

Multivariate exploration of the questionnaire and typology of the surveyed people

The results are provided by the
EnQUIRE package

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1 Quick overview of the questionnaire

The analysis was performed on 108 individuals described by 22 variables:

- Kind.of.music (blues , classic , hard rock , other , pop , rap , rock)
- Musical.knowledge (average , high , low , very low)
- Kind.of.material (cheap sound system , computer , High quality sound system , mp3 player)
- How.many.new.bands.by.month (0 or 1 , 2 to 5 , more 5)
- New.bands.from.friends (very few , few , average , quite a lot , a lot)
- New.bands.from.websites (very few , few , average , quite a lot , a lot)
- New.bands.from.radio (very few , few , average , quite a lot , a lot)
- New.bands.from.tv.shows (very few , few , average , quite a lot , a lot)
- New.bands.from.magazines (very few , few , average , quite a lot)
- New.bands.from.parents (very few , few , average , quite a lot , a lot)
- New.bands.from.posters (very few , few , average , quite a lot , a lot)
- New.bands.from.movies (very few , few , average , quite a lot , a lot)
- New.bands.from.concerts (very few , few , average , quite a lot , a lot)
- go.to.concert.of.known.bands (very few , few , average , quite a lot , a lot)
- Budget (0-10 euros , 10-30euros)
- listen.to.whole.album (no , yes)
- Why (As a background sound , Attentive listening of the track , other , to relax , Working, to be motivated)
- Play.an.instrument (no , yes alone , yes in a band)
- Go.to.enough.concerts (no , yes)
- AGE (15-18 , 19-25 , 36 and more)
- SEX (F , M)
- SPC (manager , student)

Moreover, the dataset contained 0.01% of missing values.

2 Multivariate exploration of the questionnaire

2.1 Graphical representations of the questionnaire

The following results are obtained by performing a Multiple Correspondence Analysis (MCA) on the previous 22 variables. This method provides two important graphical displays, a representation of the individuals (surveyed people) and a representation of the categories (answers given by the surveyed people). The first two main axes of variability explain 10.23% of the information contained in the dataset (5.35% for the first factorial axis and 4.88% for the second one). In some cases the analyst may want to introduce supplementary quantitative variables.

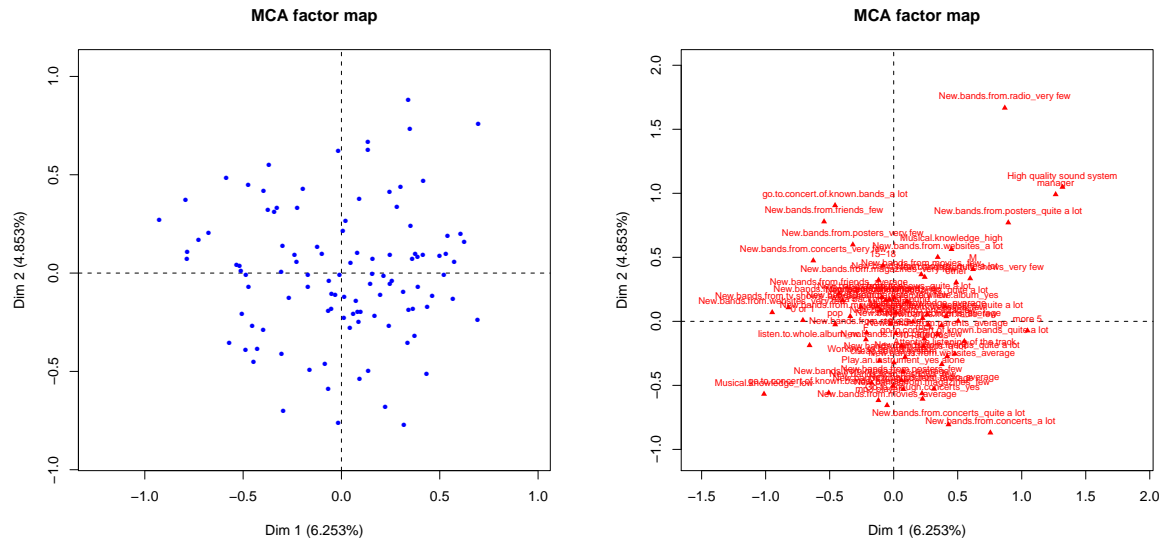


Figure 1: Representations of the individuals and of the categories on axes 1 and 2

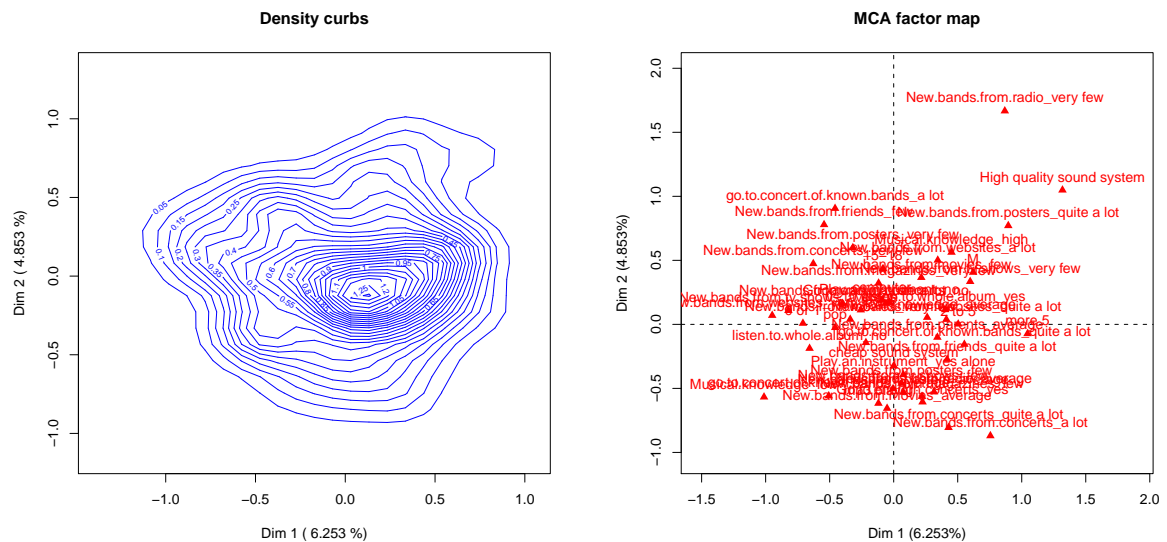


Figure 2: Representation of the individuals using density curbs and enhanced representation of the categories

2.2 Highlights on the two principal axes of variability

2.2.1 Characterization of the first factorial axis

The most meaningful variables characterizing the first factorial axis are:

- How.many.new.bands.by.month
- Musical.knowledge
- New.bands.from.websites
- New.bands.from.concerts
- listen.to.whole.album
- go.to.concert.of.known.bands
- New.bands.from.friends
- New.bands.from.tv.shows
- New.bands.from.posters
- Kind.of.material
- Kind.of.music
- SEX
- Budget
- New.bands.from.radio
- Play.an.instrument

The most meaningful categories characterizing the positive side of the first axis are:

- Musical.knowledge_high
 - Contribution: 2.04
 - V-Test: 3.06
 - Frequency in the population: 17.59 %
- listen.to.whole.album_yes
 - Contribution: 2.24
 - V-Test: 4.73
 - Frequency in the population: 62.04 %
- New.bands.from.friends_quite a lot
 - Contribution: 2.07
 - V-Test: 3.53
 - Frequency in the population: 37.04 %
- Musical.knowledge_average
 - Contribution: 0.66
 - V-Test: 2.42
 - Frequency in the population: 57.41 %
- New.bands.from.tv.shows_very few

- Contribution: 2.79
- V-Test: 3.95
- Frequency in the population: 32.41 %
- more 5
 - Contribution: 1.63
 - V-Test: 2.57
 - Frequency in the population: 6.48 %
- High quality sound system
 - Contribution: 3.75
 - V-Test: 3.89
 - Frequency in the population: 6.48 %
- go.to.concert.of.known.bands_quite a lot
 - Contribution: 3.49
 - V-Test: 4.8
 - Frequency in the population: 42.59 %
- Play.an.instrument_yes in a band
 - Contribution: 1.72
 - V-Test: 2.57
 - Frequency in the population: 1.85 %
- M
 - Contribution: 1.77
 - V-Test: 3.01
 - Frequency in the population: 25.93 %

The most meaningful categories characterizing the negative side of the first axis are:

- New.bands.from.websites_very few
 - Contribution: 6.59
 - V-Test: -5.84
 - Frequency in the population: 26.85 %
- 0 or 1
 - Contribution: 5.38
 - V-Test: -6.05
 - Frequency in the population: 44.44 %
- New.bands.from.concerts_very few
 - Contribution: 5.03
 - V-Test: -5.31
 - Frequency in the population: 32.41 %
- listen.to.whole.album_no
 - Contribution: 3.67
 - V-Test: -4.73

- Frequency in the population: 37.96 %
- Musical.knowledge_very low
 - Contribution: 3.46
 - V-Test: -3.67
 - Frequency in the population: 2.78 %
- New.bands.from.posters_very few
 - Contribution: 1.94
 - V-Test: -3.34
 - Frequency in the population: 34.26 %
- Kind.of.music_pop
 - Contribution: 2.27
 - V-Test: -3.77
 - Frequency in the population: 39.81 %
- New.bands.from.friends_very few
 - Contribution: 3.49
 - V-Test: -3.72
 - Frequency in the population: 4.63 %
- 0-10 euros
 - Contribution: 1.17
 - V-Test: -3.3
 - Frequency in the population: 59.26 %
- go.to.concert.of.known.bands_very few
 - Contribution: 2.61
 - V-Test: -3.2
 - Frequency in the population: 3.7 %

2.2.2 Characterization on the second factorial axis

The most meaningful variables characterizing the second factorial axis are:

- New.bands.from.tv.shows
- New.bands.from.radio
- go.to.concert.of.known.bands
- Kind.of.music
- Musical.knowledge
- SEX
- New.bands.from.posters
- Why
- New.bands.from.parents
- Kind.of.material

- New.bands.from.magazines
- New.bands.from.friends
- Play.an.instrument
- listen.to.whole.album

The most meaningful categories characterizing the positive side of the second axis are:

- New.bands.from.tv.shows_a lot
 - Contribution: 7.15
 - V-Test: 5.02
 - Frequency in the population: 1.85 %
- New.bands.from.radio_very few
 - Contribution: 6.73
 - V-Test: 4.96
 - Frequency in the population: 5.56 %
- go.to.concert.of.known.bands_very few
 - Contribution: 5.68
 - V-Test: 4.51
 - Frequency in the population: 3.7 %
- Why_other
 - Contribution: 6.16
 - V-Test: 4.66
 - Frequency in the population: 1.85 %
- M
 - Contribution: 4.28
 - V-Test: 4.47
 - Frequency in the population: 25.93 %
- New.bands.from.parents_very few
 - Contribution: 1.43
 - V-Test: 3.33
 - Frequency in the population: 55.56 %
- Musical.knowledge_very low
 - Contribution: 2.56
 - V-Test: 3.02
 - Frequency in the population: 2.78 %
- Play.an.instrument_yes in a band
 - Contribution: 1.93
 - V-Test: 2.6
 - Frequency in the population: 1.85 %
- New.bands.from.magazines_very few

- Contribution: 2.09
- V-Test: 4.03
- Frequency in the population: 55.56 %
- **New.bands.from.friends_very_few**
 - Contribution: 3.15
 - V-Test: 3.38
 - Frequency in the population: 4.63 %

The most meaningful categories characterizing the negative side of the second axis are:

- **New.bands.from.radio_average**
 - Contribution: 2.29
 - V-Test: -3.21
 - Frequency in the population: 23.15 %
- **Musical.knowledge_low**
 - Contribution: 4.18
 - V-Test: -4.31
 - Frequency in the population: 22.22 %
- **New.bands.from.tv.shows_average**
 - Contribution: 0.95
 - V-Test: -2.08
 - Frequency in the population: 24.07 %
- **New.bands.from.tv.shows_few**
 - Contribution: 0.73
 - V-Test: -1.9
 - Frequency in the population: 30.56 %
- **F**
 - Contribution: 1.5
 - V-Test: -4.47
 - Frequency in the population: 74.07 %
- **go.to.concert.of.known.bands_average**
 - Contribution: 4.3
 - V-Test: -4.42
 - Frequency in the population: 24.07 %
- **New.bands.from.posters_average**
 - Contribution: 2.3
 - V-Test: -3.17
 - Frequency in the population: 21.3 %
- **Kind.of.music_blues**
 - Contribution: 2.2

- V-Test: -2.77
 - Frequency in the population: 0.93 %
- `New.bands.from.tv.shows_quite a lot`
 - Contribution: 0.3
 - V-Test: -1.07
 - Frequency in the population: 11.11 %
- `Why_to relax`
 - Contribution: 0.05
 - V-Test: -0.63
 - Frequency in the population: 53.7 %

3 Typology on the individuals

3.1 Choice of the number of clusters

The ascendant hierarchical clustering (AHC) lead to a partition made of 4 clusters. Those clusters are displayed in the following representations: a graphical representation of the individuals according to the cluster they belong to, a representation of the center of gravity of each group enhanced by a confidence ellipse, a representation of the individuals according to the cluster they belong to by the use of density curbs.

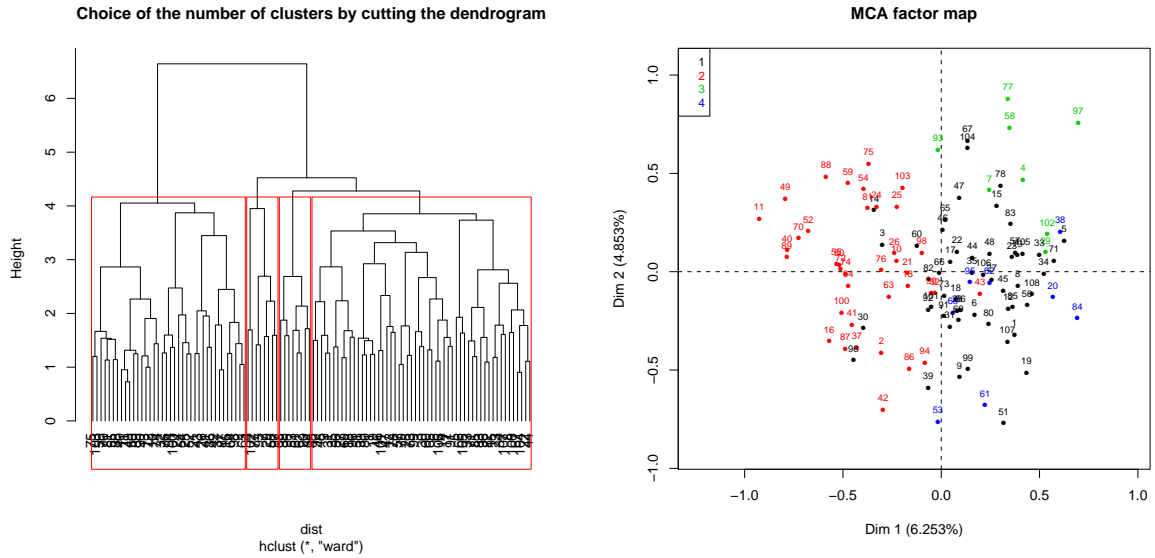


Figure 3: Number of clusters chosen by the analyst; representation of the individuals according to their cluster

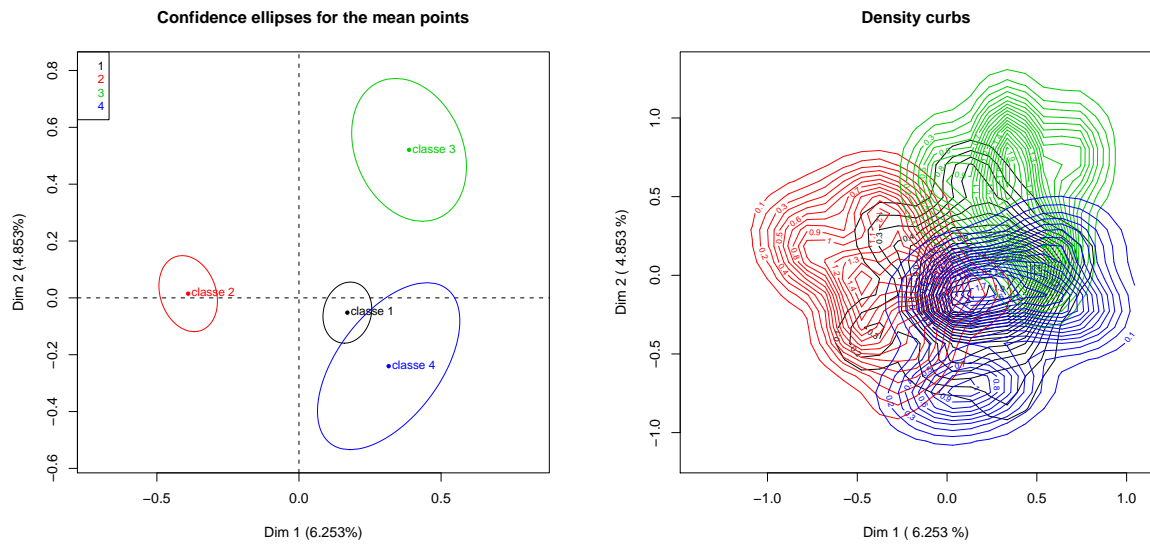


Figure 4: Centers of gravity with confidence ellipses; representation of the individuals according to their cluster with density curbs

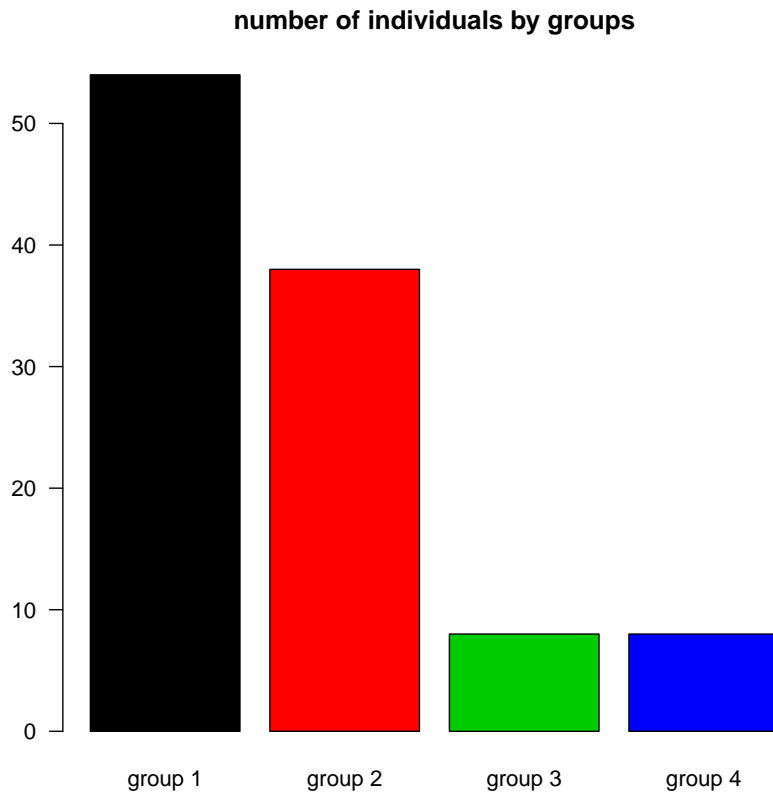


Figure 5: Number of individuals per cluster

3.2 Simultaneous comparison of the clusters with respect with the most relevant variables

3.2.1 Number of individuals by cluster for the variable New.bands.from.concerts

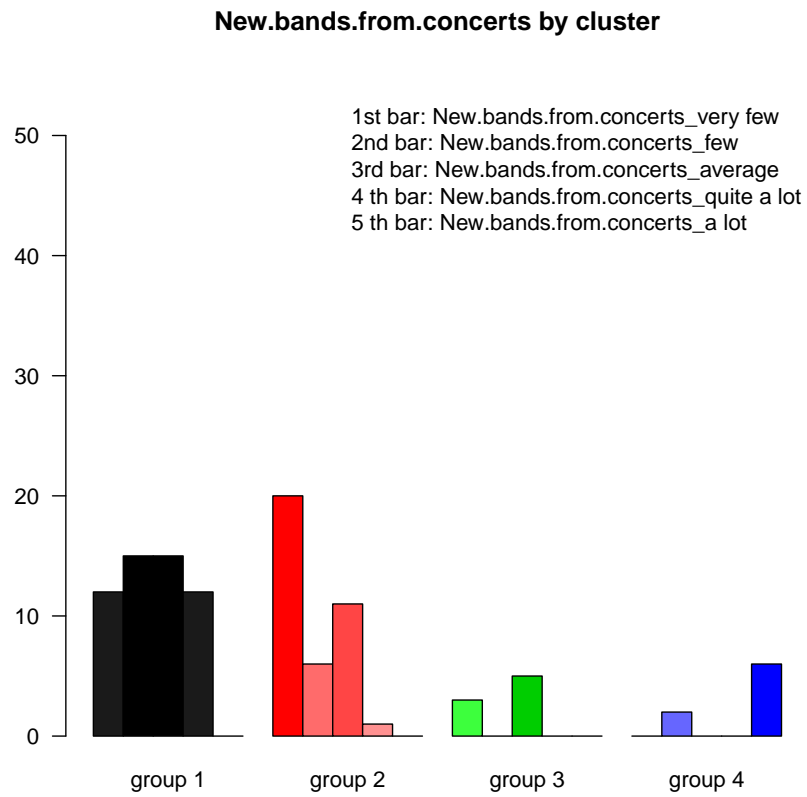


Figure 6: Variable New.bands.from.concerts

3.2.2 Number of individuals by cluster for the variable Kind.of.material

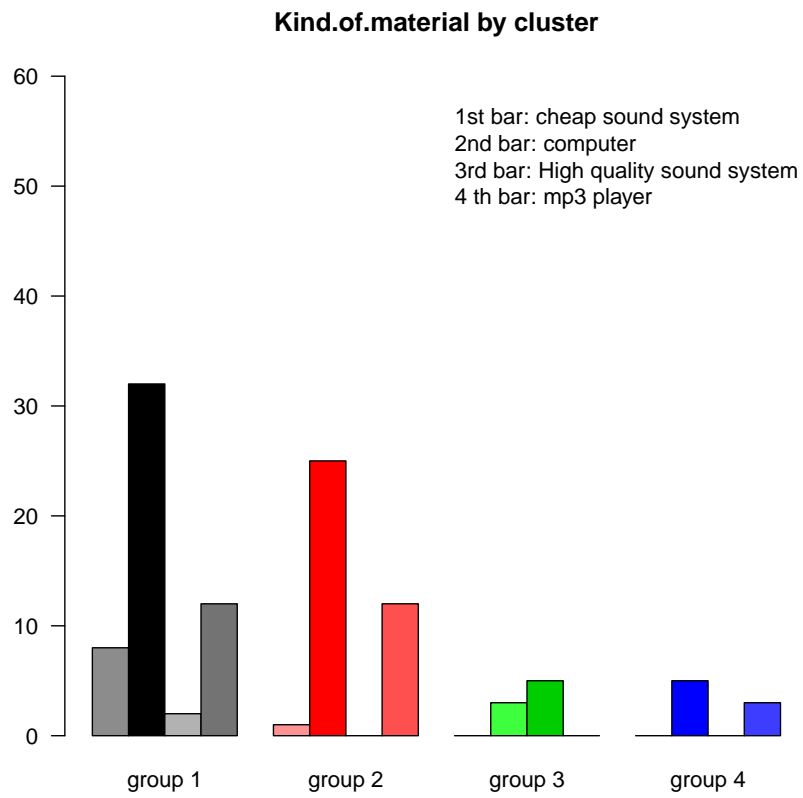


Figure 7: Variable Kind.of.material

3.2.3 Number of individuals by cluster for the variable New.bands.from.websites

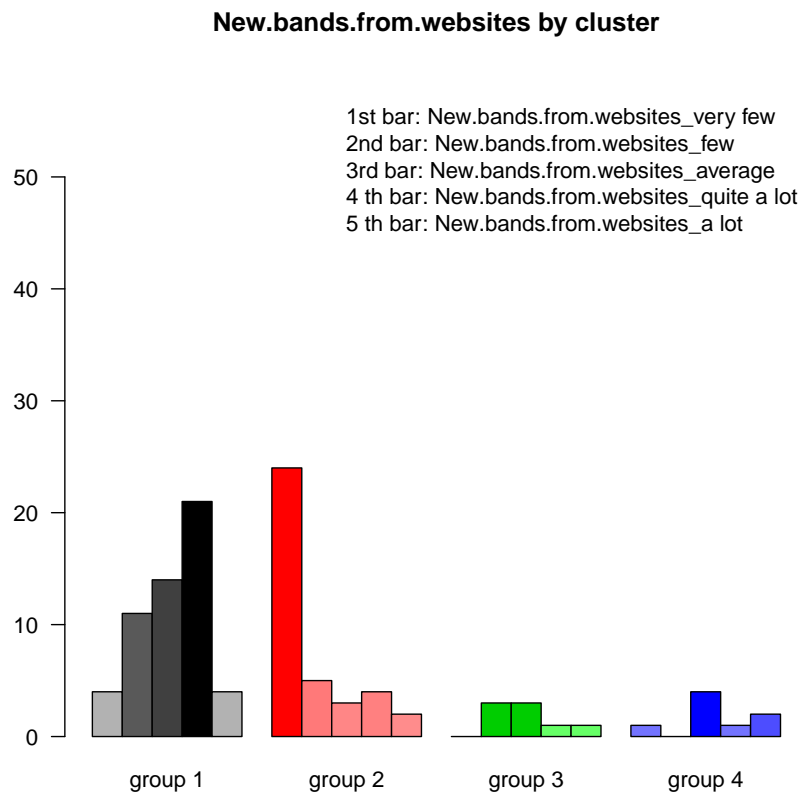


Figure 8: Variable New.bands.from.websites

3.2.4 Number of individuals by cluster for the variable New.bands.from.radio

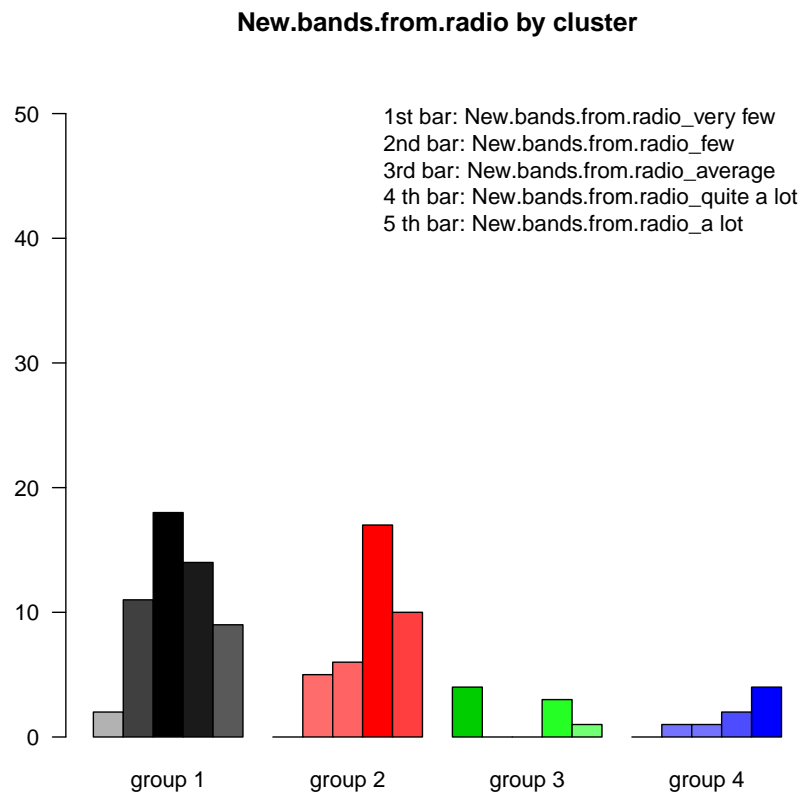


Figure 9: Variable New.bands.from.radio

3.2.5 Number of individuals by cluster for the variable SPC

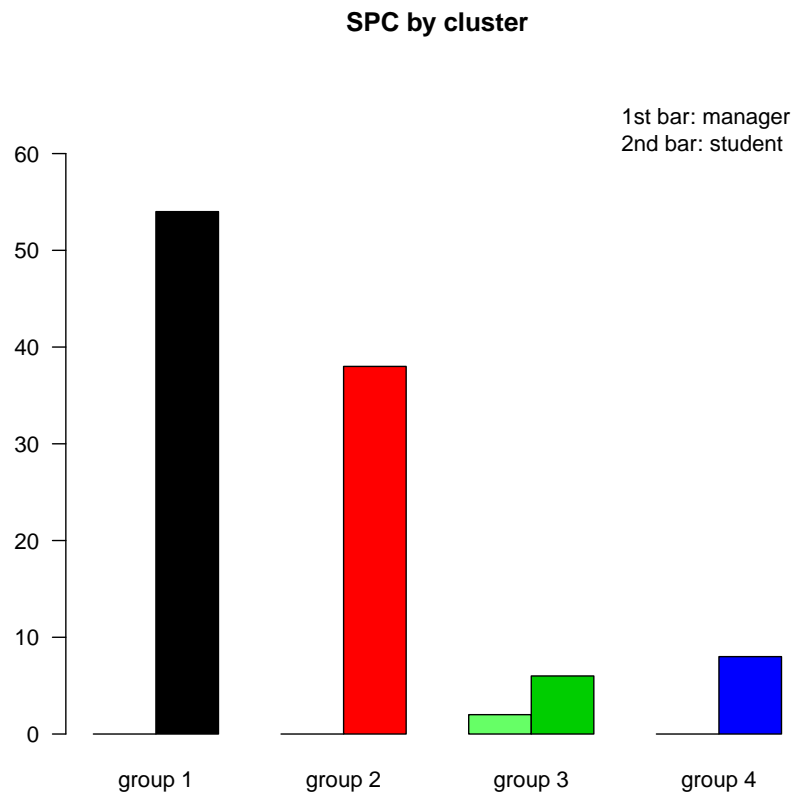


Figure 10: Variable SPC

3.2.6 Number of individuals by cluster for the variable
How.many.new.bands.by.month

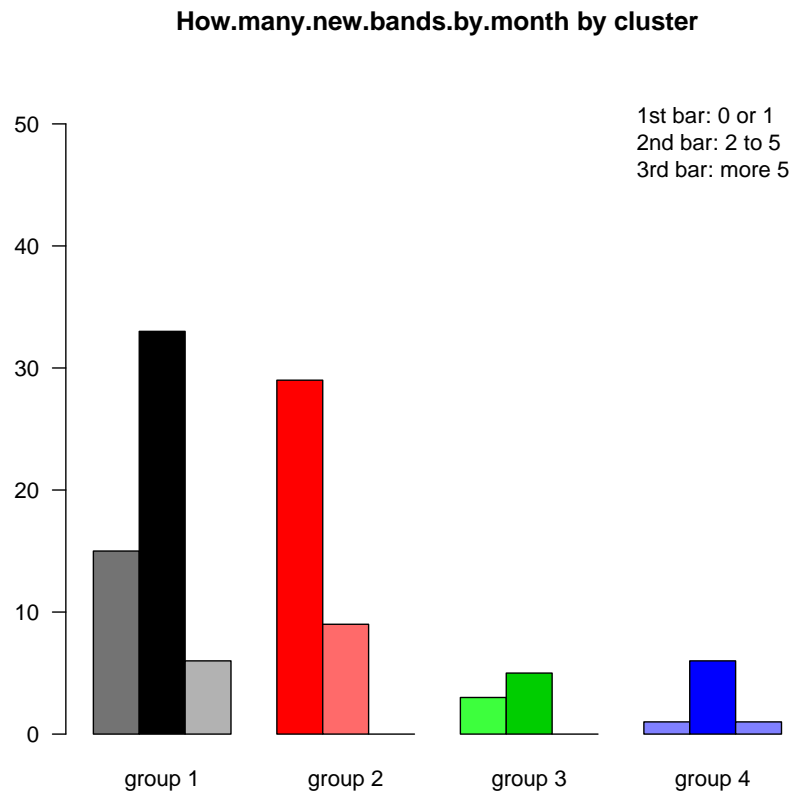


Figure 11: Variable How.many.new.bands.by.month

3.2.7 Number of individuals by cluster for the variable listen.to.whole.album

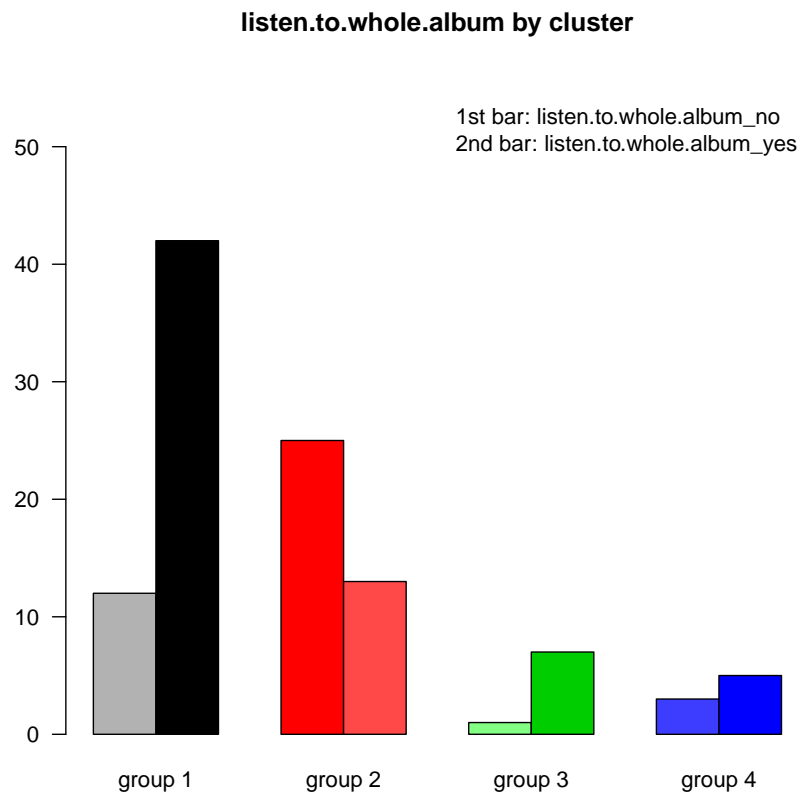


Figure 12: Variable listen.to.whole.album

3.2.8 Number of individuals by cluster for the variable New.bands.from.posters

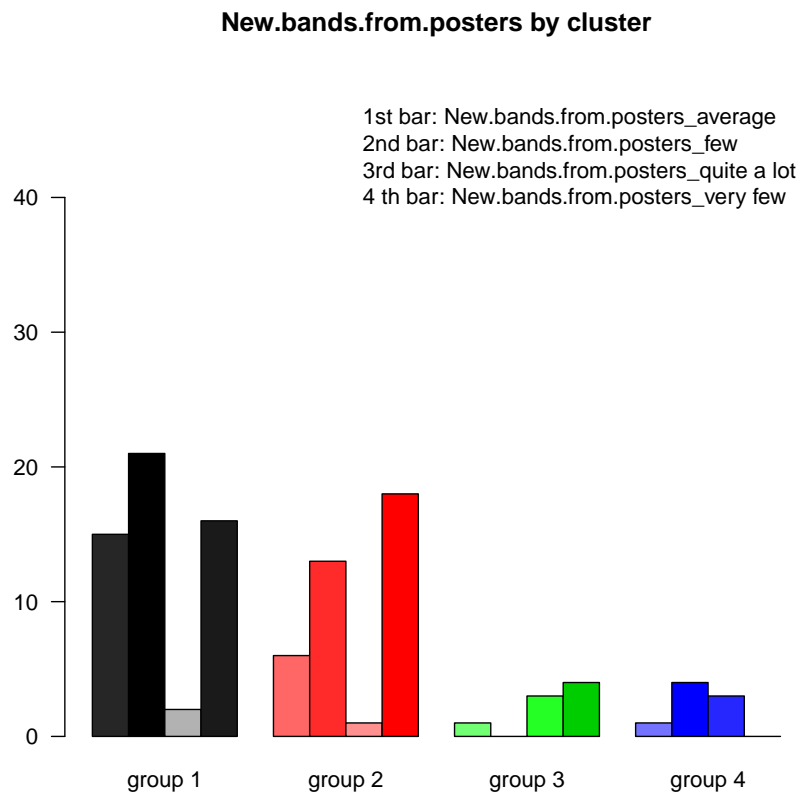


Figure 13: Variable New.bands.from.posters

3.2.9 Number of individuals by cluster for the variable New.bands.from.tv.shows

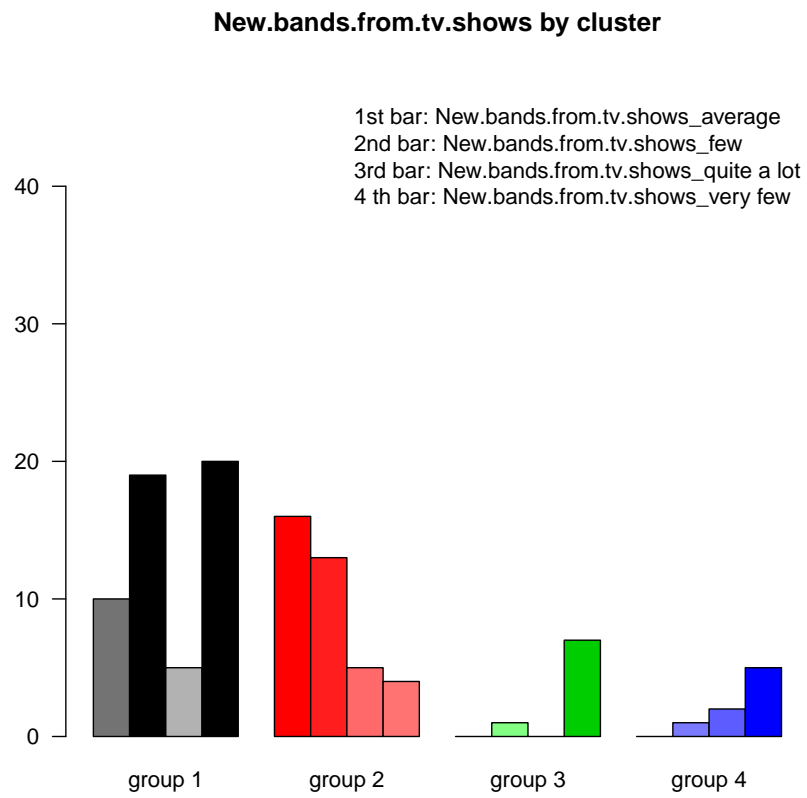


Figure 14: Variable New.bands.from.tv.shows

3.2.10 Number of individuals by cluster for the variable Go.to.enough.concerts

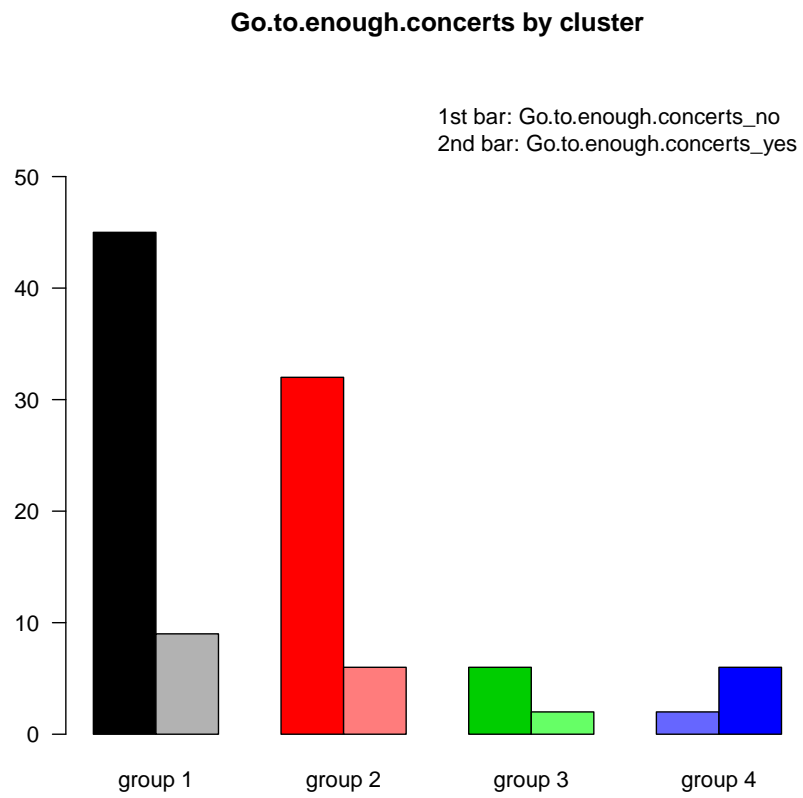


Figure 15: Variable Go.to.enough.concerts

3.3 Automatic description of each cluster

The cluster 1 (54 individuals) includes the individuals possessing the following categories:

- `listen.to.whole.album=listen.to.whole.album_yes`
62.04 % of the individuals possess this category in the global population versus 77.78 % in the cluster 1 .
Moreover, 62.69 % of the individuals possessing this category belong to the cluster 1 .
- `New.bands.from.websites=New.bands.from.websites_quite a lot`
25 % of the individuals possess this category in the global population versus 38.89 % in the cluster 1 .
Moreover, 77.78 % of the individuals possessing this category belong to the cluster 1 .
- `New.bands.from.concerts=New.bands.from.concerts_quite a lot`
12.04 % of the individuals possess this category in the global population versus 22.22 % in the cluster 1 .
Moreover, 92.31 % of the individuals possessing this category belong to the cluster 1 .
- `New.bands.from.friends=New.bands.from.friends_quite a lot`
37.04 % of the individuals possess this category in the global population versus 51.85 % in the cluster 1 .
Moreover, 70 % of the individuals possessing this category belong to the cluster 1 .
- `go.to.concert.of.known.bands=go.to.concert.of.known.bands_quite a lot`
45.37 % of the individuals possess this category in the global population versus 59.26 % in the cluster 1 .
Moreover, 65.31 % of the individuals possessing this category belong to the cluster 1 .
- `Musical.knowledge=Musical.knowledge_average`
59.26 % of the individuals possess this category in the global population versus 72.22 % in the cluster 1 .
Moreover, 60.94 % of the individuals possessing this category belong to the cluster 1 .
- `How.many.new.bands.by.month=2 to 5`
49.07 % of the individuals possess this category in the global population versus 61.11 % in the cluster 1 .
Moreover, 62.26 % of the individuals possessing this category belong to the cluster 1 .
- `New.bands.from.radio=New.bands.from.radio_average`
23.15 % of the individuals possess this category in the global population versus 33.33 % in the cluster 1 .
Moreover, 72 % of the individuals possessing this category belong to the cluster 1 .
- `Kind.of.material=cheap sound system`
8.33 % of the individuals possess this category in the global population versus 14.81 % in the cluster 1 .
Moreover, 88.89 % of the individuals possessing this category belong to the cluster 1 .

The cluster 2 (38 individuals) includes the individuals possessing the following categories:

- **New.bands.from.websites=New.bands.from.websites_very few**
26.85 % of the individuals possess this category in the global population versus 63.16 % in the cluster 2 .
Moreover, 82.76 % of the individuals possessing this category belong to the cluster 2 .
- **How.many.new.bands.by.month=0 or 1**
44.44 % of the individuals possess this category in the global population versus 76.32 % in the cluster 2 .
Moreover, 60.42 % of the individuals possessing this category belong to the cluster 2 .
- **listen.to.whole.album=listen.to.whole.album_no**
37.96 % of the individuals possess this category in the global population versus 65.79 % in the cluster 2 .
Moreover, 60.98 % of the individuals possessing this category belong to the cluster 2 .
- **Musical.knowledge=Musical.knowledge_low**
23.15 % of the individuals possess this category in the global population versus 47.37 % in the cluster 2 .
Moreover, 72 % of the individuals possessing this category belong to the cluster 2 .
- **New.bands.from.concerts=New.bands.from.concerts_very few**
32.41 % of the individuals possess this category in the global population versus 52.63 % in the cluster 2 .
Moreover, 57.14 % of the individuals possessing this category belong to the cluster 2 .
- **New.bands.from.tv.shows=New.bands.from.tv.shows_average**
24.07 % of the individuals possess this category in the global population versus 42.11 % in the cluster 2 .
Moreover, 61.54 % of the individuals possessing this category belong to the cluster 2 .
- **Kind.of.music=pop**
41.67 % of the individuals possess this category in the global population versus 60.53 % in the cluster 2 .
Moreover, 51.11 % of the individuals possessing this category belong to the cluster 2 .
- **go.to.concert.of.known.bands=go.to.concert.of.known.bands_a lot**
25.93 % of the individuals possess this category in the global population versus 42.11 % in the cluster 2 .
Moreover, 57.14 % of the individuals possessing this category belong to the cluster 2 .
- **New.bands.from.magazines=New.bands.from.magazines_average**
5.56 % of the individuals possess this category in the global population versus 13.16 % in the cluster 2 .
Moreover, 83.33 % of the individuals possessing this category belong to the cluster 2 .

The cluster 3 (8 individuals) includes the individuals possessing the following categories:

- **Kind.of.material=High quality sound system**
6.48 % of the individuals possess this category in the global population versus 62.5 % in the cluster 3 .
Moreover, 71.43 % of the individuals possessing this category belong to the cluster 3 .

- `New.bands.from.radio=New.bands.from.radio_very few`
 5.56 % of the individuals possess this category in the global population versus 50 % in the cluster 3 .
 Moreover, 66.67 % of the individuals possessing this category belong to the cluster 3 .
- `New.bands.from.tv.shows=New.bands.from.tv.shows_very few`
 33.33 % of the individuals possess this category in the global population versus 87.5 % in the cluster 3 .
 Moreover, 19.44 % of the individuals possessing this category belong to the cluster 3 .
- `SPC=manager`
 1.85 % of the individuals possess this category in the global population versus 25 % in the cluster 3 .
 Moreover, 100 % of the individuals possessing this category belong to the cluster 3 .
- `New.bands.from.posters=New.bands.from.posters_quite a lot`
 8.33 % of the individuals possess this category in the global population versus 37.5 % in the cluster 3 .
 Moreover, 33.33 % of the individuals possessing this category belong to the cluster 3 .

The cluster 4 (8 individuals) includes the individuals possessing the following categories:

- `New.bands.from.concerts=New.bands.from.concerts_a lot`
 5.56 % of the individuals possess this category in the global population versus 75 % in the cluster 4 .
 Moreover, 100 % of the individuals possessing this category belong to the cluster 4 .
- `Go.to.enough.concerts=Go.to.enough.concerts_yes`
 21.3 % of the individuals possess this category in the global population versus 75 % in the cluster 4 .
 Moreover, 26.09 % of the individuals possessing this category belong to the cluster 4 .
- `go.to.concert.of.known.bands=go.to.concert.of.known.bands_quite a lot`
 45.37 % of the individuals possess this category in the global population versus 87.5 % in the cluster 4 .
 Moreover, 14.29 % of the individuals possessing this category belong to the cluster 4 .
- `New.bands.from.posters=New.bands.from.posters_quite a lot`
 8.33 % of the individuals possess this category in the global population versus 37.5 % in the cluster 4 .
 Moreover, 33.33 % of the individuals possessing this category belong to the cluster 4 .