

Factor Analysis

1.

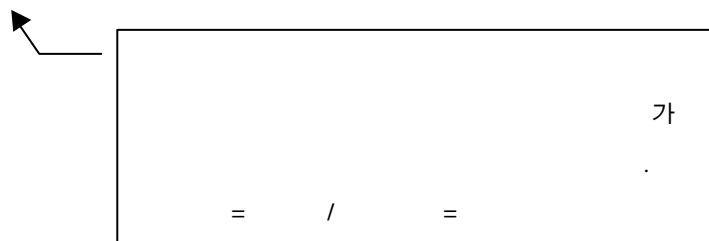
가

가

2.

가

가



가

가

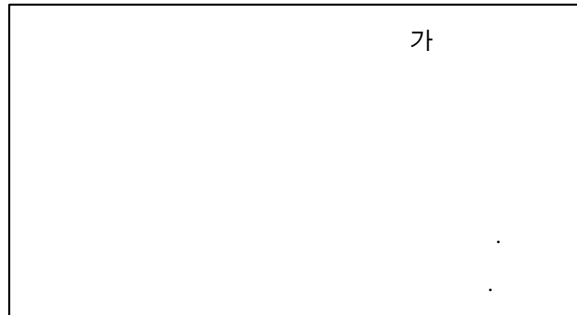
가

가

가

R-type :

Q-type :



가



One more tip !!!

| | | | |
|---|--------|---|---|
| | | | |
| - | Q-type | - | 가 |
| - | (가) | 가 | : |
| | | - | 가 |

3.

A.

- Q-type R-type 가 .

B.

✓ PCA (principal component analysis) :

가

SAS FACTOR

default

가

(variable

specific variance or unique variance),
variance)

(common variance),

(error

✓ CFA (common factor analysis)

. PCA

common variance

common variance

✓ PFA (principal factor analysis) :

✓ ML (maximum likelihood factor analysis) :

가 가 ,

Chi-square test 가 가

100

✓ GLS (generalized least square)

 **One more tip !!!**

| | | | |
|--|-----------------------|--|----------|
| | P | | 가 |
| | 가 , m m(<p) (| | 가 m , |
| | 2~3) | | |
| | - - - - - | | - 가 - |

C.

Exploratory factor analysis :

가

Confirmatory factor analysis :

focus

가



Empty rectangular box

4.

가

variable specific variance, common variance, error variance

quantitative variable

가

3

5.

가

가

가

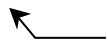
✓ Weighted least square method :

가

✓

✓ Scree test

가



Empty rectangular box

가

✓ Communality :

,i

m

6.

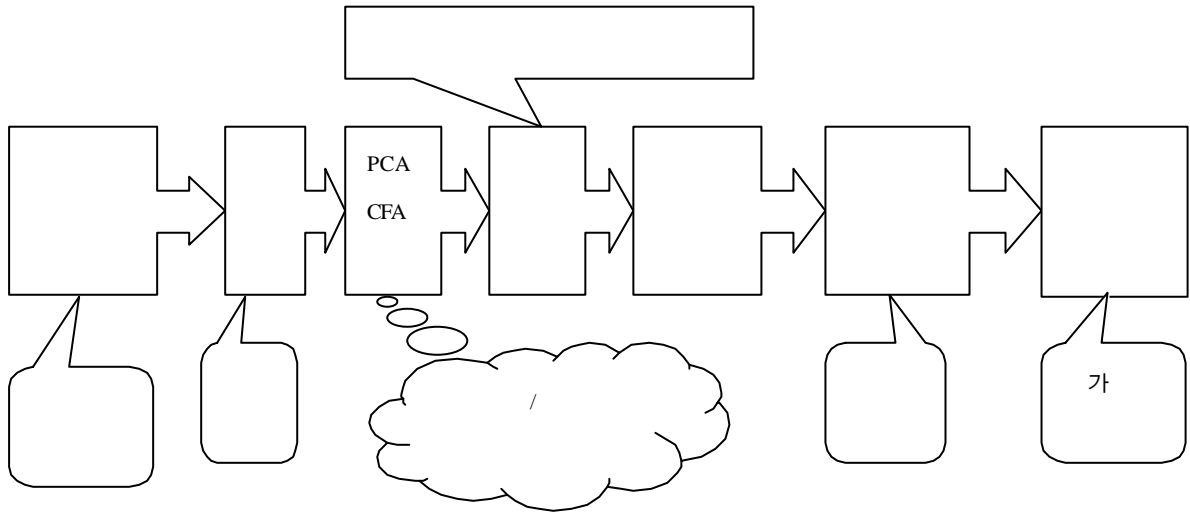
factor

$$F_i = a_1 X_1 + a_2 X_2 + \dots + a_n X_n$$

F_i : i a : X : n :

| | X1 | X2 | X3 | X4 | X5 |
|-----------|------|------|--------|--------|--------|
| Factor1 = | | a2X2 | + a3X3 | | |
| Factor2 = | a1X1 | | | + a4X4 | |
| Factor3 = | | | a3X3 | | + a5X5 |

1 2 3 , 2 1 4 , 3
 3 5



가
3-4

가

가
가

◇

PCA CFA

◇

[] :

1

1

1 가

1

[] :

95%,

60%

가

[] :

가



< >
1
가
가
Screen test

◇

factor loading

가

factor loading

0.3

, 0.4

factor loading

. factor loading

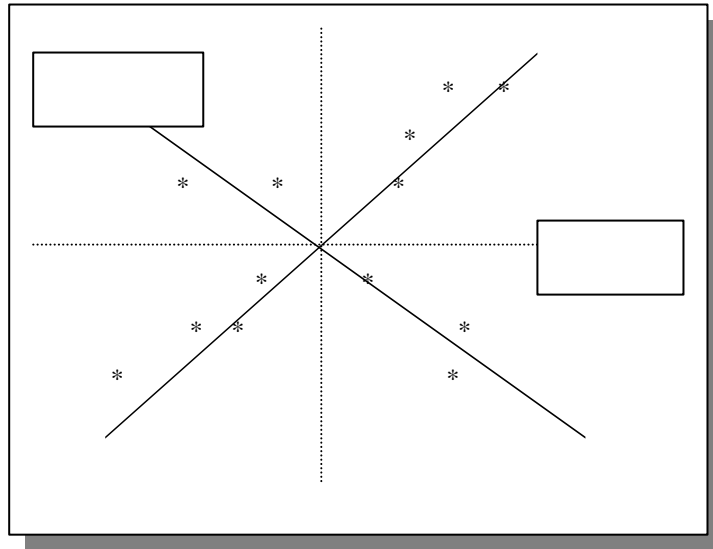
, factor loading

가

◇

가

가
rotation



가

Orthogonal rotation :

가 가

- :

- :

- : Quartimax =

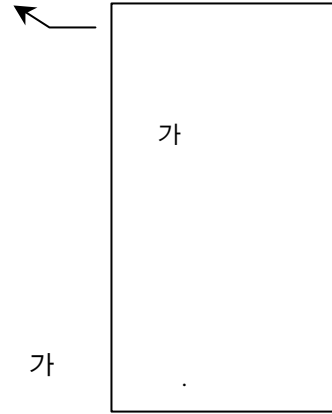
Varimax =

Equimax = 가

Oblique rotation :

- :
- :
- : Oblimax, Oblimin
가

◇



◇

weighted least square method (Bartlett) regression method 가

◇

가

가

7.

✓

가

✓

가

✓

가

가

가

✓

가