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***
*Syntax protocol.
***
*Article: Workplace Bullying in Academia: Interaction of Gender,
Nationality, Age, and Work Context of Scientific and Non-Scientific
Employees in a Large German Research Organization
***
*For this analysis, the file „20191218_MPG Work Culture_FhG Version.sav“ is
used:
*This dataset is already cleaned for cases with contradictional answer
beahviour and is filtered according to the rule „(groupatmo1 > 0) |
(groupatmo2 > 0)  |  (leadstyle1 > 0)  |  (mentor > 0)  | (bully1 > 0)“.
*The filter rule means that this data set only contains cases in which at
least 3 items of the listed construct variables are answered.

GET
  FILE='C:\Users\striebin\OneDrive - Fraunhofer\Desktop\2021 Edt
Collection\20191218_MPG Work Culture_FhG Version.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.

*In this step, the dependent construct variables that opertionalize
bullying are created.

*Self-ascription to bullying, occassionally ore more often (yes/no) in the
last 12 months.
IF (Code9_SQ001 EQ 1) bullied_occas = 0.
IF (Code9_SQ001 GT 1) bullied_occas = 1.
VARIABLE LABELS bullied_occas 'Self-ascription to occasionally ore more
frequent bullying, binary'.
VALUE LABELS bullied_occas
1 "yes"
0 "no".
MISSING VALUES bullied_occas ('  ').
VARIABLE LEVEL bullied_occas (SCALE).

*In this step, the independent variables are created and recoded to receive
the desired reference categories in the regression.
*Computing a variable nationality.
IF (Code43_SQ001 EQ 1) nationality = 1.
IF (Code43_SQ002 EQ 1) nationality = 2.
IF (Code43_SQ003 EQ 1) nationality = 3.
IF (SUM(Code43_SQ001, Code43_SQ002, Code43_SQ003) EQ 2) nationality = 4.
IF (SUM(Code43_SQ001, Code43_SQ002, Code43_SQ003) EQ 3) nationality = 5.
IF (SUM(Code43_SQ001, Code43_SQ002, Code43_SQ003) EQ 0) nationality = 9.
VARIABLE LABELS  nationality 'Nationality'.
VALUE LABELS nationality
1 "German"
2 "Other EU country"
3 "Non-EU country"
4 "Two nationalities"
5 "Three nationalities (invalid)"
9 "No nationality (missing)".
MISSING VALUES nationality ('  ', 4 thru hi).
VARIABLE LEVEL nationality (NOMINAL).

*Computing a variable section.
IF (Code45_SQ001 EQ 1) section = 1.
IF (Code45_SQ002 EQ 1) section = 2.
IF (Code45_SQ003 EQ 1) section = 3.
IF (Code45_SQ004 EQ 1) section = 4.
IF (SUM(Code45_SQ001, Code45_SQ002, Code45_SQ003, Code45_SQ004) EQ 2)
section = 5.
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IF (SUM(Code45_SQ001, Code45_SQ002, Code45_SQ003, Code45_SQ004) GE 3)
section = 6.
IF (SUM(Code45_SQ001, Code45_SQ002, Code45_SQ003, Code45_SQ004) EQ 0)
section = 9.
VARIABLE LABELS section 'Section'.
EXECUTE.

* Computing a variable scientific/nonscientific.
IF (Code47_SQ001 EQ 1) scientific = 1.
IF (Code47_SQ002 EQ 1) scientific = 2.
IF (SUM(Code47_SQ001, Code47_SQ002) EQ 2) scientific = 3.
IF (SUM(Code47_SQ001, Code47_SQ002) EQ 0) scientific = 9.
VARIABLE LABELS scientific 'Scientific or non-scientific staff with
employment contract'.
VALUE LABELS scientific
1 "Non-scientific staff"
2 "Scientific staff"
3 "Scientific and non-scientific"
9 "No status determined (missing)".
MISSING VALUES scientific ('  ', 3, 9).
VARIABLE LEVEL scientific (NOMINAL).

*Computing a variable scientific position.
IF (Code48b_001 EQ 1) sciencestaff = 1.
IF (Code48b_003 EQ 1) sciencestaff = 2.
IF (Code48b_004 EQ 1) sciencestaff = 3.
IF (Code48b_005 EQ 1) sciencestaff = 4.
IF (Code48b_006 EQ 1) sciencestaff = 5.
IF (Code48c_SQ001 EQ 1) sciencestaff = 6.
IF (Code48c_SQ002 EQ 1) sciencestaff = 7.
IF (Code48c_SQ003 EQ 1) sciencestaff = 8.
IF (SUM(Code48b_001, Code48b_003, Code48b_004, Code48b_005, Code48b_006,
Code48c_SQ001, Code48c_SQ002, Code48c_SQ003) EQ 2) sciencestaff = 9.
IF (SUM(Code48b_001, Code48b_003, Code48b_004, Code48b_005, Code48b_006,
Code48c_SQ001, Code48c_SQ002, Code48c_SQ003) GE 3) sciencestaff = 10.
IF (SUM(Code48b_001, Code48b_003, Code48b_004, Code48b_005, Code48b_006,
Code48c_SQ001, Code48c_SQ002, Code48c_SQ003) GE 2) sciencestaff = 11.
VARIABLE LABELS sciencestaff 'Position of scientific staff'.
VALUE LABELS sciencestaff
1 "Director, research group leader employed"
2 "Doctoral candidate employed"
3 "Postdoc employed"
4 "Other research associates employed"
5 "Student assistant/graduate assistant, trainee, intern employed"
6 "Doctoral candidate funded"
7 "Postdoc funded and other research scholarship holders"
8 "Research scholarship holder, IMPRS scholarship holder"
9 "Two positions"
10 "Three positions and more (invalid)"
11 "No position determined (missing)".
MISSING VALUES sciencestaff ('  ', 9 thru hi).
VARIABLE LEVEL sciencestaff (NOMINAL).

*Computing a variable simplified position.
IF (Code48b_001 EQ 1) sciencestaff_short = 1.
IF (Code48b_003 EQ 1) sciencestaff_short = 2.
IF (Code48b_004 EQ 1) sciencestaff_short = 3.
IF (Code48b_005 EQ 1) sciencestaff_short = 4.
IF (Code48c_SQ001 EQ 1) sciencestaff_short = 2.
IF (Code48c_SQ002 EQ 1) sciencestaff_short = 3.
IF (Code48c_SQ003 EQ 1) sciencestaff_short = 2.
IF (SUM(Code48b_001, Code48b_003, Code48b_004, Code48b_005, Code48b_006,
Code48c_SQ001, Code48c_SQ002, Code48c_SQ003) EQ 2) sciencestaff_short = 6.
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IF (SUM(Code48b_001, Code48b_003, Code48b_004, Code48b_005, Code48b_006,
Code48c_SQ001, Code48c_SQ002, Code48c_SQ003) GE 3) sciencestaff_short = 7.
IF (SUM(Code48b_001, Code48b_003, Code48b_004, Code48b_005, Code48b_006,
Code48c_SQ001, Code48c_SQ002, Code48c_SQ003) GE 2) sciencestaff_short = 9.
VARIABLE LABELS sciencestaff_short 'Simplified Position of scientific staff
(PhDs employed and funded and IMPRS, Postdocs employed and funded)'.
VALUE LABELS sciencestaff_short
1 "Director, research group leader"
2 "Doctoral candidate"
3 "Postdoc"
4 "Other research associates employed"
6 "Two positions"
7 "Three positions and more (invalid)"
9 "No relevant position determined (missing)".
MISSING VALUES sciencestaff_short ('  ', 6 thru hi).
VARIABLE LEVEL sciencestaff_short (NOMINAL).

*Computing a variable nonscientific unit.
IF (Code48a_001 EQ 1) nonsciencestaff = 1.
IF (Code48a_002 EQ 1) nonsciencestaff = 2.
IF (Code48a_003 EQ 1) nonsciencestaff = 3.
IF (SUM(Code48a_001, Code48a_002, Code48a_003) GE 2) sciencestaff = 9.
EXECUTE.

*Setting value 3 „No answer / Other gender“ to missing.
MISSING VALUES Code42 ('  ', 3).

*Adjusting variable codings for better understandable logistic regressions.

*Recoding variable age.
RECODE Code41 (1=1) (2=2) (3=4) (4=3).
VALUE LABELS Code41
1 "15 - 29"
2 "30 - 44"
3 "60 and older"
4 "45 - 59".
EXECUTE.

*Recoding variable nationality.
RECODE nationality (1=3) (2=1) (3=2).
VALUE LABELS nationality
1 "Other EU country"
2 "Non-EU country"
3 "German".
EXECUTE.

RECODE section (1=1) (2=4) (3=2) (4=3).
VALUE LABELS section
1 "Biology and medicine"
2 "Humanities and social sciences"
3 "Other"
4 "Chemistry, physics and technology"
5 "Two sections"
6 "Three sections and more (invalid)"
9 "No section (missing)".
MISSING VALUES section ('  ', 5 thru hi).
VARIABLE LEVEL section (NOMINAL).

*Recoding variable simplified position.
RECODE sciencestaff_short (1=3) (2=4) (3=1) (4=2).
VALUE LABELS sciencestaff_short
1 "Postdoc"
2 "Other research associates employed"
```

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3 "Director, research group leader"
4 "Doctoral candidate".
EXECUTE.

*Recoding variable nonscientific unit.
RECODE nonsciencestaff (1=3) (2=1) (3=2).
VARIABLE LABELS nonsciencestaff 'Unit of nonscientific staff'.
VALUE LABELS nonsciencestaff
1 "Technology and IT"
2 "Other services"
3 "Administration"
9 "Two units and more (invalid)".
MISSING VALUES sciencestaff ('  ', 9 thru hi).
VARIABLE LEVEL sciencestaff (NOMINAL).

*Logistic regressions for scientific employees.

*Setting filter on scientific employees.
USE ALL.
COMPUTE filter_$=(scientific = 2).
VARIABLE LABELS filter_$ 'scientific = 2 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.

*Excluding „Other" section from the analysis.
MISSING VALUES section (3, 5 thru hi).
EXECUTE.

*Table for the assessment of distribution of cases over cells.
UNIANOVA bullied_occas BY Code42 section nationality sciencestaff_short
  /PRINT DESCRIPTIVE.

*Crosstable for the distribution of gender among sections.
CROSSTABS
  /TABLES=Code42 BY section
  /FORMAT=AVALUE TABLES
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

*Crosstable for the distribution of nationality among sections.
CROSSTABS
  /TABLES=nationality BY section
  /FORMAT=AVALUE TABLES
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

*Logistic regression.
GENLIN bullied_occas (REFERENCE=FIRST) BY Code42 nationality section
sciencestaff_short(ORDER=ASCENDING)
  /MODEL Code42 nationality section sciencestaff_short Code42*nationality
    Code42*sciencestaff_short nationality*sciencestaff_short Code42*section
nationality*section INTERCEPT=YES
 DISTRIBUTION=BINOMIAL LINK=LOGIT
  /CRITERIA METHOD=FISHER(1) SCALE=1 COVB=ROBUST MAXITERATIONS=100
MAXSTEPHALVING=5
    PCONVERGE=1E-006(ABSOLUTE) SINGULAR=1E-012 ANALYSISTYPE=3(WALD)
CILEVEL=95 CITYPE=WALD
    LIKELIHOOD=FULL
  /EMMEANS TABLES=Code42 SCALE=ORIGINAL COMPARE=Code42 CONTRAST=PAIRWISE
PADJUST=LSD
```

```
  /EMMEANS TABLES=nationality SCALE=ORIGINAL COMPARE=nationality
CONTRAST=PAIRWISE PADJUST=LSD
  /EMMEANS TABLES=Code42*nationality SCALE=ORIGINAL
COMPARE=Code42*nationality CONTRAST=PAIRWISE
    PADJUST=LSD
  /EMMEANS TABLES=Code42*sciencestaff_short SCALE=ORIGINAL
COMPARE=Code42*sciencestaff_short
    CONTRAST=PAIRWISE PADJUST=LSD
  /EMMEANS TABLES=nationality*sciencestaff_short SCALE=ORIGINAL
    COMPARE=nationality*sciencestaff_short CONTRAST=PAIRWISE PADJUST=LSD
/EMMEANS TABLES=nationality*section SCALE=ORIGINAL
    COMPARE=nationality*section CONTRAST=PAIRWISE PADJUST=LSD
/EMMEANS TABLES=Code42*section SCALE=ORIGINAL
    COMPARE=Code42*section CONTRAST=PAIRWISE PADJUST=LSD
/EMMEANS TABLES= Code42*nationality*sciencestaff_short*section
SCALE=ORIGINAL
    COMPARE=Code42*nationality*sciencestaff_short*section CONTRAST=PAIRWISE
PADJUST=LSD
  /MISSING CLASSMISSING=EXCLUDE
  /PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION CORB.
```

***Logistic regressions for nonscientific employees.**

```
USE ALL.
COMPUTE filter_$=(scientific = 1).
VARIABLE LABELS filter_$ 'scientific = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
```

***Including members of the section „Other“ again.**

```
MISSING VALUES section ('  ', 5 thru hi).
EXECUTE.
```

***Table for the assessment of distribution of cases over cells.**

```
UNIANOVA bullied_occas BY Code41 Code42 nonsciencestaff
  /PRINT DESCRIPTIVE.
```

***Crosstable for the distribution of women among nonscientific units.**

```
CROSSTABS
  /TABLES=Code42 BY nonsciencestaff
  /FORMAT=AVALUE TABLES
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.
```

***Logistic regression.**

```
GENLIN bullied_occas (REFERENCE=FIRST) BY Code41 Code42 nonsciencestaff
(ORDER=ASCENDING)
  /MODEL Code41 Code42 nonsciencestaff Code41*Code42 Code42*nonsciencestaff
INTERCEPT=YES
 DISTRIBUTION=BINOMIAL LINK=LOGIT
  /CRITERIA METHOD=FISHER(1) SCALE=1 COVB=ROBUST MAXITERATIONS=100
MAXSTEPHALVING=5
    PCONVERGE=1E-006(ABSOLUTE) SINGULAR=1E-012 ANALYSISTYPE=3(WALD)
CILEVEL=95 CITYPE=WALD
    LIKELIHOOD=FULL
  /EMMEANS TABLES=Code41 SCALE=ORIGINAL COMPARE=Code41 CONTRAST=PAIRWISE
PADJUST=LSD
  /EMMEANS TABLES=Code42 SCALE=ORIGINAL COMPARE=Code42 CONTRAST=PAIRWISE
PADJUST=LSD
    /EMMEANS TABLES=nonsciencestaff SCALE=ORIGINAL COMPARE=nonsciencestaff
CONTRAST=PAIRWISE
    PADJUST=LSD
```

```
  /EMMEANS TABLES=Code41*Code42 SCALE=ORIGINAL COMPARE=Code41*Code42
CONTRAST=PAIRWISE PADJUST=LSD
  /EMMEANS TABLES=Code42*nonsciencestaff SCALE=ORIGINAL
COMPARE=Code42*nonsciencestaff
    CONTRAST=PAIRWISE PADJUST=LSD
/EMMEANS TABLES=Code41*nonsciencestaff SCALE=ORIGINAL
COMPARE=Code41*nonsciencestaff
    CONTRAST=PAIRWISE PADJUST=LSD
/EMMEANS TABLES= Code41*Code42*nonsciencestaff SCALE=ORIGINAL
COMPARE=Code41*Code42*nonsciencestaff
    CONTRAST=PAIRWISE PADJUST=LSD
  /MISSING CLASSMISSING=EXCLUDE
  /PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION.

**********
*Analyses requested by Reviewers.
**********

*Setting filter on scientific employees.
USE ALL.
COMPUTE filter_$=(scientific = 2).
VARIABLE LABELS filter_$ 'scientific = 2 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.

*Excluding „Other" section from the analysis.
MISSING VALUES section (3, 5 thru hi).
EXECUTE.

*Logistic regression.
GENLIN bullied_occas (REFERENCE=FIRST) BY Code41 Code42 nationality section
sciencestaff_short(ORDER=ASCENDING)
  /MODEL Code41 Code42 nationality section sciencestaff_short
Code42*nationality
    Code42*sciencestaff_short nationality*sciencestaff_short Code42*section
nationality*section INTERCEPT=YES
 DISTRIBUTION=BINOMIAL LINK=LOGIT
  /CRITERIA METHOD=FISHER(1) SCALE=1 COVB=ROBUST MAXITERATIONS=100
MAXSTEPHALVING=5
    PCONVERGE=1E-006(ABSOLUTE) SINGULAR=1E-012 ANALYSISTYPE=3(WALD)
CILEVEL=95 CITYPE=WALD
    LIKELIHOOD=FULL
  /EMMEANS TABLES=Code41 SCALE=ORIGINAL COMPARE=Code41 CONTRAST=PAIRWISE
PADJUST=LSD
  /EMMEANS TABLES=Code42 SCALE=ORIGINAL COMPARE=Code42 CONTRAST=PAIRWISE
PADJUST=LSD
  /EMMEANS TABLES=nationality SCALE=ORIGINAL COMPARE=nationality
CONTRAST=PAIRWISE PADJUST=LSD
  /EMMEANS TABLES=Code42*nationality SCALE=ORIGINAL
COMPARE=Code42*nationality CONTRAST=PAIRWISE
    PADJUST=LSD
  /EMMEANS TABLES=Code42*sciencestaff_short SCALE=ORIGINAL
COMPARE=Code42*sciencestaff_short
    CONTRAST=PAIRWISE PADJUST=LSD
  /EMMEANS TABLES=nationality*sciencestaff_short SCALE=ORIGINAL
    COMPARE=nationality*sciencestaff_short CONTRAST=PAIRWISE PADJUST=LSD
/EMMEANS TABLES=nationality*section SCALE=ORIGINAL
    COMPARE=nationality*section CONTRAST=PAIRWISE PADJUST=LSD
/EMMEANS TABLES=Code42*section SCALE=ORIGINAL
    COMPARE=Code42*section CONTRAST=PAIRWISE PADJUST=LSD
```

```
/EMMEANS TABLES= Code42*nationality*sciencestaff_short*section
SCALE=ORIGINAL
    COMPARE=Code42*nationality*sciencestaff_short*section CONTRAST=PAIRWISE
PADJUST=LSD
  /MISSING CLASSMISSING=EXCLUDE
  /PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION CORB.

*Logistic regressions for nonscientific employees.

USE ALL.
COMPUTE filter_$=(scientific = 1).
VARIABLE LABELS filter_$ 'scientific = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.

*Including members of the section „Other“ again.
MISSING VALUES section ('  ', 5 thru hi).
EXECUTE.

*Table for the assessment of distribution of cases over cells.
UNIANOVA bullied_occas BY Code41 Code42 nonsciencestaff section
  /PRINT DESCRIPTIVE.

*Logistic regression.
GENLIN bullied_occas (REFERENCE=FIRST) BY Code41 Code42 nonsciencestaff
section(ORDER=ASCENDING)
  /MODEL Code41 Code42 nonsciencestaff section Code41*Code42
Code42*nonsciencestaff
INTERCEPT=YES
 DISTRIBUTION=BINOMIAL LINK=LOGIT
  /CRITERIA METHOD=FISHER(1) SCALE=1 COVB=ROBUST MAXITERATIONS=100
MAXSTEPHALVING=5
    PCONVERGE=1E-006(ABSOLUTE) SINGULAR=1E-012 ANALYSISTYPE=3(WALD)
CILEVEL=95 CITYPE=WALD
    LIKELIHOOD=FULL
  /EMMEANS TABLES=Code41 SCALE=ORIGINAL COMPARE=Code41 CONTRAST=PAIRWISE
PADJUST=LSD
  /EMMEANS TABLES=Code42 SCALE=ORIGINAL COMPARE=Code42 CONTRAST=PAIRWISE
PADJUST=LSD
/EMMEANS TABLES=section SCALE=ORIGINAL COMPARE=section CONTRAST=PAIRWISE
PADJUST=LSD
    /EMMEANS TABLES=nonsciencestaff SCALE=ORIGINAL COMPARE=nonsciencestaff
CONTRAST=PAIRWISE
    PADJUST=LSD
  /EMMEANS TABLES=Code41*Code42 SCALE=ORIGINAL COMPARE=Code41*Code42
CONTRAST=PAIRWISE PADJUST=LSD
  /EMMEANS TABLES=Code42*nonsciencestaff SCALE=ORIGINAL
COMPARE=Code42*nonsciencestaff
    CONTRAST=PAIRWISE PADJUST=LSD
/EMMEANS TABLES=Code41*nonsciencestaff SCALE=ORIGINAL
COMPARE=Code41*nonsciencestaff
    CONTRAST=PAIRWISE PADJUST=LSD
/EMMEANS TABLES= Code41*Code42*nonsciencestaff SCALE=ORIGINAL
COMPARE=Code41*Code42*nonsciencestaff
    CONTRAST=PAIRWISE PADJUST=LSD
  /MISSING CLASSMISSING=EXCLUDE
  /PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION.
```