# The FACTOR Procedure

| Input Data Type | Raw Data |
|---|---|
| **Number of Records Read** | 25439 |
| **Number of Records Used** | 13318 |
| **N for Significance Tests** | 13318 |

# The FACTOR Procedure
## Initial Factor Method: Principal Components

| Partial Correlations Controlling all other Variables | | | | |
|---|---|---|---|---|
| | buy_online | more_shopping_internet | internet_chnge_shop | buy_friend_rec_prod |
| buy_online | 1.00000 | 0.46582 | 0.11691 | 0.00814 |
| more_shopping_internet | 0.46582 | 1.00000 | 0.48979 | 0.03233 |
| internet_chnge_shop | 0.11691 | 0.48979 | 1.00000 | 0.09289 |
| buy_friend_rec_prod | 0.00814 | 0.03233 | 0.09289 | 1.00000 |
| buy_ad_prod_on_social | 0.05369 | -0.01159 | 0.01039 | 0.41697 |
| trust_prod_info | 0.05237 | -0.01444 | -0.01474 | 0.29923 |

| Partial Correlations Controlling all other Variables | | |
|---|---|---|
| | buy_ad_prod_on_social | trust_prod_info |
| buy_online | 0.05369 | 0.05237 |
| more_shopping_internet | -0.01159 | -0.01444 |
| internet_chnge_shop | 0.01039 | -0.01474 |
| buy_friend_rec_prod | 0.41697 | 0.29923 |
| buy_ad_prod_on_social | 1.00000 | 0.32784 |
| trust_prod_info | 0.32784 | 1.00000 |

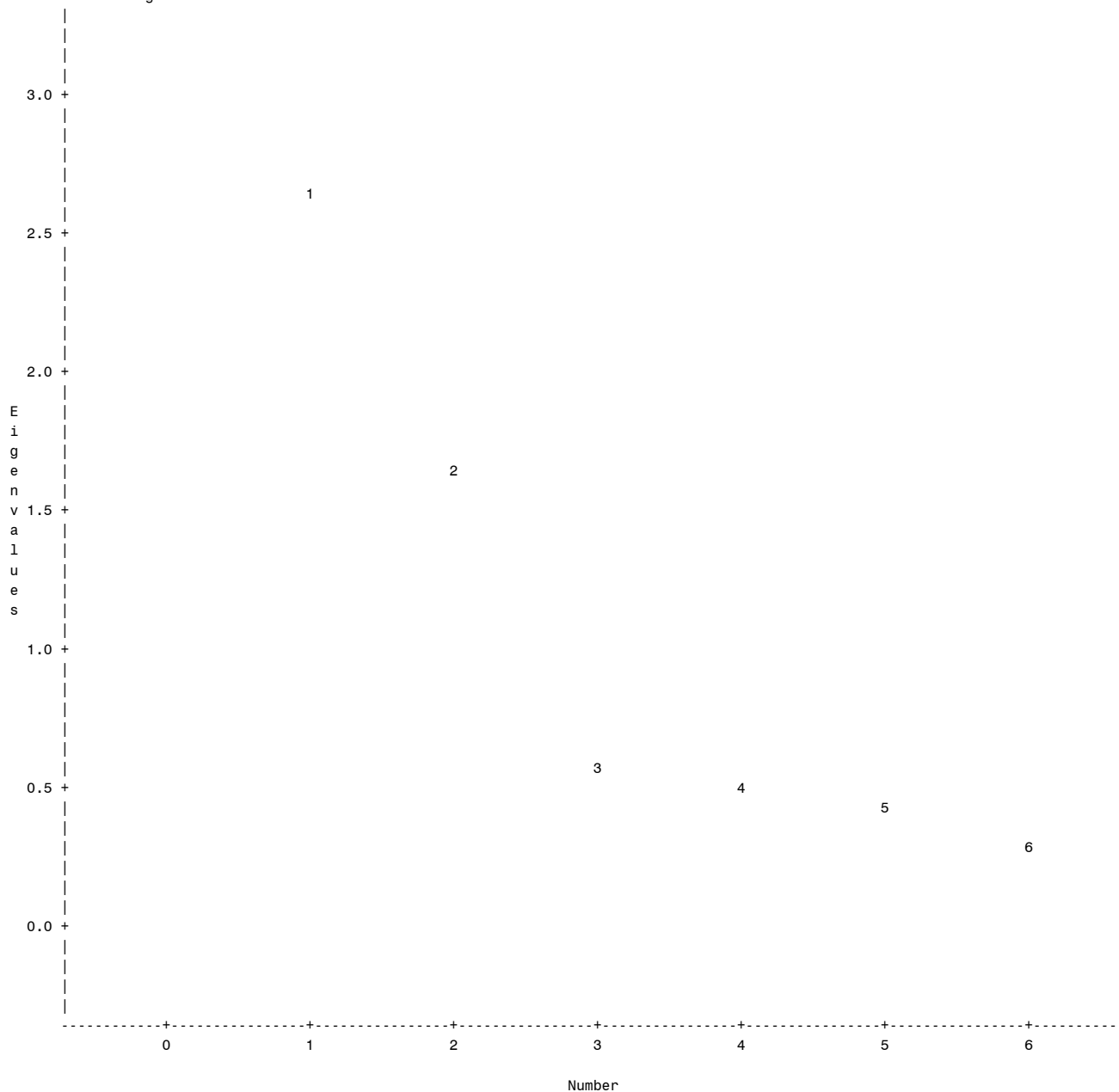| Kaiser's Measure of Sampling Adequacy: Overall MSA = 0.71751044 | | | | | |
|---|---|---|---|---|---|
| buy_online | more_shopping_internet | internet_chnge_shop | buy_friend_rec_prod | buy_ad_prod_on_social | trust_prod_info |
| 0.74819939 | 0.65213468 | 0.73122776 | 0.73214165 | 0.71542581 | 0.75547946 |

## The FACTOR Procedure
## Initial Factor Method: Principal Components

### Prior Communality Estimates: ONE

| | Eigenvalues of the Correlation Matrix: Total = 6  Average = 1 | | | |
|---|---|---|---|---|
| | Eigenvalue | Difference | Proportion | Cumulative |
| **1** | 2.62651745 | 0.99156036 | 0.4378 | 0.4378 |
| **2** | 1.63495708 | 1.09262477 | 0.2725 | 0.7102 |
| **3** | 0.54233231 | 0.06518145 | 0.0904 | 0.8006 |
| **4** | 0.47715086 | 0.07365520 | 0.0795 | 0.8802 |
| **5** | 0.40349566 | 0.08794902 | 0.0672 | 0.9474 |
| **6** | 0.31554664 | | 0.0526 | 1.0000 |

**2 factors will be retained by the NFACTOR criterion.**

```
Scree Plot of Eigenvalues
        |
        |
        |
        |
    3.0 +
        |
        |
        |
        |
        |                       1
        |
    2.5 +
        |
        |
        |
        |
        |
        |
    2.0 +
        |
 E      |
 i      |
 g      |
 e      |                  2
 n      |
 v  1.5 +
 a      |
 l      |
 u      |
 e      |
 s      |
        |
    1.0 +
        |
        |
        |
        |
        |
        |                       3
    0.5 +                              4
        |                                   5
        |
        |                                        6
        |
        |
        |
    0.0 +
        |
        |
        |
        |
        -----------+---------------+---------------+---------------+---------------+---------------+---------------+----------
                   0               1               2               3               4               5               6

                                                    Number
```

**The FACTOR Procedure**
**Initial Factor Method: Principal Components**

| Factor Pattern | Factor1 | Factor2 |
|---|---|---|
| buy_online | 0.67201 | -0.46201 |
| more_shopping_internet | 0.69775 | -0.56309 |
| internet_chnge_shop | 0.66724 | -0.49047 |
| buy_friend_rec_prod | 0.68152 | 0.49396 |
| buy_ad_prod_on_social | 0.64637 | 0.55329 |
| trust_prod_info | 0.60050 | 0.56013 |

| Variance Explained by Each Factor | |
|---|---|
| Factor1 | Factor2 |
| 2.6265174 | 1.6349571 |

| Final Communality Estimates: Total = 4.261475 | | | | | |
|---|---|---|---|---|---|
| buy_online | more_shopping_internet | internet_chnge_shop | buy_friend_rec_prod | buy_ad_prod_on_social | trust_prod_info |
| 0.66504660 | 0.80393017 | 0.68576559 | 0.70846487 | 0.72392008 | 0.67434723 |

**The FACTOR Procedure**
**Rotation Method: Varimax**

| Orthogonal Transformation Matrix | | |
|---|---|---|
| | **1** | **2** |
| **1** | 0.72738 | 0.68623 |
| **2** | -0.68623 | 0.72738 |

| Rotated Factor Pattern | | |
|---|---|---|
| | **Factor1** | **Factor2** |
| **buy_online** | 0.80585 | 0.12510 |
| **more_shopping_internet** | 0.89394 | 0.06924 |
| **internet_chnge_shop** | 0.82191 | 0.10113 |
| **buy_friend_rec_prod** | 0.15675 | 0.82698 |
| **buy_ad_prod_on_social** | 0.09047 | 0.84601 |
| **trust_prod_info** | 0.05241 | 0.81951 |

| Variance Explained by Each Factor | |
|---|---|
| **Factor1** | **Factor2** |
| 2.1595748 | 2.1018997 |

| Final Communality Estimates: Total = 4.261475 | | | | | |
|---|---|---|---|---|---|
| **buy_online** | **more_shopping_internet** | **internet_chnge_shop** | **buy_friend_rec_prod** | **buy_ad_prod_on_social** | **trust_prod_info** |
| 0.66504660 | 0.80393017 | 0.68576559 | 0.70846487 | 0.72392008 | 0.67434723 |

**The FACTOR Procedure**
**Rotation Method: Varimax**

**Scoring Coefficients Estimated by Regression**

| Squared Multiple Correlations of the Variables with Each Factor | |
|---|---|
| Factor1 | Factor2 |
| 1.0000000 | 1.0000000 |

| Standardized Scoring Coefficients | | |
|---|---|---|
| | Factor1 | Factor2 |
| buy_online | 0.38002 | -0.02997 |
| more_shopping_internet | 0.42958 | -0.06821 |
| internet_chnge_shop | 0.39065 | -0.04387 |
| buy_friend_rec_prod | -0.01859 | 0.39782 |
| buy_ad_prod_on_social | -0.05323 | 0.41503 |
| trust_prod_info | -0.06880 | 0.40609 |

## The HPCLUS Procedure

| Performance Information | |
|---|---|
| **Execution Mode** | Single-Machine |
| **Number of Threads** | 4 |

| Data Access Information | | | |
|---|---|---|---|
| **Data** | **Engine** | **Role** | **Path** |
| **WORK.MYSCORES1** | V9 | Input | On Client |
| **WORK.MYCLUSTER** | V9 | Output | On Client |

| Model Information | |
|---|---|
| **Maximum Iteration** | 100 |
| **Stop Criterion** | Cluster Change |
| **Stop Criterion Value** | 0 |
| **Clusters** | 3 |
| **Seed Initialization** | 12345 |
| **Distance** | Euclidean |
| **Number of Cluster Estimation** | ABC |

| | |
|---|---|
| **Number of Observations Read** | 25439 |
| **Number of Observations Used** | 12666 |

## The HPCLUS Procedure

| ABC Parameters | | | |
|---|---|---|---|
| **Minimum Cluster** | **Maximum Cluster** | **Reference Distribution Count** | **Alignment Method** |
| 2 | 6 | 20 | PCA |

| ABC Statistics | | | | | |
|---|---|---|---|---|---|
| | **Logarithm of Within-Cluster SSE** | | | | |
| **Number of Clusters** | **Input** | **Reference** | **Gap** | **Simulation Adjusted Standard Deviation** | **One Standard Error Adjusted Gap** |
| 2 | 11.3361 | 12.5551 | 1.2190 | 0.0106 | 1.2084 |
| 3 | 11.1520 | 12.3976 | 1.2457 | 0.00681 | 1.2388 |
| 4 | 11.0706 | 12.2516 | 1.1810 | 0.00728 | 1.1737 |
| 5 | 11.0019 | 12.2411 | 1.2391 | 0.00538 | 1.2338 |
| 6 | 10.9519 | 12.1560 | 1.2041 | 0.00493 | 1.1992 |

| Estimated Number of Clusters | |
|---|---|
| **Criterion** | **Number of Clusters** |
| **GLOBALPEAK** | 3 |

| Cluster Summary | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **Distance from Cluster Centroid to Observation** | | | | | | |
| **Cluster** | **Frequency** | **Maximum** | **Minimum** | **Average** | **SSE** | **Standard Deviation** | **Nearest Cluster** | **Distance to Nearest Cluster Centroid** |
| 1 | 4070 | 5.4206 | 0.5952 | 2.1990 | 21527.3 | 2.2998 | 3 | 2.5883 |
| 2 | 4929 | 5.4890 | 0.8376 | 2.1807 | 25670.7 | 2.2821 | 3 | 2.2096 |
| 3 | 3667 | 6.5297 | 0.6065 | 2.3670 | 22504.7 | 2.4773 | 2 | 2.2096 |

**The HPCLUS Procedure**

| Iteration Statistics | |
|---|---|
| **Iteration Number** | **SSE** |
| **0** | 108600 |
| **1** | 78849 |
| **2** | 74827 |
| **3** | 72123 |
| **4** | 70661 |
| **5** | 70075 |
| **6** | 69843 |
| **7** | 69766 |
| **8** | 69741 |
| **9** | 69730 |
| **10** | 69726 |
| **11** | 69724 |
| **12** | 69722 |
| **13** | 69719 |
| **14** | 69717 |
| **15** | 69713 |
| **16** | 69709 |
| **17** | 69707 |
| **18** | 69705 |
| **19** | 69704 |
| **20** | 69703 |
| **21** | 69703 |
| **22** | 69703 |
| **23** | 69703 |
| **24** | 69703 |
| **25** | 69703 |
| **26** | 69703 |
| **27** | 69703 |

## The HPCLUS Procedure

| Descriptive Statistics | | |
|---|---|---|
| **Variable** | **Mean** | **Standard Deviation** |
| **onlineshopper** | 0.008428 | 0.995278 |
| **socialmedia** | 0.000705 | 0.999703 |
| **clothes_last_long_time** | 4.354571 | 0.857867 |
| **buy_clothes_dont_need** | 2.415522 | 1.299036 |
| **attractive_to_others** | 3.785094 | 1.031866 |
| **disc_clothes_good** | 3.606664 | 1.125956 |
| **dress_to_please_myself** | 4.235354 | 0.916464 |

| Within Cluster Statistics | | | |
|---|---|---|---|
| **Variable** | **Cluster** | **Mean** | **Standard Deviation** |
| **onlineshopper** | 1 | 0.1151 | 2.3584 |
|  | 2 | -0.0325 | 2.2883 |
|  | 3 | -0.0550 | 2.0337 |
| **socialmedia** | 1 | 0.3480 | 2.5224 |
|  | 2 | -0.2043 | 2.1379 |
|  | 3 | -0.1092 | 1.8426 |
| **clothes_last_long_time** | 1 | 4.3300 | 10.0798 |
|  | 2 | 4.6427 | 8.8504 |
|  | 3 | 3.9945 | 7.4827 |
| **buy_clothes_dont_need** | 1 | 3.9147 | 6.8680 |
|  | 2 | 1.3889 | 3.7889 |
|  | 3 | 2.1314 | 3.5703 |
| **attractive_to_others** | 1 | 4.1867 | 9.0796 |
|  | 2 | 3.5841 | 7.3494 |
|  | 3 | 3.6095 | 6.4796 |
| **disc_clothes_good** | 1 | 3.9349 | 9.4430 |
|  | 2 | 4.2504 | 7.5734 |
|  | 3 | 2.3771 | 4.7101 |
| **dress_to_please_myself** | 1 | 4.4258 | 9.8513 |
|  | 2 | 4.4123 | 8.5559 |
|  | 3 | 3.7862 | 7.2730 |