



서강대학교 정보통신 대학원 정 화민 교수 (MIS Ph.D)

R 설치

r studio 사용법 pdf



전체

이미지

동영상

뉴스

지도

더보기

설정

도구

검색결과 약 32,200개 중 3페이지 (0.32초)

R 설치, 기초 사용법 – Project Elite

projectl33t.xyz/archives/244 ▼

2016. 10. 17. - 또한 **R-Studio**는 관리자 권한으로 실행되도록 해주세요. ... 뿐만 아니라 출력된 시각화 자료를 이미지나 **pdf** 파일로 저장하는 기능도 있습니다.

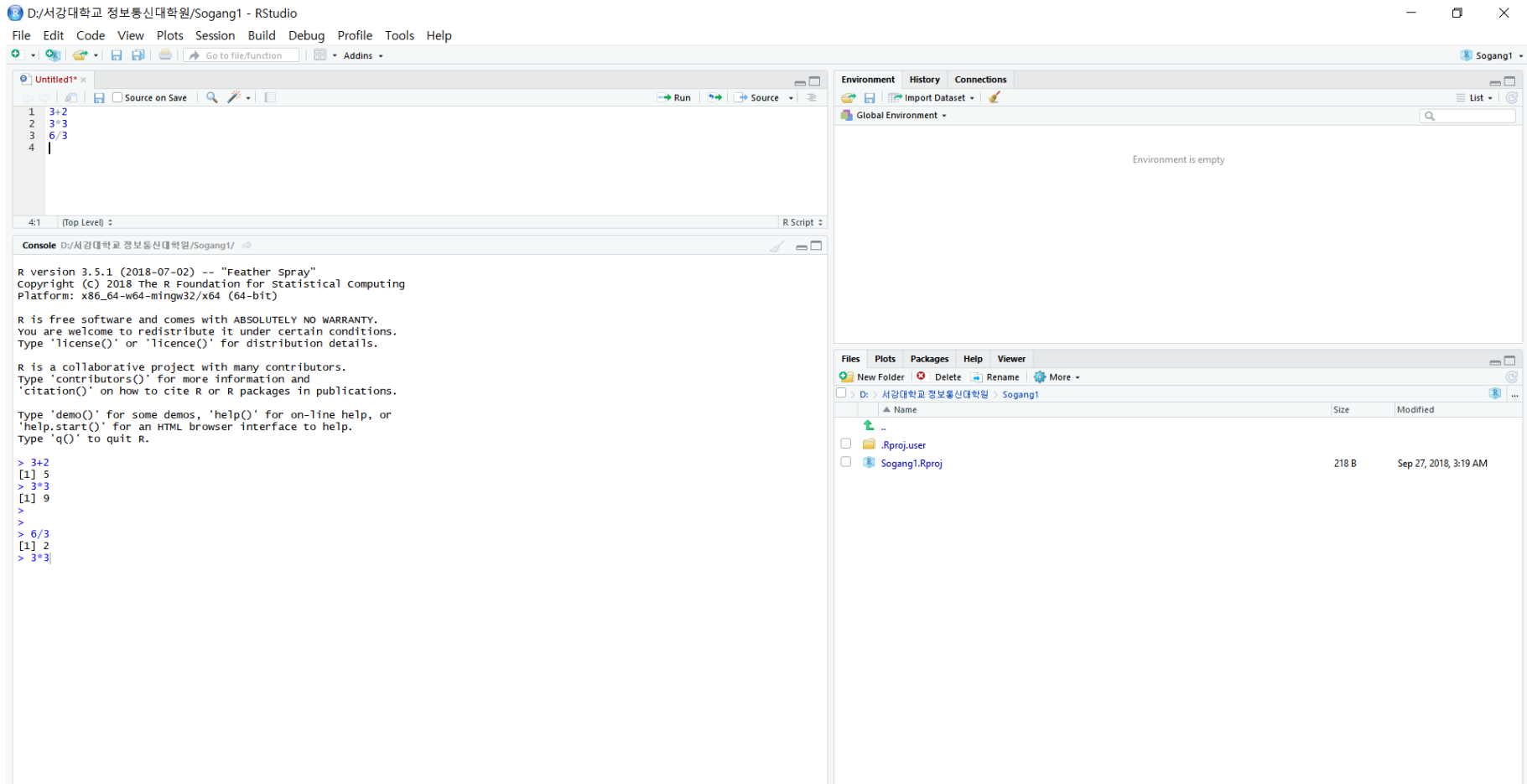
R markdown 사용법 - Amazon AWS

https://rstudio-pubs-static.s3.amazonaws.com/369288_2e88c27061494355977e770ece7...

R과 **RStudio** 설치방법: eclass의 동영상 참고; 라이브러리 설치 ... knitr을 이용하면 R코드와 설명을 html, latex, **pdf** 등 다양한 형태로 변환 가능; R script(확장자는 .

R Studio에서 New Project 실행

R studio 스크립트 창에서 간단한 연산 입력하여 콘솔창에 결과값이 나오는지 확인
명령어 실행은 Ctrl + Enter



R Studio에서 변수 만들기

R studio 명령어를 이용해 변수 만들기

A라는 변수에 4를 넣어라 ($A \leftarrow 4$), 오른쪽 상단 환경 창에 A변수 생성

The screenshot displays the R Studio environment with the following components:

- Source Editor:** Contains an R script with the following code:

```
1 3+2
2 3*3
3 6/3
4
5 A<-4
6 B<-3
7 A*B
8 |
```
- Console:** Shows the R startup message and the execution results of the script:

```
R version 3.5.1 (2018-07-02) -- "Feather Spray"
copyright (C) 2018 The R Foundation for Statistical Computing
Platform: x86_64-w64-mingw32/x64 (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

> 3+2
[1] 5
> 3*3
[1] 9
>
> 6/3
[1] 2
> A<-4
> B<-3
> A*B
[1] 12
> 3*3
```
- Environment Pane:** Located at the top right, it shows the 'Global Environment' with the following variables:

Variable	Value
A	4
B	3
- Files Pane:** Located at the bottom right, it shows the file structure of the project 'Sogang1', including a folder named 'Sogang1.Rproj' and a file named 'Sogang1.Rproj'.

R Studio에서 변수 만들기

R studio 명령어를 이용해 변수 만들기

A라는 변수에 4를 넣어라 ($A \leftarrow 4$), 오른쪽 상단 환경 창에 A변수 생성

The screenshot displays the R Studio environment with the following components:

- Source Editor:** Contains an R script with the following code:

```
1 3+2
2 3*3
3 6/3
4
5 A<-4
6 B<-3
7 A*B
8 |
```
- Console:** Shows the R startup message and the execution output of the script:

```
R version 3.5.1 (2018-07-02) -- "Feather Spray"
copyright (C) 2018 The R Foundation for Statistical Computing
Platform: x86_64-w64-mingw32/x64 (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

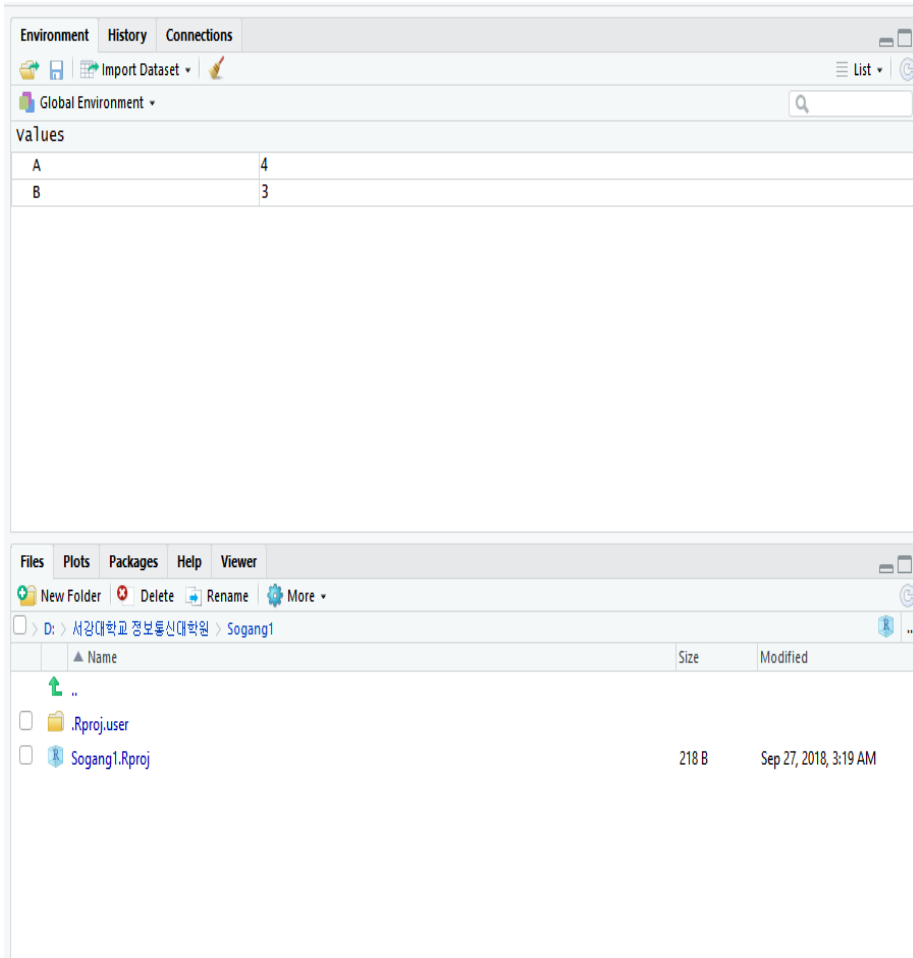
R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

> 3+2
[1] 5
> 3*3
[1] 9
>
> 6/3
[1] 2
> A<-4
> B<-3
> A*B
[1] 12
> 3*3
```
- Environment Pane:** Located at the top right, it shows the 'Global Environment' with the following variables:

Variable	Value
A	4
B	3
- Files Pane:** Located at the bottom right, it shows the file structure of the project 'Sogang1', including a folder named 'Sogang1.Rproj' and a file named 'Sogang1.Rproj'.

R Studio 파일창의 기능



Files : 현재 프로젝트 디렉토리

Plots : 그래프 보여주는 곳

Packages : 설치된 패키지 목록을 보여줌

Help: help()함수를 실행하면 명령어를 설명하는 곳

Viewer : 분석결과를 HTML 과 같은 웹 문서로 출력

R Studio 데이터 프레임 만들기

```
1 |
2 |
3 |
4 english <- c(70, 90, 80, 60, 70, 60)
5 english
6 |
7 math <- c(50, 60, 100, 20, 50, 80)
8 math
9 |
10 df_midterm <- data.frame(english, math)
11 df_midterm
12 |
13 class <- c(1, 1, 1, 2, 2, 2)
14 class
15 |
16 df_midterm <- data.frame(english, math, class)
17 df_midterm
18 |
19 mean(df_midterm$english)
20 mean(df_midterm$math)
21 |
```

2:1 (Top Level) ↕

Console D:/빅데이터기초에서분석/Data/ ↗

```
[workspace loaded from D:/빅데이터기초에서분석/Data/.RData]
> english <- c(70, 90, 80, 60, 70, 60)
> english
[1] 70 90 80 60 70 60
> math <- c(50, 60, 100, 20, 50, 80)
> math
[1] 50 60 100 20 50 80
> df_midterm <- data.frame(english, math)
> df_midterm
  english math
1      70   50
2      90   60
3      80  100
4      60   20
5      70   50
6      60   80
> class <- c(1, 1, 1, 2, 2, 2)
> class
[1] 1 1 1 2 2 2
> df_midterm <- data.frame(english, math, class)
> df_midterm
  english math class
1      70   50     1
2      90   60     1
3      80  100     1
4      60   20     2
5      70   50     2
6      60   80     2
> mean(df_midterm$english)
[1] 71.66667
> mean(df_midterm$math)
[1] 60
> |
```

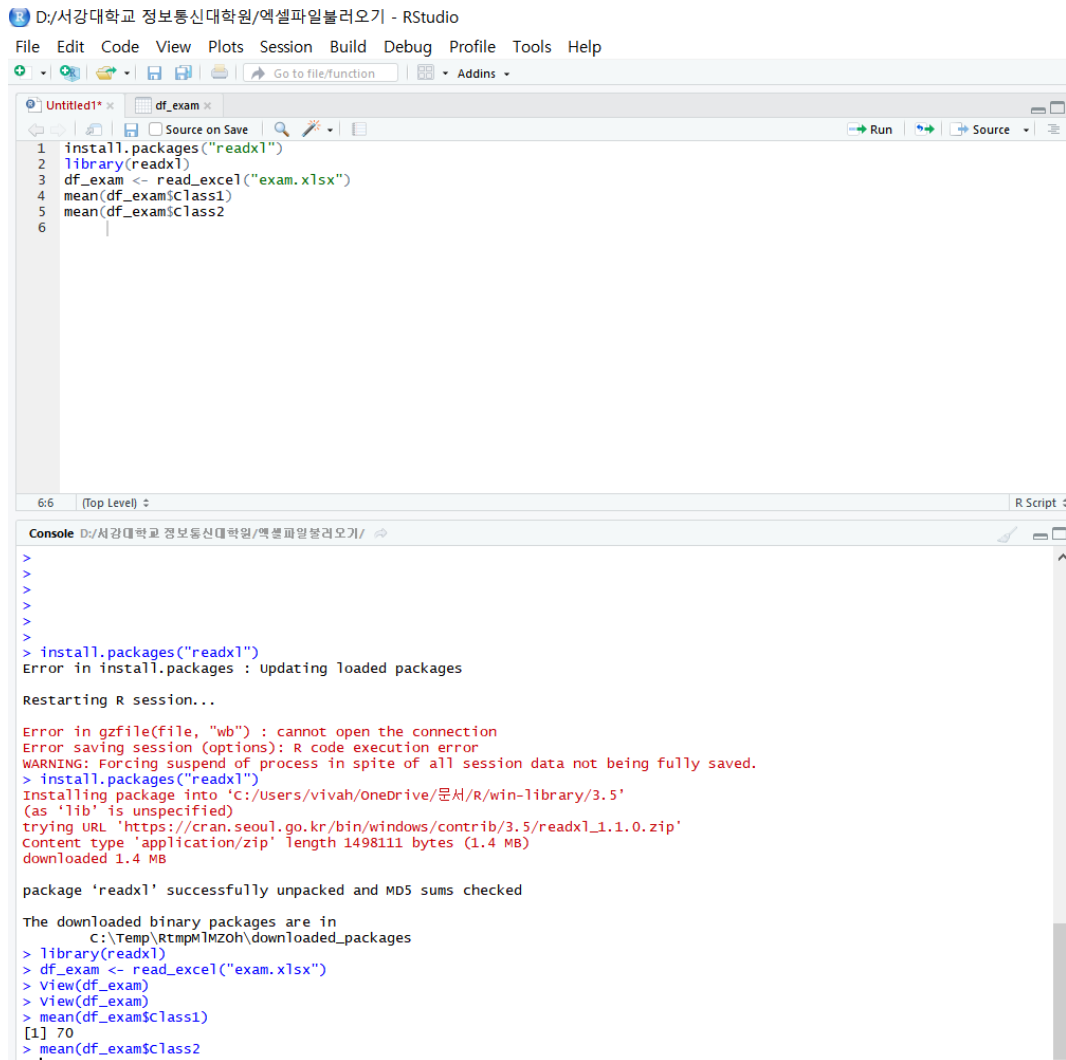
영어점수 변수생성
수학점수 변수생성
각 Class 변수생성

영어와 수학점수를 중간고사 데이터
프레임으로 할당할 것

평균을 구할 것

영어: 71.6점
수학: 60점

R Studio 엑셀 파일 불러오기 (readxl 패키지 설치하고 로드하기)



The screenshot shows the RStudio interface with a script editor and a console. The script editor contains the following code:

```
1 install.packages("readxl")
2 library(readxl)
3 df_exam <- read_excel("exam.xlsx")
4 mean(df_exam$Class1)
5 mean(df_exam$Class2)
6
```

The console shows the execution of the code, including the installation of the readxl package and the calculation of the mean for Class 1 and Class 2.

```
>
>
>
>
> install.packages("readxl")
Error in install.packages : updating loaded packages

Restarting R session...

Error in gzfile(file, "wb") : cannot open the connection
Error saving session (options): R code execution error
WARNING: Forcing suspend of process in spite of all session data not being fully saved.
> install.packages("readxl")
Installing package into 'C:/Users/vivah/OneDrive/문서/R/win-library/3.5'
(as 'lib' is unspecified)
trying URL 'https://cran.seoul.go.kr/bin/windows/contrib/3.5/readxl_1.1.0.zip'
Content type 'application/zip' length 1498111 bytes (1.4 MB)
downloaded 1.4 MB

package 'readxl' successfully unpacked and MD5 sums checked

The downloaded binary packages are in
C:\Temp\RtmpM1MZoh\downloaded_packages
> library(readxl)
> df_exam <- read_excel("exam.xlsx")
> view(df_exam)
> view(df_exam)
> mean(df_exam$Class1)
[1] 70
> mean(df_exam$Class2)
```

readxl 패키지 설치하고 로드하기

```
install.packages("readxl")
library(readxl)
df_exam <-
read_excel("exam.xlsx")
mean(df_exam$Class1)
mean(df_exam$Class2)
```

Class 1/ Class 2의 평균은 각 70점
(단, 여기서 엑셀파일은 프로젝트
폴더안에 있어야 함)

R Studio 기술통계(요약통계량 구하기)

The screenshot shows the RStudio environment with the following components:

- Title Bar:** D:/서강대학교 정보통신대학원/엑셀파일불러오기 - RStudio
- Menu Bar:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help
- Toolbar:** Includes icons for saving, running, and navigating, along with a "Go to file/function" search bar.
- Source Editor:** Contains R code for loading the 'readxl' package, reading 'exam.xlsx', and performing various operations on the resulting 'df_exam' data frame.


```

1 install.packages("readxl")
2 library(readxl)
3 df_exam <- read_excel("exam.xlsx")
4 mean(df_exam$class1)
5 mean(df_exam$class2)
6
7
8 head(df_exam)
9 view(df_exam)
10 summary(df_exam)
11

```
- Console:** Displays the output of the executed code, showing the first three rows of the data frame and a detailed summary of its structure and values.


```

>
>
>
>
>
>
>
>
>
>
> head(df_exam)
# A tibble: 6 x 3
#   NO.   class1 class2
#   <dbl>   <dbl>   <dbl>
1     1     40     70
2     2     60     60
3     3    100     70
4     4     90     80
5     5     70     70
6     6     60     50
> view(df_exam)
> summary(df_exam)
      NO.      class1      class2
Min.   : 1.00   Min.   : 40   Min.   :50.0
1st Qu.: 3.25   1st Qu.: 60   1st Qu.:62.5
Median : 5.50   Median : 65   Median :70.0
Mean   : 5.50   Mean   : 70   Mean   :70.0
3rd Qu.: 7.75   3rd Qu.: 85   3rd Qu.:77.5
Max.   :10.00   Max.   :100   Max.   :90.0
>

```

head(df_exam)
데이터의 앞부분 출력

View(df_exam)
뷰어창에서 데이터 확인
(단 V는 대문자, 소문자로 입력하면
에러 발생_주의)

summary(df_exam)
요약통계량 출력

요약통계량 : 최소값, 1사분위값
중앙값, 평균, 3사분위 값, 가장 큰
값.

R Studio 요인분석

```
library(xlsx)
install.packages("xlsx")
library(xlsx)
install.packages("psych")
library(psych)
install.packages("nFactors")
library(nFactor)
library(nFactors)
mydata=read.xlsx(FACT_ANALYSIS,1)
mydata=read.xlsx("FACT_ANALYSIS.xlsx",1)
view(mydata)
attach(mydata)
names(mydata)
x=cbind(Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12)
e_value=eigen(cor(x))
e_value
PCA=principal(x,nfactors = 2, rotate = "varimax")
print(PCA, digits=3, cutoff=.3, sort = true)
print(PCA, digits=3, cutoff=.3, sort = TRUE)
print(PCA, digits=3, cutoff=.3, sort = TRUE)
PCA=principal(x, nfactors = 2, rotate = "varimax")
print(PCA, digits=3, cutoff=.3, sort = TRUE)
```

```
eigen() decomposition
$`values`
 [1] 6.75147664 2.29192951 0.59300517 0.50986645 0.45256698
 [6] 0.29520845 0.26744906 0.24213504 0.21518752 0.16150030
[11] 0.13527080 0.08440408
```

패키지를 인스톨한 다음 라이브러리를 로드 한다.

아이겐밸류 값 1 이상을 기준으로 요인이 몇 개 나올 수 있는지 검증한다.

아이겐밸류값 6.75, 2.29를 기준으로 2개의 요인으로 분류할 수 있다.

(분석용 데이터 파일
FACT_ANALYSIS는 네이버 카페에
올려 놓겠음)

R Studio 요인분석 결과

```
Principal Components Analysis
Call: principal(r = x, nfactors = 2, rotate = "varimax")
Error in print.psych.fa(x, digits = digits, all = all, cut = cut, sort = sort,
  object 'true' not found
> print(PCA, digits=3, cutoff=.3, sort = TRUE)
Principal Components Analysis
Call: principal(r = x, nfactors = 2, rotate = "varimax")
Standardized loadings (pattern matrix) based upon correlation matrix
```

	item	RC1	RC2	h2	u2	com
Q10	10	0.897	0.180	0.837	0.163	1.08
Q8	8	0.860	0.215	0.786	0.214	1.12
Q12	12	0.857	0.236	0.791	0.209	1.15
Q9	9	0.856	0.197	0.771	0.229	1.11
Q11	11	0.852	0.281	0.805	0.195	1.22
Q7	7	0.831	0.270	0.763	0.237	1.21
Q4	4	0.187	0.882	0.813	0.187	1.09
Q6	6	0.190	0.835	0.733	0.267	1.10
Q1	1	0.082	0.832	0.700	0.300	1.02
Q3	3	0.250	0.805	0.711	0.289	1.19
Q2	2	0.271	0.783	0.686	0.314	1.24
Q5	5	0.314	0.742	0.649	0.351	1.35

요인분석 결과 2개의 요인으로 분류되었다.

2가지 요인 중 Q10은 요인1을 설명하고 있는 설명력이 89.7%를 나타내고, 요인2에서는 Q4가 두 번째 요인을 88.2%를 설명하는 변수로 나타났다.

(데이터에 대한 설명은 수업시간에 자세히 합니다)