Data written to the working file.
17 variables and 2111 cases written.
Variable: Gender Type: String Format : A6
Variable: Age Type: Number Format : F9.6
Variable: Height Type: Number Format : F8.6
Variable: Weight Type: Number Format : F10.6
Variable: family_history_with_overweight Type: String Format : A3
Variable: FAVC Type: String Format : A3
Variable: FCVC Type: Number Format : F8.6
Variable: NCP Type: Number Format : F8.6
Variable: CAEC Type: String Format : A10
Variable: SMOKE Type: String Format : A3
Variable: CH2O Type: Number Format : F8.6
Variable: SCC Type: String Format : A3
Variable: FAF Type: Number Format : F8.6
Variable: TUE Type: Number Format : F8.6
Variable: CALC Type: String Format : A10
Variable: MTRANS Type: String Format : A21
Variable: NObeyesdad Type: String Format : A19

Substitute the following to build syntax for these data.
/VARIABLES=
Gender A6
Age F9.6
Height F8.6
Weight F10.6
family_history_with_overweight A3
FAVC A3
FCVC F8.6
NCP F8.6
CAEC A10
SMOKE A3
CH2O F8.6
SCC A3
FAF F8.6
TUE F8.6
CALC A10
MTRANS A21
NObeyesdad A19

## 요인분석

## 노트

| | | |
|---|---|---|
| 작성된 출력결과 | | 16-AUG-2024 22:32:34 |
| 주석 | | |
| 입력 | 데이터 | C:₩Users₩aj₩Downloads₩Estimation+of+obesity+levels+based+on+eating+habits+and+physical+condition₩데이터.sav |
| | 활성 데이터 세트 | 데이터세트1 |
| | 필터 | <없음> |
| | 가중 | <없음> |
| | 분할 파일 | <없음> |
| | 작업 데이터 파일의 행 수 | 2111 |
| 결측값 처리 | 결측값 정의 | MISSING=EXCLUDE: 사용자 정의 결측값이 결측으로 처리됩니다. |
| | 사용 케이스 | LISTWISE: 통계량은 사용한 변수에 대해 결측값이 없는 케이스를 기준으로 산출합니다. |
| 명령문 | | FACTOR<br>/VARIABLES Gender Age Height Weight family_history_with_overweight FAVC FCVC NCP CAEC SMOKE CH2O SCC FAF TUE CALC MTRANS<br>/MISSING LISTWISE<br>/ANALYSIS Gender Age Height Weight family_history_with_overweight FAVC FCVC NCP CAEC SMOKE CH2O SCC FAF TUE CALC MTRANS<br>/PRINT UNIVARIATE INITIAL CORRELATION KMO COVARIANCE EXTRACTION ROTATION<br>/FORMAT SORT<br>/CRITERIA MINEIGEN(1) ITERATE(25)<br>/EXTRACTION ML<br>/CRITERIA KAISER ITERATE(25) DELTA(0)<br>/ROTATION OBLIMIN<br>/SAVE REG(ALL). |

## 노트

| | | |
|---|---|---|
| 사용된 자원 | 프로세서 시간 | 00:00:00.08 |
| | 경과 시간 | 00:00:00.08 |
| | 최대 요구 메모리 | 34320 (33.516K) 바이트 |
| 생성된 변수 | FAC1_1 | 회귀 요인점수 1 |
| | FAC2_1 | 회귀 요인점수 2 |
| | FAC3_1 | 회귀 요인점수 3 |
| | FAC4_1 | 회귀 요인점수 4 |
| | FAC5_1 | 회귀 요인점수 5 |
| | FAC6_1 | 회귀 요인점수 6 |

[데이터세트1] C:₩Users₩aj₩Downloads₩estimation+of+obesity+levels+based+on+eating+habits+and+physical+condition₩데이터.sav

## 기술통계량

| | 평균 | 표준편차 | 분석수 |
|---|---|---|---|
| Gender | .51 | .500 | 2111 |
| Age | 24.31259991 | 6.345968274 | 2111 |
| Height | 1.70167735 | .093304820 | 2111 |
| Weight | 86.58605813 | 26.191171745 | 2111 |
| family_history_with_overweight | .82 | .386 | 2111 |
| FAVC | .88 | .320 | 2111 |
| FCVC | 2.41904306 | .533926579 | 2111 |
| NCP | 2.68562805 | .778038649 | 2111 |
| CAEC | 1.14 | .469 | 2111 |
| SMOKE | .02 | .143 | 2111 |
| CH2O | 2.00801140 | .612953452 | 2111 |
| SCC | .05 | .208 | 2111 |
| FAF | 1.01029770 | .850592431 | 2111 |
| TUE | .65786592 | .608927260 | 2111 |
| CALC | .73 | .515 | 2111 |
| MTRANS | 1.64 | 1.263 | 2111 |

**공분산 행렬**

| | Gender | Age | Height | Weight | family_history_with_overweight |
|---|---|---|---|---|---|
| Gender | .250 | .154 | .029 | 2.117 | .020 |
| Age | .154 | 40.271 | −.015 | 33.667 | .504 |
| Height | .029 | −.015 | .009 | 1.132 | .009 |
| Weight | 2.117 | 33.667 | 1.132 | 685.977 | 5.026 |
| family_history_with_overweight | .020 | .504 | .009 | 5.026 | .149 |
| FAVC | .010 | .130 | .005 | 2.285 | .026 |
| FCVC | −.073 | .055 | −.002 | 3.022 | .008 |
| NCP | .026 | −.217 | .018 | 2.190 | .021 |
| CAEC | −.021 | −.249 | −.002 | −3.528 | −.031 |
| SMOKE | .003 | .083 | .001 | .096 | .001 |
| CH2O | .033 | −.176 | .012 | 3.220 | .035 |
| SCC | −.011 | −.154 | −.003 | −1.102 | −.015 |
| FAF | .081 | −.782 | .023 | −1.146 | −.019 |
| TUE | .005 | −1.147 | .003 | −1.141 | .005 |
| CALC | −.002 | .146 | .006 | 2.790 | −.007 |
| MTRANS | .087 | 4.826 | .008 | −.190 | .048 |

**공분산 행렬**

| | FAVC | FCVC | NCP | CAEC | SMOKE | CH2O |
|---|---|---|---|---|---|---|
| Gender | .010 | −.073 | .026 | −.021 | .003 | .033 |
| Age | .130 | .055 | −.217 | −.249 | .083 | −.176 |
| Height | .005 | −.002 | .018 | −.002 | .001 | .012 |
| Weight | 2.285 | 3.022 | 2.190 | −3.528 | .096 | 3.220 |
| family_history_with_overweight | .026 | .008 | .021 | −.031 | .001 | .035 |
| FAVC | .103 | −.005 | −.002 | −.023 | −.002 | .002 |
| FCVC | −.005 | .285 | .018 | .014 | .001 | .022 |
| NCP | −.002 | .018 | .605 | .036 | .001 | .027 |
| CAEC | −.023 | .014 | .036 | .220 | .004 | −.042 |
| SMOKE | −.002 | .001 | .001 | .004 | .020 | −.003 |
| CH2O | .002 | .022 | .027 | −.042 | −.003 | .376 |
| SCC | −.013 | .008 | −.003 | .011 | .001 | .001 |
| FAF | −.029 | .009 | .086 | .012 | .001 | .087 |
| TUE | .013 | −.033 | .017 | .014 | .002 | .004 |
| CALC | .015 | .017 | .029 | −.011 | .006 | .029 |
| MTRANS | .029 | −.043 | .052 | −.027 | .002 | −.035 |

## 공분산 행렬

| | SCC | FAF | TUE | CALC | MTRANS |
|---|---|---|---|---|---|
| Gender | −.011 | .081 | .005 | −.002 | .087 |
| Age | −.154 | −.782 | −1.147 | .146 | 4.826 |
| Height | −.003 | .023 | .003 | .006 | .008 |
| Weight | −1.102 | −1.146 | −1.141 | 2.790 | −.190 |
| family_history_with_overweight | −.015 | −.019 | .005 | −.007 | .048 |
| FAVC | −.013 | −.029 | .013 | .015 | .029 |
| FCVC | .008 | .009 | −.033 | .017 | −.043 |
| NCP | −.003 | .086 | .017 | .029 | .052 |
| CAEC | .011 | .012 | .014 | −.011 | −.027 |
| SMOKE | .001 | .001 | .002 | .006 | .002 |
| CH2O | .001 | .087 | .004 | .029 | −.035 |
| SCC | .043 | .013 | −.001 | .000 | −.011 |
| FAF | .013 | .724 | .030 | −.038 | −.011 |
| TUE | −.001 | .030 | .371 | −.014 | −.138 |
| CALC | .000 | −.038 | −.014 | .266 | −.009 |
| MTRANS | −.011 | −.011 | −.138 | −.009 | 1.594 |

## 상관행렬

| | | Gender | Age | Height | Weight | family_history_with_overweight |
|---|---|---|---|---|---|---|
| 상관관계 | Gender | 1.000 | .048 | .618 | .162 | .103 |
| | Age | .048 | 1.000 | −.026 | .203 | .206 |
| | Height | .618 | −.026 | 1.000 | .463 | .248 |
| | Weight | .162 | .203 | .463 | 1.000 | .497 |
| | family_history_with_overweight | .103 | .206 | .248 | .497 | 1.000 |
| | FAVC | .065 | .064 | .178 | .272 | .208 |
| | FCVC | −.275 | .016 | −.038 | .216 | .040 |
| | NCP | .068 | −.044 | .244 | .107 | .071 |
| | CAEC | −.092 | −.084 | −.049 | −.287 | −.170 |
| | SMOKE | .045 | .092 | .055 | .026 | .017 |
| | CH2O | .108 | −.045 | .213 | .201 | .147 |
| | SCC | −.103 | −.116 | −.134 | −.202 | −.185 |
| | FAF | .190 | −.145 | .295 | −.051 | −.057 |
| | TUE | .017 | −.297 | .052 | −.072 | .023 |
| | CALC | −.008 | .044 | .130 | .207 | −.037 |
| | MTRANS | .137 | .602 | .072 | −.006 | .099 |

**상관행렬**

| | | FAVC | FCVC | NCP | CAEC | SMOKE |
|---|---|---|---|---|---|---|
| 상관관계 | Gender | .065 | −.275 | .068 | −.092 | .045 |
| | Age | .064 | .016 | −.044 | −.084 | .092 |
| | Height | .178 | −.038 | .244 | −.049 | .055 |
| | Weight | .272 | .216 | .107 | −.287 | .026 |
| | family_history_with_overweight | .208 | .040 | .071 | −.170 | .017 |
| | FAVC | 1.000 | −.027 | −.007 | −.150 | −.051 |
| | FCVC | −.027 | 1.000 | .042 | .055 | .014 |
| | NCP | −.007 | .042 | 1.000 | .098 | .008 |
| | CAEC | −.150 | .055 | .098 | 1.000 | .055 |
| | SMOKE | −.051 | .014 | .008 | .055 | 1.000 |
| | CH2O | .010 | .068 | .057 | −.145 | −.032 |
| | SCC | −.191 | .072 | −.016 | .109 | .048 |
| | FAF | −.108 | .020 | .130 | .030 | .011 |
| | TUE | .068 | −.101 | .036 | .049 | .018 |
| | CALC | .090 | .061 | .072 | −.048 | .082 |
| | MTRANS | .071 | −.064 | .053 | −.045 | .013 |

**상관행렬**

| | | CH2O | SCC | FAF | TUE | CALC |
|---|---|---|---|---|---|---|
| 상관관계 | Gender | .108 | −.103 | .190 | .017 | −.008 |
| | Age | −.045 | −.116 | −.145 | −.297 | .044 |
| | Height | .213 | −.134 | .295 | .052 | .130 |
| | Weight | .201 | −.202 | −.051 | −.072 | .207 |
| | family_history_with_overweight | .147 | −.185 | −.057 | .023 | −.037 |
| | FAVC | .010 | −.191 | −.108 | .068 | .090 |
| | FCVC | .068 | .072 | .020 | −.101 | .061 |
| | NCP | .057 | −.016 | .130 | .036 | .072 |
| | CAEC | −.145 | .109 | .030 | .049 | −.048 |
| | SMOKE | −.032 | .048 | .011 | .018 | .082 |
| | CH2O | 1.000 | .008 | .167 | .012 | .091 |
| | SCC | .008 | 1.000 | .074 | −.011 | .003 |
| | FAF | .167 | .074 | 1.000 | .059 | −.087 |
| | TUE | .012 | −.011 | .059 | 1.000 | −.046 |
| | CALC | .091 | .003 | −.087 | −.046 | 1.000 |
| | MTRANS | −.045 | −.042 | −.010 | −.180 | −.013 |

## 상관행렬

| | | MTRANS |
|---|---|---|
| 상관관계 | Gender | .137 |
| | Age | .602 |
| | Height | .072 |
| | Weight | -.006 |
| | family_history_with_overweight | .099 |
| | FAVC | .071 |
| | FCVC | -.064 |
| | NCP | .053 |
| | CAEC | -.045 |
| | SMOKE | .013 |
| | CH2O | -.045 |
| | SCC | -.042 |
| | FAF | -.010 |
| | TUE | -.180 |
| | CALC | -.013 |
| | MTRANS | 1.000 |

## KMO와 Bartlett의 검정

| | | |
|---|---|---|
| 표본 적절성의 Kaiser-Meyer-Olkin 측도. | | .582 |
| Bartlett의 구형성 검정 | 근사 카이제곱 | 5924.279 |
| | 자유도 | 120 |
| | 유의확률 | <.001 |

**공통성[a]**

| | 초기 | 추출 |
|---|---|---|
| Gender | .477 | .547 |
| Age | .491 | .999 |
| Height | .619 | .988 |
| Weight | .552 | .761 |
| family_history_with_overweight | .307 | .997 |
| FAVC | .143 | .175 |
| FCVC | .186 | .385 |
| NCP | .098 | .101 |
| CAEC | .155 | .370 |
| SMOKE | .037 | .023 |
| CH2O | .110 | .174 |
| SCC | .095 | .122 |
| FAF | .191 | .323 |
| TUE | .120 | .118 |
| CALC | .106 | .114 |
| MTRANS | .425 | .422 |

추출 방법: 최대우도.

a. 반복계산 중 1보다 큰 하나 이상의 공통성 추정량이 나타났습니다. 결과해법은 주의하여 해석해야 합니다.

## 설명된 총분산

| 요인 | 초기 고유값 | | | 추출 제곱합 적재량 | | | 회전 제곱합 적재량[a] |
|---|---|---|---|---|---|---|---|
| | 전체 | % 분산 | 누적 % | 전체 | % 분산 | 누적 % | 전체 |
| 1 | 2.603 | 16.270 | 16.270 | 1.660 | 10.378 | 10.378 | 1.505 |
| 2 | 1.867 | 11.670 | 27.940 | 1.406 | 8.788 | 19.165 | 1.733 |
| 3 | 1.530 | 9.560 | 37.501 | 1.606 | 10.035 | 29.200 | 1.248 |
| 4 | 1.357 | 8.481 | 45.982 | .884 | 5.523 | 34.722 | 1.301 |
| 5 | 1.125 | 7.032 | 53.015 | .655 | 4.095 | 38.818 | .631 |
| 6 | 1.066 | 6.664 | 59.679 | .405 | 2.530 | 41.348 | 1.053 |
| 7 | .982 | 6.135 | 65.814 | | | | |
| 8 | .870 | 5.437 | 71.251 | | | | |
| 9 | .820 | 5.123 | 76.374 | | | | |
| 10 | .788 | 4.924 | 81.297 | | | | |
| 11 | .759 | 4.743 | 86.041 | | | | |
| 12 | .685 | 4.282 | 90.323 | | | | |
| 13 | .602 | 3.760 | 94.083 | | | | |
| 14 | .401 | 2.504 | 96.587 | | | | |
| 15 | .328 | 2.050 | 98.637 | | | | |
| 16 | .218 | 1.363 | 100.000 | | | | |

추출 방법: 최대우도.

a. 요인이 상관된 경우 전체 분산을 구할 때 제곱합 적재량이 추가될 수 없습니다.

## 요인행렬[a]

| | 요인 | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Age | .993 | −.114 | .008 | .000 | .000 | .000 |
| MTRANS | .596 | −.087 | .103 | −.217 | −.016 | .036 |
| TUE | −.285 | .120 | .013 | −.102 | −.052 | −.090 |
| SMOKE | .091 | −.008 | .061 | −.021 | .086 | −.052 |
| family_history_with_overweight | .316 | .945 | −.071 | −.003 | .001 | .000 |
| Height | .005 | .331 | .937 | −.007 | .006 | −.003 |
| Gender | .059 | .134 | .613 | −.249 | −.288 | .070 |
| NCP | −.034 | .103 | .222 | −.010 | .195 | −.029 |
| Weight | .255 | .468 | .333 | .602 | −.067 | .000 |
| CALC | .039 | −.039 | .154 | .277 | .005 | −.098 |
| FCVC | .021 | .033 | −.053 | .403 | .461 | .079 |
| CAEC | −.101 | −.147 | −.005 | −.271 | .425 | −.289 |
| FAVC | .087 | .201 | .120 | .180 | −.215 | −.185 |
| SCC | −.135 | −.158 | −.088 | −.082 | .212 | .138 |
| FAF | −.147 | .012 | .310 | −.185 | .187 | .369 |
| CH2O | −.027 | .178 | .167 | .126 | .017 | .313 |

추출 방법: 최대우도.

a. 6 요인 추출을 시도했습니다. 25 넘는 반복계산이 요구됩니다. (수렴=.064). 추출이 종료됩니다.

## 패턴 행렬[a]

| | 요인 | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Age | .967 | .120 | .017 | .008 | −.001 | −.116 |
| MTRANS | .612 | .039 | .184 | −.137 | .067 | −.008 |
| TUE | −.318 | .060 | .097 | −.056 | .056 | −.044 |
| family_history_with_overweight | .030 | 1.058 | −.093 | −.200 | .058 | .048 |
| Gender | .057 | −.020 | .661 | .084 | .053 | .267 |
| Height | −.060 | .097 | .547 | .409 | .358 | .447 |
| FCVC | .021 | .059 | −.541 | .222 | .151 | .165 |
| Weight | .070 | .401 | −.084 | .603 | −.080 | .180 |
| CALC | .010 | −.084 | −.033 | .351 | .020 | −.018 |
| FAVC | −.038 | .174 | .135 | .271 | −.053 | −.138 |
| SCC | −.036 | −.155 | −.158 | −.161 | .060 | .124 |
| CAEC | −.077 | −.096 | −.088 | −.156 | .534 | −.180 |
| NCP | −.050 | .060 | .013 | .072 | .246 | .130 |
| SMOKE | .084 | .011 | .001 | .021 | .118 | −.012 |
| FAF | −.025 | −.097 | .106 | −.157 | .099 | .514 |
| CH2O | −.007 | .103 | −.028 | .046 | −.125 | .382 |

추출 방법: 최대우도.
회전 방법: 카이저 정규화가 있는 오블리민.

a. 23 반복계산에서 요인회전이 수렴되었습니다.

## 구조행렬

| | 요인 | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Age | .986 | .204 | .042 | .143 | .016 | −.165 |
| MTRANS | .605 | .081 | .189 | −.047 | .094 | −.040 |
| TUE | −.313 | .025 | .103 | −.073 | .030 | −.014 |
| family_history_with_overweight | .101 | .975 | .118 | .145 | −.031 | .105 |
| SCC | −.074 | −.239 | −.193 | −.210 | .092 | .097 |
| Gender | .054 | .163 | .675 | .151 | .102 | .311 |
| Height | −.013 | .336 | .612 | .513 | .415 | .586 |
| FCVC | .045 | .018 | −.508 | .233 | .165 | .192 |
| Weight | .159 | .605 | .040 | .757 | −.093 | .260 |
| CALC | .044 | .020 | −.032 | .321 | .023 | .019 |
| FAVC | .015 | .281 | .178 | .314 | −.093 | −.092 |
| CAEC | −.068 | −.234 | −.121 | −.226 | .513 | −.124 |
| NCP | −.033 | .068 | .037 | .100 | .257 | .184 |
| SMOKE | .094 | .013 | .005 | .032 | .119 | .004 |
| FAF | −.077 | −.100 | .102 | −.125 | .188 | .510 |
| CH2O | −.022 | .151 | .012 | .124 | −.077 | .376 |

추출 방법: 최대우도.
회전 방법: 카이저 정규화가 있는 오블리민.

## 요인 상관행렬

| 요인 | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1 | 1.000 | .090 | .006 | .113 | .047 | −.061 |
| 2 | .090 | 1.000 | .207 | .322 | −.094 | .073 |
| 3 | .006 | .207 | 1.000 | .054 | .008 | .047 |
| 4 | .113 | .322 | .054 | 1.000 | −.008 | .118 |
| 5 | .047 | −.094 | .008 | −.008 | 1.000 | .152 |
| 6 | −.061 | .073 | .047 | .118 | .152 | 1.000 |

추출 방법: 최대우도.
회전 방법: 카이저 정규화가 있는 오블리민.