

## Chapter 1: processing and recoding data

### Exercise 1

Number	Name	Sex	Age	Sport	Score1	Score2	Score3	Test	Exercises
1	Peter	1	21	Much	5	7	1	15	5.26
2	Luc	1	36	Average	6	8	2	17	4.78
3	Katrien	2	25	None	8	9	5	9999	5.69
4	Sarah	2	45	Much	4	5		10	5.36
5	Geert	1	52	Average	6	5	2	13	4.36
6	Hannes	1	44	None	1	6	3	9	9.25
7	Pieter	1	14	Low	2	5	3	8	6.25
8	Sofie	2	12	Much	5	8	2	14	6.95
9	Linde	2	55	Much		8	5	9999	3.74
10	Hanne	2	54	Low	4	8	2	10	geen
11	Jan	1	39	Average	4	7	2	18	geen
12	Dirk	1	28	Average	7	4	1	11	6.58
13	Dirk	1	17	Much	6	4		14	4.73
14	Kris	1	22	None	8	5	5	12	8.19
15	Piet	1	50	None	8	8	2	9999	9.57

1. Type all data into SPSS, name all variables, label them and give values
2. The variables score1, score2 en score3 reflect a score on 10, but score 10 has opposite scores (0 is the highest score and 10 is the lowest score. Recode score 3 so that it reflects the same score as score 1 and score 2.
3. Make a sum score of score 1, score 2 en score 3 that reflects a total on 30, do this in two ways with and without missing values.
4. Now recode the score on 30 towards a score on 3.
5. The variable 'test' reflects a test score on 20, people who did not participate got a score of 9999. Define 9999 as missing.
6. Make a histogram with normal curve for the variable test
7. Make a boxplot for the variable test
8. Inspect frequencies for all values
9. Run frequencies for test and exercise, but select only men and only women.
10. For the variable test: calculate mean, SD, median, minimum, maximum

## **Exercise 2**

1. Type all data into SPSS, name all variables, label them and give values
2. Calculate Body Mass Index.
3. For the BMI: calculate mean, SD, median, minimum, maximum BMI = weight (in kg)/height<sup>2</sup> (in meter)
4. Create a histogram for BMI. Is it normally distributed?

Pp	Gewicht	Lengte	Pp	Gewicht	Lengte
1	76	167	8	77	179
2	57	187	9	85	170
3	66	176	10	74	193
4	89	198	11	85	174
5	59	158	12	53	161
6	95	179	13	49	168
7	66	156	14	95	172

## Chapter 2: Correlations and $\chi$ -square

### Correlations

#### Exercise 1

1. A researcher wants to investigate whether scores on a newly developed field test correlate with scores on a test in the lab. Is there a relationship?

<b>PP</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
Fieldtest	10	8	7	5	12	15	10	15	6	9
Lab	12	10	8	8	12	18	12	18	8	9
<b>PP</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
Fieldtest	18	8	10	15	12	14	13	11	16	9
Lab	20	8	12	17	12	15	15	12	18	8

#### Exercise 2

A researcher wants to investigate relationships between test scores taken by 20 participants. He hypothesizes that there will be a positive relationship between strength and flexibility and an negative relationship between flexibility and technique. Is this correct based on the data below?

Strength	Flexibility	Technique
14	67	6
17	65	6
15	57	7
13	77	5
14	86	4
12	64	6
11	47	8
17	54	8
18	47	8
19	77	5
25	55	7
12	76	5
15	56	8
13	73	5
18	52	8
23	68	6
24	59	7
22	60	6
21	55	7
22	64	6

# **χ-square**

## **Exercise 1**

1. A researcher wants to investigate the relationship between years of experience and sales rates.

Pp	Experience	sales	Pp	experience	sales
1	0-5	Low	9	6-10	Low
2	6-10	Average	10	>10	Low
3	6-10	High	11	0-5	High
4	0-5	Low	12	>10	Average
5	>10	High	13	0-5	Average
6	0-5	Average	14	0-5	Low
7	6-10	High	15	>10	High
8	0-5	Low	16	>10	High

## Chapter 3: T-tests

### Exercise 1

1. A researcher wants to investigate whether tennis players have better concentration when compared to soccer players (n=24 each).

Soccer	Soccer	Soccer	Tennis	Tennis	Tennis
5	6	6	7	7	8
7	5	5	6	6	8
6	6	4	7	8	7
7	7	4	9	8	9
8	8	5	8	9	8
6	7	6	7	7	9
7	8	7	8	8	8
5	5	6	8	7	7

### Exercise 2

2. 20 pupils of one class of 16 year old students participated in a running test. Did they perform worse than the norm for their age-group? (norm is 40)

34	45	48	52	34
39	41	48	47	54
53	54	37	38	39
61	42	44	48	47

### Exercise 3

3. Is there a positive evolution in strength after five weeks of training?

Pp	Pre	Post	Pp	Pre	Post
1	16	16	8	16	17
2	14	13	9	15	16
3	17	17	10	16	16
4	13	15	11	17	16
5	10	10	12	16	17
6	14	13	13	15	16
7	18	17	14	11	13