#### This report was generated by the EnQuireR package

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July 28, 2010



#### EnQuireR: Multivariate Exploratory Analysis of Questionnaires

#### Multivariate exploration of the questionnaire

How is my dataset "structured"?

How does my dataset look like?

How can the main axes of variability be interpreted?

#### Typology of the individuals

How many groups are there in my dataset? How can the groups be displayed? How different are the groups? How can the groups be described?

## EnQuireR: Multivariate Exploratory Analysis of Questionnaires

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### Percentages of variance explained by the first five axes

Axis	Eigenvalue	Percentage of variance
1	0.12174	10.51%
2	0.06973	6.02%
3	0.05547	4.79%
4	0.05051	4.36%
5	0.04705	4.06%

Table: Eigenvalues associated with the first five axes

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#### Representation of the individuals

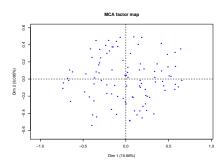


Figure: Raw representation of the individuals on axes 1 and 2

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### Representation of the categories

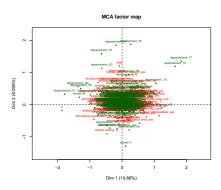


Figure: Raw representation of the categories on axes 1 and 2

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#### Simplified representation of the categories

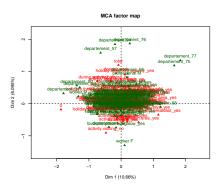


Figure: Simplified representation of the categories on axes 1 and 2

#### Description of the first axis: positive side (1/4)

- 5
- 4
- with.family\_yes
- holidays.for.four.to.six.days\_yes
- during.spring\_yes
- during.february\_yes
- city\_yes
- holidays.for.one.week\_yes
- holidays.for.two.weeks\_yes
- destination.Europe\_yes

#### Description of the first axis: positive side (2 / 4)

- •
- destination.border.area\_yes
- family.house\_yes
- with.friends\_yes
- during.autumn\_yes
- destination.France\_yes
- friend.house\_yes
- during.summer\_yes
- mountain\_yes
- during.christmas\_yes

### Description of the first axis: positive side (3 / 4)

- countryside\_yes
- seaside\_yes
- destination.area\_yes
- destination.out.of.Europe\_yes
- with.boy/girlfriend\_yes
- bungalow\_yes
- activity.outdoor.sports\_yes
- trip.without.organization\_yes
- hotel\_yes
- rented.house\_yes

## Description of the first axis: positive side ( 4 / 4 )

- holidays.for.three.weeks\_yes
- activity.visiting\_yes
- holidays.for.one.month.and.more\_yes

#### Description of the first axis: negative side (1/4)

- •
- 1
- with.family\_no
- holidays.for.four.to.six.days\_no
- during.spring\_no
- during.february\_no
- city\_no
- holidays.for.one.week\_no
- holidays.for.two.weeks\_no
- destination.Europe\_no

#### Description of the first axis: negative side (2 / 4)

- destination.border.area\_no
- family.house\_no
- with.friends\_no
- during.autumn\_no
- destination.France\_no
- friend.house\_no
- during.summer\_no
- mountain\_no
- during.christmas\_no
- countryside\_no

#### Description of the first axis: negative side (3 / 4)

- seaside\_no
- destination.area\_no
- destination.out.of.Europe\_no
- with.boy/girlfriend\_no
- bungalow\_no
- activity.outdoor.sports\_no
- trip.without.organization\_no
- hotel\_no
- rented.house\_no
- holidays.for.three.weeks\_no

# Description of the first axis: negative side ( 4 / 4 )

- activity.visiting\_no
- holidays.for.one.month.and.more\_no

### Description of the second axis: positive side ( 1/3 )

- activity.job\_no
- total
- activity.visiting\_yes
- campsite\_no
- holiday.idea.from.friends\_no
- destination.area\_no
- doesn,t work
- during.summer\_no
- hotel\_yes
- activity.beach.sports\_no

### Description of the second axis: positive side ( 2 / 3 )

- seaside\_no
- holiday.idea.from.agency\_yes
- during.february\_yes
- with.friends\_no
- holidays.for.four.to.six.days\_no
- activity.strolling\_yes
- activity.tv\_yes
- holiday.idea.from.internet\_yes
- activity.bathing\_no
- during.spring\_yes

## Description of the second axis: positive side (3/3)

- rented.house\_yes
- youth.hostel\_yes
- activity.tabloid\_yes
- holidays.for.one.week\_yes
- mountain\_yes
- city\_yes

#### Description of the second axis: negative side (1/3)

- activity.job\_yes
- activity.visiting\_no
- campsite\_yes
- holiday.idea.from.friends\_yes
- destination.area\_yes
- holiday work
- during.summer\_yes
- hotel\_no
- activity.beach.sports\_yes
- half

#### Description of the second axis: negative side (2 / 3)

- nothing
- seaside\_yes
- holiday.idea.from.agency\_no
- during.february\_no
- with.friends\_yes
- holidays.for.four.to.six.days\_yes
- activity.strolling\_no
- activity.tv\_no
- holiday.idea.from.internet\_no
- activity.bathing\_yes

### Description of the second axis: negative side (3 / 3)

- during.spring\_no
- rented.house\_no
- youth.hostel\_no
- activity.tabloid\_no
- holidays.for.one.week\_no
- mountain\_no
- city\_no

## EnQuireR: Multivariate Exploratory Analysis of Questionnaires

#### Multivariate exploration of the questionnaire

How is my dataset "structured"?

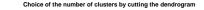
How does my dataset look like?

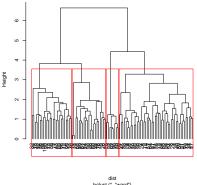
How can the main axes of variability be interpreted?

#### Typology of the individuals

How many groups are there in my dataset? How can the groups be displayed? How different are the groups? How can the groups be described? How many groups are there in my dataset?

#### Number of clusters chosen by the analyst





hclust (\*, "ward")

Figure: A number of clusters is chosen

How can the groups be displayed?

# Representation of the individuals according to the group they belong to

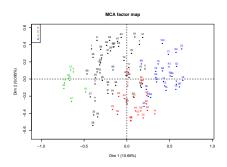
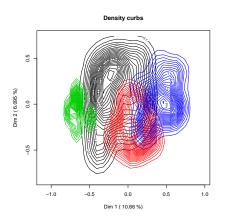


Figure: Correspondence map displaying clusters

How can the groups be displayed?

# Simplified representation of the individuals according to the group they belong to



How can the groups be displayed?

# Representation of the barycenter of each group enhanced with confidence ellipses

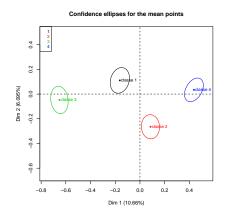


Figure: Confidence ellinses around each cluster

### Number of individuals per cluster

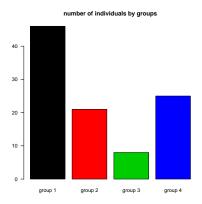


Figure: Number of individuals by cluster

# Distribution of the individuals per cluster for the variable nb.holidays.more.than.three.days

nb.holidays.more.than.three.days by cluster

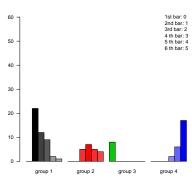
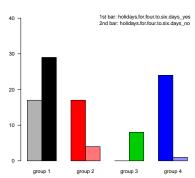


Figure: Variable no holidays more than three days

# Distribution of the individuals per cluster for the variable holidays.for.four.to.six.days

#### holidays.for.four.to.six.days by cluster



# Distribution of the individuals per cluster for the variable with family

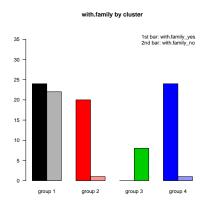


Figure: Variable with.family

# Distribution of the individuals per cluster for the variable during.february

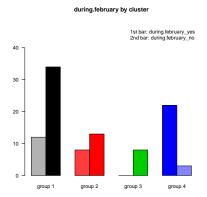


Figure: Variable during.february

## Distribution of the individuals per cluster for the variable during.autumn

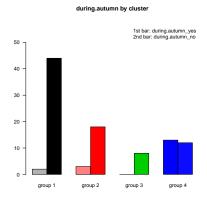
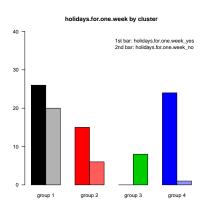


Figure: Variable during.autumn

# Distribution of the individuals per cluster for the variable holidays.for.one.week



# Distribution of the individuals per cluster for the variable with friends

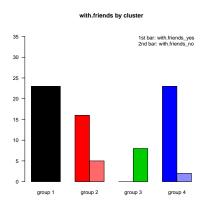


Figure: Variable with.friends

# Distribution of the individuals per cluster for the variable during.summer

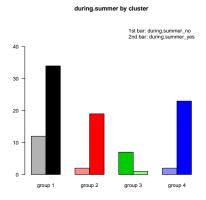


Figure: Variable during.summer

## Distribution of the individuals per cluster for the variable seaside

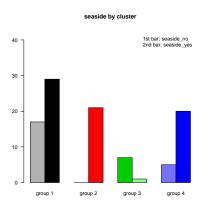


Figure: Variable seaside

How different are the groups?

# Distribution of the individuals per cluster for the variable destination. France

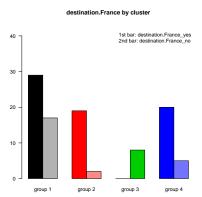


Figure: Variable destination.France

### Description of cluster 1 ( 1 / 6 )

- nb.holidays.more.than.three.days=1
  22 % of the individuals possess this category in the global population versus 47.83% of the individuals within cluster 1;
  - 100 % individuals possessing this category belong to cluster 1
- holiday.idea.from.friends=holiday.idea.from.friends\_no
   30 % of the individuals possess this category in the global population versus 50% of the individuals within cluster 1;
  - 76.67 % individuals possessing this category belong to cluster 1
- holi
  - days.for.four.to.six.days=holidays.for.four.to.six.days\_no 42 % of the individuals possess this category in the global population versus 63.04% of the individuals within cluster 1;
  - 69.05 % individuals possessing this category belong to cluster 1
- activity.job=activity.job\_no
   50 % of the individuals possess this category in the global population versus 69.57% of the individuals within cluster 1;
  - $64\ \%$  individuals possessing this category belong to cluster 1
- friend.house=friend.house\_no
   60 % of the individuals possess this category in the global population versus 78.26% of the individuals within cluster 1;
  - 60 % individuals possessing this category belong to cluster 1

Multivariate exploration of the questionnaire

# Description of cluster 1 (2 / 6)

- during.autumn=during.autumn\_no
  - 82 % of the individuals possess this category in the global population versus 95.65% of the individuals within cluster 1;
  - 53.66 % individuals possessing this category belong to cluster 1
- - with.family=with.family\_no
    32 % of the individuals possess this category in the global population versus 47.83% of the individuals within cluster 1;
  - 68.75 % individuals possessing this category belong to cluster 1
- during.february=during.february\_no
  - 58 % of the individuals possess this category in the global population versus 73.91% of the individuals within cluster 1;
  - 58.62 % individuals possessing this category belong to cluster 1
- work.to.earn.money=doesn,t work
  - 35 % of the individuals possess this category in the global population versus 50% of the individuals within cluster 1;
  - 65.71 % individuals possessing this category belong to cluster 1
- SPC.father=employee F
  - 10 % of the individuals possess this category in the global population versus 19.57% of the individuals within cluster 1;
  - 90 % individuals possessing this category belong to cluster 1

Multivariate exploration of the questionnaire

### Description of cluster 1 ( 3 / 6 )

- activity.outdoor.sports=activity.outdoor.sports\_no
   48 % of the individuals possess this category in the global population versus 63.04% of the individuals within cluster 1;
   60.42 % individuals possessing this category belong to cluster 1
- bungalow=bungalow\_no
   % of the individuals possess this category in the global population versus 95.65% of the individuals within cluster 1;
   51.76 % individuals possessing this category belong to cluster 1
- trip.with.young.people=trip.with.young.people\_no
   74 % of the individuals possess this category in the global population versus 86.96% of the individuals within cluster 1;
   54.05 % individuals possessing this category belong to cluster 1
- activity.bathing=activity.bathing\_no
   12 % of the individuals possess this category in the global population versus 21.74% of the individuals within cluster 1;
   83.33 % individuals possessing this category belong to cluster 1
- mountain=mountain\_no
   65 % of the individuals possess this category in the global population versus 78.26% of the individuals within cluster 1;
   55.38 % individuals possessing this category belong to cluster 1

### Description of cluster 1 ( 4 / 6 )

### The following modalities are meaningful for cluster 1 :

- favourite.activity.job=favourite.activity.job\_no
  75 % of the individuals possess this category in the global population versus 86.96% of the individuals within cluster 1;
  - 53.33 % individuals possessing this category belong to cluster 1

- (

favourite.activity.sun.tanning=favourite.activity.sun.tanning\_no 39 % of the individuals possess this category in the global population versus 52.17% of the individuals within cluster 1;

61.54 % individuals possessing this category belong to cluster 1

- campsite=campsite\_no
  - 54 % of the individuals possess this category in the global population versus 67.39% of the individuals within cluster 1;
  - 57.41 % individuals possessing this category belong to cluster 1
- family.house=family.house\_no
   61 % of the individuals possess this category in the global population versus 73.91% of the individuals within cluster 1;
  - 55.74~% individuals possessing this category belong to cluster 1
- destination. Europe=destination. Europe\_no
   48 % of the individuals possess this category in the global population versus 60.87% of the individuals within cluster 1;
  - 58.33 % individuals possessing this category belong to cluster 1

Multivariate exploration of the questionnaire

### Description of cluster 1 ( 5 / 6 )

#### The following modalities are meaningful for cluster 1:

- destination.border.area=destination.border.area\_no
   76 % of the individuals possess this category in the global population versus 86.96% of the individuals within cluster 1;
   52.63 % individuals possessing this category belong to cluster 1
- holidays.for.two.weeks=holidays.for.two.weeks\_no
   57 % of the individuals possess this category in the global population versus 69.57% of the individuals within cluster 1;
   56.14 % individuals possessing this category belong to cluster 1
- holiday.means.meetings=holiday.means.meetings\_no
   44 % of the individuals possess this category in the global population versus 56.52% of the individuals within cluster 1;
   59.09 % individuals possessing this category belong to cluster 1
- with.friends=with.friends\_no
   38 % of the individuals possess this category in the global population versus 50% of the individuals within cluster 1;
- 60.53~% individuals possessing this category belong to cluster 1
- nb.holidays.more.than.three.days=2
  17 % of the individuals possess this category in the global population versus 26.09% of the individuals within cluster 1;

70.59~% individuals possessing this category belong to cluster 1

# Description of cluster 1 ( 6 / 6 )

### The following modalities are meaningful for cluster 1 :

• during.christmas=during.christmas\_no

 $77\ \%$  of the individuals possess this category in the global population versus 86.96% of the individuals within cluster 1;

 $51.95\ \%$  individuals possessing this category belong to cluster 1

Multivariate exploration of the questionnaire

# Description of cluster 2 ( 1 / 3 )

- activity.job=activity.job\_yes
   50 % of the individuals possess this category in the global population versus 90.48% of the individuals within cluster 2;
   38 % individuals possessing this category belong to cluster 2
- seaside=seaside\_yes
   71 % of the individuals possess this category in the global population versus 100% of the individuals within cluster 2;
   29.58 % individuals possessing this category belong to cluster 2
- with.family=with.family\_yes
   68 % of the individuals possess this category in the global population versus 95.24% of the individuals within cluster 2;
   29.41 % individuals possessing this category belong to cluster 2
- activity.tv=activity.tv\_no
   69 % of the individuals possess this category in the global population versus 95.24% of the individuals within cluster 2;
   28.99 % individuals possessing this category belong to cluster 2
- trip.with.young.people=trip.with.young.people\_yes
   26 % of the individuals possess this category in the global population versus 52.38% of the individuals within cluster 2;
  - $42.31\ \%$  individuals possessing this category belong to cluster 2

# Description of cluster 2 ( 2 / 3 )

- parents.financial.help=nothing
   27 % of the individuals possess this category in the global population versus 52.38% of the individuals within cluster 2;
  - 40.74 % individuals possessing this category belong to cluster 2
  - work.to.earn.money=holiday work
  - 60 % of the individuals possess this category in the global population versus 85.71% of the individuals within cluster 2;
    - 30 % individuals possessing this category belong to cluster 2
- destination.France=destination.France\_yes
   68 % of the individuals possess this category in the global population versus 90.48% of the individuals within cluster 2;
  - 27.94 % individuals possessing this category belong to cluster 2
- holi
  - days.for.four.to.six.days=holidays.for.four.to.six.days\_yes 58 % of the individuals possess this category in the global population versus 80.95% of the individuals within cluster 2;
  - 29.31 % individuals possessing this category belong to cluster 2
- holiday.idea.from.internet=holiday.idea.from.internet\_no
   48 % of the individuals possess this category in the global population versus 71.43% of the individuals within cluster 2;
  - 31.25 % individuals possessing this category belong to cluster 2

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How can the groups be described?

Multivariate exploration of the questionnaire

### Description of cluster 2 ( 3 / 3 )

### The following modalities are meaningful for cluster 2:

- activity.computer=activity.computer\_no
   64 % of the individuals possess this category in the global population versus 85.71% of the individuals within cluster 2;
  - $28.12\ \%$  individuals possessing this category belong to cluster 2

 $favourite.place.family.house = favourite.place.family.house\_no~70~\% of the individuals possess this category in the global population versus 90.48\% of the individuals within cluster 2;$ 

- 27.14~% individuals possessing this category belong to cluster 2
- activity.beach.sports=activity.beach.sports\_yes
   35 % of the individuals possess this category in the global population versus 57.14% of the individuals within cluster 2;
  - $34.29\ \%$  individuals possessing this category belong to cluster 2

Multivariate exploration of the questionnaire

### Description of cluster 3 ( 1 / 3 )

- nb.holidays.more.than.three.days=0
   8 % of the individuals possess this category in the global population versus 100% of the individuals within cluster 3;
  - 100~% individuals possessing this category belong to cluster 3
- destination.France=destination.France\_no
   32 % of the individuals possess this category in the global population versus 100% of the individuals within cluster 3;
  - 25 % individuals possessing this category belong to cluster 3
- with.family=with.family\_no
   32 % of the individuals possess this category in the global population versus 100% of the individuals within cluster 3;
  - $25\ \%$  individuals possessing this category belong to cluster 3
- during.summer=during.summer\_no 23 % of the individuals possess this category in the global population versus 87.5% of the individuals within cluster 3;
  - 30.43 % individuals possessing this category belong to cluster 3
- holidays.for.one.week=holidays.for.one.week\_no
   35 % of the individuals possess this category in the global population versus 100% of the individuals within cluster 3;
  - $22.86\ \%$  individuals possessing this category belong to cluster 3

## Description of cluster 3 ( 2 / 3 )

### The following modalities are meaningful for cluster 3:

- with.friends=with.friends\_no
   38 % of the individuals possess this category in the global population versus 100% of the individuals within cluster 3;

  - $21.05\ \%$  individuals possessing this category belong to cluster 3

#### seaside=seaside\_no

- 29 % of the individuals possess this category in the global population versus 87.5% of the individuals within cluster 3;
- 24.14 % individuals possessing this category belong to cluster 3
- holi
  - days.for.four.to.six.days=holidays.for.four.to.six.days\_no 42 % of the individuals possess this category in the global population versus 100% of the individuals within cluster 3;
  - 19.05~% individuals possessing this category belong to cluster 3
- city=city\_no
- 44 % of the individuals possess this category in the global population versus 100% of the individuals within cluster 3;
  - 18.18~% individuals possessing this category belong to cluster 3
- destination.Europe=destination.Europe\_no
  - 48 % of the individuals possess this category in the global population versus 100% of the individuals within cluster 3;
  - 16.67 % individuals possessing this category belong to cluster 3

Multivariate exploration of the questionnaire

### Description of cluster 3 ( 3 / 3 )

- trip.without.organization=trip.without.organization\_no
   11 % of the individuals possess this category in the global population versus 50% of the individuals within cluster 3;
   36.36 % individuals possessing this category belong to cluster 3
- during.spring=during.spring\_no
   53 % of the individuals possess this category in the global population versus 100% of the individuals within cluster 3;
   15.09 % individuals possessing this category belong to cluster 3
- holidays.for.two.weeks=holidays.for.two.weeks\_no
   57 % of the individuals possess this category in the global population versus 100% of the individuals within cluster 3;
   14.04 % individuals possessing this category belong to cluster 3
  - during.february=during.february\_no
    58 % of the individuals possess this category in the global population versus 100% of the individuals within cluster 3;
  - 13.79 % individuals possessing this category belong to cluster 3
- SPC.father=farmer F
   9 % of the individuals possess this category in the global population versus 37.5% of the individuals within cluster 3;
  - $33.33\ \%$  individuals possessing this category belong to cluster 3

# Description of cluster 4 ( 1 / 6 )

- nb.holidays.more.than.three.days=5
   22 % of the individuals possess this category in the global population versus 68% of the individuals within cluster 4;
  - 77.27 % individuals possessing this category belong to cluster 4
- during.february=during.february\_yes
  - 42 % of the individuals possess this category in the global population versus 88% of the individuals within cluster 4;
- 52.38 % individuals possessing this category belong to cluster 4
- holi
  - days.for.four.to.six.days=holidays.for.four.to.six.days\_yes 58 % of the individuals possess this category in the global population versus 96% of the individuals within cluster 4;
  - 41.38 % individuals possessing this category belong to cluster 4
- during.autumn=during.autumn\_yes
   18 % of the individuals possess this category in the global population versus 52% of the individuals within cluster 4;
  - $72.22\ \%$  individuals possessing this category belong to cluster 4
- family.house=family.house\_yes
  - 39 % of the individuals possess this category in the global population versus 76% of the individuals within cluster 4;
  - 48.72 % individuals possessing this category belong to cluster 4

Multivariate exploration of the questionnaire

## Description of cluster 4 ( 2 / 6 )

- countryside=countryside\_yes
   29 % of the individuals possess this category in the global population versus 64% of the individuals within cluster 4;
   55.17 % individuals possessing this category belong to cluster 4
- destination.border.area=destination.border.area\_yes
   24 % of the individuals possess this category in the global population versus 56% of the individuals within cluster 4;
   58.33 % individuals possessing this category belong to cluster 4
- holidays.for.one.week=holidays.for.one.week\_yes
   65 % of the individuals possess this category in the global population versus 96% of the individuals within cluster 4;
   36.92 % individuals possessing this category belong to cluster 4
  - activity.outdoor.sports=activity.outdoor.sports\_yes 52 % of the individuals possess this category in the global population versus 84% of the individuals within cluster 4;
  - 40.38 % individuals possessing this category belong to cluster 4
- with.friends=with.friends\_yes
   62 % of the individuals possess this category in the global population versus 92% of the individuals within cluster 4;
   37.1 % individuals possessing this category belong to cluster 4

Multivariate exploration of the questionnaire

### Description of cluster 4 ( 3 / 6 )

- with.family=with.family\_yes
   68 % of the individuals possess this category in the global population versus 96% of the individuals within cluster 4;
   35.29 % individuals possessing this category belong to cluster 4
- friend.house=friend.house\_yes
   40 % of the individuals possess this category in the global population versus 72% of the individuals within cluster 4;
   45 % individuals possessing this category belong to cluster 4
- mountain=mountain\_yes
   35 % of the individuals possess this category in the global population versus 64% of the individuals within cluster 4;
   45.71 % individuals possessing this category belong to cluster 4
  - during.spring=during.spring\_yes
    47 % of the individuals possess this category in the global population versus 76% of the individuals within cluster 4;
  - 40.43 % individuals possessing this category belong to cluster 4
- holidays.for.two.weeks=holidays.for.two.weeks\_yes
   43 % of the individuals possess this category in the global population versus 72% of the individuals within cluster 4;
  - $41.86\ \%$  individuals possessing this category belong to cluster 4

### Description of cluster 4 ( 4 / 6 )

- city=city\_yes
  - 56 % of the individuals possess this category in the global population versus 84% of the individuals within cluster 4;
  - 37.5 % individuals possessing this category belong to cluster 4
- during.christmas=during.christmas\_yes
  - 23 % of the individuals possess this category in the global population versus 48% of the individuals within cluster 4;
  - 52.17 % individuals possessing this category belong to cluster 4
- e
- favourite.place.family.house=favourite.place.family.house\_yes 30 % of the individuals possess this category in the global population versus 56% of the individuals within cluster 4:
- 46.67 % individuals possessing this category belong to cluster 4
- with.boy/girlfriend=with.boy/girlfriend\_yes
- 29 % of the individuals possess this category in the global population versus 52% of the individuals within cluster 4;
  - 44.83 % individuals possessing this category belong to cluster 4
- holiday.idea.from.internet=holiday.idea.from.internet\_yes
   52 % of the individuals possess this category in the global population versus 76% of the individuals within cluster 4;
  - 36.54 % individuals possessing this category belong to cluster 4

### Description of cluster 4 ( 5 / 6 )

- destination. Europe=destination. Europe\_yes
   52 % of the individuals possess this category in the global population versus 76% of the individuals within cluster 4;
  - 36.54 % individuals possessing this category belong to cluster 4
  - holi
    - days.for.one.month.and.more=holidays.for.one.month.and.more\_yes 12 % of the individuals possess this category in the global population versus 28% of the individuals within cluster 4;
    - 58.33 % individuals possessing this category belong to cluster 4
- destination.out.of.Europe=destination.out.of.Europe\_yes
   21 % of the individuals possess this category in the global population versus 40% of the individuals within cluster 4;
  - 47.62 % individuals possessing this category belong to cluster 4
- activity.visiting=activity.visiting\_yes
   79 % of the individuals possess this category in the global population versus 96% of the individuals within cluster 4;
  - $30.38\ \%$  individuals possessing this category belong to cluster 4
- departement=departement\_78
  - 3 % of the individuals possess this category in the global population versus 12% of the individuals within cluster 4;
  - 100 % individuals possessing this category belong to cluster 4

Multivariate exploration of the questionnaire

### Description of cluster 4 ( 6 / 6 )

- destination.area=destination.area\_yes
   32 % of the individuals possess this category in the global population versus 52% of the individuals within cluster 4;
   40.62 % individuals possessing this category belong to cluster 4
- activity.computer=activity.computer\_yes
   36 % of the individuals possess this category in the global population versus 56% of the individuals within cluster 4;
   38.89 % individuals possessing this category belong to cluster 4
- activity.sun.tanning=activity.sun.tanning\_yes
   66 % of the individuals possess this category in the global population versus 84% of the individuals within cluster 4;
  - $31.82\ \%$  individuals possessing this category belong to cluster 4