3)
/METHOD = ML
/PRINT = SOLUTION TESTCOV
/RANDOM INTERCEPT EA | SUBJECT(CLASE) COVTYPE(VC)
/SAVE =PRED.
EXECUTE.

```

```

IGRAPH
/VIEWNAME='Scatterplot'
/X1 = VAR(EA) TYPE = CATEGORICAL
/Y = VAR (PRED_1) TYPE = SCALE
/PANEL = VAR(CLASE)
/SCATTER COINCIDENT = NONE.

```

**/\*TEMA 7: Diseños intersujetos I: aleatorización completa\*/**

**/\*DCA factorial equilibrado\*/**

```
DATA LIST FREE / complejidad claridad rapidez rend .
VALUE LABELS complejidad 1 'a1' 2 'a2' 3 'a3' 4 'a4'.
VALUE LABELS claridad 1 'b1' 2 'b2'.
VALUE LABELS rapidez 1 'c1' 2 'c2'.
BEGIN DATA
1 1 1 13 1 1 1 14 1 1 1 12 1 1 2 13 1 1 2 15 1 1 2 17
1 2 1 30 1 2 1 32 1 2 1 34 1 2 2 33 1 2 2 34 1 2 2 35
2 1 1 15 2 1 1 16 2 1 1 14 2 1 2 18 2 1 2 20 2 1 2 22
2 2 1 31 2 2 1 32 2 2 1 33 2 2 2 38 2 2 2 39 2 2 2 37
3 1 1 18 3 1 1 19 3 1 1 23 3 1 2 22 3 1 2 21 3 1 2 23
3 2 1 36 3 2 1 35 3 2 1 37 3 2 2 40 3 2 2 38 3 2 2 36
4 1 1 20 4 1 1 21 4 1 1 22 4 1 2 24 4 1 2 25 4 1 2 26
4 2 1 38 4 2 1 38 4 2 1 38 4 2 2 41 4 2 2 42 4 2 2 37
END DATA .
```

**/\*Salida 7.1\*/**

```
MEANS TABLES=rend BY complejidad BY claridad BY rapidez
/CELLS MEAN SUM VAR COUNT .
```

**/\*Salida 7.2 y Figuras\*/**

```
GLM rend BY complejidad claridad rapidez
/RANDOM = complejidad
/PLOT = PROFILE( claridad*rapidez*complejidad )
/PRINT = ETASQ
/DESIGN = complejidad claridad rapidez complejidad*claridad complejidad*rapidez claridad*rapidez
complejidad*claridad*rapidez .
```

**/\*Salida 7.3\*/**

```
GLM rend BY complejidad claridad rapidez
/RANDOM = complejidad
/DESIGN = complejidad claridad rapidez complejidad*claridad complejidad*rapidez
claridad*rapidez.
```

**/\*Salida 7.4\*/**

```
GLM rend BY complejidad claridad rapidez
/RANDOM = complejidad
/DESIGN = complejidad claridad rapidez .
```

**/\*Salida 7.6\*/**

```
GLM rend BY complejidad claridad rapidez
/RANDOM = complejidad
/DESIGN = complejidad claridad rapidez complejidad*rapidez .
```

**/\*Salida 7.8\*/**

```
MIXED rend BY complejidad claridad rapidez
/FIXED = claridad rapidez| SSTYPE(3)
/RANDOM complejidad complejidad*rapidez | COVTYPE(VC) .
```

**/\*DCA factorial no equilibrado\*/**

```
DATA LIST FREE /terap frecu mmpi .
VALUE LABELS terap 1 'condu' 2 'roger' 3 'asert' .
VALUE LABELS frecu 1 'baja' 2 'mode' 3 'alta' .
BEGIN DATA
```

```

1 1 41 1 1 43 1 1 50 1 2 51 1 2 43 1 2 53 1 2 54
1 2 46 1 3 45 1 3 55 1 3 56 1 3 60 1 3 58 1 3 62
1 3 62 2 1 56 2 1 47 2 1 45 2 1 46 2 1 49 2 2 58
2 2 54 2 2 49 2 2 61 2 2 52 2 2 62 2 3 59 2 3 55
2 3 68 2 3 63 3 1 43 3 1 56 3 1 48 3 1 46 3 1 47
3 2 59 3 2 46 3 2 58 3 2 54 3 3 55 3 3 69 3 3 63
3 3 56 3 3 62 3 3 67
END DATA.

```

**/\*Salida 7.9\*/**

```

MEANS TABLES=mmpi BY terap BY frecu
/CELLS MEAN SUM VAR COUNT .

```

**/\*Salida 7.10\*/**

```

GLM mmpi BY terap frecu
/PLOT = PROFILE( terap*frecu )
/DESIGN = terap frecu terap*frecu .

```

```

DATA LIST FREE /terap frecu mmpi .
MISSING VALUES mmpi to mmpi (-9).
COMPUTE mmpir=mmpi.
BEGIN DATA.

```

|   |   |    |   |   |    |   |   |    |   |   |    |
|---|---|----|---|---|----|---|---|----|---|---|----|
| 1 | 1 | 41 | 1 | 1 | 43 | 1 | 1 | 50 | 1 | 1 | .  |
| 1 | 1 | .  | 1 | 1 | .  | 1 | 1 | .  | 1 | 2 | 51 |
| 1 | 2 | 43 | 1 | 2 | 53 | 1 | 2 | 54 | 1 | 2 | 46 |
| 1 | 2 | .  | 1 | 2 | .  | 1 | 3 | 45 | 1 | 3 | 55 |
| 1 | 3 | 56 | 1 | 3 | 60 | 1 | 3 | 58 | 1 | 3 | 62 |
| 1 | 3 | 62 | 2 | 1 | 56 | 2 | 1 | 47 | 2 | 1 | 45 |
| 2 | 1 | 46 | 2 | 1 | 49 | 2 | 1 | .  | 2 | 1 | .  |
| 2 | 2 | 58 | 2 | 2 | 54 | 2 | 2 | 49 | 2 | 2 | 61 |
| 2 | 2 | 52 | 2 | 2 | 62 | 2 | 2 | .  | 2 | 3 | 59 |
| 2 | 3 | 55 | 2 | 3 | 68 | 2 | 3 | 63 | 2 | 3 | .  |
| 2 | 3 | .  | 2 | 3 | .  | 3 | 1 | 43 | 3 | 1 | 56 |
| 3 | 1 | 48 | 3 | 1 | 46 | 3 | 1 | 47 | 3 | 1 | .  |
| 3 | 1 | .  | 3 | 2 | 59 | 3 | 2 | 46 | 3 | 2 | 58 |
| 3 | 2 | 54 | 3 | 2 | .  | 3 | 2 | .  | 3 | 2 | .  |
| 3 | 3 | 55 | 3 | 3 | 69 | 3 | 3 | 63 | 3 | 3 | 56 |
| 3 | 3 | 62 | 3 | 3 | 67 | 3 | 3 | .  |   |   |    |

END DATA .

**/\*Salida 7.10\*/**

```

RMV
/mmpi_1=SMEAN(mmpi).

```

```

GLM mmpi_1 BY terap frecu
/RANDOM = frecu
/METHOD = SSTYPE(3)
/INTERCEPT = INCLUDE
/CRITERIA = ALPHA(.05)
/DESIGN = terap frecu terap*frecu .

```

**/\*Salida 7.12\*/**

```

GLM mmpi BY terap frecu
/PLOT = PROFILE( terap*frecu )
/DESIGN = terap frecu .

```

**/\*Salida 7.13\*/**

```
GLM mmpi_1 BY terap frecu
/RANDOM = frecu
/METHOD = SSTYPE(3)
/INTERCEPT = INCLUDE
/CRITERIA = ALPHA(.05)
/DESIGN = terap frecu .
```

**/\*Salida 7.14\*/**

```
DATASET DECLARE mmpi_i.
MULTIPLE IMPUTATION terap frecu mmpi
/IMPUTE METHOD=AUTO NIMPUTATIONS=5 MAXPCTMISSING=NONE
/MISSINGSUMMARIES NONE
/IMPUTATIONSUMMARIES MODELS
/OUTFILE IMPUTATIONS=mmpi_i .
```

```
DATASET ACTIVATE mmpi_i.
UNIANOVA mmpi BY terap frecu
/RANDOM=frecu
/METHOD=SSTYPE(3)
/INTERCEPT=INCLUDE
/CRITERIA=ALPHA(0.05)
/DESIGN=terap frecu.
```

**/\*DJE con un factor y una variable anidada\*/**

```
DATA LIST FREE / género monitor valor.
VALUE LABELS A género 1 'varón' 2 'mujer'.
VALUE LABELS monitor 1 'm1' 2 'm2' 3 'm3' 4 'm4' 5 'm5' 6 'm6'.
BEGIN DATA
1 1 49 1 1 40 1 1 31 1 1 40 1 2 42 1 2 48
1 2 52 1 2 58 1 3 42 1 3 46 1 3 50 1 3 54
2 4 53 2 4 59 2 4 63 2 4 69 2 5 44 2 5 54
2 5 54 2 5 64 2 6 58 2 6 63 2 6 67 2 6 72
END DATA.
```

**/\*Figura 7.6\*/**

```
GRAPH /LINE (MULTIPLE)MEAN(valor) BY MONITOR BY género.
```

**/\*Salida 7.15\*/**

```
MEANS TABLES =valor BY género monitor
/CELL MEAN SUM VAR COUNT.
```

**/\*Salida 7.16\*/**

```
GLM valor BY género monitor
/RANDOM = monitor
/DESIGN = género género*monitor.
```

**/\*Salida 7.18\*/**

```
MIXED valor BY género monitor
/FIXED género|SSTYPE(3)
/RANDOM monitor(género) | COVTYPE(VC).
```

**/\*DJE con dos factores y una variable anidada\*/**

```
DATA LIST FREE /forma género alumno valor .
VALUE LABELS forma 1 'A' 2 'B'
VALUE LABELS género 1 'varón' 2 'mujer' .
```

```

VALUE LABELS alumno 1 'al1' 2 'al2' 3 'al3' 4 'al4' 5 'al5' 6 'al6' .
BEGIN DATA
1 1 1 30 1 1 1 36 1 1 1 38 1 1 2 33
1 1 2 31 1 1 2 35 1 1 3 32 1 1 3 33
1 1 3 30 1 2 4 21 1 2 4 19 1 2 4 22
1 2 5 09 1 2 5 08 1 2 5 06 1 2 6 09
1 2 6 12 1 2 6 13 2 1 1 51 2 1 1 53
2 1 1 56 2 1 2 60 2 1 2 59 2 1 2 57
2 1 3 49 2 1 3 46 2 1 3 47 2 2 4 32
2 2 4 29 2 2 4 35 2 2 5 15 2 2 5 13
2 2 5 19 2 2 6 10 2 2 6 16 2 2 6 14
END DATA .

```

**/\*Salida 7.19\*/**

```

MEANS TABLES=valor BY forma BY género BY alumno
/CELLS MEAN SUM VAR COUNT .

```

**/\*Salida 7.20\*/**

```

GLM valor BY forma género alumno
/RANDOM = alumno
/PLOT = PROFILE(forma*alumno)
/PRINT = ETASQ OPOWER
/DESIGN = forma género forma*género alumno(género)
forma*alumno(género) .

```

**/\*Salida 7.22\*/**

```

MIXED valor BY forma género alumno
/FIXED = forma género forma*género | SSTYPE(3)
/RANDOM = alumno(género) forma*alumno(género) | COVTYPE(VC) .

```

**/\*TEMA 8: Diseños intersujetos II: reducción del error residual\*/**

**/\*DBA replicado\*/**

```
DATA LIST FREE / A B tmin .
VALUE LABELS A 1 'a1' 2 'a2' 3 'a3' .
VALUE LABELS B 1 'b1' 2 'b2' 3 'b3' 4 'b4' 5 'b5' .
BEGIN DATA
1 1 5 1 1 7 1 2 7 1 2 6 1 3 7 1 3 5 1 4 6 1 4 5 1 5 8 1 5 7
2 1 8 2 1 6 2 2 8 2 2 7 2 3 10 2 3 8 2 4 12 2 4 10 2 5 10 2 5 10
3 1 8 3 1 8 3 2 10 3 2 8 3 3 10 3 3 8 3 4 12 3 4 9 3 5 12 3 5 10
END DATA .
```

**/\*Salida 8.1\*/**

```
MEANS TABLES= tmin BY A B
/CELLS MEAN SUM VAR COUNT.
```

**/\*Salida 8.1\*/**

```
GLM tmin BY A B
/RANDOM = B
/PLOT = PROFILE (A*B)
/PRINT =ETASQ OPOWER
/DESIGN = A B A*B.
```

**/\*Salida 8.2-8.4\*/**

```
GLM tmin BY A B
/RANDOM = B
/POSTHOC = A (Tukey)
/PRINT =ETASQ OPOWER
/DESIGN = A B .
```

**/\*DBA no replicado\*/**

```
DATA LIST FREE / A B tmin .
VALUE LABELS A 1 'a1' 2 'a2' 3 'a3' .
VALUE LABELS B 1 'b1' 2 'b2' 3 'b3' 4 'b4' 5 'b5' .
BEGIN DATA
1 1 5 1 2 7 1 3 7 1 4 6 1 5 8
2 1 8 2 2 8 2 3 10 2 4 12 2 5 10
3 1 8 3 2 10 3 3 10 3 4 12 3 5 12
END DATA.
```

**/\*Salida 8.5\*/**

```
MEANS TABLES = tmin BY A BY B
/CELLS SUM VAR COUNT.
```

**/\*Salida 8.6\*/**

```
GLM tmin BY A B
/RANDOM = B
/PLOT = PROFILE (A*B)
/POSTHOC = A (Tukey)
/DESIGN = A B.
```

**/\*Salida 8.8\*/**

```
/*PRUEBA DE ADITIVIDAD: DBA no replicado*/
DATA LIST FREE/ A B tmin.
VALUE LABELS A 1 'a1' 2 'a2' 3 'a3'.
VALUE LABELS B 1 'b1' 2 'b2' 3 'b3' 4 'b4' 5 'b5'.
```

```
BEGIN DATA
1 1 5 1 2 8 1 3 8
2 1 7 2 2 8 2 3 10
3 1 7 3 2 10 3 3 10
4 1 6 4 2 12 4 3 12
5 1 8 5 2 10 5 3 12
end data.
```

```
MIXED tmin BY A B
/FIXED =A | SSTYPE(3)
/RANDOM B
/METHOD = REML
/PRINT = SOLUTION TESTCOV
/SAVE =PRED.
```

```
COMPUTE NOAD = PRED_1**2.
EXECUTE.
```

```
MIXED tmin BY A B WITH NOAD
/RANDOM B
/FIXED =A NOAD| SSTYPE(3)
/METHOD = REML
/PRINT = SOLUTION TESTCOV.
```

```
GLM tmin BY A B WITH NOAD
/RANDOM B
/DESIGN = A B NOAD.
```

**/\*Diseño bloques factorial replicado\*/**

```
DATA LIST FREE / F A B test .
VALUE LABELS F 1 'f1' 2 'f2' 3 'f3' 4 'f4' 5 'f5' 6 'f6' 7 'f5' 8 'f6'.
VALUE LABELS A 1 'a1' 2 'a2'.
VALUE LABELS B 1 'b1' 2 'b2'.
BEGIN DATA
1 1 1 4 1 1 1 9 1 1 2 5 1 1 2 10 1 2 1 6 1 2 1 6 1 2 2 0 1 2 2 5
2 1 1 8 2 1 1 8 2 1 2 3 2 1 2 5 2 2 1 7 2 2 1 4 2 2 2 1 2 2 2 3
3 1 1 10 3 1 1 10 3 1 2 4 3 1 2 6 3 2 1 4 3 2 1 7 3 2 2 3 3 2 2 6
4 1 1 5 4 1 1 9 4 1 2 6 4 1 2 9 4 2 1 6 4 2 1 8 4 2 2 4 4 2 2 4
5 1 1 9 5 1 1 9 5 1 2 2 5 1 2 8 5 2 1 8 5 2 1 7 5 2 2 1 5 2 2 2
6 1 1 10 6 1 1 10 6 1 2 3 6 1 2 9 6 2 1 3 6 2 1 9 6 2 2 5 6 2 2 1
7 1 1 8 7 1 1 10 7 1 2 5 7 1 2 6 7 2 1 2 7 2 1 6 7 2 2 2 7 2 2 5
8 1 1 4 8 1 1 9 8 1 2 5 8 1 2 10 8 2 1 6 8 2 1 6 8 2 2 0 8 2 2 5
END DATA.
```

**/\*Interactivo\*/**

```
GLM test BY f a b
/DESIGN = f a b a*b a*b*f.
/*Aditivo*/
GLM test BY f a b
/DESIGN = f a b a*b.
```

**/\*Diseño bloques factorial replicado\*/**

```
DATA LIST FREE / F A B test .
VALUE LABELS F 1 'f1' 2 'f2' 3 'f3' 4 'f4' 5 'f5' 6 'f6' 7 'f5' 8 'f6'.
VALUE LABELS A 1 'a1' 2 'a2'.
VALUE LABELS B 1 'b1' 2 'b2'.
```

```

BEGIN DATA
1 1 1 4 1 1 2 5 1 2 1 6 1 2 2 0
2 1 1 8 2 1 2 3 2 2 1 7 2 2 2 1
3 1 1 10 3 1 2 4 3 2 1 4 3 2 2 3
4 1 1 5 4 1 2 6 4 2 1 6 4 2 2 4
5 1 1 9 5 1 2 2 5 2 1 8 5 2 2 1
6 1 1 10 6 1 2 3 6 2 1 3 6 2 2 5
7 1 1 8 7 1 2 5 7 2 1 2 7 2 2 2
8 1 1 4 8 1 2 5 8 2 1 6 8 2 2 0
END DATA.
MEANS TABLES = test BY A BY B/CELLS SUM VAR COUNT.
GLM test BY f a b
/DESIGN = f a b a*b.

```

**/\*Bloqueo y ANCOVA\*/**

```

DATA LIST FREE/A X B Y .
VALUE LABELS A 1 'a1' 2 'a2' 3 'a3'.
VALUE LABELS B 1 'b1' 2 'b2' 3 'b3'.
BEGIN DATA
1 3 1 8 1 7 1 12 1 10 2 16 1 8 2 14 1 14 3 19 1 8 2 12 1 13 3 17
2 13 3 15 2 17 3 20 2 10 2 14 2 9 2 12 2 4 1 8 2 6 1 9 2 4 1 6
3 14 3 24 3 10 2 22 3 8 2 20 3 4 1 16 3 5 1 14 3 8 2 18 3 7 1 12
END DATA.

```

**/\*Salida 8.10\*/**

```

MEANS TABLES= Y BY A BY B
/CELLS MEAN SUM VAR COUNT .

```

**/\*Salida 8.11\*/**

```

GLM Y by A B
/PLOT = PROFILE (A*B)
/DESIGN= A B A*B .

```

**/\*Salida 8.12\*/**

```

GLM Y by A B
/DESIGN= A B .

```

**/\*Salida 8.13\*/**

```

GLM Y by A WITH X
/DESIGN= A X .

```

**/\*DCL no replicado\*/**

```

DATA LIST FREE / A B C test .
VALUE LABELS A 1 'a1' 2 'a2' 3 'a3' 4 'a4'.
VALUE LABELS B 1 'b1' 2 'b2' 3 'b3' 4 'b4'.
VALUE LABELS C 1 'c1' 2 'c2' 3 'c3' 4 'c4'.
BEGIN DATA
1 1 1 4 2 1 2 5 4 1 3 1 3 1 4 3
2 2 1 7 3 2 2 5 1 2 3 6 4 2 4 2
3 3 1 6 4 3 2 1 2 3 3 9 1 3 4 7
4 4 1 2 1 4 2 5 3 4 3 8 2 4 4 9
END DATA.

```

**/\*Salida 8.14\*/**

```

MEANS TABLES = test BY A BY B BY C
/CELLS SUM VAR COUNT.

```

**/\*Salida 8.15\*/**

```
GLM test BY A B C
/RANDOM = B C
/PLOT = PROFILE (A*B)
/PLOT = PROFILE (A*C)
/DESIGN = A B C A*B*C.
```

```
GLM test BY A B C
/RANDOM = B C
/DESIGN = A B C.
```

**/\*PRUEBA DE ADITIVIDAD: DBA no replicado\*/**

```
MIXED test BY A B C
/FIXED =A | SSTYPE(3)
/RANDOM B C
/METHOD = REML
/PRINT = SOLUTION TESTCOV
/SAVE =PRED.
```

```
COMPUTE NOAD = PRED_1**2.
EXECUTE.
```

```
MIXED test BY A B C WITH NOAD
/RANDOM B C
/FIXED =A NOAD| SSTYPE(3)
/METHOD = REML
/PRINT = SOLUTION TESTCOV.
```

```
GLM test BY A B C WITH NOAD
/RANDOM B C
/DESIGN = A B C NOAD.
```

**/\*Salida 8.16\*/**

```
GLM test BY A B C
/RANDOM B C
/POSHOC = A (Bonferroni)
/DESIGN = A B C .
```

**/\*DCL replicado\*/**

```
DATA LIST FREE / A B C test .
VALUE LABELS A 1 'a1' 2 'a2' 3 'a3' 4 'a4'.
VALUE LABELS B 1 'b1' 2 'b2' 3 'b3' 4 'b4'.
VALUE LABELS C 1 'c1' 2 'c2' 3 'c3' 4 'c4'.
BEGIN DATA
1 1 1 4 1 1 1 5 1 1 1 2 2 1 2 5 2 1 2 7 2 1 2 3
4 1 3 1 4 1 3 0 4 1 3 1 3 1 4 3 3 1 4 2 3 1 4 2
2 2 1 7 2 2 1 8 2 2 1 5 3 2 2 5 3 2 2 3 3 2 2 2
1 2 3 6 1 2 3 3 1 2 3 3 4 2 4 2 4 2 4 0 4 2 4 0
3 3 1 6 3 3 1 3 3 3 1 2 4 3 2 1 4 3 2 1 4 3 2 1
2 3 3 9 2 3 3 8 2 3 3 1 1 1 3 4 7 1 3 4 5 1 3 4 6
4 4 1 2 4 4 1 3 4 4 1 1 1 4 2 5 1 4 2 4 1 4 2 6
3 4 3 8 3 4 3 7 3 4 3 5 2 4 4 9 2 4 4 1 2 2 4 4 1 6
END DATA.
```

**/\*Salida 8.17\*/**

MEANS TABLES = test BY A BY B BY C  
/CELLS SUM VAR COUNT.

**/\*Salida 8.18\*/**

GLM test BY A B C  
/RANDOM = B C  
/PLOT = PROFILE (A\*B)  
/PLOT = PROFILE (A\*C)  
/DESIGN = A B C A\*B\*C.

**/\*Salida 8.19\*/**

GLM test BY A B C  
/RANDOM = B C  
/PRINT =ETASQ  
/DESIGN = A B C.

**/\*TEMA 9: Diseños de medidas repetidas (intrasujetos)\*/**

```
DATA LIST FREE /Sujetos a1 a2 a3 .
BEGIN DATA
1 85 86 82
2 81 80 81
3 88 84 84
4 63 63 58
5 67 60 61
6 71 65 64
7 54 51 55
8 62 59 51
9 61 52 56
10 89 80 86
11 88 89 81
12 84 86 86
13 63 65 63
14 65 58 59
15 63 56 64
16 58 55 56
17 62 53 60
18 57 51 53
END DATA .
```

**/\*Salida 9.1\*/**

```
CORRELATIONS
/VARIABLES=a1 a2 a3
/PRINT=TWOTAIL NOSIG
/STATISTICS DESCRIPTIVES XPROD
/MISSING=PAIRWISE .
```

**/\*Revierde el formato multivariante a formato univariante\*/**

```
VARSTOCASES
/MAKE respemo FROM a1 a2 a3
/INDEX=contextos .
list sujetos contextos respemo .
```

**/\*Salida 9.2\*/**

```
GLM respemo BY contextos
/DESIGN = contextos.
```

**/\*Salida 9.3\*/**

```
GLM respemo BY sujetos contextos
/RANDOM = sujetos
/POSTHOC = contextos (TUKEY)
/DESIGN = contextos sujetos .
```

**/\*PRUEBA DE ADITIVIDAD: DMR \*/**

```
MIXED respemo BY contextos sujetos
/FIXED =contextos | SSTYPE(3)
/RANDOM sujetos
/METHOD = REML
/PRINT = SOLUTION TESTCOV
/SAVE =PRED.
```

```
COMPUTE NOAD = PRED_1**2.
```

EXECUTE.

```
MIXED respemo BY sujetos contextos WITH NOAD
  /RANDOM sujetos
  /FIXED =contextos NOAD| SSTYPE(3)
  /METHOD = REML
  /PRINT = SOLUTION TESTCOV.
```

```
GLM respemo BY sujetos contextos WITH NOAD
  /RANDOM sujetos
  /DESIGN = sujetos contextos NOAD.
```

**/\*Revierte el formato univariante a formato multivariante\*/**

```
CASESTOVARs
  /ID = sujetos
  /INDEX=contextos .
  List .
```

**/\*Salida 9.4\*/**

```
GLM respemo.1 respemo.2 respemo.3
  /WSFACTOR = contextos 3 Polynomial
  /MEASURE = respemo
  /PRINT = ETASQ OPOWER
  /WSDSIGN = contextos.
```

**/\*Revierte el formato multivariante a formato univariante\*/**

```
VARSTOCASES
  /MAKE respemo FROM respemo.1 respemo.2 respemo.3
  /INDEX=contextos .
  list sujetos contextos respemo .
```

**/\*Salida 9.5\*/**

```
MIXED respemo BY contextos sujetos
  /FIXED = contextos | SSTYPE(3)
  /REPEATED = contextos | SUBJECT(sujetos) COVTYPE(CS).
```

**/\*Salida 9.6\*/**

```
MIXED respemo BY contextos sujetos
  /FIXED = contextos | SSTYPE(3)
  /REPEATED = contextos | SUBJECT(sujetos) COVTYPE(UN).
```

**/\*DMR con dos factores intrasujeto\*/**

```
DATA LIST FREE / sujetos tareas intervalos aciertos .
VALUE LABELS sujetos 1 's1' 2 's2' 3 's3' 4 's4' 5 's5' 6 's6' 7 's7' .
VALUE LABELS tareas 1 'a1' 2 'a2' .
VALUE LABELS intervalos 1 'b1' 2 'b2' 3 'b3' .
BEGIN DATA
1 1 1 4 1 1 2 5 1 1 3 7 1 2 1 1 1 2 2 4 1 2 3 5
2 1 1 6 2 1 2 8 2 1 3 10 2 2 1 3 2 2 2 6 2 2 3 6
3 1 1 1 3 1 2 6 3 1 3 5 3 2 1 3 3 2 2 5 3 2 3 4
4 1 1 2 4 1 2 10 4 1 3 12 4 2 1 1 4 2 2 4 4 2 3 7
5 1 1 5 5 1 2 10 5 1 3 10 5 2 1 5 5 2 2 6 5 2 3 8
6 1 1 1 6 1 2 7 6 1 3 8 6 2 1 2 6 2 2 8 6 2 3 8
7 1 1 4 7 1 2 9 7 1 3 11 7 2 1 4 7 2 2 7 7 2 3 8
END DATA .
```

**/\*Salida 9.8\*/**

MEANS TABLES=aciertos BY sujetos  
/CELLS MEAN SUM VAR COUNT.

**/\*Salida 9.9\*/**

GLM aciertos BY tareas intervalos sujetos  
/RANDOM = sujetos  
/PLOT = PROFILE (intervalos\*tareas)  
/DESIGN =tareas intervalos tareas\*intervalos sujetos sujetos\* tareas sujetos\*intervalos.

GLM aciertos BY tareas intervalos sujetos  
/RANDOM = sujetos  
/PLOT = PROFILE (intervalos\*tareas)  
/DESIGN =tareas intervalos tareas\*intervalos sujetos .

**/\*Salida 9.10\*/**

GLM aciertos BY tareas intervalos sujetos  
/RANDOM = sujetos  
/PLOT = PROFILE (intervalos\*tareas)  
/DESIGN =tareas intervalos sujetos.

**/\*Revierte el formato univariante a formato multivariante\*/**

CASESTOVARs  
/ID = sujetos  
/INDEX=tareas intervalos .  
List .

**/\*Salida 9.11\*/**

GLM aciertos.1.1 aciertos.1.2 aciertos.1.3 aciertos.2.1 aciertos.2.2 aciertos.2.3  
/WSFACTOR = tareas 2 Polynomial intervalos 3 Polynomial  
/MEASURE = aciertos  
/PRINT = ETASQ OPOWER  
/WSDESIGN = tareas intervalos tareas\*intervalos .

GLM aciertos.1.1 aciertos.1.2 aciertos.1.3 aciertos.2.1 aciertos.2.2 aciertos.2.3  
/WSFACTOR = tareas 2 Polynomial intervalos 3 Polynomial  
/MEASURE = aciertos  
/PRINT = ETASQ OPOWER  
/WSDESIGN = tareas intervalos .

**/\*Revierte el formato multivariante a formato univariante\*/**

VARSTOCASES  
/MAKE aciertos FROM aciertos.1.1 aciertos.1.2 aciertos.1.3 aciertos.2.1 aciertos.2.2 aciertos.2.3  
/INDEX= tareas(2) intervalos(3) .  
list sujetos tareas intervalos aciertos.

**/\*Salida 9.13\*/**

MIXED aciertos BY tareas intervalos  
/FIXED = tareas intervalos| SSTYPE(3)  
/REPEATED = tareas\*intervalos | SUBJECT(sujetos) COVTYPE(CS).

**/\*Salida 9.14\*/**

MIXED aciertos BY tareas intervalos  
/FIXED = tareas intervalos| SSTYPE(3)  
/REPEATED = tareas\*intervalos | SUBJECT(sujetos) COVTYPE(UN).

**/\*TEMA 10: Diseños de medidas repetidas (mixtos)\*/**

**/\*DMR con un factor inter y otro intra\*/**

```
DATA LIST FREE / recompensa sujeto d1 d2 d3 d4.
VALUE LABELS recompensa 1 'a1' 2 'a2'.
VALUE LABELS sujeto 1 's1' 2 's2' 3 's3' 4 's4' 5 's5' 6 's6' 7 's7' 8 's8' .
BEGIN DATA
1 1 14 11 10 08
1 2 16 13 13 07
1 3 15 12 11 07
1 4 13 12 12 06
2 5 12 11 10 05
2 6 11 08 08 07
2 7 08 09 07 06
2 8 06 09 07 05
END DATA.
```

**/\*Revierte el formato multivariante a formato univariante\*/**

```
VARSTOCASES /MAKE recuerdo FROM d1 d2 d3 d4
/INDEX = demora (recuerdo)
/KEEP = sujeto recompensa
/NULL = KEEP.
```

**/\*Salida 10.1\*/**

```
MEAN TABLES=recuerdo BY sujeto
/CELLS MEAN SUM VAR COUNT .
```

**/\*Salida 10.3\*/**

```
GLM recuerdo BY sujeto recompensa demora
/RANDOM = sujeto
/PLOT=PROFILE(demora*recompensa)
/DESIGN = recompensa sujeto(recompensa) demora recompensa*demora .
```

**/\*Salida 10.4\*/**

```
GLM recuerdo BY sujeto recompensa demora
/RANDOM = sujeto
/DESIGN = recompensa sujeto(recompensa) demora .
```

**/\*PRUEBA DE ADITIVIDAD: DMPR \*/**

```
MIXED recuerdo BY sujeto recompensa demora
/FIXED = recompensa demora sujeto recompensa*demora | SSTYPE(3)
/SAVE =PRED.
```

```
COMPUTE NOAD = PRED_1**2.
EXECUTE.
```

```
GLM recuerdo BY sujeto recompensa demora WITH NOAD
/RANDOM = sujeto
/DESIGN = recompensa demora sujeto recompensa*demora NOAD.
```

**/\*Revierte el formato univariante a formato multivariante\*/**

```
CASESTOVARs
/ID = sujeto
/INDEX=demora .
List .
```

**/\*Salida 10.5\*/**

GLM recuerdo.d1 recuerdo.d2 recuerdo.d3 recuerdo.d4 BY recompensa  
 /WSFACTOR = demora 4 Polynomial  
 /WSDSIGN = demora  
 /DESIGN = recompensa.

**/\*Revierte el formato multivariante a formato univariante\*/**

VARSTOCASES  
 /MAKE recuerdo FROM recuerdo.d1 recuerdo.d2 recuerdo.d3 recuerdo.d4  
 /INDEX = demora  
 /KEEP = sujeto recompensa  
 /NULL = KEEP.

**/\*Salida 10.6\*/**

MIXED recuerdo BY sujeto recompensa demora  
 /FIXED = recompensa demora recompensa\*demora | SSTYPE(3)  
 /REPEATED = demora | SUBJECT(sujeto) COVTYPE(UN) .

**/\*Salida 10.7\*/**

MIXED recuerdo BY sujeto recompensa demora  
 /FIXED = recompensa demora recompensa\*demora | SSTYPE(3)  
 /REPEATED = demora | SUBJECT(sujeto) COVTYPE(CS) .

**/\*Salida 10.9\*/**

MIXED recuerdo BY sujeto recompensa demora  
 /FIXED = recompensa demora recompensa\*demora | SSTYPE(3)  
 /REPEATED = demora | SUBJECT(sujeto) COVTYPE(HF).

**/\*DMR con dos factores inter y un factor intra\*/**

DATA LIST FREE / ansiedad tensión sujeto c1 c2 c3 c4.  
 VALUE LABELS ansiedad 1 'a1' 2 'a2'.  
 VALUE LABELS tensión 1 'b1' 2 'b2'.  
 VALUE LABELS sujeto 1 's1' 2 's2' 3 's3' 4 's4' 5 's5' 6 's6' 7 's7' 8 's8' 9 's9' 10 's10' 11 's11' 12 's12'.

BEGIN DATA  
 1 1 1 18 14 12 6  
 1 1 2 19 12 8 4  
 1 1 3 14 10 6 2  
 1 2 4 16 12 10 4  
 1 2 5 12 8 6 2  
 1 2 6 18 10 5 1  
 2 1 7 16 10 8 4  
 2 1 8 18 8 4 1  
 2 1 9 16 12 6 2  
 2 2 10 19 16 10 8  
 2 2 11 16 14 10 9  
 2 2 12 16 12 8 8  
 END DATA.

**/\*Revierte el formato multivariante a formato univariante\*/**

VARSTOCASES /MAKE rend FROM c1 c2 c3 c4  
 /INDEX = ensayos(rend)  
 /KEEP = sujeto ansiedad tensión  
 / NULL = KEEP.

**/\*Salida 10.11\*/**

MEAN TABLES=rend BY ansiedad BY tensión BY ensayos  
/CELLS MEAN SUM VAR COUNT.

MEAN TABLES=rend BY sujeto  
/CELLS MEAN SUM VAR COUNT.

**/\*Salida 10.13\*/**

GLM rend BY sujeto ansiedad tensión ensayos  
/RANDOM = sujeto  
/PLOT=PROFILE(ansiedad\*tensión BY ensayos)  
/DESIGN = ansiedad tensión ansiedad\*tensión sujeto(ansiedad\*tensión) ensayos  
ansiedad\*ensayos tensión\*ensayos ansiedad\*tensión\*ensayos .

**/\*Salida 10.14\*/**

GLM rend BY sujeto ansiedad tensión ensayos  
/RANDOM = sujeto  
/DESIGN = ansiedad tensión ansiedad\*tensión sujeto(ansiedad\*tensión) ensayos  
ansiedad\*ensayos tensión\*ensayos.

**/\*Salida 10.15\*/**

GLM rend BY sujeto ansiedad tensión ensayos  
/RANDOM = sujeto  
/DESIGN = ansiedad tensión ansiedad\*tensión sujeto(ansiedad\*tensión) ensayos .

**/\*Revierte el formato univariante a formato multivariante\*/**

CASESTOVAR  
/ID = sujeto  
/INDEX=ensayos .  
List .

**/\*Salida 10.16\*/**

GLM c1 c2 c3 c4 BY ansiedad tensión  
/WSFACTOR = ensayo 4 Polynomial  
/MEASURE = rend  
/WSDSIGN = ensayo .

**/\*Revierte el formato multivariante a formato univariante\*/**

VARSTOCASES /MAKE rend FROM c1 c2 c3 c4  
/INDEX = ensayos (rend)  
/KEEP = sujeto ansiedad tensión  
/ NULL = KEEP.

**/\*Salida 10.17\*/**

MIXED rend BY sujeto ansiedad tensión ensayos  
/FIXED = ansiedad tensión ansiedad\*tensión ensayos | SSTYPE(3)  
/REPEATED = ensayos | SUBJECT(sujeto) COVTYPE(UN).

**/\*Salida 10.18\*/**

MIXED rend BY sujeto ansiedad tensión ensayos  
/FIXED = ansiedad tensión ansiedad\*tensión ensayos | SSTYPE(3)  
/REPEATED = ensayos | SUBJECT(sujeto) COVTYPE(CS).

**/\*Salida 10.20\*/**

MIXED rend BY sujeto ansiedad tensión ensayos  
/FIXED = ansiedad tensión ansiedad\*tensión ensayos | SSTYPE(3)

/REPEATED = ensayos | SUBJECT(sujeto) COVTYPE(ARH1).

**/\*Diseño de parcela dividida (DPD)\*/**

DATA LIST FREE / edad sujeto b1 b2 b3 .

VALUE LABELS edad 1 '20' 2 '60' .

VALUE LABELS sujeto 1 's1' 2 's2' 3 's3' 4 's4' 5 's5' 6 's6' 7 's7' 8 's8' 9 's9' 10 's10' 11 's11' 12 's12' 13 's13' 14 's14' 15 's15' 16 's16' 17 's17' 18 's18' 19 's19' 20 's20' .

BEGIN DATA

1 01 0,450 0,510 0,630  
 1 02 0,390 0,480 0,540  
 1 03 0,570 0,630 0,660  
 1 04 0,450 0,660 0,720  
 1 05 0,510 0,660 0,630  
 1 06 0,360 0,450 0,450  
 1 07 0,510 0,600 0,720  
 1 08 0,510 0,660 0,780  
 1 09 0,510 0,660 0,660  
 1 10 0,510 0,540 0,660  
 2 11 0,420 0,570 0,690  
 2 12 0,600 0,720 0,810  
 2 13 0,450 0,540 0,690  
 2 14 0,630 0,660 0,780  
 2 15 0,420 0,570 0,780  
 2 16 0,600 0,780 0,870  
 2 17 0,630 0,690 0,870  
 2 18 0,480 0,570 0,720  
 2 19 0,690 0,750 0,900  
 2 20 0,510 0,690 0,810  
 END DATA .

**/\*Revierde el formato multivariante a formato univariante\*/**

VARSTOCASES

/MAKE tr FROM b1 b2 b3

/INDEX = ángulo(tr)

/KEEP = sujeto edad

/NULL = KEEP.

**/\*Salida 10.22\*/**

MIXED tr BY edad ángulo

/FIXED = edad ángulo edad\*ángulo | SSTYPE(3)

/METHOD= REML

/REPEATED = ángulo | SUBJECT(sujeto) COVTYPE(CS) .

**/\*El diseño conmutativo (DCO)\*/**

DATA LIST FREE / grupo sujeto p1 p2 .

VALUE LABELS grupo 1 'A-B' 2 'B-A' .

VALUE LABELS sujeto 1 's1' 2 's2' 3 's3' 4 's4' 5 's5' 6 's6' 7 's7' 8 's8' 9 's9' 10 's10' .

BEGIN DATA

1 1 7 6  
 1 2 8 6  
 1 3 6 4  
 1 4 7 5  
 1 5 8 7  
 2 6 6 9  
 2 7 5 7  
 2 8 5 6

```
2 9 7 8
2 10 4 6
END DATA .
```

**/\*Revierte el formato multivariante a formato univariante\*/**

```
VARSTOCASES
/MAKE recuerdo FROM p1 p2
/INDEX = periodo (recuerdo)
/KEEP = sujeto grupo
/NULL = KEEP.
```

**/\*Salida 10.23\*/**

```
MEANS TABLES=recuerdo BY grupo BY periodo
/CELLS MEAN SUM VAR COUNT.
```

**/\*Salida 10.24\*/**

```
MEANS TABLES=recuerdo BY sujeto
/CELLS MEAN SUM VAR COUNT.
```

**/\*Figura 10.5\*/**

```
GLM recuerdo BY grupo periodo
/PLOT = PROFILE( periodo*grupo ) .
```

**/\*Salida 10.25\*/**

```
MIXED recuerdo BY sujeto grupo periodo
/FIXED = grupo periodo grupo*periodo | SSTYPE(3)
/REPEATED = periodo | SUBJECT(sujeto) COVTYPE(CS) .
```

**/\*TEMA 11: Diseños cuasiexperimentales\*/**

**/\*Diseño con grupo control no equivalente (DGNE)\*/**

DATA LIST FREE /sujeto grupo pret post .

VALUE LABELS grupo 1 'experimental' 2 'control' .

BEGIN DATA

|    |   |    |    |    |   |    |    |    |   |    |    |    |   |    |    |
|----|---|----|----|----|---|----|----|----|---|----|----|----|---|----|----|
| 1  | 1 | 10 | 15 | 2  | 1 | 8  | 13 | 3  | 1 | 9  | 16 | 4  | 1 | 13 | 15 |
| 5  | 1 | 10 | 17 | 6  | 1 | 14 | 18 | 7  | 1 | 13 | 18 | 8  | 1 | 8  | 12 |
| 9  | 1 | 12 | 17 | 10 | 1 | 8  | 14 | 11 | 1 | 14 | 17 | 12 | 1 | 9  | 13 |
| 13 | 1 | 10 | 14 | 14 | 1 | 13 | 17 | 15 | 1 | 9  | 15 | 16 | 1 | 13 | 16 |
| 17 | 1 | 12 | 18 | 18 | 1 | 9  | 16 | 19 | 1 | 10 | 16 | 20 | 1 | 7  | 13 |
| 21 | 1 | 6  | 13 | 22 | 1 | 11 | 15 | 23 | 1 | 7  | 14 | 24 | 1 | 10 | 17 |
| 25 | 1 | 8  | 16 | 26 | 1 | 8  | 15 | 27 | 1 | 11 | 13 | 28 | 1 | 11 | 17 |
| 29 | 1 | 12 | 16 | 30 | 1 | 11 | 16 | 31 | 2 | 4  | 8  | 32 | 2 | 11 | 10 |
| 33 | 2 | 10 | 12 | 34 | 2 | 12 | 12 | 35 | 2 | 13 | 14 | 36 | 2 | 9  | 14 |
| 37 | 2 | 6  | 11 | 38 | 2 | 10 | 13 | 39 | 2 | 12 | 11 | 40 | 2 | 12 | 15 |
| 41 | 2 | 11 | 14 | 42 | 2 | 6  | 8  | 43 | 2 | 7  | 11 | 44 | 2 | 12 | 14 |
| 45 | 2 | 8  | 10 | 46 | 2 | 12 | 13 | 47 | 2 | 6  | 7  | 48 | 2 | 9  | 11 |
| 49 | 2 | 5  | 9  | 50 | 2 | 7  | 9  | 51 | 2 | 11 | 11 | 52 | 2 | 6  | 9  |
| 53 | 2 | 6  | 12 | 54 | 2 | 9  | 12 | 55 | 2 | 10 | 10 | 56 | 2 | 9  | 10 |
| 57 | 2 | 10 | 11 | 58 | 2 | 7  | 10 | 59 | 2 | 8  | 11 | 60 | 2 | 7  | 12 |

END DATA .

**/\*Salida 11.1\*/**

MEAN TABLES=pret post BY grupo

/CELLS MEAN SUM VAR COUNT .

**/\*Figura11.2\*/**

GRAPH

/SCATTERPLOT(BIVAR)=pret WITH post BY grupo

/MISSING=LISTWISE .

**/\*Revierde el formato multivariante a formato univariante\*/**

VARSTOCASES

/MAKE rend FROM pret post

/INDEX = prepost

/KEEP = sujeto pret post grupo

/NULL = KEEP .

**/\*Salida11.2\*/**

MIXED rend BY grupo prepost

/FIXED = grupo prepost grupo\*prepost

/METHOD = REML

/REPEATED=prepost |SUBJECT(sujeto) COVTYPE(CS).

**/\*Figura11.3\*/**

GLM rend BY grupo prepost

/PLOT = PROFILE(prepost\*grupo) .

**/\*Revierde el formato univariante a formato multivariante\*/**

CASESTOVAR

/ID = sujeto

/INDEX=prepost .

List .

**/\*Salidas 11.3-11.4\*/**

```
GLM rend.2 BY grupo WITH rend.1
/INTERCEPT = INCLUDE
/PRINT = PARAMETER
/DESIGN = grupo rend.1 .
```

```
COMPUTE cambio = rend.1 - rend.2 .
EXECUTE.
```

**/\*Salida11.5\*/**

```
GLM cambio BY grupo
/DESIGN = grupo .
```

**/\*Diseño de discontinuidad de la regresión (DDR)\*/**

```
DATA LIST FREE /grupo pretest posttest .
VALUE LABELS grupo 1 'GE' 2 'GC' .
BEGIN DATA
```

|   |    |    |   |    |    |   |    |    |   |    |    |
|---|----|----|---|----|----|---|----|----|---|----|----|
| 1 | 20 | 21 | 1 | 20 | 26 | 1 | 21 | 28 | 1 | 22 | 29 |
| 1 | 20 | 27 | 1 | 20 | 25 | 1 | 21 | 24 | 1 | 22 | 32 |
| 1 | 20 | 23 | 1 | 20 | 25 | 1 | 20 | 24 | 1 | 20 | 29 |
| 1 | 22 | 25 | 1 | 23 | 26 | 1 | 23 | 28 | 1 | 22 | 25 |
| 1 | 25 | 31 | 1 | 26 | 32 | 1 | 21 | 24 | 1 | 27 | 31 |
| 1 | 21 | 34 | 1 | 20 | 23 | 1 | 20 | 33 | 1 | 20 | 27 |
| 1 | 22 | 32 | 1 | 20 | 32 | 1 | 20 | 23 | 1 | 21 | 29 |
| 1 | 23 | 26 | 1 | 21 | 25 | 1 | 21 | 30 | 1 | 20 | 25 |
| 1 | 20 | 25 | 1 | 22 | 26 | 1 | 23 | 31 | 1 | 26 | 31 |
| 1 | 20 | 28 | 1 | 24 | 30 | 1 | 23 | 34 | 1 | 22 | 33 |
| 2 | 4  | 9  | 2 | 6  | 11 | 2 | 3  | 10 | 2 | 5  | 10 |
| 2 | 3  | 11 | 2 | 5  | 9  | 2 | 6  | 12 | 2 | 6  | 9  |
| 2 | 5  | 8  | 2 | 4  | 8  | 2 | 5  | 9  | 2 | 5  | 10 |
| 2 | 7  | 11 | 2 | 6  | 8  | 2 | 7  | 12 | 2 | 8  | 10 |
| 2 | 8  | 11 | 2 | 7  | 10 | 2 | 6  | 9  | 2 | 7  | 12 |
| 2 | 8  | 11 | 2 | 6  | 9  | 2 | 8  | 11 | 2 | 9  | 13 |
| 2 | 10 | 14 | 2 | 10 | 14 | 2 | 11 | 16 | 2 | 13 | 15 |
| 2 | 12 | 15 | 2 | 12 | 14 | 2 | 11 | 12 | 2 | 11 | 10 |
| 2 | 10 | 13 | 2 | 12 | 17 | 2 | 13 | 16 | 2 | 11 | 16 |
| 2 | 13 | 18 | 2 | 15 | 15 | 2 | 12 | 18 | 2 | 12 | 18 |
| 2 | 13 | 16 | 2 | 15 | 16 | 2 | 15 | 15 | 2 | 14 | 17 |
| 2 | 16 | 16 | 2 | 14 | 17 | 2 | 13 | 18 | 2 | 16 | 20 |
| 2 | 17 | 21 | 2 | 17 | 19 | 2 | 18 | 19 | 2 | 19 | 21 |
| 2 | 16 | 22 | 2 | 19 | 20 | 2 | 12 | 23 | 2 | 13 | 21 |
| 2 | 18 | 23 | 2 | 13 | 22 | 2 | 15 | 22 | 2 | 17 | 21 |

```
END DATA .
```

```
COMPUTE pretcent = pretest - 20 .
EXECUTE .
```

**/\*Salida11.6\*/**

```
MEAN TABLES=pretest posttest BY grupo
/CELLS MEAN SUM VAR COUNT .
```

**/\*Salidas11.7-11.8\*/**

```
GLM posttest BY grupo WITH pretcent
/PRINT=PARAMETER
/DESIGN = grupo pretcent .
```

**/\*Figura11.8\*/**

GRAPH  
/SCATTERPLOT(BIVAR)=pretcent WITH postest BY grupo.

**/\*Diseño de series temporales interrumpidas simple DSTI)\*/**

DATA LIST FREE /mes robos programa serie .

BEGIN DATA

|    |     |   |   |
|----|-----|---|---|
| 1  | 3,3 | 0 | 1 |
| 2  | 4,3 | 0 | 1 |
| 3  | 3,5 | 0 | 1 |
| 4  | 4,4 | 0 | 1 |
| 5  | 3,6 | 0 | 1 |
| 6  | 3,9 | 0 | 1 |
| 7  | 5,3 | 0 | 1 |
| 8  | 3,5 | 0 | 1 |
| 9  | 4,3 | 0 | 1 |
| 10 | 3,9 | 0 | 1 |
| 11 | 3,6 | 1 | 1 |
| 12 | 2,4 | 1 | 1 |
| 13 | 2,3 | 1 | 1 |
| 14 | 1,8 | 1 | 1 |
| 15 | 3,3 | 1 | 1 |
| 16 | 1,5 | 1 | 1 |
| 17 | 1,4 | 1 | 1 |
| 18 | 2,8 | 1 | 1 |
| 19 | 2,3 | 1 | 1 |
| 20 | 2,0 | 1 | 1 |

END DATA .

COMPUTE difmes = mes - 10 .

EXECUTE .

COMPUTE inter = difmes\*programa .

EXECUTE .

**/\*Salida11.9\*/**

REGRESSION

/STATISTICS COEFF OUTS R ANOVA

/NOORIGIN

/DEPENDENT robos

/METHOD=ENTER programa difmes inter

/RESIDUALS DURBIN .

**/\*Salida11.10\*/**

MIXED robos WITH programa difmes inter

/FIXED = programa difmes inter | SSTYPE(3)

/PRINT = SOLUTION TESTCOV

/SAVE =PRED

/REPEATED = difmes | SUBJECT(serie) COVTYPE(ID) .

**/\*Salida11.11\*/**

MIXED robos WITH programa difmes inter

/FIXED = programa difmes inter | SSTYPE(3)

/PRINT = SOLUTION TESTCOV

/REPEATED = difmes | SUBJECT(serie) COVTYPE(AR1) .

**/\*Figuras11a y 11b\*/**

GRAPH/SCATTERPLOT(BIVAR)=difmes WITH robos .  
 GRAPH/SCATTERPLOT(BIVAR)=difmes WITH PRED\_1 .

**/\*Diseño de series temporales interrumpidas simple DSTI\*/**

DATA LIST FREE /serie dia pref cper .

BEGIN DATA

1 1 0 42  
 1 2 0 58  
 1 3 0 58  
 1 4 0 67  
 1 5 0 73  
 1 6 1 34  
 1 7 1 42  
 1 8 1 42  
 1 9 1 33  
 1 10 1 31  
 1 11 1 38  
 1 12 1 44  
 1 13 1 38  
 1 14 1 37  
 1 15 1 41  
 1 16 1 40  
 1 17 1 41  
 1 18 1 24  
 1 19 1 29  
 1 20 1 30

END DATA .

COMPUTE difdia = dia - 5 .  
 EXECUTE .

COMPUTE inter = difdia\*pref .  
 EXECUTE .

**/\*Salida11.14/**

MIXED cper WITH pref difdia inter  
 /FIXED = pref difdia inter | SSTYPE(3)  
 /PRINT = SOLUTION TESTCOV  
 /SAVE =PRED  
 /REPEATED = difdia | SUBJECT(serie) COVTYPE(ID).

**/\*Salida11.15/**

MIXED cper WITH pref difdia inter  
 /FIXED = pref difdia inter | SSTYPE(3)  
 /PRINT = SOLUTION TESTCOV  
 /REPEATED = difdia | SUBJECT(serie) COVTYPE(AR1).

**/\*Figuras12a y 12b\*/**

GRAPH/SCATTERPLOT(BIVAR)=difdia WITH cper .  
 GRAPH/SCATTERPLOT(BIVAR)=difdia WITH PRED\_1 .

**/\*DSTI con grupo control no equivalente\*/**

DATA LIST FREE /dia rend prog grupo1 .

BEGIN DATA

01 31 0 1 0 02 24 0 1 0 03 30 0 1 0  
 04 15 0 1 0

|    |    |   |   |      |    |   |   |      |    |   |   |     |
|----|----|---|---|------|----|---|---|------|----|---|---|-----|
| 05 | 17 | 0 | 1 | 0 06 | 30 | 0 | 1 | 0 07 | 22 | 0 | 1 | 0   |
| 08 | 36 | 0 | 1 | 0    |    |   |   |      |    |   |   |     |
| 09 | 28 | 0 | 1 | 0 10 | 22 | 0 | 1 | 0 11 | 18 | 0 | 1 | 0   |
| 12 | 28 | 0 | 1 | 0    |    |   |   |      |    |   |   |     |
| 13 | 44 | 0 | 1 | 0 14 | 21 | 0 | 1 | 0 15 | 22 | 0 | 1 | 0   |
| 16 | 21 | 0 | 1 | 0    |    |   |   |      |    |   |   |     |
| 17 | 30 | 0 | 1 | 0 18 | 31 | 0 | 1 | 0 19 | 11 | 0 | 1 | 0   |
| 20 | 27 | 0 | 1 | 0    |    |   |   |      |    |   |   |     |
| 21 | 31 | 0 | 1 | 0 22 | 30 | 0 | 1 | 0 23 | 21 | 0 | 1 | 0   |
| 24 | 21 | 0 | 1 | 0    |    |   |   |      |    |   |   |     |
| 25 | 28 | 0 | 1 | 0 26 | 30 | 0 | 1 | 0 27 | 10 | 1 | 1 | 0   |
| 28 | 11 | 1 | 1 | 0    |    |   |   |      |    |   |   |     |
| 29 | 13 | 1 | 1 | 0 30 | 10 | 1 | 1 | 0 31 | 8  | 1 | 1 | 0   |
| 32 | 10 | 1 | 1 | 0    |    |   |   |      |    |   |   |     |
| 33 | 10 | 1 | 1 | 0 34 | 8  | 1 | 1 | 0 35 | 7  | 1 | 1 | 0   |
| 36 | 6  | 1 | 1 | 0    |    |   |   |      |    |   |   |     |
| 37 | 6  | 1 | 1 | 0 38 | 8  | 1 | 1 | 0 39 | 8  | 1 | 1 | 0   |
| 40 | 6  | 1 | 1 | 0    |    |   |   |      |    |   |   |     |
| 41 | 8  | 1 | 1 | 0 42 | 2  | 1 | 1 | 0 43 | 6  | 1 | 1 | 0   |
| 44 | 7  | 1 | 1 | 0    |    |   |   |      |    |   |   |     |
| 45 | 0  | 1 | 1 | 0 46 | 6  | 1 | 1 | 0 47 | 5  | 1 | 1 | 0   |
| 48 | 4  | 1 | 1 | 0    |    |   |   |      |    |   |   |     |
| 49 | 4  | 1 | 1 | 0 50 | 4  | 1 | 1 | 0 51 | 3  | 1 | 1 | 0   |
| 52 | 0  | 1 | 1 | 0    |    |   |   |      |    |   |   |     |
| 53 | 6  | 1 | 1 | 0 54 | 5  | 1 | 1 | 0 55 | 3  | 1 | 1 | 0   |
| 56 | 4  | 1 | 1 | 0    |    |   |   |      |    |   |   |     |
| 57 | 4  | 1 | 1 | 0 58 | 2  | 1 | 1 | 0 59 | 3  | 1 | 1 | 0   |
| 60 | 0  | 1 | 1 | 0    |    |   |   |      |    |   |   |     |
| 1  | 25 | 0 | 0 | 1 2  | 25 | 0 | 0 | 1 3  | 35 | 0 | 0 | 1 4 |
|    | 19 | 0 | 0 | 1    |    |   |   |      |    |   |   |     |
| 5  | 17 | 0 | 0 | 1 6  | 18 | 0 | 0 | 1 7  | 13 | 0 | 0 | 1 8 |
|    | 32 | 0 | 0 | 1    |    |   |   |      |    |   |   |     |
| 9  | 16 | 0 | 0 | 1 10 | 13 | 0 | 0 | 1 11 | 20 | 0 | 0 | 1   |
| 12 | 16 | 0 | 0 | 1    |    |   |   |      |    |   |   |     |
| 13 | 22 | 0 | 0 | 1 14 | 23 | 0 | 0 | 1 15 | 16 | 0 | 0 | 1   |
| 16 | 30 | 0 | 0 | 1    |    |   |   |      |    |   |   |     |
| 17 | 16 | 0 | 0 | 1 18 | 30 | 0 | 0 | 1 19 | 24 | 0 | 0 | 1   |
| 20 | 26 | 0 | 0 | 1    |    |   |   |      |    |   |   |     |
| 21 | 16 | 0 | 0 | 1 22 | 29 | 0 | 0 | 1 23 | 23 | 0 | 0 | 1   |
| 24 | 27 | 0 | 0 | 1    |    |   |   |      |    |   |   |     |
| 25 | 23 | 0 | 0 | 1 26 | 30 | 0 | 0 | 1 27 | 20 | 1 | 0 | 1   |
| 28 | 15 | 1 | 0 | 1    |    |   |   |      |    |   |   |     |
| 29 | 36 | 1 | 0 | 1 30 | 18 | 1 | 0 | 1 31 | 20 | 1 | 0 | 1   |
| 32 | 31 | 1 | 0 | 1    |    |   |   |      |    |   |   |     |
| 33 | 23 | 1 | 0 | 1 34 | 16 | 1 | 0 | 1 35 | 15 | 1 | 0 | 1   |
| 36 | 26 | 1 | 0 | 1    |    |   |   |      |    |   |   |     |
| 37 | 24 | 1 | 0 | 1 38 | 23 | 1 | 0 | 1 39 | 16 | 1 | 0 | 1   |
| 40 | 16 | 1 | 0 | 1    |    |   |   |      |    |   |   |     |
| 41 | 18 | 1 | 0 | 1 42 | 25 | 1 | 0 | 1 43 | 22 | 1 | 0 | 1   |
| 44 | 27 | 1 | 0 | 1    |    |   |   |      |    |   |   |     |
| 45 | 20 | 1 | 0 | 1 46 | 17 | 1 | 0 | 1 47 | 27 | 1 | 0 | 1   |
| 48 | 21 | 1 | 0 | 1    |    |   |   |      |    |   |   |     |
| 49 | 22 | 1 | 0 | 1 50 | 21 | 1 | 0 | 1 51 | 25 | 1 | 0 | 1   |
| 52 | 22 | 1 | 0 | 1    |    |   |   |      |    |   |   |     |
| 53 | 21 | 1 | 0 | 1 54 | 20 | 1 | 0 | 1 55 | 21 | 1 | 0 | 1   |
| 56 | 21 | 1 | 0 | 1    |    |   |   |      |    |   |   |     |

```

57      16      1      0      1 58      17      1      0      1 59      26      1      0      1
60      28      1      0      1
END DATA.

```

```

COMPUTE difdia = dia - 26 .
EXECUTE .

```

```

COMPUTE inter = difdia * prog .
EXECUTE .

```

**/\*Solución 11.17\*/**

```

MIXED rend WITH prog difdia inter grupo
/FIXED = prog difdia inter grupo | SSTYPE(3)
/PRINT = SOLUTION TESTCOV
/REPEATED = difdia | SUBJECT(dia) COVTYPE(ID) .

```

**/\*Solución 11.18\*/**

```

MIXED rend WITH prog difdia inter
/FIXED = prog difdia inter | SSTYPE(3)
/PRINT = SOLUTION TESTCOV
/SAVE =PRED
/REPEATED = difdia | SUBJECT(dia) COVTYPE(ID) .

```

**/\*TEMA 12: Diseños de caso único\*/**

**/\*Datos de un diseño de dos fases A-B \*/**

DATA LIST FREE /tiempo tratamiento respuesta .

BEGIN DATA

|    |   |    |
|----|---|----|
| 1  | 0 | 41 |
| 2  | 0 | 44 |
| 3  | 0 | 47 |
| 4  | 0 | 43 |
| 5  | 0 | 46 |
| 6  | 0 | 46 |
| 7  | 0 | 52 |
| 8  | 0 | 52 |
| 9  | 0 | 58 |
| 10 | 0 | 61 |
| 11 | 1 | 57 |
| 12 | 1 | 55 |
| 13 | 1 | 51 |
| 14 | 1 | 54 |
| 15 | 1 | 53 |
| 16 | 1 | 60 |
| 17 | 1 | 65 |
| 18 | 1 | 67 |
| 19 | 1 | 67 |
| 20 | 1 | 71 |

END DATA.

**/\*Análisis de regresión del diseño A-B. Página 464\*/**

REGRESSION

/DEPENDENT Respuesta

/METHOD=ENTER Tiempo Tratamiento

/RESIDUALS DURBIN .

**/\*Análisis de regresión del diseño A-B. Página 465\*/**

AREG Respuesta WITH Tiempo Tratamiento

/METHOD=CO

/CONSTANT

/RHO=0

/MXITER=10.

**/\* Datos del diseño A-B-A-B de generalización de Lambert et al. (2006)\*/**

DATA LIST FREE /participante tiempo1 tiempo2 tiempo3 tiempo4 fase a1b1 b1a2 a2b2 respuesta .

BEGIN DATA

| participante | tiempo1 | tiempo2 | tiempo3 | tiempo4 | fase | a1b1 | b1a2 | a2b2 | respuesta |
|--------------|---------|---------|---------|---------|------|------|------|------|-----------|
| 1            | 1       | 0       | 0       | 0       | 0    | 0    | 0    | 0    | 7         |
| 1            | 2       | 0       | 0       | 0       | 0    | 0    | 0    | 0    | 9         |
| 1            | 3       | 0       | 0       | 0       | 0    | 0    | 0    | 0    | 8         |
| 1            | 4       | 0       | 0       | 0       | 0    | 0    | 0    | 0    | 6         |
| 1            | 5       | 0       | 0       | 0       | 0    | 0    | 0    | 0    | 7         |
| 1            | 6       | 0       | 0       | 0       | 0    | 0    | 0    | 0    | 4         |
| 1            | 7       | 0       | 0       | 0       | 0    | 0    | 0    | 0    | 5         |
| 1            | 8       | 0       | 0       | 0       | 0    | 0    | 0    | 0    | 10        |
| 1            | 9       | 0       | 0       | 0       | 1    | 1    | 0    | 0    | 2         |
| 1            | 10      | 1       | 0       | 0       | 1    | 1    | 0    | 0    | 0         |
| 1            | 11      | 2       | 0       | 0       | 1    | 1    | 0    | 0    | 1         |
| 1            | 12      | 3       | 0       | 0       | 1    | 1    | 0    | 0    | 0         |
| 1            | 13      | 4       | 0       | 0       | 1    | 1    | 0    | 0    | 0         |

|   |    |    |    |   |   |   |   |   |    |
|---|----|----|----|---|---|---|---|---|----|
| 1 | 14 | 5  | 0  | 0 | 0 | 1 | 1 | 0 | 3  |
| 1 | 15 | 6  | 1  | 0 | 0 | 1 | 1 | 0 | 8  |
| 1 | 16 | 7  | 2  | 0 | 0 | 1 | 1 | 0 | 8  |
| 1 | 17 | 8  | 3  | 0 | 0 | 1 | 1 | 0 | 6  |
| 1 | 18 | 9  | 4  | 0 | 0 | 1 | 1 | 0 | 10 |
| 1 | 19 | 10 | 5  | 0 | 0 | 1 | 1 | 0 | 10 |
| 1 | 20 | 11 | 6  | 0 | 0 | 1 | 1 | 0 | 10 |
| 1 | 21 | 12 | 7  | 0 | 0 | 1 | 1 | 0 | 8  |
| 1 | 22 | 13 | 8  | 0 | 1 | 1 | 1 | 1 | 3  |
| 1 | 23 | 14 | 9  | 1 | 1 | 1 | 1 | 1 | 4  |
| 1 | 24 | 15 | 10 | 2 | 1 | 1 | 1 | 1 | 1  |
| 1 | 25 | 16 | 11 | 3 | 1 | 1 | 1 | 1 | 3  |
| 1 | 26 | 17 | 12 | 4 | 1 | 1 | 1 | 1 | 2  |
| 1 | 27 | 18 | 13 | 5 | 1 | 1 | 1 | 1 | 4  |
| 1 | 28 | 19 | 14 | 6 | 1 | 1 | 1 | 1 | 0  |
| 1 | 29 | 20 | 15 | 7 | 1 | 1 | 1 | 1 | 1  |
| 1 | 30 | 21 | 16 | 8 | 1 | 1 | 1 | 1 | 0  |
| 2 | 1  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 8  |
| 2 | 2  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 7  |
| 2 | 3  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 7  |
| 2 | 4  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 8  |
| 2 | 5  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 6  |
| 2 | 6  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 7  |
| 2 | 7  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 9  |
| 2 | 8  | 0  | 0  | 0 | 1 | 1 | 0 | 0 | 3  |
| 2 | 9  | 1  | 0  | 0 | 1 | 1 | 0 | 0 | 1  |
| 2 | 10 | 2  | 0  | 0 | 1 | 1 | 0 | 0 | 0  |
| 2 | 11 | 3  | 0  | 0 | 1 | 1 | 0 | 0 | 4  |
| 2 | 12 | 4  | 0  | 0 | 1 | 1 | 0 | 0 | 0  |
| 2 | 13 | 5  | 0  | 0 | 1 | 1 | 0 | 0 | 0  |
| 2 | 14 | 6  | 0  | 0 | 0 | 1 | 1 | 0 | 8  |
| 2 | 15 | 7  | 1  | 0 | 0 | 1 | 1 | 0 | 9  |
| 2 | 16 | 8  | 2  | 0 | 0 | 1 | 1 | 0 | 10 |
| 2 | 17 | 9  | 3  | 0 | 0 | 1 | 1 | 0 | 7  |
| 2 | 18 | 10 | 4  | 0 | 0 | 1 | 1 | 0 | 9  |
| 2 | 19 | 11 | 5  | 0 | 0 | 1 | 1 | 0 | 10 |
| 2 | 20 | 12 | 6  | 0 | 0 | 1 | 1 | 0 | 8  |
| 2 | 21 | 13 | 7  | 0 | 0 | 1 | 1 | 0 | 10 |
| 2 | 22 | 14 | 8  | 0 | 1 | 1 | 1 | 1 | 1  |
| 2 | 23 | 15 | 9  | 1 | 1 | 1 | 1 | 1 | 1  |
| 2 | 24 | 16 | 10 | 2 | 1 | 1 | 1 | 1 | 0  |
| 2 | 25 | 17 | 11 | 3 | 1 | 1 | 1 | 1 | 5  |
| 2 | 26 | 18 | 12 | 4 | 1 | 1 | 1 | 1 | 3  |
| 2 | 27 | 19 | 13 | 5 | 1 | 1 | 1 | 1 | 6  |
| 2 | 28 | 20 | 14 | 6 | 1 | 1 | 1 | 1 | 0  |
| 2 | 29 | 21 | 15 | 7 | 1 | 1 | 1 | 1 | 0  |
| 2 | 30 | 22 | 16 | 8 | 1 | 1 | 1 | 1 | 2  |
| 3 | 1  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 10 |
| 3 | 2  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 6  |
| 3 | 3  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 6  |
| 3 | 4  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 9  |
| 3 | 5  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 6  |
| 3 | 6  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 10 |
| 3 | 7  | 0  | 0  | 0 | 1 | 1 | 0 | 0 | 0  |
| 3 | 8  | 1  | 0  | 0 | 1 | 1 | 0 | 0 | 1  |
| 3 | 9  | 2  | 0  | 0 | 1 | 1 | 0 | 0 | 1  |

|   |    |    |    |   |   |   |   |   |    |
|---|----|----|----|---|---|---|---|---|----|
| 3 | 10 | 3  | 0  | 0 | 1 | 1 | 0 | 0 | 0  |
| 3 | 11 | 4  | 0  | 0 | 1 | 1 | 0 | 0 | 0  |
| 3 | 12 | 5  | 0  | 0 | 0 | 1 | 1 | 0 | 5  |
| 3 | 13 | 6  | 1  | 0 | 0 | 1 | 1 | 0 | 7  |
| 3 | 14 | 7  | 2  | 0 | 0 | 1 | 1 | 0 | 10 |
| 3 | 15 | 8  | 3  | 0 | 0 | 1 | 1 | 0 | 5  |
| 3 | 16 | 9  | 4  | 0 | 0 | 1 | 1 | 0 | 10 |
| 3 | 17 | 10 | 5  | 0 | 0 | 1 | 1 | 0 | 9  |
| 3 | 18 | 11 | 6  | 0 | 0 | 1 | 1 | 0 | 10 |
| 3 | 19 | 12 | 7  | 0 | 1 | 1 | 1 | 1 | 4  |
| 3 | 20 | 13 | 8  | 1 | 1 | 1 | 1 | 1 | 6  |
| 3 | 21 | 14 | 9  | 2 | 1 | 1 | 1 | 1 | 5  |
| 3 | 22 | 15 | 10 | 3 | 1 | 1 | 1 | 1 | 7  |
| 3 | 23 | 16 | 11 | 4 | 1 | 1 | 1 | 1 | 0  |
| 3 | 24 | 17 | 12 | 5 | 1 | 1 | 1 | 1 | 0  |
| 3 | 25 | 18 | 13 | 6 | 1 | 1 | 1 | 1 | 0  |
| 3 | 26 | 19 | 14 | 7 | 1 | 1 | 1 | 1 | 1  |
| 4 | 1  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 10 |
| 4 | 2  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 6  |
| 4 | 3  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 4  |
| 4 | 4  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 8  |
| 4 | 5  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 8  |
| 4 | 6  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 9  |
| 4 | 7  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 10 |
| 4 | 8  | 0  | 0  | 0 | 1 | 1 | 0 | 0 | 3  |
| 4 | 9  | 1  | 0  | 0 | 1 | 1 | 0 | 0 | 6  |
| 4 | 10 | 2  | 0  | 0 | 1 | 1 | 0 | 0 | 0  |
| 4 | 11 | 3  | 0  | 0 | 1 | 1 | 0 | 0 | 0  |
| 4 | 12 | 4  | 0  | 0 | 1 | 1 | 0 | 0 | 1  |
| 4 | 13 | 5  | 0  | 0 | 0 | 1 | 1 | 0 | 3  |
| 4 | 14 | 6  | 1  | 0 | 0 | 1 | 1 | 0 | 8  |
| 4 | 15 | 7  | 2  | 0 | 0 | 1 | 1 | 0 | 10 |
| 4 | 16 | 8  | 3  | 0 | 0 | 1 | 1 | 0 | 10 |
| 4 | 17 | 9  | 4  | 0 | 0 | 1 | 1 | 0 | 10 |
| 4 | 18 | 10 | 5  | 0 | 0 | 1 | 1 | 0 | 10 |
| 4 | 19 | 11 | 6  | 0 | 0 | 1 | 1 | 0 | 5  |
| 4 | 20 | 12 | 7  | 0 | 1 | 1 | 1 | 1 | 6  |
| 4 | 21 | 13 | 8  | 1 | 1 | 1 | 1 | 1 | 1  |
| 4 | 22 | 14 | 9  | 2 | 1 | 1 | 1 | 1 | 5  |
| 4 | 23 | 15 | 10 | 3 | 1 | 1 | 1 | 1 | 0  |
| 4 | 24 | 16 | 11 | 4 | 1 | 1 | 1 | 1 | 0  |
| 4 | 25 | 17 | 12 | 5 | 1 | 1 | 1 | 1 | 0  |
| 4 | 26 | 18 | 13 | 6 | 1 | 1 | 1 | 1 | 1  |
| 5 | 1  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 10 |
| 5 | 2  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 6  |
| 5 | 3  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 9  |
| 5 | 4  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 4  |
| 5 | 5  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 5  |
| 5 | 6  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 9  |
| 5 | 7  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 6  |
| 5 | 8  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 10 |
| 5 | 9  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 9  |
| 5 | 10 | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 9  |
| 5 | 11 | 0  | 0  | 0 | 1 | 1 | 0 | 0 | 4  |
| 5 | 12 | 1  | 0  | 0 | 1 | 1 | 0 | 0 | 3  |
| 5 | 13 | 2  | 0  | 0 | 1 | 1 | 0 | 0 | 4  |

|   |    |    |    |    |   |   |   |   |    |
|---|----|----|----|----|---|---|---|---|----|
| 5 | 14 | 3  | 0  | 0  | 1 | 1 | 0 | 0 | 4  |
| 5 | 15 | 4  | 0  | 0  | 1 | 1 | 0 | 0 | 1  |
| 5 | 16 | 5  | 0  | 0  | 1 | 1 | 0 | 0 | 0  |
| 5 | 17 | 6  | 0  | 0  | 0 | 1 | 1 | 0 | 3  |
| 5 | 18 | 7  | 1  | 0  | 0 | 1 | 1 | 0 | 5  |
| 5 | 19 | 8  | 2  | 0  | 0 | 1 | 1 | 0 | 8  |
| 5 | 20 | 9  | 3  | 0  | 0 | 1 | 1 | 0 | 10 |
| 5 | 21 | 10 | 4  | 0  | 0 | 1 | 1 | 0 | 10 |
| 5 | 22 | 11 | 5  | 0  | 0 | 1 | 1 | 0 | 10 |
| 5 | 23 | 12 | 6  | 0  | 0 | 1 | 1 | 0 | 6  |
| 5 | 24 | 13 | 7  | 0  | 1 | 1 | 1 | 1 | 3  |
| 5 | 25 | 14 | 8  | 1  | 1 | 1 | 1 | 1 | 0  |
| 5 | 26 | 15 | 9  | 2  | 1 | 1 | 1 | 1 | 2  |
| 5 | 27 | 16 | 10 | 3  | 1 | 1 | 1 | 1 | 4  |
| 5 | 28 | 17 | 11 | 4  | 1 | 1 | 1 | 1 | 1  |
| 5 | 29 | 18 | 12 | 5  | 1 | 1 | 1 | 1 | 0  |
| 5 | 30 | 19 | 13 | 6  | 1 | 1 | 1 | 1 | 1  |
| 5 | 31 | 20 | 14 | 7  | 1 | 1 | 1 | 1 | 3  |
| 5 | 32 | 21 | 15 | 8  | 1 | 1 | 1 | 1 | 0  |
| 5 | 33 | 22 | 16 | 9  | 1 | 1 | 1 | 1 | 1  |
| 5 | 34 | 23 | 17 | 10 | 1 | 1 | 1 | 1 | 0  |
| 6 | 1  | 0  | 0  | 0  | 0 | 0 | 0 | 0 | 7  |
| 6 | 2  | 0  | 0  | 0  | 0 | 0 | 0 | 0 | 4  |
| 6 | 3  | 0  | 0  | 0  | 0 | 0 | 0 | 0 | 5  |
| 6 | 4  | 0  | 0  | 0  | 0 | 0 | 0 | 0 | 7  |
| 6 | 5  | 0  | 0  | 0  | 0 | 0 | 0 | 0 | 8  |
| 6 | 6  | 0  | 0  | 0  | 0 | 0 | 0 | 0 | 4  |
| 6 | 7  | 0  | 0  | 0  | 0 | 0 | 0 | 0 | 8  |
| 6 | 8  | 0  | 0  | 0  | 0 | 0 | 0 | 0 | 8  |
| 6 | 9  | 0  | 0  | 0  | 1 | 1 | 0 | 0 | 0  |
| 6 | 10 | 1  | 0  | 0  | 1 | 1 | 0 | 0 | 0  |
| 6 | 11 | 2  | 0  | 0  | 1 | 1 | 0 | 0 | 0  |
| 6 | 12 | 3  | 0  | 0  | 1 | 1 | 0 | 0 | 0  |
| 6 | 13 | 4  | 0  | 0  | 0 | 1 | 1 | 0 | 5  |
| 6 | 14 | 5  | 1  | 0  | 0 | 1 | 1 | 0 | 7  |
| 6 | 15 | 6  | 2  | 0  | 0 | 1 | 1 | 0 | 6  |
| 6 | 16 | 7  | 3  | 0  | 0 | 1 | 1 | 0 | 4  |
| 6 | 17 | 8  | 4  | 0  | 0 | 1 | 1 | 0 | 6  |
| 6 | 18 | 10 | 5  | 0  | 0 | 1 | 1 | 0 | 5  |
| 6 | 19 | 11 | 6  | 0  | 1 | 1 | 1 | 1 | 0  |
| 6 | 20 | 12 | 7  | 1  | 1 | 1 | 1 | 1 | 0  |
| 6 | 21 | 13 | 8  | 2  | 1 | 1 | 1 | 1 | 0  |
| 6 | 22 | 14 | 9  | 3  | 1 | 1 | 1 | 1 | 2  |
| 6 | 23 | 15 | 10 | 4  | 1 | 1 | 1 | 1 | 0  |
| 6 | 24 | 16 | 11 | 5  | 1 | 1 | 1 | 1 | 0  |
| 6 | 25 | 17 | 12 | 6  | 1 | 1 | 1 | 1 | 0  |
| 6 | 26 | 18 | 13 | 7  | 1 | 1 | 1 | 1 | 0  |
| 6 | 27 | 19 | 14 | 8  | 1 | 1 | 1 | 1 | 0  |
| 7 | 1  | 0  | 0  | 0  | 0 | 0 | 0 | 0 | 6  |
| 7 | 2  | 0  | 0  | 0  | 0 | 0 | 0 | 0 | 6  |
| 7 | 3  | 0  | 0  | 0  | 0 | 0 | 0 | 0 | 8  |
| 7 | 4  | 0  | 0  | 0  | 0 | 0 | 0 | 0 | 9  |
| 7 | 5  | 0  | 0  | 0  | 0 | 0 | 0 | 0 | 10 |
| 7 | 6  | 0  | 0  | 0  | 0 | 0 | 0 | 0 | 9  |
| 7 | 7  | 0  | 0  | 0  | 0 | 0 | 0 | 0 | 8  |
| 7 | 8  | 0  | 0  | 0  | 1 | 1 | 0 | 0 | 0  |

|   |    |    |    |   |   |   |   |   |   |
|---|----|----|----|---|---|---|---|---|---|
| 7 | 9  | 1  | 0  | 0 | 1 | 1 | 0 | 0 | 1 |
| 7 | 10 | 2  | 0  | 0 | 1 | 1 | 0 | 0 | 2 |
| 7 | 11 | 3  | 0  | 0 | 1 | 1 | 0 | 0 | 1 |
| 7 | 12 | 4  | 0  | 0 | 1 | 1 | 0 | 0 | 1 |
| 7 | 13 | 5  | 0  | 0 | 1 | 1 | 0 | 0 | 0 |
| 7 | 14 | 6  | 0  | 0 | 0 | 1 | 1 | 0 | 2 |
| 7 | 15 | 7  | 1  | 0 | 0 | 1 | 1 | 0 | 4 |
| 7 | 16 | 8  | 2  | 0 | 0 | 1 | 1 | 0 | 4 |
| 7 | 17 | 9  | 3  | 0 | 0 | 1 | 1 | 0 | 5 |
| 7 | 18 | 10 | 4  | 0 | 0 | 1 | 1 | 0 | 8 |
| 7 | 19 | 11 | 5  | 0 | 0 | 1 | 1 | 0 | 8 |
| 7 | 20 | 12 | 6  | 0 | 0 | 1 | 1 | 0 | 7 |
| 7 | 21 | 13 | 7  | 0 | 1 | 1 | 1 | 1 | 1 |
| 7 | 22 | 14 | 8  | 1 | 1 | 1 | 1 | 1 | 0 |
| 7 | 23 | 15 | 9  | 2 | 1 | 1 | 1 | 1 | 2 |
| 7 | 24 | 16 | 10 | 3 | 1 | 1 | 1 | 1 | 1 |
| 7 | 25 | 17 | 11 | 4 | 1 | 1 | 1 | 1 | 0 |
| 7 | 26 | 18 | 12 | 5 | 1 | 1 | 1 | 1 | 1 |
| 7 | 27 | 19 | 13 | 6 | 1 | 1 | 1 | 1 | 0 |
| 7 | 28 | 20 | 14 | 7 | 1 | 1 | 1 | 1 | 1 |
| 7 | 29 | 21 | 15 | 8 | 1 | 1 | 1 | 1 | 0 |
| 8 | 1  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 8 |
| 8 | 2  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 1 |
| 8 | 3  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 4 |
| 8 | 4  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 6 |
| 8 | 5  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 6 |
| 8 | 6  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 7 |
| 8 | 7  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 8 |
| 8 | 8  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 8 |
| 8 | 9  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 10 | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 2 |
| 8 | 11 | 0  | 0  | 0 | 1 | 1 | 0 | 0 | 0 |
| 8 | 12 | 1  | 0  | 0 | 1 | 1 | 0 | 0 | 0 |
| 8 | 13 | 2  | 0  | 0 | 1 | 1 | 0 | 0 | 0 |
| 8 | 14 | 3  | 0  | 0 | 1 | 1 | 0 | 0 | 2 |
| 8 | 15 | 4  | 0  | 0 | 1 | 1 | 0 | 0 | 6 |
| 8 | 16 | 5  | 0  | 0 | 0 | 1 | 1 | 0 | 5 |
| 8 | 17 | 6  | 1  | 0 | 0 | 1 | 1 | 0 | 6 |
| 8 | 18 | 7  | 2  | 0 | 0 | 1 | 1 | 0 | 5 |
| 8 | 19 | 8  | 3  | 0 | 0 | 1 | 1 | 0 | 8 |
| 8 | 20 | 9  | 4  | 0 | 0 | 1 | 1 | 0 | 4 |
| 8 | 21 | 10 | 5  | 0 | 0 | 1 | 1 | 0 | 0 |
| 8 | 22 | 11 | 6  | 0 | 0 | 1 | 1 | 0 | 2 |
| 8 | 23 | 12 | 7  | 0 | 1 | 1 | 1 | 1 | 1 |
| 8 | 24 | 13 | 8  | 1 | 1 | 1 | 1 | 1 | 2 |
| 8 | 25 | 14 | 9  | 2 | 1 | 1 | 1 | 1 | 6 |
| 8 | 26 | 15 | 10 | 3 | 1 | 1 | 1 | 1 | 0 |
| 8 | 27 | 16 | 11 | 4 | 1 | 1 | 1 | 1 | 2 |
| 8 | 28 | 17 | 12 | 5 | 1 | 1 | 1 | 1 | 0 |
| 8 | 29 | 18 | 13 | 6 | 1 | 1 | 1 | 1 | 1 |
| 8 | 30 | 19 | 14 | 7 | 1 | 1 | 1 | 1 | 1 |
| 9 | 1  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 9 |
| 9 | 2  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 5 |
| 9 | 3  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 4 |
| 9 | 4  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 2 |
| 9 | 5  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 3 |

|   |    |    |    |   |   |   |   |   |    |
|---|----|----|----|---|---|---|---|---|----|
| 9 | 6  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 10 |
| 9 | 7  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 4  |
| 9 | 8  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 10 |
| 9 | 9  | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 8  |
| 9 | 10 | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 8  |
| 9 | 11 | 0  | 0  | 0 | 1 | 1 | 0 | 0 | 0  |
| 9 | 12 | 1  | 0  | 0 | 1 | 1 | 0 | 0 | 2  |
| 9 | 13 | 2  | 0  | 0 | 1 | 1 | 0 | 0 | 1  |
| 9 | 14 | 3  | 0  | 0 | 1 | 1 | 0 | 0 | 3  |
| 9 | 15 | 4  | 0  | 0 | 1 | 1 | 0 | 0 | 0  |
| 9 | 16 | 5  | 0  | 0 | 1 | 1 | 0 | 0 | 0  |
| 9 | 17 | 6  | 0  | 0 | 0 | 1 | 1 | 0 | 3  |
| 9 | 18 | 7  | 1  | 0 | 0 | 1 | 1 | 0 | 0  |
| 9 | 19 | 8  | 2  | 0 | 0 | 1 | 1 | 0 | 2  |
| 9 | 20 | 9  | 3  | 0 | 0 | 1 | 1 | 0 | 7  |
| 9 | 21 | 10 | 4  | 0 | 0 | 1 | 1 | 0 | 7  |
| 9 | 22 | 11 | 5  | 0 | 0 | 1 | 1 | 0 | 2  |
| 9 | 23 | 12 | 6  | 0 | 1 | 1 | 1 | 1 | 0  |
| 9 | 24 | 13 | 7  | 1 | 1 | 1 | 1 | 1 | 1  |
| 9 | 25 | 14 | 8  | 2 | 1 | 1 | 1 | 1 | 0  |
| 9 | 26 | 15 | 9  | 3 | 1 | 1 | 1 | 1 | 2  |
| 9 | 27 | 16 | 10 | 4 | 1 | 1 | 1 | 1 | 2  |
| 9 | 28 | 17 | 11 | 5 | 1 | 1 | 1 | 1 | 4  |
| 9 | 29 | 18 | 12 | 6 | 1 | 1 | 1 | 1 | 0  |
| 9 | 30 | 19 | 13 | 7 | 1 | 1 | 1 | 1 | 0  |
| 9 | 31 | 20 | 14 | 8 | 1 | 1 | 1 | 1 | 1  |
| 9 | 32 | 21 | 15 | 9 | 1 | 1 | 1 | 1 | 1  |

END DATA.

COMPUTE ID = participante .  
/EXECUTE.

COMPUTE Inter1 = tiempo2\*a1b1 .  
/EXECUTE.

COMPUTE Inter2 = tiempo3\*b1a2 .  
/EXECUTE.

COMPUTE Inter3 = tiempo4\*a2b2 .  
/EXECUTE.

**/\*Cuadro 12.4. Modelo 1\*/**

MIXED respuesta BY fase  
/FIXED = fase| SSTYPE(3)  
/METHOD = ML  
/PRINT = SOLUTION TESTCOV  
/RANDOM INTERCEPT fase | SUBJECT(ID) COVTYPE(UN).

**/\*Cuadro 12.4. Modelo 2\*/**

MIXED respuesta WITH a1b1 b1a2 a2b2  
/FIXED = a1b1 b1a2 a2b2| SSTYPE(3)  
/METHOD = ML  
/PRINT = SOLUTION TESTCOV  
/RANDOM INTERCEPT a1b1 b1a2 a2b2 | SUBJECT(ID) COVTYPE(VC).

**/\*Cuadro 12.4. Modelo 3a\*/**

```

MIXED respuesta WITH tiempo1 a1b1 b1a2 a2b2 inter1 inter2 inter3
/FIXED = tiempo1 a1b1 b1a2 a2b2 a1b1 inter1 inter2 inter3 | SSTYPE(3)
/METHOD = ML
/PRINT = SOLUTION TESTCOV
/RANDOM INTERCEPT tiempo1 a1b1 b1a2 a2b2 inter1 inter2 inter3 | SUBJECT(ID)
COVTYPE(VC).

```

**/\*Cuadro 12.4. Modelo 3b\*/**

```

MIXED respuesta BY a1b1 b1a2 a2b2 WITH tiempo1 inter1 inter2 inter3
/FIXED = tiempo1 a1b1 b1a2 a2b2 inter1 inter2 inter3 | SSTYPE(3)
/METHOD = ML
/PRINT = SOLUTION TESTCOV
/RANDOM INTERCEPT | SUBJECT(ID) COVTYPE(VC)
/REPEATED = Tiempo1 | SUBJECT(ID) COVTYPE(AR1)
/SAVE =PRED.

```

EXE.

```

IGRAPH
/VIEWNAME='Scatterplot'
/X1 = VAR(tiempo1) TYPE = CATEGORICAL
/Y = VAR (PRED_1) TYPE = SCALE
/PANEL = VAR(id)
/SCATTER COINCIDENT = NONE.

```

**/\* Datos del DLBM de McClannahan et al. (1990)\*/\***

DATA LIST FREE /id t1 t2 t3 t4 treat Y.

BEGIN DATA

|   |    |     |    |   |   |    |
|---|----|-----|----|---|---|----|
| 1 | 0  | -6  | 0  | 0 | 0 | 70 |
| 1 | 1  | -5  | 0  | 1 | 0 | 72 |
| 1 | 2  | -4  | 0  | 2 | 0 | 80 |
| 1 | 3  | -3  | 0  | 3 | 0 | 65 |
| 1 | 4  | -2  | 0  | 4 | 0 | 76 |
| 1 | 5  | -1  | 0  | 5 | 0 | 75 |
| 1 | 6  | 0   | 0  | 6 | 1 | 86 |
| 1 | 7  | 1   | 1  | 6 | 1 | 81 |
| 1 | 8  | 2   | 2  | 6 | 1 | 85 |
| 1 | 9  | 3   | 3  | 6 | 1 | 84 |
| 1 | 10 | 4   | 4  | 6 | 1 | 84 |
| 1 | 11 | 5   | 5  | 6 | 1 | 90 |
| 1 | 12 | 6   | 6  | 6 | 1 | 95 |
| 1 | 13 | 7   | 7  | 6 | 1 | 83 |
| 1 | 14 | 8   | 8  | 6 | 1 | 94 |
| 1 | 15 | 9   | 9  | 6 | 1 | 88 |
| 1 | 16 | 10  | 10 | 6 | 1 | 87 |
| 1 | 17 | 11  | 11 | 6 | 1 | 98 |
| 1 | 18 | 12  | 12 | 6 | 1 | 92 |
| 1 | 19 | 13  | 13 | 6 | 1 | 91 |
| 1 | 20 | 14  | 14 | 6 | 1 | 90 |
| 2 | 0  | -11 | 0  | 0 | 0 | 50 |
| 2 | 1  | -10 | 0  | 1 | 0 | 55 |
| 2 | 2  | -9  | 0  | 2 | 0 | 45 |
| 2 | 3  | -8  | 0  | 3 | 0 | 59 |
| 2 | 4  | -7  | 0  | 4 | 0 | 42 |
| 2 | 5  | -6  | 0  | 5 | 0 | 48 |
| 2 | 6  | -5  | 0  | 6 | 0 | 60 |
| 2 | 7  | -4  | 0  | 7 | 0 | 58 |

|   |    |     |   |    |   |    |
|---|----|-----|---|----|---|----|
| 2 | 8  | -3  | 0 | 8  | 0 | 52 |
| 2 | 9  | -2  | 0 | 9  | 0 | 55 |
| 2 | 10 | -1  | 0 | 10 | 0 | 66 |
| 2 | 11 | 0   | 0 | 11 | 1 | 63 |
| 2 | 12 | 1   | 1 | 11 | 1 | 73 |
| 2 | 13 | 2   | 2 | 11 | 1 | 78 |
| 2 | 14 | 3   | 3 | 11 | 1 | 75 |
| 2 | 15 | 4   | 4 | 11 | 1 | 71 |
| 2 | 16 | 5   | 5 | 11 | 1 | 84 |
| 2 | 17 | 6   | 6 | 11 | 1 | 74 |
| 2 | 18 | 7   | 7 | 11 | 1 | 88 |
| 2 | 19 | 8   | 8 | 11 | 1 | 75 |
| 2 | 20 | 9   | 9 | 11 | 1 | 78 |
| 3 | 0  | -16 | 0 | 0  | 0 | 68 |
| 3 | 1  | -15 | 0 | 1  | 0 | 89 |
| 3 | 2  | -14 | 0 | 2  | 0 | 80 |
| 3 | 3  | -13 | 0 | 3  | 0 | 76 |
| 3 | 4  | -12 | 0 | 4  | 0 | 80 |
| 3 | 5  | -11 | 0 | 5  | 0 | 67 |
| 3 | 6  | -10 | 0 | 6  | 0 | 79 |
| 3 | 7  | -9  | 0 | 7  | 0 | 66 |
| 3 | 8  | -8  | 0 | 8  | 0 | 70 |
| 3 | 9  | -7  | 0 | 9  | 0 | 79 |
| 3 | 10 | -6  | 0 | 10 | 0 | 66 |
| 3 | 11 | -5  | 0 | 11 | 0 | 78 |
| 3 | 12 | -4  | 0 | 12 | 0 | 85 |
| 3 | 13 | -3  | 0 | 13 | 0 | 67 |
| 3 | 14 | -2  | 0 | 14 | 0 | 81 |
| 3 | 15 | -1  | 0 | 15 | 0 | 78 |
| 3 | 16 | 0   | 0 | 16 | 1 | 90 |
| 3 | 17 | 1   | 1 | 16 | 1 | 92 |
| 3 | 18 | 2   | 2 | 16 | 1 | 88 |
| 3 | 19 | 3   | 3 | 16 | 1 | 92 |
| 3 | 20 | 4   | 4 | 16 | 1 | 93 |

END DATA.

**/\*Cuadro 12.6. Modelo 1\*/**

MIXED y WITH treat

/FIXED = treat| SSTYPE(3)

/METHOD = ML

/PRINT = SOLUTION TESTCOV

/RANDOM INTERCEPT TREAT | SUBJECT(ID) COVTYPE(VC).

**/\*Cuadro 12.6. Modelo 2a\*/**

MIXED y WITH t1 t2 treat

/FIXED = t1 treat t2\*treat| SSTYPE(3)

/METHOD = ML

/PRINT = SOLUTION TESTCOV

/RANDOM INTERCEPT t1 treat t2\*treat | SUBJECT(ID) COVTYPE(VC).

**/\*Cuadro 12.6. Modelo 2b\*/**

MIXED y WITH treat T1

/FIXED = t1 treat| SSTYPE(3)

/METHOD = ML

/PRINT = SOLUTION TESTCOV

/RANDOM INTERCEPT | SUBJECT(ID) COVTYPE(VC)

```
/SAVE =PRED.
```

```
EXE.
```

```
IGRAPH
```

```
/VIEWNAME='Scatterplot'
```

```
/X1 = VAR(T1) TYPE = CATEGORICAL
```

```
/Y = VAR (PRED_1) TYPE = SCALE
```

```
/PANEL = VAR(id)
```

```
/SCATTER COINCIDENT = NONE.
```