

Faktoranalüüs

Peakomponentide meetod (PCA)

Mõisted

Faktoranalüüs

- Annab tulemuseks faktorid
- Kinnitav, saab teha üldistusi
- *Confirmatory Factor Analysis (CFA)*
- Amos, SPSS



PCA (peakomponentide meetod) *Principal component analysis*

- Annab tulemuseks komponendid
- Uurimuslik, üldistusi teha ei saa
- *Exploratory factor analysis*
- SPSS

Faktoranalüüs

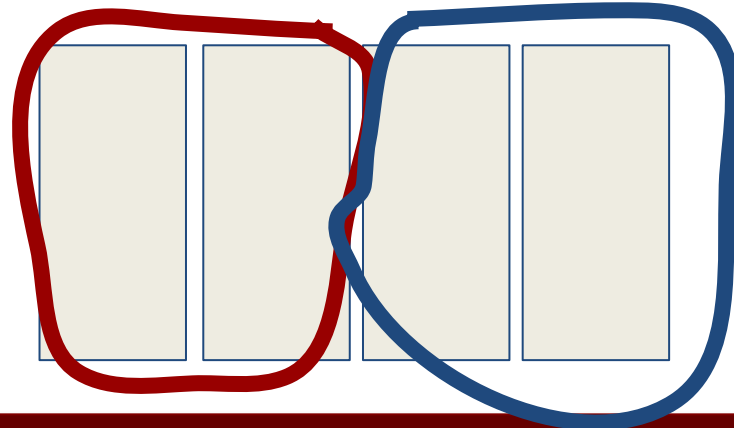
- Alguses on faktoreid samapalju kui algtunnuseid.
- Meetodi kasutamise eesmärk – **faktoreid vähem kui algtunnuseid**.
- Faktoranalüüsi idee on kirjeldada iga algtunnus faktorite ja eripära kaudu.

$$X_1 = l_{11}F_1 + l_{12}F_2 + \dots + l_{1m}F_m + e_1$$

$$X_2 = l_{21}F_1 + l_{22}F_2 + \dots + l_{2m}F_m + e_2$$

...

$$X_k = l_{k1}F_1 + l_{k2}F_2 + \dots + l_{km}F_m + e_k$$



Faktoranalüüsi eeldus

FA põhineb **Pearsoni korrelatsioonidel**

- Mis **tüüpi tunnuste** korral faktoranalüüsi läbi viia saab? Mida tuleks arvesse võtta binaarsete tunnuste kasutamisel?

Tunnuse tüübid

- Intervalltunnused, järjestustunnused (! ei sobi kui on **selgelt mittevõrdsed**), binaarsed tunnused
 - Binaarsete tunnuste korral on arvutatud korrelatsioonikordajad kalduvad olema madalamad
-
- Milliseid **seoseid** faktoranalüüs tunnustelt eeldab? Kas olukord, kus kõik tunnused on omavahel tugevalt seotud, on hea faktoranalüüsi läbiviimiseks?
 - Faktoranalüüs **põhineb Pearsoni korrelatsioonidel** => mudel tuleb parem kui seosed on olemas (osad tugevamad, osad nõrgemad).

Faktoranalüüsi eeldus

Faktoranalüüs eeldab **objektide arvuks**

- **Üldine reegel – vähemalt 10-15 objekti ühe tunnuse kohta
10 tunnust: 100-150 objekti**
- *Nunnally* (1978) – objektide arv peaks olema tunnuste arv korrutatud 10-ga
- *Kass & Tinsley* (1979) – 5 kuni 10 objekti ühe tunnuse kohta, kokku kuni 300 objekti
- *Tabachnick & Fidell* (2007) – vähemalt **300** objekti
- *Comrey & Lee* (1992) – 100 kehv valim, 300 hea valim, 1000 suurepärase valim

Millal võib uuritavate objektide arv olla **väiksem**?

Kui me ei kasuta FA mudelit väljaspoole valimit ja ei eelda, et samasugused juhtumid oleksid laiemalt kehtivad või kui on väga **selged tekkinud grupid**

Faktoranalüüsi eeldus

Kas tunnused peavad olema mõõdetud samal skaalal?

Ei, tunnuste väärtused **standardiseeritakse**

Faktoranalüüsi eeldus

Millised kaks eeldust on küll faktoranalüüsi eeldused, kuid nende **kontrollimine Likerti skaala puhul ei ole** primaarne/**oluline** küsimus.

- Tunnused alluvad **normaaljaotusele**
- Seose kuju **lineaarsus**

Faktoranalüüsi läbiviimine

- **Sõnastame** uuritava nähtuse/**fenomeni**.
- **Operatsionaliseerime** e valime tunnused, mis võiksid seda nähtust kirjeldada.
- Vajadusel testime valimi suuruse sobivust/adekvaatsust (KMO test).
0,7-0,8 hea 0,8-0,9 väga hea 0,9-1 suurepärase
- Tellime **faktoranalüüsi**.
- Vaatame loodud mudeli **kirjeldusvõimet** ning tekkinud komponente. Esimeses komponendis on kõige rohkem algtoonustest, viimases kõige vähem (põhiliselt on seal omapära)
- Vajaduse **eemaldame** mõne tunnuse, mis ei kirjelda piisavalt selgelt/hästi antud fenomeni, näiteks on tunnus seotud võrdse mitme komponendiga. Kuid sellele eelneb mõtlemine, võibolla sobib antud tunnus väga kirjeldama loodavat fenomeni.
- Kontrollime iga loodud komponendi **reliaablust** (eraldi). Telli ka Cronbach a väärtused juhuks, kui tunnus ei kuulu loodava komponendi koosseisu.
- Vajadusel **eemaldame** mõne tunnuse, mille eemaldamisega tõuseb grupi tunnuste reliaablus kõrgemaks. Eelneb taaskord tõsine sisuline analüüs.
- Arvutame summatunnused, anname faktoritele nende sisu kirjeldavad nimed.

1. Näide

wvs.sav

Mis on inimeste jaoks oluline? (V80 –V89)

Now I will briefly describe some people. Using this card, would you please indicate for each description whether that person is very much like you, like you, somewhat like you, not like you, or not at all like you? (Code one answer for each description):

	1	2	3	4	5	6	Skaala
V80. It is important to this person to think up new ideas and be creative; to do things one's own way.							1 – very much like me
V81. It is important to this person to be rich; to have a lot of money and expensive things.							2 – like me
V82. Living in secure surroundings is important to this person; to avoid anything that might be dangerous.							3 – somewhat like me
V83. It is important to this person to have a good time; to "spoil" oneself.							4 - a little like me
V84. It is important to this person to help the people nearby; to care for their well-being.							5 – not like me
V85. Being very successful is important to this person; to have people recognize one's achievements.							6 – not at all like me
V86. Adventure and taking risks are important to this person; to have an exciting life.							
V87. It is important to this person to always behave properly; to avoid doing anything people would say is wrong.							
V88. Looking after the environment is important to this person; to care for nature.							
V89. Tradition is important to this person; to follow the customs handed down by one's religion or family.							

1. näide.

Hüpotees: tekib 4 komponenti

V80. Mõelda uusi ideid, olla loominguline

V86. Riskimine ja seiklused on olulised

V83. Veeta hästi aega

V81. Omada palju raha ja kalleid asju

V85. Olla edukas

V82. Elada turvalises ümbruskonnas

V89. Järgida traditsioone

V87. Käituda korralikult

V88. Hoida loodust

V84. Hoolida ja aidata naabreid

Meelelahutus

Edu

Turvalisus

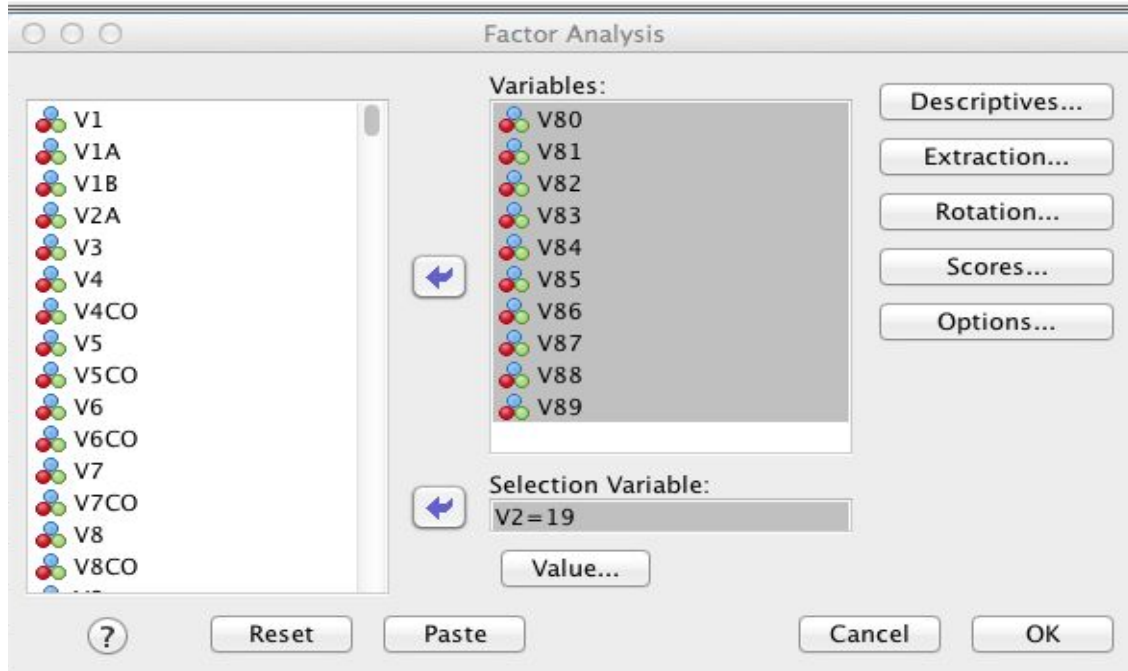
Hoolimine

1. näide

- **Eeltöö**
 - Andmete ülevaatamine – kui palju riike, puuduvad väärtused
 - Kirjeldavad arvnäitajad valitud tunnuste kohta
 - Korrelatsioonimaatriks
 - Vajadusel testime valimi suuruse sobivust (KMO test).

1. näide

- Analyze/Dimension Reduction/Factor



Uuritavad tunnused viime
Variables väljale

Soovime analüüsida vaid
ühe riigi (Rootsi) andmeid

1. näide

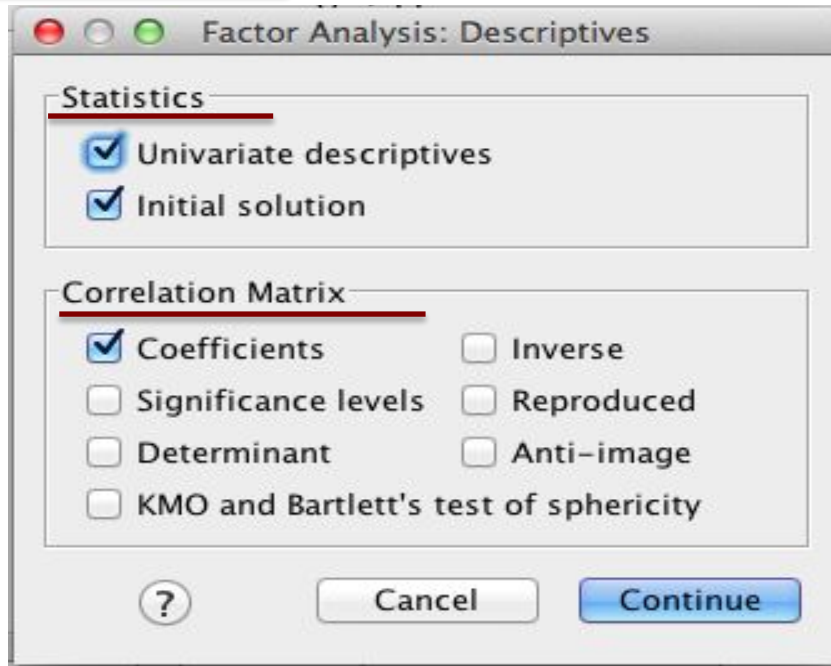
Descriptives...

Extraction...

Rotation...

Scores...

Options...



Factor Analysis: Descriptives

Statistics

- ☒ Univariate descriptives
- ☒ Initial solution

Correlation Matrix

- ☒ Coefficients
- ☐ Inverse
- ☐ Significance levels
- ☐ Reproduced
- ☐ Determinant
- ☐ Anti-image
- ☐ KMO and Bartlett's test of sphericity

? Cancel Continue

Univariate descriptives kirjeldavad statistikud (M, SD, N))

Initial solution – esialgne lahendus

Coefficients – korrelatsioonimaatriks

Significance levels – korrelatsiooni kordajate olulisustöenäosused.

Determinant – korrelatsioonikordajate determinant.

KMO and Bartlett's test of sphericity

→
Inverse – pöördvõrdeline korr.maatriks.

Reproduced – korr.maatriks, põhineb mudelil, mitte päris andmetel.

Descriptive Statistics^a



TALLINNA ÜLIKOOL

	Mean	Std. Deviation	Analysis N
80 Schwartz: Important to this person to think up new ideas	2.39	1.086	983
81 Schwartz: Important to this person to be rich	4.61	1.080	983
82 Schwartz: Important to this person living in secure surroundings	2.89	1.287	983
83 Schwartz: Important to this person to have a good time	3.28	1.339	983
84 Schwartz: Important to this person to help the people	1.97	.863	983
85 Schwartz: Important to this person being very successful	3.80	1.343	983
86 Schwartz: Important to this person adventure and taking risks	4.03	1.404	983
87 Schwartz: Important to this person to always behave properly	3.48	1.392	983
88 Schwartz: Important to this person looking after environment	2.56	1.175	983
89 Schwartz: Important to this person tradition	3.15	1.423	983

1	2	3	4	5	6
Väga					Ei ole
minu					üldse
moodi					minu
					moodi

a. Only cases for which Country/Region = Sweden are used in the analysis phase.

+ Kui tabelis on tugevad ja nõrgad seosed. Faktorite moodustamise alus: tunnus on tugevalt seotud ühe faktoriga & nõrgalt teiste faktoritega.

! Kui tunnus ei korreleeru teistega

! Kui tunnusel on seosed üle 0,9 (ekstreemne multikollineaarsus)

Correlation Matrix^a

	80 Schwartz: Important to this person to think up new ideas	81 Schwartz: Important to this person to be rich	82 Schwartz: Important to this person living in secure surroundings	83 Schwartz: Important to this person to have a good time	84 Schwartz: Important to this person to help the people	85 Schwartz: Important to this person being very successful	86 Schwartz: Important to this person adventure and taking risks	87 Schwartz: Important to this person to always behave properly	88 Schwartz: Important to this person looking after environment
Correlation	1.000	.169	-.116	.104	.133	.209	.256	-.042	.057
80 Schwartz: Important to this person to think up new ideas									
81 Schwartz: Important to this person to be rich	.169	1.000	.078	.310	-.043	.397	.203	.153	-.163
82 Schwartz: Important to this person living in secure surroundings	-.116	.078	1.000	.082	.193	.027	-.248	.341	.085
83 Schwartz: Important to this person to have a good time	.104	.310	.082	1.000	.125	.184	.253	.004	-.054
84 Schwartz: Important to this person to help the people	.133	-.043	.193	.125	1.000	.038	.051	.101	.207
85 Schwartz: Important to this person being very successful	.209	.397	.027	.184	.038	1.000	.243	.204	-.092
86 Schwartz: Important to this person adventure and taking risks	.256	.203	-.248	.253	.051	.243	1.000	.002	.042
87 Schwartz: Important to this person to always behave properly	-.042	.153	.341	.004	.101	.204	.002	1.000	.160
88 Schwartz: Important to this person looking after environment	.057	-.163	.085	-.054	.207	-.092	.042	.160	1.000
89 Schwartz: Important to this person tradition	-.032	.040	.254	-.020	.154	.060	-.024	.280	.165

1. näide

Descriptives...

Factor Analysis: Descriptives

Statistics

☒ Univariate descriptives

☒ Initial solution

Correlation Matrix

☒ Coefficients ☐ Inverse

☐ Significance levels ☐ Reproduced

☐ Determinant ☐ Anti-image

☒ KMO and Bartlett's test of sphericity

?

Cancel Continue

KMO and Bartlett's Test^a

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.627
Bartlett's Test of Sphericity	Approx. Chi-Square	1110.525
	df	45
	Sig.	.000

a. Only cases for which Country/Region = Sweden are used in the analysis phase.

KMO test mõõdab valimi suuruse adekvaatsust.

(N = 983, KMO=0,63)

Kaiser:

0-0,5 mitteaktsepteeritav...0,5-0,6 väga kehv ... 0,6-0,8 keskmine ... 0,8-0,9 väga hea ... 0,9-1 suurepärase

0,8-1 = adekvaatne

Alla 0,6 = valim ei ole adekvaatne, enne FA tuleks midagi ette võtta

1. näide

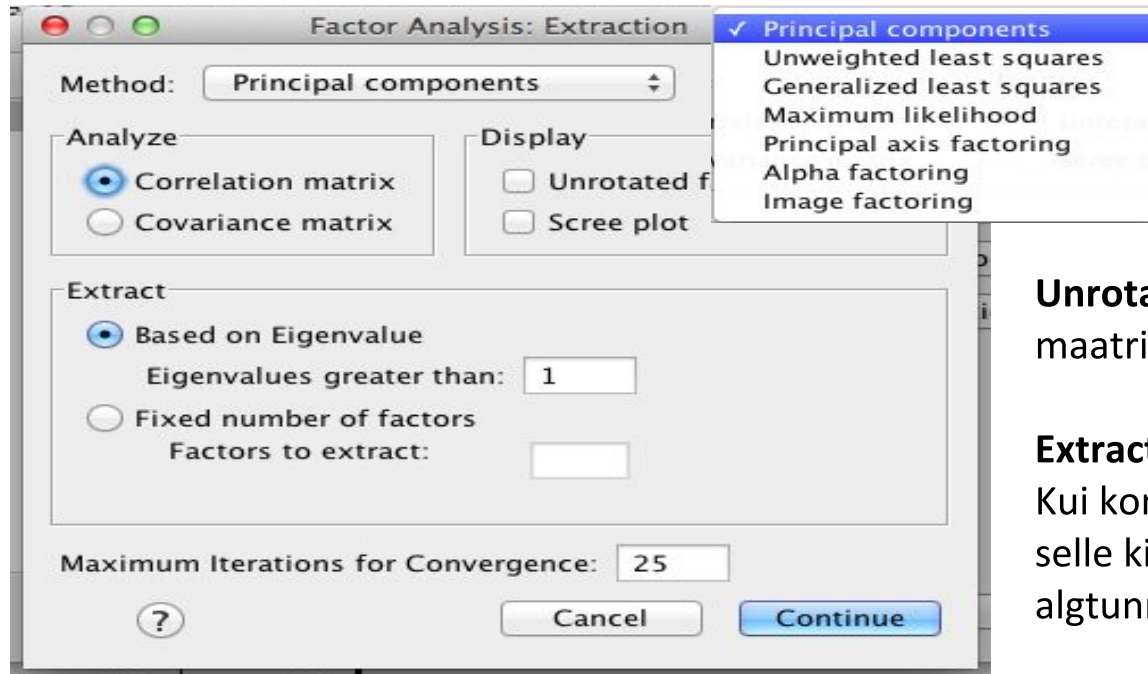
Descriptives...

Extraction...

Rotation...

Scores...

Options...



PCA - peakomponentide meetod
Osad vanad meetodid, enne PC
Likelihood – on tehniliselt erinev, sama idee.
Alfa factoring ja Finish factoring
–uuemad meetodid.

Unrotated factor solution – pööramata maatriks.

Extract – väljaeraldamine

Kui komponendi omaväärtus on 1
selle kirjeldusvõime on sama suur kui
alg tunnusel.

- Loodavad kolm komponenti kirjeldavad algtunnustest

50,997%

- Igal algtunnusel on peale standardiseerimist hajuvus 1
- Kui faktori koguvariatiivsus on suurem kui 1 => faktor kirjeldab rohkem kui algtunnused eraldi
- Kui aga faktor kirjeldab vähem, siis ei ole ju mõtet faktoreid luua

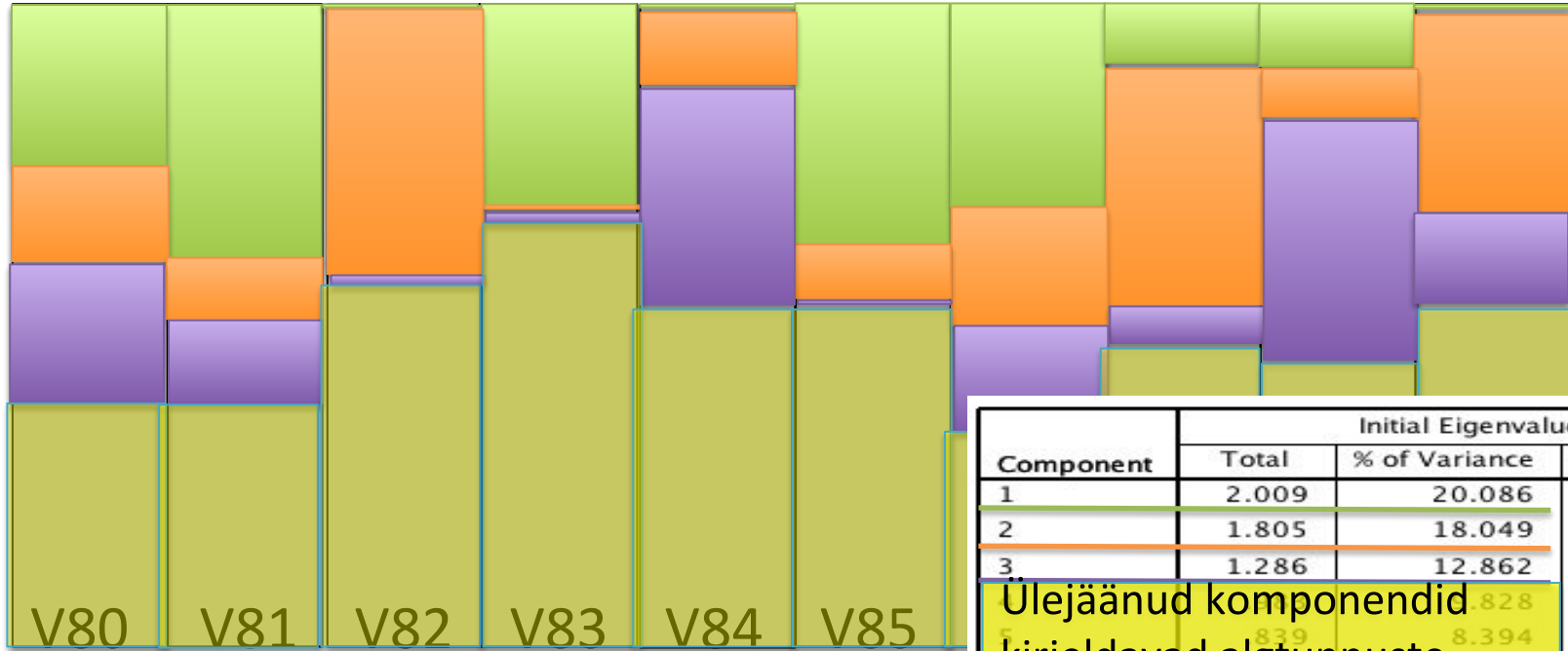
Total Variance Explained^a

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.009	20.086	20.086	2.009	20.086	20.086	1.982	19.820	19.820
2	1.805	18.049	38.135	1.805	18.049	38.135	1.744	17.443	37.263
3	1.286	12.862	50.997	1.286	12.862	50.997	1.373	13.734	50.997
4	.983	9.828	60.825						
5	.839	8.394	69.219						
6	.750	7.501	76.720						
7	.691	6.907	83.626						
8	.600	6.002	89.629						
9	.538	5.380	95.009						
10	.499	4.991	100.000						

Extraction Method: Principal Component Analysis.

a. Only cases for which Country/Region = Sweden are used in the analysis phase.

Initial Eigenvalues - % of variance



Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	2.009	20.086	20.086
2	1.805	18.049	38.135
3	1.286	12.862	50.997
4	.828	8.282	60.825
5	.839	8.394	69.219
6	.750	7.501	76.720
7	.600	6.002	83.626
8	.600	6.002	89.629
9	.538	5.380	95.009
10	.499	4.991	100.000

Ülejäänud komponendid kirjeldavad algtoonuste variatiivsusest 49%

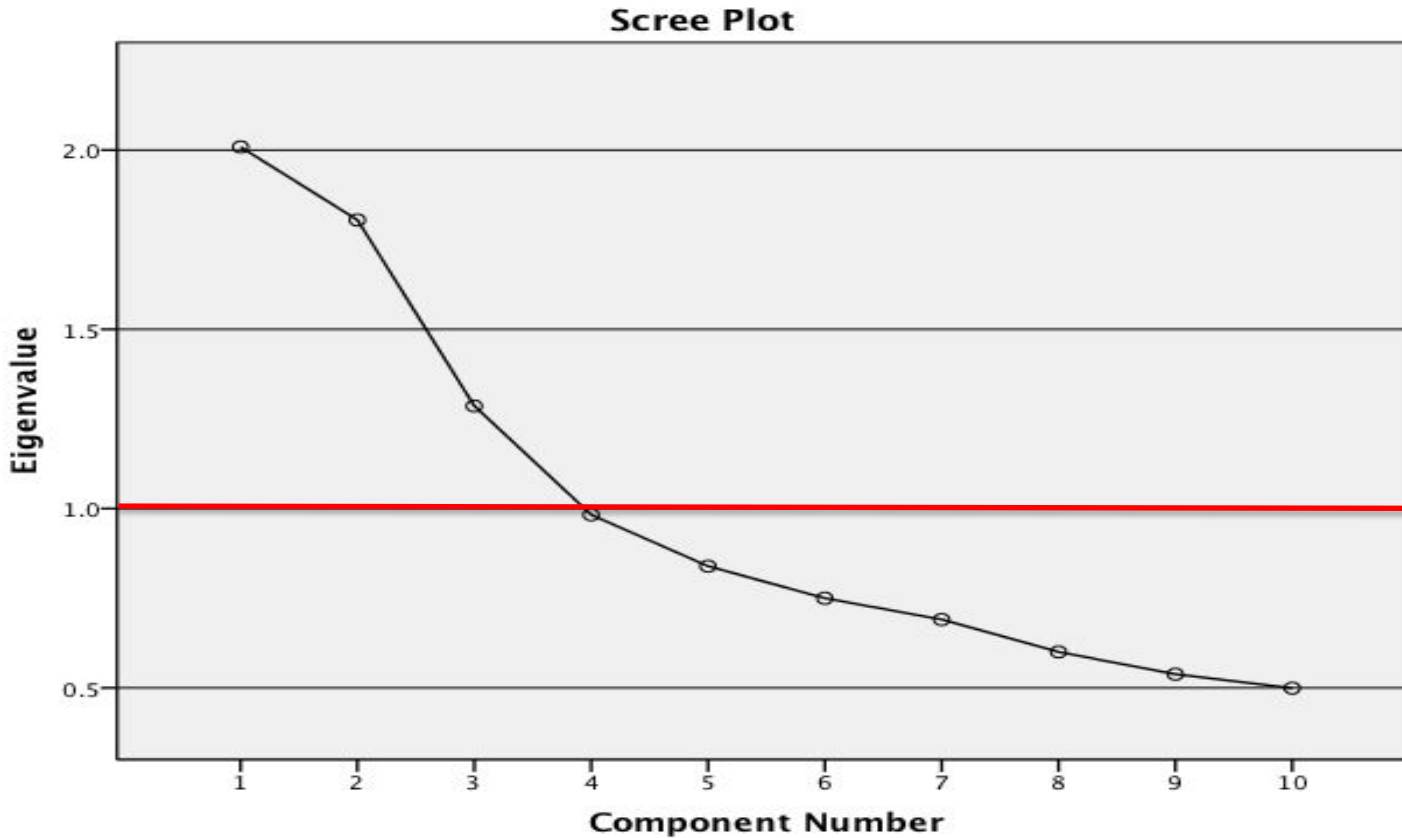
- Peale pööramist summa sama (50,997%), jagunemine ühtlasem

Total Variance Explained^a

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.009	20.086	20.086	2.009	20.086	20.086	1.982	19.820	19.820
2	1.805	18.049	38.135	1.805	18.049	38.135	1.744	17.443	37.263
3	1.286	12.862	50.997	1.286	12.862	50.997	1.373	13.734	50.997
4	.983	9.828	60.825						
5	.839	8.394	69.219						
6	.750	7.501	76.720						
7	.691	6.907	83.626						
8	.600	6.002	89.629						
9	.538	5.380	95.009						
10	.499	4.991	100.000						

Extraction Method: Principal Component Analysis.

a. Only cases for which Country/Region = Sweden are used in the analysis phase.

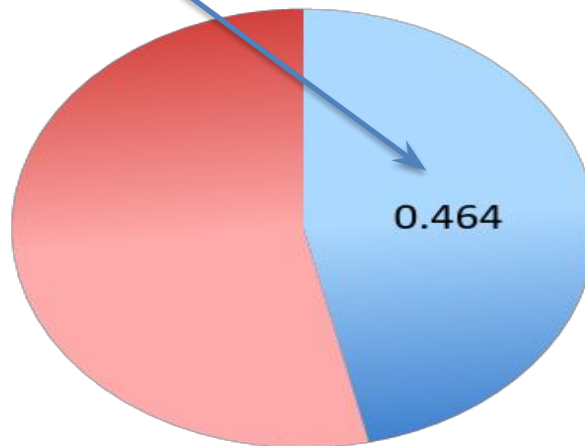


Communalities^a

TALLINNA ÜLIKOOL

	Initial	Extraction
80 Schwartz: Important to this person to think up new ideas	1.000	.464
81 Schwartz: Important to this person to be rich	1.000	.642
82 Schwartz: Important to this person living in secure surroundings	1.000	.602
83 Schwartz: Important to this person to have a good time	1.000	.331
84 Schwartz: Important to this person to help the people	1.000	.468
85 Schwartz: Important to this person being very successful	1.000	.525
86 Schwartz: Important to this person adventure and taking risks	1.000	.554
87 Schwartz: Important to this person to always behave properly	1.000	.528
88 Schwartz: Important to this person looking after environment	1.000	.577
89 Schwartz: Important to this person tradition	1.000	.408

Mitu % selle tunnuse variatiivsusest on faktorites?



Extraction Method: Principal Component Analysis.

a. Only cases for which Country/Region = Sweden are used in the analysis phase.

1. näide

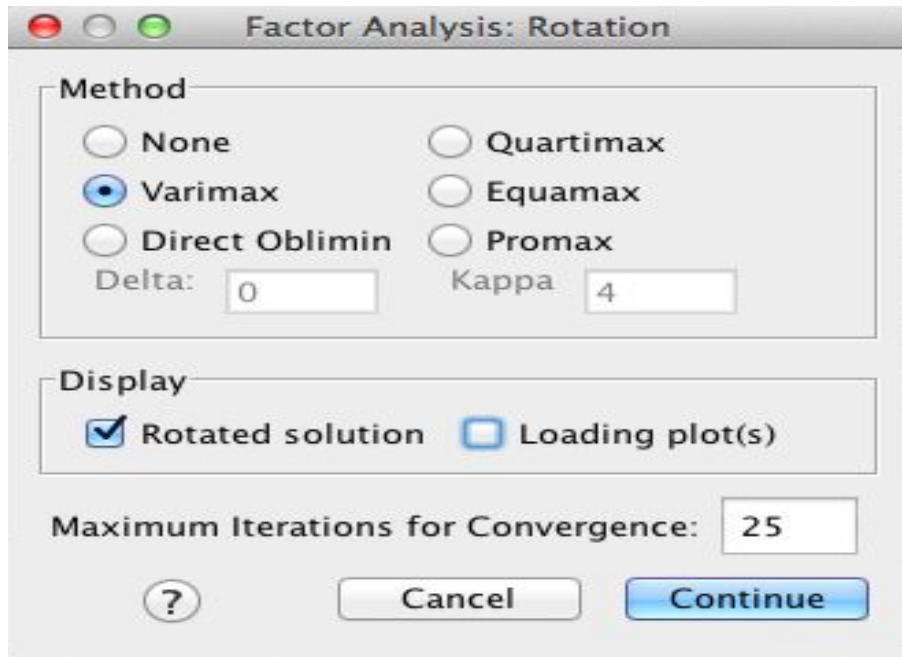
Descriptives...

Extraction...

Rotation...

Scores...

Options...



Factor Analysis: Rotation

Method

☐ None ☐ Quartimax

☒ Varimax ☐ Equamax

☐ Direct Oblimin ☐ Promax

Delta: Kappa:

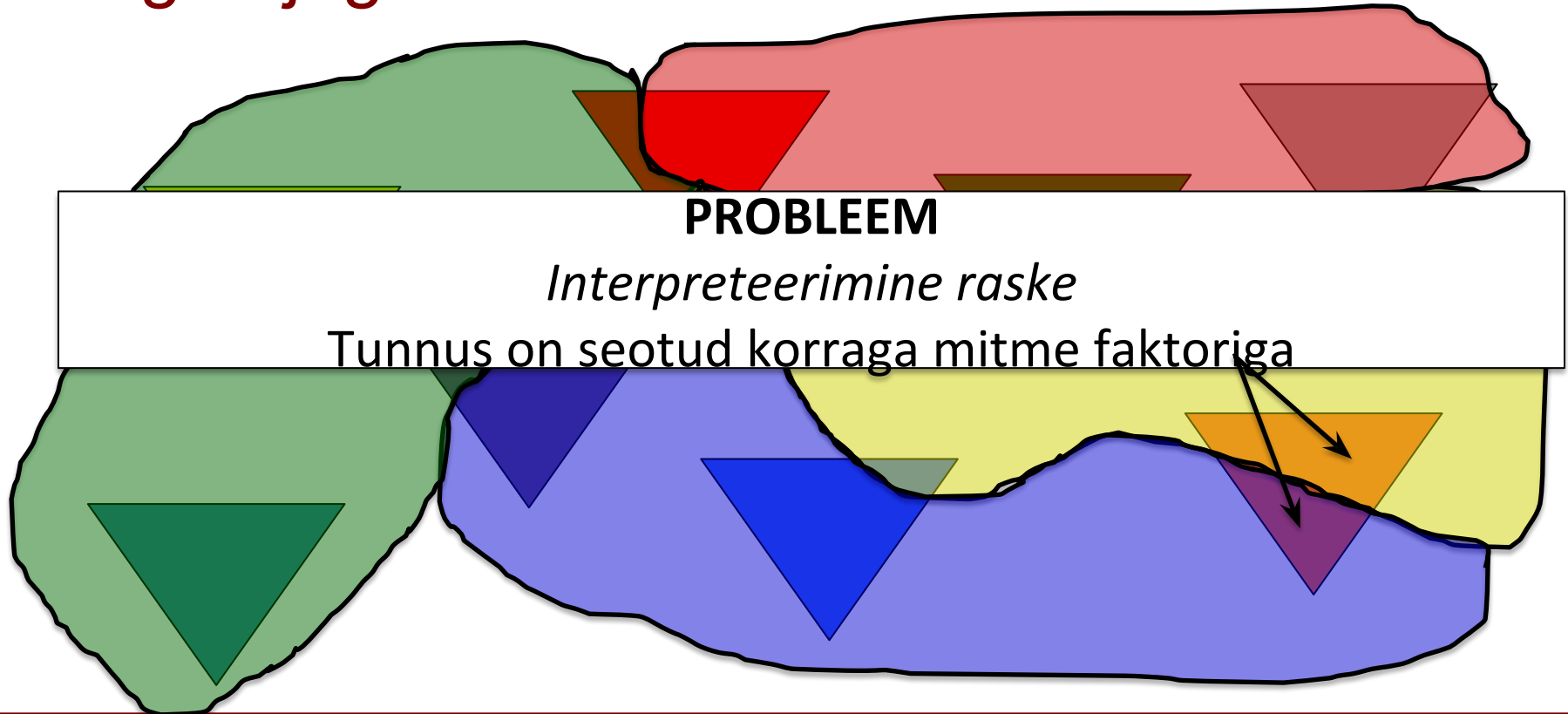
Display

☒ Rotated solution ☐ Loading plot(s)

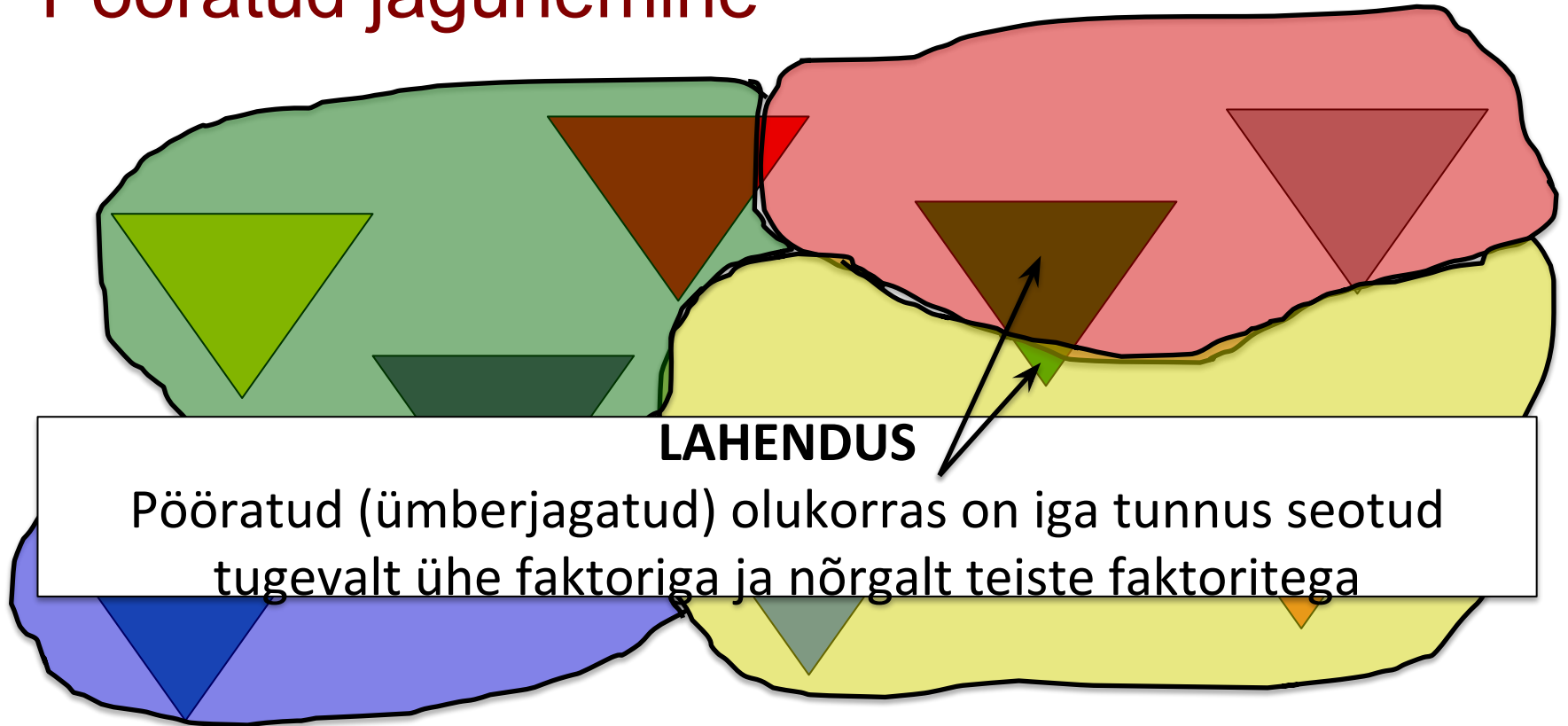
Maximum Iterations for Convergence:

- **Rotation** – pööramine
- **Varimax** - kõige tüüpilisem, ortogonaalne pööramine, seos faktorite vahe puudub.
- Quartimax, Equamax – edasiarendused.
- Direct Oblimin, Promax – mitteortogonaalsed, jätab faktorid seotuks.

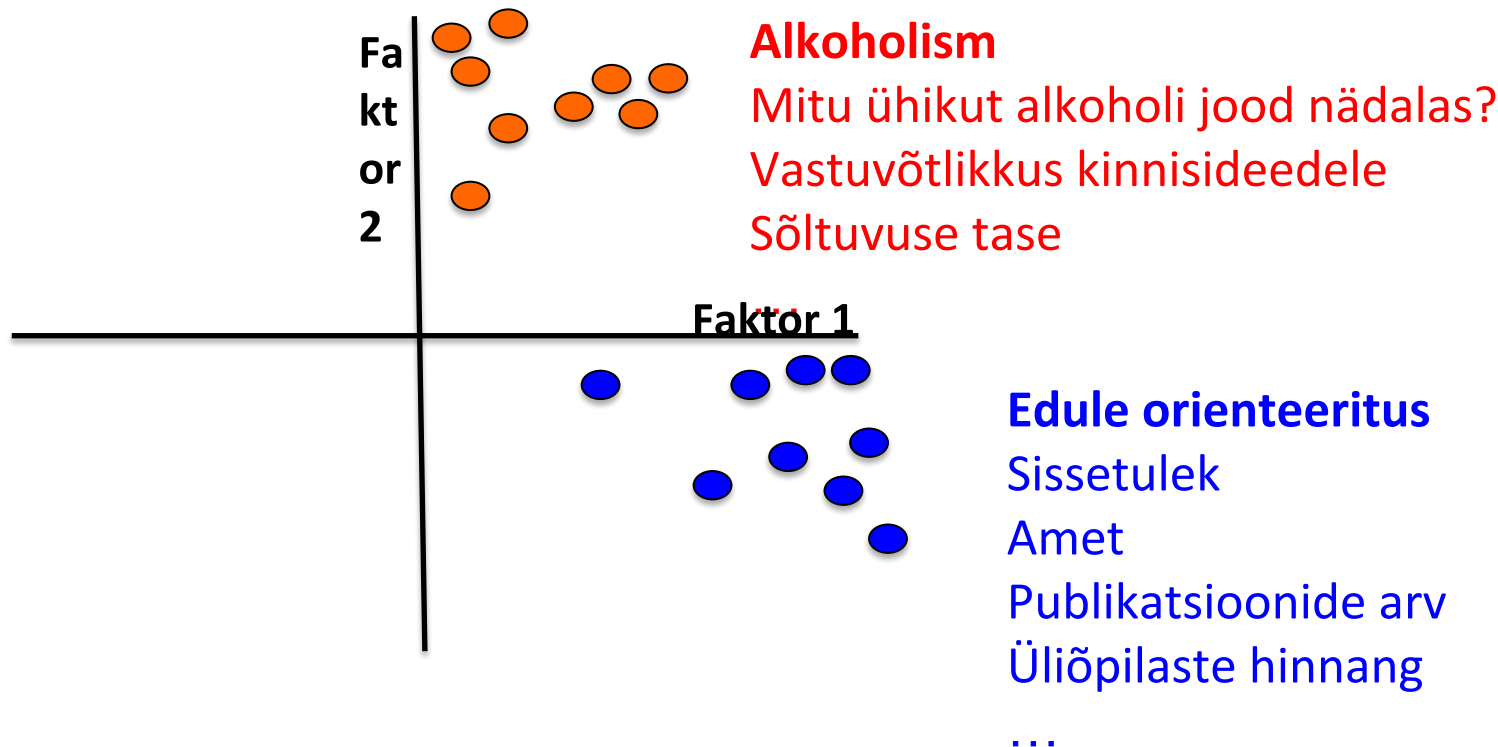
Algne jagunemine



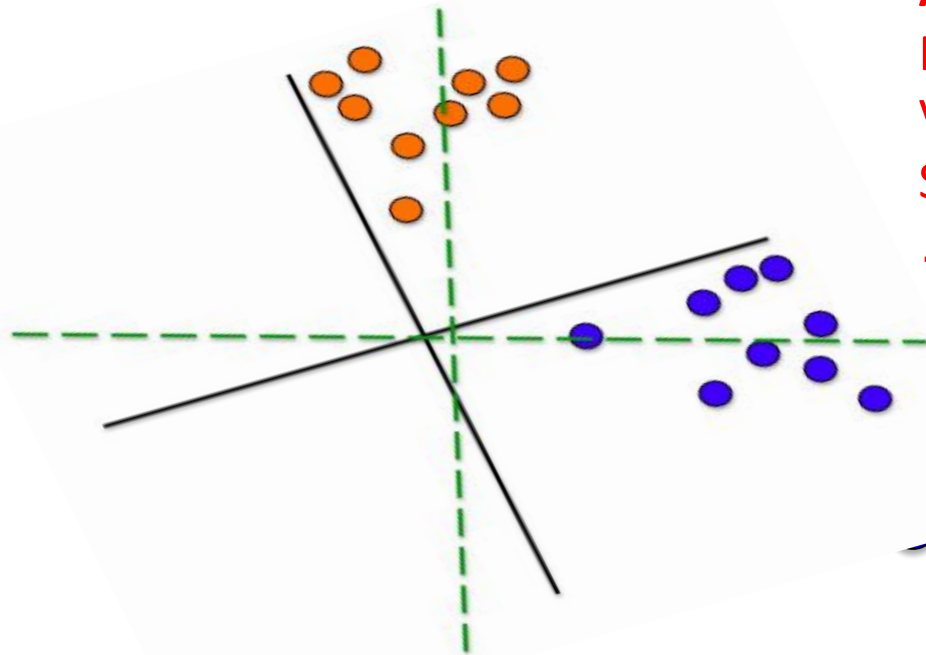
Pööratud jagunemine



Faktorite pööramine (ortogonaalne)



Faktorite pööramine (ortogonaalne)



Alkoholism

Mitu ühikut alkoholi jood nädalas?

Vastuvõtlikkus kinnisideedele

Sõltuvuse tase

...

Edule orienteeritus

Sissetulek

Amet

Publikatsioonide arv

Üliõpilaste hinnang

...

Component Matrix^{a,b}

	Component		
	1	2	3
85 Schwartz: Important to this person being very successful	.692		
81 Schwartz: Important to this person to be rich	.689		-.381
83 Schwartz: Important to this person to have a good time	.557		
86 Schwartz: Important to this person adventure and taking risks	.526	-.380	.366
82 Schwartz: Important to this person living in secure surroundings		.702	
89 Schwartz: Important to this person tradition		.601	
87 Schwartz: Important to this person to always behave properly	.370	.598	
88 Schwartz: Important to this person looking after environment		.428	.628
84 Schwartz: Important to this person to help the people		.383	.508
80 Schwartz: Important to this person to think up new ideas	.442		.449

Rotated Component Matrix^{a,b}

	Component		
	1	2	3
81 Schwartz: Important to this person to be rich	.736		
85 Schwartz: Important to this person being very successful	.704		
86 Schwartz: Important to this person adventure and taking risks	.577	-.344	.319
83 Schwartz: Important to this person to have a good time	.573		
80 Schwartz: Important to this person to think up new ideas	.453		.419
82 Schwartz: Important to this person living in secure surroundings		.775	
87 Schwartz: Important to this person to always behave properly		.695	
89 Schwartz: Important to this person tradition		.577	
88 Schwartz: Important to this person looking after environment			.720
84 Schwartz: Important to this person to help the people			.647

1. näide

Descriptives...

Extraction...

Rotation...

Scores...

Options...

Factor Analysis: Factor Scores

☒ Save as variables

Method

☒ Regression

☐ Bartlett

☐ Anderson-Rubin

☐ Display factor score coefficient matrix

? Cancel Continue

FAC1_1	FAC2_1
3.51510	-.34365
3.51408	-1.40596
3.49561	-1.17999
3.47472	-.50892
3.47293	.12869
3.46275	-1.05374
3.45973	.29575
3.44762	-.75296
3.44062	-1.41935
3.43520	1.44540

1. näide

Descriptives...

Extraction...

Rotation...

Scores...

Options...

Factor Analysis: Options

Missing Values

☒ Exclude cases listwise
☐ Exclude cases pairwise

	k1	k2	k3	k4
1	1	3	1	2
2	2		1	
3	3	3	3	
4	2	5	5	1
5	3	2	2	2
6	2	3	3	5
7	3	3	5	1
8	2		5	5
9	3	2	5	3

Exclude cases listwise – välja jäetakse need objektid, kellel on kasvõi ühes analüüsitavates tunnuses puuduv väärtus (välja – 2, 3, 8)

Exclude cases pairwise – jäetakse välja iga tunnuse korral puuduvaid väärtuseid omanud objektid (k2 – välja 2,8; k4 – välja 2,3)

Replace with mean – puuduvad väärtused asendatakse tunnuse keskvärtusega (kui andmed on jaotunud normaaljaotusest erinevalt; kui valimi suurus jääb väga väikeseks)

Sorted by size – pööratud komponentide maatriks järjestatakse faktorite kaalude järgi kahanevasse järjekorda

Suppress small coefficients – maatriksis ei kuvata neid väärtuseid, mis on alla 0,3

1 komponent: 81, 85, 86, 83, 80

Reliability Statistics

Cronbach's Alpha	N of Items
.675	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
81 Schwartz: Important to this person to be rich	12.93	16.106	.457	.611
85 Schwartz: Important to this person being very successful	13.89	16.266	.481	.601
86 Schwartz: Important to this person adventure and taking risks	13.04	15.840	.445	.616
83 Schwartz: Important to this person to have a good time	13.53	17.133	.361	.654
80 Schwartz: Important to this person to think up new ideas	14.22	17.634	.403	.635

2 komponent: 82, 87, 89

Reliability Statistics

Cronbach's Alpha	N of Items
.625	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
82 Schwartz: Important to this person living in secure surroundings	5.03	5.351	.401	.570
87 Schwartz: Important to this person to always behave properly	4.89	4.752	.479	.460
89 Schwartz: Important to this person tradition	4.97	4.843	.423	.542

3 komponent: 88, 84

Reliability Statistics

Cronbach's Alpha	N of Items
.572	2

1. näide.

Reaalsus: tekkis 3 komponenti

V80. Mõelda uusi ideid, olla loominguline

V86. Riskimine ja seiklused on olulised

V83. Veeta hästi aega

V81. Omada palju raha ja kalleid asju

V85. Olla edukas

V82. Elada turvalises ümbruskonnas

V89. Järgida traditsioone

V87. Käituda korralikult

V88. Hoida loodust

V84. Hoolida ja aidata naabreid

Meelelahutus ja edu

Turvalisus

Hoolimine

Väärtuste salvestamine

V84	V88	FAC3_1
6	1	2.63629
1	1	-.36049
1	1	-.57821
2	1	.50450
1	1	-.02845
6	2	2.53602
2	2	.69872

Teistega võrreldes nõustumise poolel

-0,36

0

2,53



Väga minu
moodi

Keskmine = 2,26

$(V88 + V84)/2$

$(2,56 + 1,97)/2$

Keskmine on väga palju
nihutatud nõustumise poole

Ei ole üldse
minu moodi

Faktorite väärtuste arvutamine

- Mida selgemad erinevused faktorite vahel, seda sarnasemad tulemused tulevad.
- + faktorite väärtused esitatakse originaalskaalal
- iga algtunnuse eripära pannakse faktorisse (FA viskas eripära välja ja lisas teiste algtunnuste osa faktorisse)

1.näide

- Valisime **tunnused** (määrasime tingimuse (riik = rootsi))
- Vaatasime **kirjeldavad statistikud** ja **korrelatsioonitabelit** (KMO test)
- Vaatasime **kommunaliteete** (mitu % tunnuse kirjeldusest võeti faktoritesse). Kas jätame mõne tunnuse FA välja?
- Vaatasime **mudelit** (kui suure osa algtunnustest kirjeldavad ära loodud faktorid)
- Vaatasime komponentide maatriksit ja **tekkinud faktoreid**. Kas siuliselt on faktorid tõlgendatavad?
- Kontrollisime faktorite **reliaablust**
- Andsime loodud faktoritele **nimed** ja tõlgendasime **komponentide väärtuseid**

Testime, võrdleme, uurime...

2. näide V60-V67

For each of the following statements I read out, can you tell me how strongly you agree or disagree with each. Do you strongly agree, agree, disagree, or strongly disagree? (*Read out and code one answer for each statement*):

	Strongly agree	Agree	Disagree	Strongly disagree
V60. Being a housewife is just as fulfilling as working for pay.	1	2	3	4
V61. On the whole, men make better political leaders than women do.	1	2	3	4
V62. A university education is more important for a boy than for a girl.	1	2	3	4
V63. On the whole, men make better business executives than women do.	1	2	3	4

People pursue different goals in life. For each of the following goals, can you tell me if you strongly agree, agree, disagree or strongly disagree with it? (*Read out and code one answer for each statement*):

	Strongly agree	Agree	Disagree	Strongly disagree
V64. One of my main goals in life has been to make my parents proud.	1	2	3	4
V65. I seek to be myself rather than to follow others.	1	2	3	4
V66. I make a lot of effort to live up to what my friends expect.	1	2	3	4
V67. I decide my goals in life by myself.	1	2	3	4

3. näide

- Kuulumine erinevatesse organisatsioonidesse (V24-V33)
- *Not a member - Inactive member - Active member*
- Kõik riigid (?)

Now I am going to read off a list of voluntary organizations. For each one, could you tell me whether you are an active member, an inactive member or not a member of that type of organization? (*Read out and code one answer for each organization*):

	Active member	Inactive member	Don't belong
V24. Church or religious organization	2	1	0
V25. Sport or recreational organization	2	1	0
V26. Art, music or educational organization	2	1	0
V27. Labor Union	2	1	0
V28. Political party	2	1	0
V29. Environmental organization	2	1	0
V30. Professional association	2	1	0
V31. Humanitarian or charitable organization	2	1	0
V32. Consumer organization	2	1	0
V33. Any other (<i>write in</i>): _____	2	1	0

4. näide

- Tunnused on mõõdetud erinevatel skaaladel
- Tööga seonduvad kaks küsimuste blokki
- V50-V54** (1-2-3-4-5)
- V116-V121**
(1-2-3-4-5-6-7-8-9-10)

Please specify for each of the following statements how strongly you agree, agree, neither agree nor disagree (answer for each statement):

- V50.** To fully develop your talents, you need to have a job.
- V51.** It is humiliating to receive money without working for it.
- V52.** People who don't work become lazy.
- V53.** Work is a duty toward society.
- V54.** Work should always come first, even if it means less free time.

St
2

(Show Card Q)

V116. Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between. (Code one number for each issue):

Incomes should be made more equal	1	2	3	4	5	6	7	8	9	We need larger income differences as incentives for individual effort
V117. Private ownership of business and industry should be increased	1	2	3	4	5	6	7	8	9	Government ownership of business and industry should be increased
V118. The government should take more responsibility to ensure that everyone is provided for	1	2	3	4	5	6	7	8	9	People should take more responsibility to provide for themselves
V119. Competition is good. It stimulates people to work hard and develop new ideas	1	2	3	4	5	6	7	8	9	Competition is harmful. It brings out the worst in people
V120. In the long run, hard work usually brings a better life	1	2	3	4	5	6	7	8	9	Hard work doesn't generally bring success—it's more a matter of luck and connections
V121. People can only get rich at the expense of others	1	2	3	4	5	6	7	8	9	Wealth can grow so there's enough for everyone