

## Deluppgift 1 utan SAS: Data Colombia

priset	2014	2015	2016	2017
bönor(råda)	3909	3819	4048	4065
bonör	3012	3246	3158	3115
bönor(vita)	3434	3372	3332	3296

kvantitet	2014	2015	2016	2017
bönor(råda)	7	6	7	6
bonör	6	6	6	6
bönor(vita)	6	6	6	6

	Bas år 2014		Rapporteringsår 2015	
Produkt	priset p0	kvantitet q0	priset p1	kvantitet q1
bönor(råda)	3909	7	3819	6
bonör	3012	6	3246	6
bönor(vita)	3434	6	3372	6

	p0*q0	p1*q0		p1*q1	p0*q1
	27363	26733		22914	23454
	18072	19476		19476	18072
	20604	20232		20232	20604
Summa	66039	66441		62622	62130
Laspeyres %	100,61		Paasches %	100,79	

Från 2014 till 2015 har priset på bönor ökat med 0,61% respektive 0,79%

	Bas år 2014		Rapporteringsår 2016	
Produkt	priset p0	kvantitet q0	priset p1	kvantitet q1
bönor(råda)	3909	7	4048	7
bonör	3012	6	3158	6
bönor(vita)	3434	6	3332	6

	$p_0 \cdot q_0$	$p_1 \cdot q_0$		$p_1 \cdot q_1$	$p_0 \cdot q_1$
	27363	28336		28336	27363
	18072	18948		18948	18072
	20604	19992		19992	20604
Summa	66039	67276		67276	66039
Laspeyres %	101,87		Paasches %	101,87	

Från 2014 till 2016 har priset på bönor ökat med 1,87%

	Bas år <b>2014</b>		Rapporteringsår <b>2017</b>	
Produkt	priset $p_0$	kvantitet $q_0$	priset $p_1$	kvantitet $q_1$
<b>bönor(råda)</b>	3909	7	4065	6
<b>bonör</b>	3012	6	3115	6
<b>bönor(vita)</b>	3434	6	3296	6

	$p_0 \cdot q_0$	$p_1 \cdot q_0$		$p_1 \cdot q_1$	$p_0 \cdot q_1$
	27363	28455		24390	23454
	18072	18690		18690	18072
	20604	19776		19776	20604
Summa	66039	66921		62856	62130
Laspeyres %	101,34		Paasches %	101,17	

Från 2014 till 2017 har priset på bönor ökat med 1,34% respektive 1,17%.

## Deluppgift 2 med SAS: data Hepatitis

<b>Data Set Name</b>	WORK.HEPATITIS	<b>Observations</b>	106
<b>Member Type</b>	DATA	<b>Variables</b>	4
<b>Engine</b>	V9	<b>Indexes</b>	0
<b>Created</b>	2020-10-20 16:13:37	<b>Observation Length</b>	32
<b>Last Modified</b>	2020-10-20 16:13:37	<b>Deleted Observations</b>	0
<b>Protection</b>		<b>Compressed</b>	NO
<b>Data Set Type</b>		<b>Sorted</b>	NO
<b>Label</b>			
<b>Data Representation</b>	SOLARIS_X86_64, LINUX_X86_64, ALPHA_TRU64, LINUX_IA64		
<b>Encoding</b>	utf-8 Unicode (UTF-8)		

Engine/Host Dependent Information	
<b>Data Set Page Size</b>	65536
<b>Number of Data Set Pages</b>	1
<b>First Data Page</b>	1
<b>Max Obs per Page</b>	2038
<b>Obs in First Data Page</b>	106
<b>Number of Data Set Repairs</b>	0
<b>Filename</b>	/tmp/SAS_work58DC00003AFE_localhost.localdomain/SAS_work416700003AFE_localhost.localdomain/hepatitis.sas7bdat
<b>Release Created</b>	9.0401M6
<b>Host Created</b>	Linux
<b>Inode Number</b>	141611
<b>Access Permission</b>	rw-rw-r--
<b>Owner Name</b>	sasdemo
<b>File Size</b>	128KB
<b>File Size (bytes)</b>	131072

Alphabetic List of Variables and Attributes					
#	Variable	Type	Len	Format	Label
1	AGE	Num	8	BEST.	AGE
4	ALBUMIN	Num	8	BEST.	ALBUMIN
3	FATIGUE	Num	8	BEST.	FATIGUE
2	GENDER	Num	8	BEST.	GENDER

Obs	AGE	GENDER	FATIGUE	ALBUMIN
1	30	kvinna	ja	4
2	50	man	nej	3.5
3	78	man	nej	4
4	31	man	ja	4
5	34	man	ja	4
6	34	man	ja	4
7	39	man	nej	4.4
8	30	man	ja	3.9
9	39	man	ja	4.4
10	32	man	nej	3.7
11	41	man	nej	3.9
12	30	man	nej	4.9
13	38	man	nej	2.9
14	66	man	nej	4.3
15	40	man	nej	4
16	38	man	ja	4.1
17	38	man	ja	4.2
18	22	kvinna	nej	4.2
19	27	man	nej	4.1
20	31	man	ja	4
21	42	man	ja	4.7
22	25	kvinna	ja	4.3
23	27	man	nej	3.8
24	49	man	nej	3.7
25	58	kvinna	nej	2.7
26	61	man	nej	3.8
27	51	man	nej	4.6
28	41	kvinna	nej	5
29	26	kvinna	ja	3.8
30	35	man	nej	4.3
31	23	man	nej	4.1
32	20	kvinna	nej	3.9
33	42	man	ja	4
34	65	man	nej	2.9
35	52	man	ja	4
36	33	man	ja	4.4
37	56	man	nej	4.4
38	28	man	nej	4.4
39	37	man	ja	3.8
40	28	kvinna	nej	3.3

41	36	man	ja	4.2
42	38	man	nej	4.2
43	39	man	ja	4
44	39	man	ja	4
45	44	man	ja	4.4
46	40	man	nej	4
47	30	man	nej	4.2
48	30	man	ja	3.9
49	64	man	nej	4.3
50	37	man	ja	4.5
51	32	man	ja	4
52	32	man	nej	3.4
53	36	man	ja	3.1
54	49	man	nej	3.5
55	27	man	ja	4.2
56	56	man	ja	3
57	39	man	nej	4
58	44	man	nej	3.7
59	24	man	ja	4.3
60	36	man	nej	4
61	50	man	ja	5.3
62	32	man	nej	4.1
63	34	kvinna	ja	4
64	34	man	nej	4.4
65	28	man	ja	4.9
66	23	man	nej	4.8
67	36	man	ja	4.2
68	30	man	ja	4
69	62	kvinna	nej	3.9
70	28	man	nej	4
71	38	man	nej	4.4
72	50	kvinna	nej	3.4
73	52	man	ja	2.9
74	40	man	nej	4.2
75	30	man	nej	3.9
76	44	man	nej	3.5
77	27	man	nej	3
78	51	man	nej	3.9
79	25	man	ja	6.4
80	54	man	ja	3.6
81	7	man	ja	4.2

82	52	man	nej	4
83	45	man	nej	3
84	36	man	ja	3.3
85	24	man	nej	4.1
86	50	man	ja	3.9
87	54	man	nej	3.8
88	20	man	nej	2.9
89	37	man	nej	4.3
90	50	man	ja	4
91	34	kvinna	nej	4.1
92	54	man	nej	3.1
93	54	man	ja	4.5
94	48	man	nej	3.8
95	72	man	nej	3.4
96	25	man	nej	4.5
97	51	man	ja	4.5
98	38	man	ja	3.5
99	45	man	ja	4.2
100	36	man	nej	2.7
101	51	man	nej	3
102	31	man	nej	4.2
103	36	man	ja	4
104	44	man	nej	4.3
105	61	man	nej	4.1
106	53	kvinna	nej	4.1

***The MEANS Procedure***











*The FREQ Procedure*

FATIGUE				
FATIGUE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
nej	62	58.49	62	58.49
ja	44	41.51	106	100.00

*The MEANS Procedure***FATIGUE=nej**

Analysis Variable : AGE AGE				
N	Mean	Std Dev	Minimum	Maximum
62	41.5645161	13.7633643	20.0000000	78.0000000

**FATIGUE=ja**

Analysis Variable : AGE AGE				
N	Mean	Std Dev	Minimum	Maximum
44	37.2272727	9.9624029	7.0000000	56.0000000

***The MEANS Procedure*****FATIGUE=nej**

Analysis Variable : ALBUMIN ALBUMIN				
N	Mean	Std Dev	Minimum	Maximum
62	3.8870968	0.5342327	2.7000000	5.0000000

**FATIGUE=ja**

Analysis Variable : ALBUMIN ALBUMIN				
N	Mean	Std Dev	Minimum	Maximum
44	4.1045455	0.5697631	2.9000000	6.4000000

***The UNIVARIATE Procedure***  
***Variable: AGE (AGE)***

FATIGUE=nej

Moments			
<b>N</b>	62	<b>Sum Weights</b>	62
<b>Mean</b>	41.5645161	<b>Sum Observations</b>	2577
<b>Std Deviation</b>	13.7633643	<b>Variance</b>	189.430196
<b>Skewness</b>	0.52029858	<b>Kurtosis</b>	-0.3541993
<b>Uncorrected SS</b>	118667	<b>Corrected SS</b>	11555.2419
<b>Coeff Variation</b>	33.1132551	<b>Std Error Mean</b>	1.74794901

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	41.56452	<b>Std Deviation</b>	13.76336
<b>Median</b>	39.50000	<b>Variance</b>	189.43020
<b>Mode</b>	27.00000	<b>Range</b>	58.00000
		<b>Interquartile Range</b>	21.00000

*Note: The mode displayed is the smallest of 8 modes with a count of 3.*

Tests for Location: Mu0=0				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	23.77902	<b>Pr &gt;  t </b>	<.0001
<b>Sign</b>	<b>M</b>	31	<b>Pr &gt;=  M </b>	<.0001
<b>Signed Rank</b>	<b>S</b>	976.5	<b>Pr &gt;=  S </b>	<.0001

Quantiles (Definition 5)	
Level	Quantile
<b>100% Max</b>	78.0
<b>99%</b>	78.0
<b>95%</b>	65.0
<b>90%</b>	61.0
<b>75% Q3</b>	51.0
<b>50% Median</b>	39.5
<b>25% Q1</b>	30.0
<b>10%</b>	25.0
<b>5%</b>	23.0
<b>1%</b>	20.0
<b>0% Min</b>	20.0



***The UNIVARIATE Procedure***  
***Variable: AGE (AGE)***

**FATIGUE=nej**

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
20	50	64	28
20	20	65	21
22	10	66	8
23	36	72	55
23	19	78	2

***The UNIVARIATE Procedure***

**FATIGUE=nej**

*The UNIVARIATE Procedure*  
*Variable: GENDER (GENDER)*

FATIGUE=nej

Moments			
<b>N</b>	62	<b>Sum Weights</b>	62
<b>Mean</b>	0.14516129	<b>Sum Observations</b>	9
<b>Std Deviation</b>	0.35513905	<b>Variance</b>	0.12612374
<b>Skewness</b>	2.0649189	<b>Kurtosis</b>	2.33830082
<b>Uncorrected SS</b>	9	<b>Corrected SS</b>	7.69354839
<b>Coeff Variation</b>	244.651345	<b>Std Error Mean</b>	0.0451027

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	0.145161	<b>Std Deviation</b>	0.35514
<b>Median</b>	0.000000	<b>Variance</b>	0.12612
<b>Mode</b>	0.000000	<b>Range</b>	1.00000
		<b>Interquartile Range</b>	0

Tests for Location: Mu0=0				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	3.218461	<b>Pr &gt;  t </b>	0.0021
<b>Sign</b>	<b>M</b>	4.5	<b>Pr &gt;=  M </b>	0.0039
<b>Signed Rank</b>	<b>S</b>	22.5	<b>Pr &gt;=  S </b>	0.0039

Quantiles (Definition 5)	
Level	Quantile
<b>100% Max</b>	1
<b>99%</b>	1
<b>95%</b>	1
<b>90%</b>	1
<b>75% Q3</b>	0
<b>50% Median</b>	0
<b>25% Q1</b>	0
<b>10%</b>	0
<b>5%</b>	0
<b>1%</b>	0
<b>0% Min</b>	0

Extreme Observations

*The UNIVARIATE Procedure*  
*Variable: GENDER (GENDER)*

FATIGUE=nej

Lowest		Highest	
Value	Obs	Value	Obs
0	61	1	24
0	60	1	37
0	59	1	40
0	58	1	52
0	57	1	62

***The UNIVARIATE Procedure***  
***Variable: ALBUMIN (ALBUMIN)***

**FATIGUE=nej**

Moments			
<b>N</b>	62	<b>Sum Weights</b>	62
<b>Mean</b>	3.88709677	<b>Sum Observations</b>	241
<b>Std Deviation</b>	0.53423267	<b>Variance</b>	0.28540455
<b>Skewness</b>	-0.5032828	<b>Kurtosis</b>	-0.1209331
<b>Uncorrected SS</b>	954.2	<b>Corrected SS</b>	17.4096774
<b>Coeff Variation</b>	13.7437451	<b>Std Error Mean</b>	0.06784762

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	3.887097	<b>Std Deviation</b>	0.53423
<b>Median</b>	4.000000	<b>Variance</b>	0.28540
<b>Mode</b>	4.000000	<b>Range</b>	2.30000
		<b>Interquartile Range</b>	0.70000

***Note: The mode displayed is the smallest of 2 modes with a count of 7.***

Tests for Location: Mu0=0				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	57.29157	<b>Pr &gt;  t </b>	<.0001
<b>Sign</b>	<b>M</b>	31	<b>Pr &gt;=  M </b>	<.0001
<b>Signed Rank</b>	<b>S</b>	976.5	<b>Pr &gt;=  S </b>	<.0001

Quantiles (Definition 5)	
Level	Quantile
<b>100% Max</b>	5.0
<b>99%</b>	5.0
<b>95%</b>	4.6
<b>90%</b>	4.4
<b>75% Q3</b>	4.2
<b>50% Median</b>	4.0
<b>25% Q1</b>	3.5
<b>10%</b>	3.0
<b>5%</b>	2.9
<b>1%</b>	2.7
<b>0% Min</b>	2.7

***The UNIVARIATE Procedure***  
***Variable: ALBUMIN (ALBUMIN)***

**FATIGUE=nej**

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
2.7	57	4.5	56
2.7	14	4.6	16
2.9	50	4.8	36
2.9	21	4.9	6
2.9	7	5.0	17

***The UNIVARIATE Procedure***  
***Variable: AGE (AGE)***

**FATIGUE=ja**

Moments			
<b>N</b>	44	<b>Sum Weights</b>	44
<b>Mean</b>	37.2272727	<b>Sum Observations</b>	1638
<b>Std Deviation</b>	9.9624029	<b>Variance</b>	99.2494715
<b>Skewness</b>	-0.1675609	<b>Kurtosis</b>	0.74188209
<b>Uncorrected SS</b>	65246	<b>Corrected SS</b>	4267.72727
<b>Coeff Variation</b>	26.7610334	<b>Std Error Mean</b>	1.50188875

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	37.22727	<b>Std Deviation</b>	9.96240
<b>Median</b>	36.00000	<b>Variance</b>	99.24947
<b>Mode</b>	36.00000	<b>Range</b>	49.00000
		<b>Interquartile Range</b>	12.50000

Tests for Location: Mu0=0				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	24.78697	<b>Pr &gt;  t </b>	<.0001
<b>Sign</b>	<b>M</b>	22	<b>Pr &gt;=  M </b>	<.0001
<b>Signed Rank</b>	<b>S</b>	495	<b>Pr &gt;=  S </b>	<.0001

Quantiles (Definition 5)	
Level	Quantile
<b>100% Max</b>	56.0
<b>99%</b>	56.0
<b>95%</b>	54.0
<b>90%</b>	52.0
<b>75% Q3</b>	43.0
<b>50% Median</b>	36.0
<b>25% Q1</b>	30.5
<b>10%</b>	26.0
<b>5%</b>	25.0
<b>1%</b>	7.0
<b>0% Min</b>	7.0

**Extreme Observations**

*The UNIVARIATE Procedure*  
*Variable: AGE (AGE)*

FATIGUE=ja

Lowest		Highest	
Value	Obs	Value	Obs
7	98	52	76
24	89	52	95
25	96	54	97
25	73	54	102
26	74	56	88



***The UNIVARIATE Procedure***

**FATIGUE=ja**

*The UNIVARIATE Procedure*  
*Variable: GENDER (GENDER)*

FATIGUE=ja

Moments			
<b>N</b>	44	<b>Sum Weights</b>	44
<b>Mean</b>	0.09090909	<b>Sum Observations</b>	4
<b>Std Deviation</b>	0.29080336	<b>Variance</b>	0.0845666
<b>Skewness</b>	2.94749981	<b>Kurtosis</b>	7.0043554
<b>Uncorrected SS</b>	4	<b>Corrected SS</b>	3.63636364
<b>Coeff Variation</b>	319.8837	<b>Std Error Mean</b>	0.04384026

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	0.090909	<b>Std Deviation</b>	0.29080
<b>Median</b>	0.000000	<b>Variance</b>	0.08457
<b>Mode</b>	0.000000	<b>Range</b>	1.00000
		<b>Interquartile Range</b>	0

Tests for Location: Mu0=0				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	2.073644	<b>Pr &gt;  t </b>	0.0441
<b>Sign</b>	<b>M</b>	2	<b>Pr &gt;=  M </b>	0.1250
<b>Signed Rank</b>	<b>S</b>	5	<b>Pr &gt;=  S </b>	0.1250

Quantiles (Definition 5)	
Level	Quantile
<b>100% Max</b>	1
<b>99%</b>	1
<b>95%</b>	1
<b>90%</b>	0
<b>75% Q3</b>	0
<b>50% Median</b>	0
<b>25% Q1</b>	0
<b>10%</b>	0
<b>5%</b>	0
<b>1%</b>	0
<b>0% Min</b>	0

Extreme Observations

*The UNIVARIATE Procedure*  
*Variable: GENDER (GENDER)*

FATIGUE=ja

Lowest		Highest	
Value	Obs	Value	Obs
0	106	0	106
0	105	1	63
0	104	1	73
0	103	1	74
0	102	1	91

*The UNIVARIATE Procedure*  
*Variable: ALBUMIN (ALBUMIN)*

FATIGUE=ja

Moments			
<b>N</b>	44	<b>Sum Weights</b>	44
<b>Mean</b>	4.10454545	<b>Sum Observations</b>	180.6
<b>Std Deviation</b>	0.56976313	<b>Variance</b>	0.32463002
<b>Skewness</b>	1.28079903	<b>Kurtosis</b>	5.83342036
<b>Uncorrected SS</b>	755.24	<b>Corrected SS</b>	13.9590909
<b>Coeff Variation</b>	13.8812722	<b>Std Error Mean</b>	0.08589502

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	4.104545	<b>Std Deviation</b>	0.56976
<b>Median</b>	4.000000	<b>Variance</b>	0.32463
<b>Mode</b>	4.000000	<b>Range</b>	3.50000
		<b>Interquartile Range</b>	0.35000

Tests for Location: Mu0=0				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	47.7856	<b>Pr &gt;  t </b>	<.0001
<b>Sign</b>	<b>M</b>	22	<b>Pr &gt;=  M </b>	<.0001
<b>Signed Rank</b>	<b>S</b>	495	<b>Pr &gt;=  S </b>	<.0001

Quantiles (Definition 5)	
Level	Quantile
<b>100% Max</b>	6.40
<b>99%</b>	6.40
<b>95%</b>	4.90
<b>90%</b>	4.50
<b>75% Q3</b>	4.30
<b>50% Median</b>	4.00
<b>25% Q1</b>	3.95
<b>10%</b>	3.50
<b>5%</b>	3.10
<b>1%</b>	2.90
<b>0% Min</b>	2.90

Extreme Observations

*The UNIVARIATE Procedure*  
*Variable: ALBUMIN (ALBUMIN)*

FATIGUE=ja

Lowest		Highest	
Value	Obs	Value	Obs
2.9	95	4.5	103
3.0	88	4.7	72
3.1	86	4.9	92
3.3	99	5.3	90
3.5	104	6.4	96

***The UNIVARIATE Procedure***  
***Variable: AGE (AGE)***

FATIGUE=nej

Moments			
<b>N</b>	62	<b>Sum Weights</b>	62
<b>Mean</b>	41.5645161	<b>Sum Observations</b>	2577
<b>Std Deviation</b>	13.7633643	<b>Variance</b>	189.430196
<b>Skewness</b>	0.52029858	<b>Kurtosis</b>	-0.3541993
<b>Uncorrected SS</b>	118667	<b>Corrected SS</b>	11555.2419
<b>Coeff Variation</b>	33.1132551	<b>Std Error Mean</b>	1.74794901

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	41.56452	<b>Std Deviation</b>	13.76336
<b>Median</b>	39.50000	<b>Variance</b>	189.43020
<b>Mode</b>	27.00000	<b>Range</b>	58.00000
		<b>Interquartile Range</b>	21.00000

*Note: The mode displayed is the smallest of 8 modes with a count of 3.*

Tests for Location: Mu0=0				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	23.77902	<b>Pr &gt;  t </b>	<.0001
<b>Sign</b>	<b>M</b>	31	<b>Pr &gt;=  M </b>	<.0001
<b>Signed Rank</b>	<b>S</b>	976.5	<b>Pr &gt;=  S </b>	<.0001

Quantiles (Definition 5)	
Level	Quantile
<b>100% Max</b>	78.0
<b>99%</b>	78.0
<b>95%</b>	65.0
<b>90%</b>	61.0
<b>75% Q3</b>	51.0
<b>50% Median</b>	39.5
<b>25% Q1</b>	30.0
<b>10%</b>	25.0
<b>5%</b>	23.0
<b>1%</b>	20.0
<b>0% Min</b>	20.0

***The UNIVARIATE Procedure***  
***Variable: AGE (AGE)***

**FATIGUE=nej**

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
20	50	64	28
20	20	65	21
22	10	66	8
23	36	72	55
23	19	78	2

**The UNIVARIATE Procedure**  
**Variable: GENDER (GENDER)**

FATIGUE=nej

Moments			
<b>N</b>	62	<b>Sum Weights</b>	62
<b>Mean</b>	0.14516129	<b>Sum Observations</b>	9
<b>Std Deviation</b>	0.35513905	<b>Variance</b>	0.12612374
<b>Skewness</b>	2.0649189	<b>Kurtosis</b>	2.33830082
<b>Uncorrected SS</b>	9	<b>Corrected SS</b>	7.69354839
<b>Coeff Variation</b>	244.651345	<b>Std Error Mean</b>	0.0451027

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	0.145161	<b>Std Deviation</b>	0.35514
<b>Median</b>	0.000000	<b>Variance</b>	0.12612
<b>Mode</b>	0.000000	<b>Range</b>	1.00000
		<b>Interquartile Range</b>	0

Tests for Location: Mu0=0				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	3.218461	<b>Pr &gt;  t </b>	0.0021
<b>Sign</b>	<b>M</b>	4.5	<b>Pr &gt;=  M </b>	0.0039
<b>Signed Rank</b>	<b>S</b>	22.5	<b>Pr &gt;=  S </b>	0.0039

Quantiles (Definition 5)	
Level	Quantile
<b>100% Max</b>	1
<b>99%</b>	1
<b>95%</b>	1
<b>90%</b>	1
<b>75% Q3</b>	0
<b>50% Median</b>	0
<b>25% Q1</b>	0
<b>10%</b>	0
<b>5%</b>	0
<b>1%</b>	0
<b>0% Min</b>	0

Extreme Observations



*The UNIVARIATE Procedure*  
*Variable: GENDER (GENDER)*

FATIGUE=nej

Lowest		Highest	
Value	Obs	Value	Obs
0	61	1	24
0	60	1	37
0	59	1	40
0	58	1	52
0	57	1	62

***The UNIVARIATE Procedure***  
***Variable: ALBUMIN (ALBUMIN)***

**FATIGUE=nej**

Moments			
<b>N</b>	62	<b>Sum Weights</b>	62
<b>Mean</b>	3.88709677	<b>Sum Observations</b>	241
<b>Std Deviation</b>	0.53423267	<b>Variance</b>	0.28540455
<b>Skewness</b>	-0.5032828	<b>Kurtosis</b>	-0.1209331
<b>Uncorrected SS</b>	954.2	<b>Corrected SS</b>	17.4096774
<b>Coeff Variation</b>	13.7437451	<b>Std Error Mean</b>	0.06784762

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	3.887097	<b>Std Deviation</b>	0.53423
<b>Median</b>	4.000000	<b>Variance</b>	0.28540
<b>Mode</b>	4.000000	<b>Range</b>	2.30000
		<b>Interquartile Range</b>	0.70000

***Note: The mode displayed is the smallest of 2 modes with a count of 7.***

Tests for Location: Mu0=0				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	57.29157	<b>Pr &gt;  t </b>	<.0001
<b>Sign</b>	<b>M</b>	31	<b>Pr &gt;=  M </b>	<.0001
<b>Signed Rank</b>	<b>S</b>	976.5	<b>Pr &gt;=  S </b>	<.0001

Quantiles (Definition 5)	
Level	Quantile
<b>100% Max</b>	5.0
<b>99%</b>	5.0
<b>95%</b>	4.6
<b>90%</b>	4.4
<b>75% Q3</b>	4.2
<b>50% Median</b>	4.0
<b>25% Q1</b>	3.5
<b>10%</b>	3.0
<b>5%</b>	2.9
<b>1%</b>	2.7
<b>0% Min</b>	2.7

***The UNIVARIATE Procedure***  
***Variable: ALBUMIN (ALBUMIN)***

**FATIGUE=nej**

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
2.7	57	4.5	56
2.7	14	4.6	16
2.9	50	4.8	36
2.9	21	4.9	6
2.9	7	5.0	17

***The UNIVARIATE Procedure***

**FATIGUE=nej**

***The UNIVARIATE Procedure***  
***Variable: AGE (AGE)***

**FATIGUE=ja**

Moments			
<b>N</b>	44	<b>Sum Weights</b>	44
<b>Mean</b>	37.2272727	<b>Sum Observations</b>	1638
<b>Std Deviation</b>	9.9624029	<b>Variance</b>	99.2494715
<b>Skewness</b>	-0.1675609	<b>Kurtosis</b>	0.74188209
<b>Uncorrected SS</b>	65246	<b>Corrected SS</b>	4267.72727
<b>Coeff Variation</b>	26.7610334	<b>Std Error Mean</b>	1.50188875

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	37.22727	<b>Std Deviation</b>	9.96240
<b>Median</b>	36.00000	<b>Variance</b>	99.24947
<b>Mode</b>	36.00000	<b>Range</b>	49.00000
		<b>Interquartile Range</b>	12.50000

Tests for Location: Mu0=0				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	24.78697	<b>Pr &gt;  t </b>	<.0001
<b>Sign</b>	<b>M</b>	22	<b>Pr &gt;=  M </b>	<.0001
<b>Signed Rank</b>	<b>S</b>	495	<b>Pr &gt;=  S </b>	<.0001

Quantiles (Definition 5)	
Level	Quantile
<b>100% Max</b>	56.0
<b>99%</b>	56.0
<b>95%</b>	54.0
<b>90%</b>	52.0
<b>75% Q3</b>	43.0
<b>50% Median</b>	36.0
<b>25% Q1</b>	30.5
<b>10%</b>	26.0
<b>5%</b>	25.0
<b>1%</b>	7.0
<b>0% Min</b>	7.0

**Extreme Observations**

*The UNIVARIATE Procedure*  
*Variable: AGE (AGE)*

FATIGUE=ja

Lowest		Highest	
Value	Obs	Value	Obs
7	98	52	76
24	89	52	95
25	96	54	97
25	73	54	102
26	74	56	88

*The UNIVARIATE Procedure*  
*Variable: GENDER (GENDER)*

FATIGUE=ja

Moments			
<b>N</b>	44	<b>Sum Weights</b>	44
<b>Mean</b>	0.09090909	<b>Sum Observations</b>	4
<b>Std Deviation</b>	0.29080336	<b>Variance</b>	0.0845666
<b>Skewness</b>	2.94749981	<b>Kurtosis</b>	7.0043554
<b>Uncorrected SS</b>	4	<b>Corrected SS</b>	3.63636364
<b>Coeff Variation</b>	319.8837	<b>Std Error Mean</b>	0.04384026

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	0.090909	<b>Std Deviation</b>	0.29080
<b>Median</b>	0.000000	<b>Variance</b>	0.08457
<b>Mode</b>	0.000000	<b>Range</b>	1.00000
		<b>Interquartile Range</b>	0

Tests for Location: Mu0=0				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	2.073644	<b>Pr &gt;  t </b>	0.0441
<b>Sign</b>	<b>M</b>	2	<b>Pr &gt;=  M </b>	0.1250
<b>Signed Rank</b>	<b>S</b>	5	<b>Pr &gt;=  S </b>	0.1250

Quantiles (Definition 5)	
Level	Quantile
<b>100% Max</b>	1
<b>99%</b>	1
<b>95%</b>	1
<b>90%</b>	0
<b>75% Q3</b>	0
<b>50% Median</b>	0
<b>25% Q1</b>	0
<b>10%</b>	0
<b>5%</b>	0
<b>1%</b>	0
<b>0% Min</b>	0

Extreme Observations

*The UNIVARIATE Procedure*  
*Variable: GENDER (GENDER)*

FATIGUE=ja

Lowest		Highest	
Value	Obs	Value	Obs
0	106	0	106
0	105	1	63
0	104	1	73
0	103	1	74
0	102	1	91



*The UNIVARIATE Procedure*  
*Variable: ALBUMIN (ALBUMIN)*

FATIGUE=ja

Moments			
<b>N</b>	44	<b>Sum Weights</b>	44
<b>Mean</b>	4.10454545	<b>Sum Observations</b>	180.6
<b>Std Deviation</b>	0.56976313	<b>Variance</b>	0.32463002
<b>Skewness</b>	1.28079903	<b>Kurtosis</b>	5.83342036
<b>Uncorrected SS</b>	755.24	<b>Corrected SS</b>	13.9590909
<b>Coeff Variation</b>	13.8812722	<b>Std Error Mean</b>	0.08589502

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	4.104545	<b>Std Deviation</b>	0.56976
<b>Median</b>	4.000000	<b>Variance</b>	0.32463
<b>Mode</b>	4.000000	<b>Range</b>	3.50000
		<b>Interquartile Range</b>	0.35000

Tests for Location: Mu0=0				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	47.7856	<b>Pr &gt;  t </b>	<.0001
<b>Sign</b>	<b>M</b>	22	<b>Pr &gt;=  M </b>	<.0001
<b>Signed Rank</b>	<b>S</b>	495	<b>Pr &gt;=  S </b>	<.0001

Quantiles (Definition 5)	
Level	Quantile
<b>100% Max</b>	6.40
<b>99%</b>	6.40
<b>95%</b>	4.90
<b>90%</b>	4.50
<b>75% Q3</b>	4.30
<b>50% Median</b>	4.00
<b>25% Q1</b>	3.95
<b>10%</b>	3.50
<b>5%</b>	3.10
<b>1%</b>	2.90
<b>0% Min</b>	2.90

Extreme Observations

*The UNIVARIATE Procedure*  
*Variable: ALBUMIN (ALBUMIN)*

FATIGUE=ja

Lowest		Highest	
Value	Obs	Value	Obs
2.9	95	4.5	103
3.0	88	4.7	72
3.1	86	4.9	92
3.3	99	5.3	90
3.5	104	6.4	96

***The UNIVARIATE Procedure***

**FATIGUE=ja**

***The UNIVARIATE Procedure***  
***Variable: AGE (AGE)***

FATIGUE=nej

Moments			
<b>N</b>	62	<b>Sum Weights</b>	62
<b>Mean</b>	41.5645161	<b>Sum Observations</b>	2577
<b>Std Deviation</b>	13.7633643	<b>Variance</b>	189.430196
<b>Skewness</b>	0.52029858	<b>Kurtosis</b>	-0.3541993
<b>Uncorrected SS</b>	118667	<b>Corrected SS</b>	11555.2419
<b>Coeff Variation</b>	33.1132551	<b>Std Error Mean</b>	1.74794901

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	41.56452	<b>Std Deviation</b>	13.76336
<b>Median</b>	39.50000	<b>Variance</b>	189.43020
<b>Mode</b>	27.00000	<b>Range</b>	58.00000
		<b>Interquartile Range</b>	21.00000

***Note: The mode displayed is the smallest of 8 modes with a count of 3.***

Tests for Location: Mu0=0				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	23.77902	<b>Pr &gt;  t </b>	<.0001
<b>Sign</b>	<b>M</b>	31	<b>Pr &gt;=  M </b>	<.0001
<b>Signed Rank</b>	<b>S</b>	976.5	<b>Pr &gt;=  S </b>	<.0001

Quantiles (Definition 5)	
Level	Quantile
<b>100% Max</b>	78.0
<b>99%</b>	78.0
<b>95%</b>	65.0
<b>90%</b>	61.0
<b>75% Q3</b>	51.0
<b>50% Median</b>	39.5
<b>25% Q1</b>	30.0
<b>10%</b>	25.0
<b>5%</b>	23.0
<b>1%</b>	20.0
<b>0% Min</b>	20.0

***The UNIVARIATE Procedure***  
***Variable: AGE (AGE)***

**FATIGUE=nej**

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
20	50	64	28
20	20	65	21
22	10	66	8
23	36	72	55
23	19	78	2

**The UNIVARIATE Procedure**  
**Variable: AGE (AGE)**

FATIGUE=ja

Moments			
<b>N</b>	44	<b>Sum Weights</b>	44
<b>Mean</b>	37.2272727	<b>Sum Observations</b>	1638
<b>Std Deviation</b>	9.9624029	<b>Variance</b>	99.2494715
<b>Skewness</b>	-0.1675609	<b>Kurtosis</b>	0.74188209
<b>Uncorrected SS</b>	65246	<b>Corrected SS</b>	4267.72727
<b>Coeff Variation</b>	26.7610334	<b>Std Error Mean</b>	1.50188875

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	37.22727	<b>Std Deviation</b>	9.96240
<b>Median</b>	36.00000	<b>Variance</b>	99.24947
<b>Mode</b>	36.00000	<b>Range</b>	49.00000
		<b>Interquartile Range</b>	12.50000

Tests for Location: Mu0=0				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	24.78697	<b>Pr &gt;  t </b>	<.0001
<b>Sign</b>	<b>M</b>	22	<b>Pr &gt;=  M </b>	<.0001
<b>Signed Rank</b>	<b>S</b>	495	<b>Pr &gt;=  S </b>	<.0001

Quantiles (Definition 5)	
Level	Quantile
<b>100% Max</b>	56.0
<b>99%</b>	56.0
<b>95%</b>	54.0
<b>90%</b>	52.0
<b>75% Q3</b>	43.0
<b>50% Median</b>	36.0
<b>25% Q1</b>	30.5
<b>10%</b>	26.0
<b>5%</b>	25.0
<b>1%</b>	7.0
<b>0% Min</b>	7.0

Extreme Observations

*The UNIVARIATE Procedure*  
*Variable: AGE (AGE)*

FATIGUE=ja

Lowest		Highest	
Value	Obs	Value	Obs
7	98	52	76
24	89	52	95
25	96	54	97
25	73	54	102
26	74	56	88

***The UNIVARIATE Procedure***

**FATIGUE=ja**



***The UNIVARIATE Procedure***  
***Variable: ALBUMIN (ALBUMIN)***

**FATIGUE=nej**

Moments			
<b>N</b>	62	<b>Sum Weights</b>	62
<b>Mean</b>	3.88709677	<b>Sum Observations</b>	241
<b>Std Deviation</b>	0.53423267	<b>Variance</b>	0.28540455
<b>Skewness</b>	-0.5032828	<b>Kurtosis</b>	-0.1209331
<b>Uncorrected SS</b>	954.2	<b>Corrected SS</b>	17.4096774
<b>Coeff Variation</b>	13.7437451	<b>Std Error Mean</b>	0.06784762

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	3.887097	<b>Std Deviation</b>	0.53423
<b>Median</b>	4.000000	<b>Variance</b>	0.28540
<b>Mode</b>	4.000000	<b>Range</b>	2.30000
		<b>Interquartile Range</b>	0.70000

***Note: The mode displayed is the smallest of 2 modes with a count of 7.***

Tests for Location: Mu0=0				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	57.29157	<b>Pr &gt;  t </b>	<.0001
<b>Sign</b>	<b>M</b>	31	<b>Pr &gt;=  M </b>	<.0001
<b>Signed Rank</b>	<b>S</b>	976.5	<b>Pr &gt;=  S </b>	<.0001

Quantiles (Definition 5)	
Level	Quantile
<b>100% Max</b>	5.0
<b>99%</b>	5.0
<b>95%</b>	4.6
<b>90%</b>	4.4
<b>75% Q3</b>	4.2
<b>50% Median</b>	4.0
<b>25% Q1</b>	3.5
<b>10%</b>	3.0
<b>5%</b>	2.9
<b>1%</b>	2.7
<b>0% Min</b>	2.7

***The UNIVARIATE Procedure***  
***Variable: ALBUMIN (ALBUMIN)***

**FATIGUE=nej**

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
2.7	57	4.5	56
2.7	14	4.6	16
2.9	50	4.8	36
2.9	21	4.9	6
2.9	7	5.0	17

*The UNIVARIATE Procedure*  
*Variable: ALBUMIN (ALBUMIN)*

FATIGUE=ja

Moments			
<b>N</b>	44	<b>Sum Weights</b>	44
<b>Mean</b>	4.10454545	<b>Sum Observations</b>	180.6
<b>Std Deviation</b>	0.56976313	<b>Variance</b>	0.32463002
<b>Skewness</b>	1.28079903	<b>Kurtosis</b>	5.83342036
<b>Uncorrected SS</b>	755.24	<b>Corrected SS</b>	13.9590909
<b>Coeff Variation</b>	13.8812722	<b>Std Error Mean</b>	0.08589502

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	4.104545	<b>Std Deviation</b>	0.56976
<b>Median</b>	4.000000	<b>Variance</b>	0.32463
<b>Mode</b>	4.000000	<b>Range</b>	3.50000
		<b>Interquartile Range</b>	0.35000

Tests for Location: Mu0=0				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	47.7856	<b>Pr &gt;  t </b>	<.0001
<b>Sign</b>	<b>M</b>	22	<b>Pr &gt;=  M </b>	<.0001
<b>Signed Rank</b>	<b>S</b>	495	<b>Pr &gt;=  S </b>	<.0001

Quantiles (Definition 5)	
Level	Quantile
<b>100% Max</b>	6.40
<b>99%</b>	6.40
<b>95%</b>	4.90
<b>90%</b>	4.50
<b>75% Q3</b>	4.30
<b>50% Median</b>	4.00
<b>25% Q1</b>	3.95
<b>10%</b>	3.50
<b>5%</b>	3.10
<b>1%</b>	2.90
<b>0% Min</b>	2.90

Extreme Observations

*The UNIVARIATE Procedure*  
*Variable: ALBUMIN (ALBUMIN)*

FATIGUE=ja

Lowest		Highest	
Value	Obs	Value	Obs
2.9	95	4.5	103
3.0	88	4.7	72
3.1	86	4.9	92
3.3	99	5.3	90
3.5	104	6.4	96

***The UNIVARIATE Procedure***

**FATIGUE=ja**

*The FREQ Procedure*

*The FREQ Procedure***Deluppgift 2.1**

Table of FATIGUE by GENDER			
FATIGUE(FATIGUE)	GENDER(GENDER)		
Frequency Percent Row Pct Col Pct	man	kvinna	Total
nej	53 50.00 85.48 56.99	9 8.49 14.52 69.23	62 58.49
ja	40 37.74 90.91 43.01	4 3.77 9.09 30.77	44 41.51
Total	93 87.74	13 12.26	106 100.00

*Statistics for Table of FATIGUE by GENDER*

Column 1 Risk Estimates						
	Risk	ASE	95% Confidence Limits		Exact 95% Confidence Limits	
Row 1	0.8548	0.0447	0.7672	0.9425	0.7422	0.9314
Row 2	0.9091	0.0433	0.8241	0.9940	0.7833	0.9747
Total	0.8774	0.0319	0.8149	0.9398	0.7994	0.9331
Difference	-0.0543	0.0623	-0.1763	0.0678		
Difference is (Row 1 - Row 2)						

Risk Difference Test	
H0: P1 - P2 = 0 Wald Method	
Risk Difference	-0.0543
ASE (H0)	0.0647
Z	-0.8390
One-sided Pr < Z	0.2007
Two-sided Pr >  Z	0.4015
Column 1 (GENDER = man)	

Column 2 Risk Estimates						
	Risk	ASE	95% Confidence Limits		Exact 95% Confidence Limits	
Row 1	0.1452	0.0447	0.0575	0.2328	0.0686	0.2578
Row 2	0.0909	0.0433	0.0060	0.1759	0.0253	0.2167
Total	0.1226	0.0319	0.0602	0.1851	0.0669	0.2006
Difference	0.0543	0.0623	-0.0678	0.1763		
Difference is (Row 1 - Row 2)						

*Sample Size = 106*

**Svar:** Nollhypotesen  $H_0 = p=0$  innebär att trötthetsproportionen inte beror på kön. Då fick vi

<b>One-sided Pr &lt; Z</b>	0.2007
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Och vi kan inte förkasta nollhypotesen och därför anta att trötthetsproportionen inte beror på kön då signifikantnivå är 0,05 som är mindre än 0,2007 .



Analysis Variable : AGE AGE		
Lower 95% CL for Mean	Upper 95% CL for Mean	Mean
37.3640855	42.1642164	39.7641509

**Deluppgift 2.2.****The MEANS Procedure**

Analysis Variable : ALBUMIN		
Lower 95% CL for Mean	Upper 95% CL for Mean	Mean
3.8700713	4.0846457	3.9773585

**The MEANS Procedure**

Analysis Variable : ALBUMIN		
Lower 90% CL for Mean	Upper 90% CL for Mean	Mean
3.8875656	4.0671513	3.9773585

Svar: Detta ger oss två olika felmarginaler, där ett 90% konfidensintervall ger felmarginalen 0,089 och ett 95% konfidensintervall ger oss felmarginalen 0,106. Intervallskattning av medelvärdet 3.977 kommer att bli bredare med ett 95% konfidensintervall.

**Deluppgift 2.3 a) Vi antar att  $H_0=3,5$** 

$H_a > 3,5$ ,  $\alpha = 0,05$  som ger oss  $t(kr) = 1,65$

N	Mean	Std Dev	Std Err	Minimum	Maximum
106	3.9774	0.5571	0.0541	2.7000	6.4000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
3.9774	3.8701	4.0846	0.5571	0.4909	0.6441

DF	t Value	Pr >  t
105	8.82	<.0001

**Svar:** Enligt resultaten är  $t(\text{obs})/t(\text{value}) = 8.82$  alltså  $t(\text{obs}) 8.82 > t(\text{kr}) 1.65$  vilket betyder att vi ska förkasta  $H_0$  och acceptera  $H_a$ .  
På annat sätt kan vi bekräfta det genom att kolla på:

Pr >  t
<.0001

som är mindre än  $\alpha 0.05$  och då kan vi också konstatera att  $H_a$  är sann.

### Deluppgift 2.3 b)

FATIGUE	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
nej		62	3.8871	0.5342	0.0678	2.7000	5.0000
ja		44	4.1045	0.5698	0.0859	2.9000	6.4000
Diff (1-2)	Pooled		-0.2174	0.5492	0.1083		
Diff (1-2)	Satterthwaite		-0.2174		0.1095		

FATIGUE	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
nej		3.8871	3.7514	4.0228	0.5342	0.4540	0.6492
ja		4.1045	3.9313	4.2778	0.5698	0.4708	0.7219

<b>Diff (1-2)</b>	<b>Pooled</b>	-0.2174	-0.4321	-0.00277	0.5492	0.4836	0.6355	tisdagen den 20:e oktober 2020 kl. 16:13:51 62
<b>Diff (1-2)</b>	<b>Satterthwaite</b>	-0.2174	-0.4349	0.000045				

Method	Variances	DF	t Value	Pr >  t
<b>Pooled</b>	Equal	104	-34.34	<.0001
<b>Satterthwaite</b>	Unequal	88.98	-33.96	<.0001

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
<b>Folded F</b>	43	61	1.14	0.6363

Svar:

Enligt resultaten patienter med albumin  $\geq 3,5$  var inte trötta.

