Faktör Analizi

**Faktör analizi için yapılması gereken işlemler**

1. Analyze > Dimension reduction > Factor
2. İncelenecek tüm değişkenler Variables kutusuna taşınmalı.
3. Desriptives butonuna tıklayın.
4. Statistics bölümünde Initial Solutions’ın tıklandığından emin olun.
5. Correlatoin Matrix olarak ifade edilen bölümde Coefficients ve KMO and Bartlett’s test of sphericity’I seçin.
6. Extraction butonuna basin.
7. Display bölümünde Screeplot’I seçin.
8. Extract bölümünde Based on Eigenvalue’u seçin. Faktörleştirme için sabit birsayıyı tercih edecekseniz Fixed number of factors’I seçerek istediğiniz değeri girin.
9. Rotation’a tıklayın ve Direct Oblimin’I seçin.
10. Continue > OK

**Verilerin Yorumlanması**

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| 1. Betimsel istatistik tablosu örneklem büyüklüğü, minimum ve maksimum değerler, ortalama ve standart sapma hakkında bilgiler içerir.

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| **Descriptive Statistics** |
|  | N | Minimum | Maximum | Mean | Std. Deviation |
| Justifiable: Claiming government benefits to which you are not entitled | 82711 | 1 | 10 | 2.80 | 2.536 |
| Justifiable: Avoiding a fare on public transport | 83375 | 1 | 10 | 2.65 | 2.392 |
| Justifiable: Stealing property | 83763 | 1 | 10 | 1.80 | 1.769 |
| Justifiable: Cheating on taxes if you have a chance | 78750 | 1 | 10 | 2.26 | 2.131 |
| Justifiable: Someone accepting a bribe in the course of their duties | 83456 | 1 | 10 | 1.95 | 1.880 |
| Justifiable: Homosexuality | 78241 | 1 | 10 | 3.35 | 3.052 |
| Justifiable: Prostitution | 59073 | 1 | 10 | 2.85 | 2.524 |
| Justifiable: Abortion | 80687 | 1 | 10 | 3.29 | 2.771 |
| Justifiable: Divorce | 82514 | 1 | 10 | 4.63 | 3.079 |
| Justifiable: Sex before marriage | 71790 | 1 | 10 | 4.69 | 3.349 |
| Justifiable: Suicide | 82492 | 1 | 10 | 2.30 | 2.252 |
| Justifiable: Euthanasia | 40904 | 1 | 10 | 3.37 | 2.988 |
| Justifiable: For a man to beat his wife | 83683 | 1 | 10 | 2.08 | 2.032 |
| Justifiable: Parents beating children | 83688 | 1 | 10 | 2.91 | 2.575 |
| Justifiable: Violence against other people | 83652 | 1 | 10 | 1.99 | 1.912 |
| Valid N (listwise) | 28759 |  |  |  |  |

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2) Veri setinin faktörleştirilebilir olup olmadığının belirlenebilmesi için Kaiser-Meyer-Olkin ölçütünün (KMO) 0.6 ya da daha fazla olması beklenir. Bartlett testinin de 0.05 düzeyinde anlamlılığa sahip olması kontrol edilmelidir.

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| **KMO and Bartlett's Test** |
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | .908 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 223306.332 |
| df | 105 |
| Sig. | .000 |

1. İkinci adımda, kaç faktörün olluştuğunun tespiti için, Total Variance Explained sütunundaki özdeğerlerin kaç tanesinin 1 ya da daha fazla olduğuna bakılmalıdır. Aynı tabloda, bu faktör sayısıyla toplam varyansın ne kadarının açıklanabildiği de görülür.

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| **Total Variance Explained** |
| Component | Initial Eigenvalues | Extraction Sums of Squared Loadings |
| Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 5.806 | 38.709 | 38.709 | 5.806 | 38.709 | 38.709 |
| 2 | 2.702 | 18.012 | 56.721 | 2.702 | 18.012 | 56.721 |
| 3 | 1.206 | 8.043 | 64.764 | 1.206 | 8.043 | 64.764 |
| 4 | .732 | 4.879 | 69.643 |  |  |  |
| 5 | .637 | 4.247 | 73.890 |  |  |  |
| 6 | .529 | 3.527 | 77.417 |  |  |  |
| 7 | .466 | 3.108 | 80.525 |  |  |  |
| 8 | .459 | 3.063 | 83.588 |  |  |  |
| 9 | .419 | 2.794 | 86.382 |  |  |  |
| 10 | .404 | 2.691 | 89.073 |  |  |  |
| 11 | .377 | 2.512 | 91.585 |  |  |  |
| 12 | .338 | 2.254 | 93.840 |  |  |  |
| 13 | .315 | 2.100 | 95.940 |  |  |  |
| 14 | .313 | 2.085 | 98.025 |  |  |  |
| 15 | .296 | 1.975 | 100.000 |  |  |  |
| Extraction Method: Principal Component Analysis. |



1. Üçüncü adımda da, Pattern Matrix’te görülen değişkenlerin hangi faktör içerisine yerleştiği incelenir. Birden fazla faktöre yüklenen değişkenler söz konusuysa, yük miktarının 0.3’ten fazla olduğu değişkenler tercih edilebilir. Her bir bileşenin üç ya da daha fazla değişken tarafından yüklenmiş olmasına dikkat edilmelidir.

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| **Component Matrixa** |
|  | Component |
| 1 | 2 | 3 |
| Justifiable: Suicide | .715 |  |  |
| Justifiable: Prostitution | .713 | -.304 |  |
| Justifiable: Someone accepting a bribe in the course of their duties | .694 | .409 |  |
| Justifiable: Stealing property | .686 | .432 |  |
| Justifiable: Violence against other people | .682 | .369 |  |
| Justifiable: Cheating on taxes if you have a chance | .664 | .375 |  |
| Justifiable: Abortion | .663 | -.486 |  |
| Justifiable: Euthanasia | .647 | -.383 |  |
| Justifiable: Homosexuality | .611 | -.543 |  |
| Justifiable: For a man to beat his wife | .603 | .440 | .432 |
| Justifiable: Avoiding a fare on public transport | .568 | .322 | -.456 |
| Justifiable: Claiming government benefits to which you are not entitled | .471 | .355 | -.464 |
| Justifiable: Sex before marriage | .556 | -.605 |  |
| Justifiable: Divorce | .552 | -.583 |  |
| Justifiable: Parents beating children | .418 | .397 | .592 |
| Extraction Method: Principal Component Analysis. |
| a. 3 components extracted. |

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| **Pattern Matrixa** |
|  | Component |
| 1 | 2 | 3 |
| Justifiable: Avoiding a fare on public transport | .826 |  |  |
| Justifiable: Claiming government benefits to which you are not entitled | .809 |  |  |
| Justifiable: Cheating on taxes if you have a chance | .708 |  |  |
| Justifiable: Stealing property | .684 |  |  |
| Justifiable: Someone accepting a bribe in the course of their duties | .650 |  |  |
| Justifiable: Sex before marriage |  | -.851 |  |
| Justifiable: Divorce |  | -.834 |  |
| Justifiable: Homosexuality |  | -.828 |  |
| Justifiable: Abortion |  | -.817 |  |
| Justifiable: Euthanasia |  | -.725 |  |
| Justifiable: Prostitution |  | -.687 |  |
| Justifiable: Suicide |  | -.540 | .335 |
| Justifiable: Parents beating children |  |  | .875 |
| Justifiable: For a man to beat his wife |  |  | .800 |
| Justifiable: Violence against other people |  |  | .664 |
| Extraction Method: Principal Component Analysis.  Rotation Method: Oblimin with Kaiser Normalization. |
| a. Rotation converged in 8 iterations. |

**ÖRNEK 2**

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| **Descriptive Statistics** |
|  | N | Minimum | Maximum | Mean | Std. Deviation |
| Confidence: The Churches | 82229 | 1 | 4 | 2.16 | 1.017 |
| Confidence: The armed forces | 79760 | 1 | 4 | 2.17 | .918 |
| Confidence: The press | 82681 | 1 | 4 | 2.61 | .867 |
| Confidence: Television | 83379 | 1 | 4 | 2.50 | .877 |
| Confidence: Labour Unions | 73565 | 1 | 4 | 2.72 | .891 |
| Confidence: The police | 83234 | 1 | 4 | 2.38 | .937 |
| Confidence: The courts | 82098 | 1 | 4 | 2.41 | .940 |
| Confidence: The government (in your nation’s capital) | 82355 | 1 | 4 | 2.56 | .956 |
| Confidence: Political Parties | 77983 | 1 | 4 | 2.92 | .883 |
| Confidence: Parliament | 81167 | 1 | 4 | 2.72 | .937 |
| Confidence: The Civil service | 80140 | 1 | 4 | 2.57 | .890 |
| Confidence: Universities | 80440 | 1 | 4 | 2.14 | .853 |
| Confidence: Major Companies | 79470 | 1 | 4 | 2.49 | .871 |
| Confidence: Banks | 81455 | 1 | 4 | 2.42 | .928 |
| Confidence: Environmental organizations | 78383 | 1 | 4 | 2.38 | .876 |
| Confidence: Women's organizations | 76570 | 1 | 4 | 2.39 | .896 |
| Confidence: Charitable or humanitarian organizations | 79044 | 1 | 4 | 2.32 | .892 |
| Confidence: The European Union | 15126 | 1 | 4 | 2.68 | .814 |
| Valid N (listwise) | 11721 |  |  |  |  |

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| **KMO and Bartlett's Test** |
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | .926 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 108866.770 |
| df | 153 |
| Sig. | .000 |

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| **Total Variance Explained** |
| Component | Initial Eigenvalues | Extraction Sums of Squared Loadings |
| Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 7.251 | 40.282 | 40.282 | 7.251 | 40.282 | 40.282 |
| 2 | 1.582 | 8.789 | 49.071 | 1.582 | 8.789 | 49.071 |
| 3 | 1.086 | 6.031 | 55.102 | 1.086 | 6.031 | 55.102 |
| 4 | .999 | 5.549 | 60.650 |  |  |  |
| 5 | .888 | 4.932 | 65.583 |  |  |  |
| 6 | .854 | 4.742 | 70.325 |  |  |  |
| 7 | .726 | 4.032 | 74.356 |  |  |  |
| 8 | .607 | 3.374 | 77.731 |  |  |  |
| 9 | .583 | 3.237 | 80.968 |  |  |  |
| 10 | .558 | 3.098 | 84.066 |  |  |  |
| 11 | .459 | 2.551 | 86.617 |  |  |  |
| 12 | .419 | 2.326 | 88.943 |  |  |  |
| 13 | .399 | 2.216 | 91.159 |  |  |  |
| 14 | .355 | 1.972 | 93.131 |  |  |  |
| 15 | .331 | 1.840 | 94.971 |  |  |  |
| 16 | .330 | 1.833 | 96.804 |  |  |  |
| 17 | .299 | 1.661 | 98.464 |  |  |  |
| 18 | .276 | 1.536 | 100.000 |  |  |  |
| Extraction Method: Principal Component Analysis. |



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| **Rotated Component Matrixa** |
|  | Component |
| 1 | 2 | 3 |
| Confidence: The Churches |  |  | .562 |
| Confidence: The armed forces | .345 |  | .526 |
| Confidence: The press | .312 |  | .740 |
| Confidence: Television | .303 |  | .747 |
| Confidence: Labour Unions | .424 |  | .430 |
| Confidence: The police | .614 |  | .301 |
| Confidence: The courts | .676 |  |  |
| Confidence: The government (in your nation’s capital) | .778 |  |  |
| Confidence: Political Parties | .758 |  |  |
| Confidence: Parliament | .800 |  |  |
| Confidence: The Civil service | .638 | .371 |  |
| Confidence: Universities |  | .586 |  |
| Confidence: Major Companies |  | .576 |  |
| Confidence: Banks |  | .534 |  |
| Confidence: Environmental organizations |  | .787 |  |
| Confidence: Women's organizations |  | .784 |  |
| Confidence: Charitable or humanitarian organizations |  | .771 |  |
| Confidence: The European Union |  | .501 |  |
| Extraction Method: Principal Component Analysis.  Rotation Method: Varimax with Kaiser Normalization. |
| a. Rotation converged in 5 iterations. |

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| **Pattern Matrixa** |
|  | Component |
| 1 | 2 | 3 |
| Confidence: The Churches |  |  | .603 |
| Confidence: The armed forces |  |  | .501 |
| Confidence: The press |  |  | .750 |
| Confidence: Television |  |  | .764 |
| Confidence: Labour Unions | .330 |  | .355 |
| Confidence: The police | .601 |  |  |
| Confidence: The courts | .670 |  |  |
| Confidence: The government (in your nation’s capital) | .812 |  |  |
| Confidence: Political Parties | .798 |  |  |
| Confidence: Parliament | .831 |  |  |
| Confidence: The Civil service | .606 |  |  |
| Confidence: Universities |  | .572 |  |
| Confidence: Major Companies |  | .544 |  |
| Confidence: Banks |  | .495 |  |
| Confidence: Environmental organizations |  | .842 |  |
| Confidence: Women's organizations |  | .845 |  |
| Confidence: Charitable or humanitarian organizations |  | .834 |  |
| Confidence: The European Union |  | .497 |  |
| Extraction Method: Principal Component Analysis.  Rotation Method: Oblimin with Kaiser Normalization. |
| a. Rotation converged in 6 iterations. |