

6th Conference of the
International Society for Quality-of-Life Studies
Philadelphia, USA, 2004

Session

Community Quality of Life

chaired by

Don Rahtz - M. Joseph Sirgy

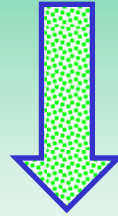
***The importance of quality-of-life
dimensions in citizens' preferences:
an experimental application of conjoint
analysis***

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One of the most interesting aims of quality of urban-life studies



investigating
the *importance* and *preference*
that individuals attribute to the different
aspects
that define the field of the city life

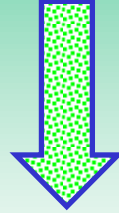
Investigating the subjective worth through *direct inquiry does not* always allow reaching significant outcomes
(for ex. applying a rating scale)

**The multivariate conjoint method allows
to understand how respondents develop their preferences**

**The particular application presented here concerns the outcomes of a
n experimental application of the conjoint model**

The application is part of a particular study

AIMS



testing

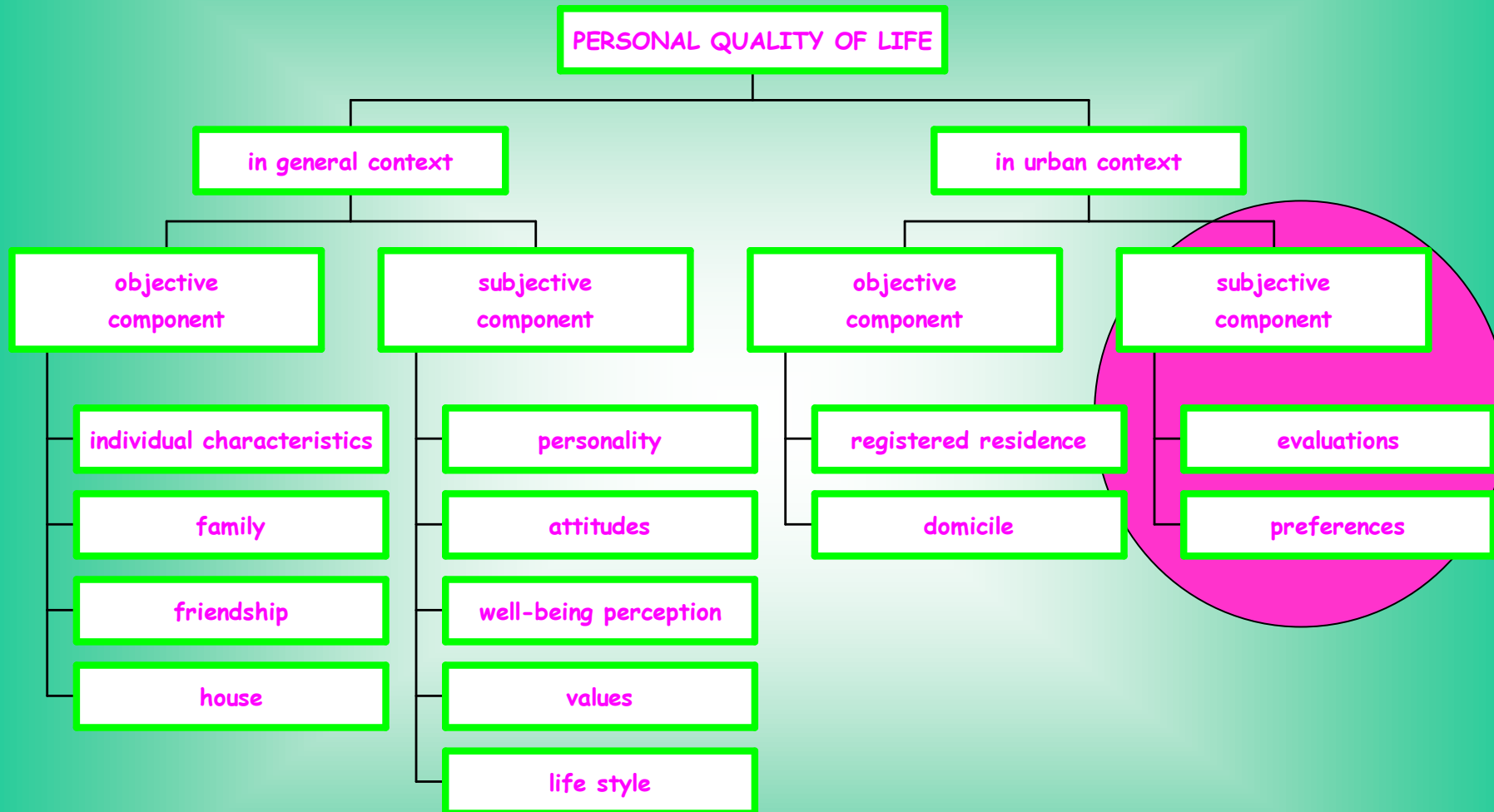
some scaling and measurement techniques
applied in the quality of the life ambit

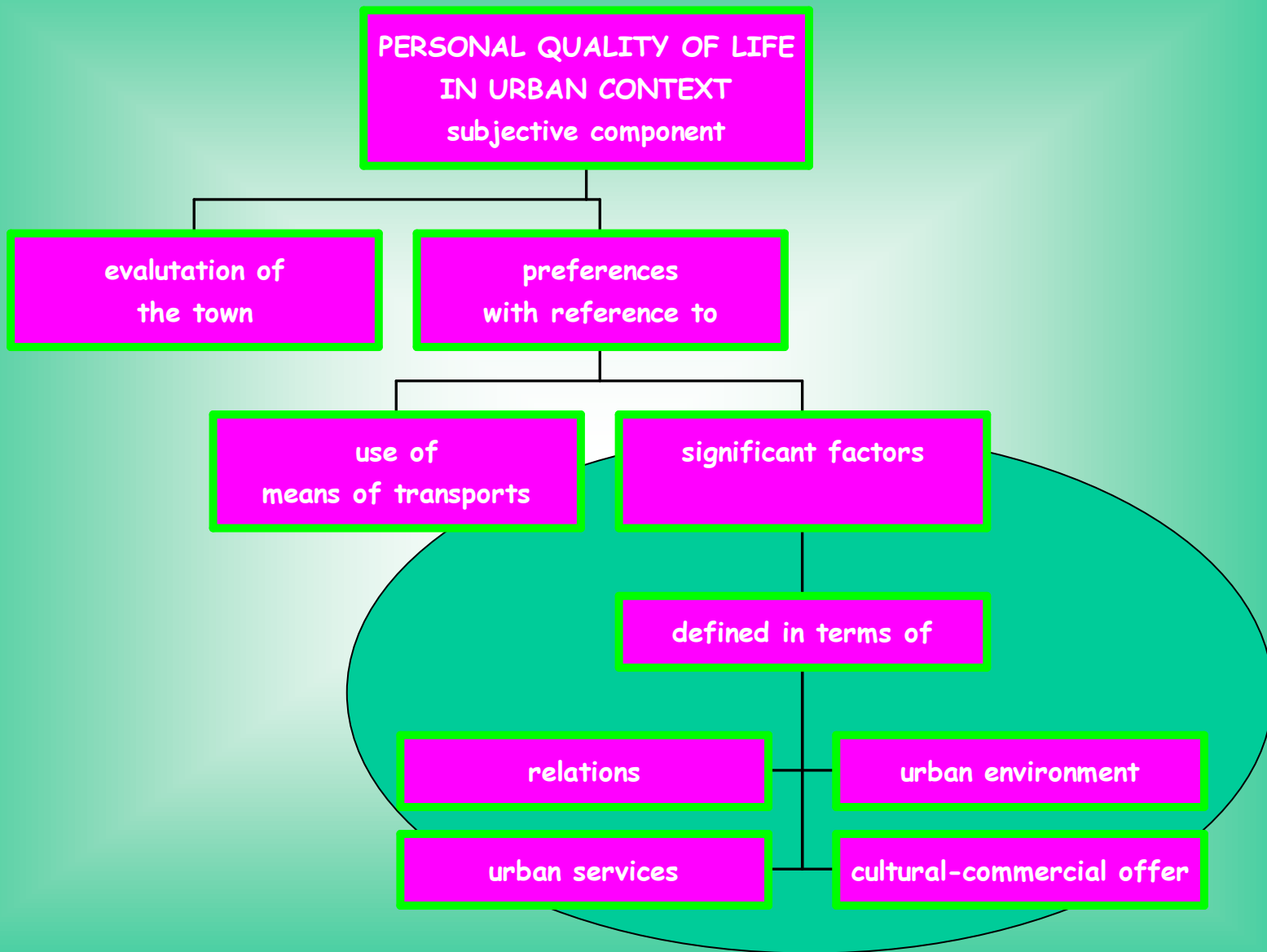
in particular

the subjective perception of the quality of the life in urban environment

through a questionnaire

Areas and Variables





since
the goal of the study is methodological
(assessing a particular measurement approach)
we need

homogenous experimental group,
in terms of individual and social characteristics
(age, marital status, education level and so on)



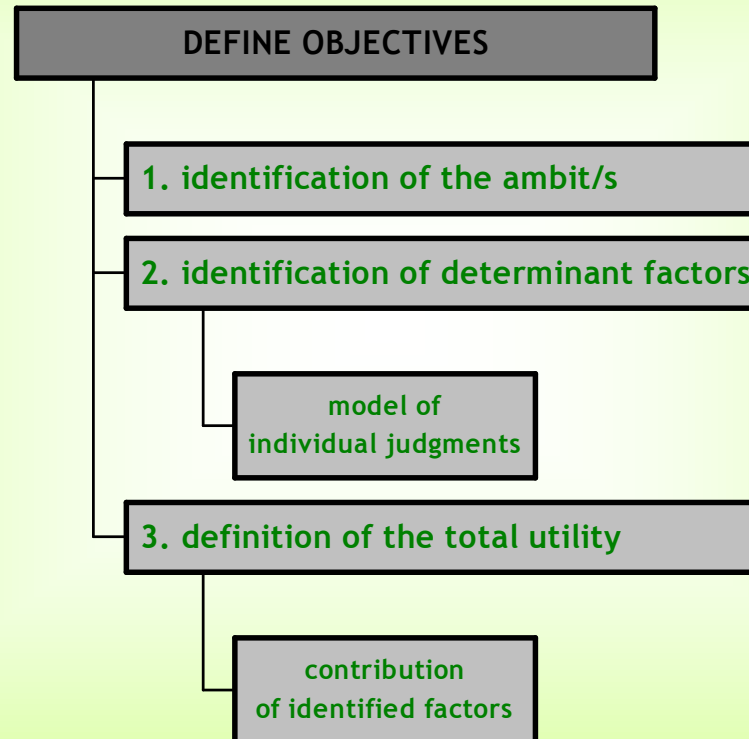
attribution of variability of the results to
methodological problems

GROUP:
university students (49)
attending a course of Applied Statistics
(University of Florence - Italy)

CONJOINT ANALYSIS APPLICATION

STAGES

STAGE 1



1. *Identification of the Ambits*

- **human relations**
- **urban environment**
- **urban services**
- **cultural-commercial offer**



The chosen ambits and their definitions do not have the pretension to be exhaustively descriptive of the urban reality

2. Identification of the Factors

- **human relations**

defined by all the interpersonal relationships an individual can have in the everyday life with the family, the friends, the neighbours, the colleagues;

- **urban services**

defined by the services which a town offers in terms of transports, parking areas, cycle tracks, access to the center;

- **urban environment**

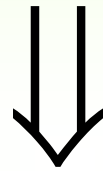
defined by environmental elements such as air, water, decoration of city structure;

- **cultural-commercial offer**

defined in term of high-education proposals, of presence of artistic and tourist structures, of quality and advantage of commercial products.

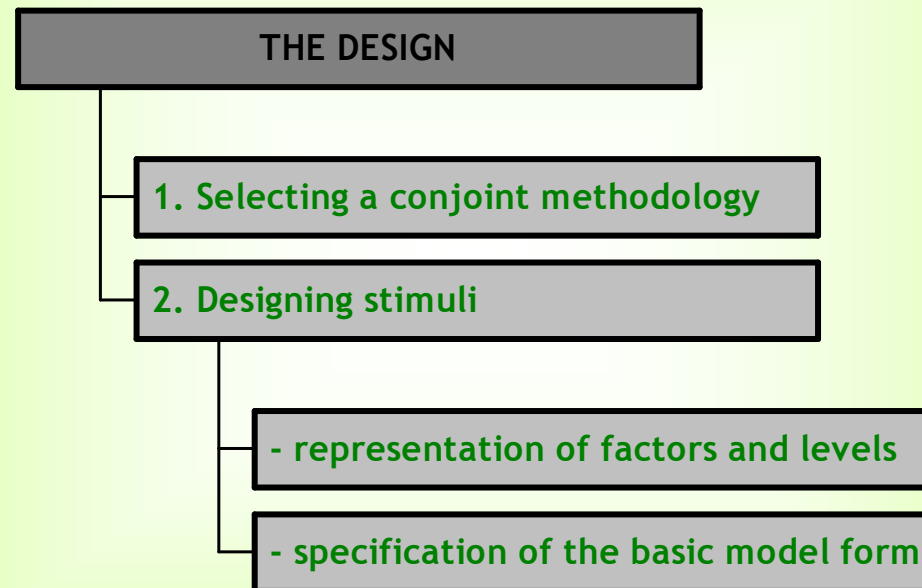
3. Definition of Total Utility

We have to consider the object of the application



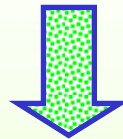
*Testing the **applicability** of the proposed approach to the particular ambit of the social investigation represented by the study of quality of life.*

STAGE 2



1. *Selecting a Conjoint Methodology*

We decided to adopt a particular approach to the aggregate analysis (*group estimates*).

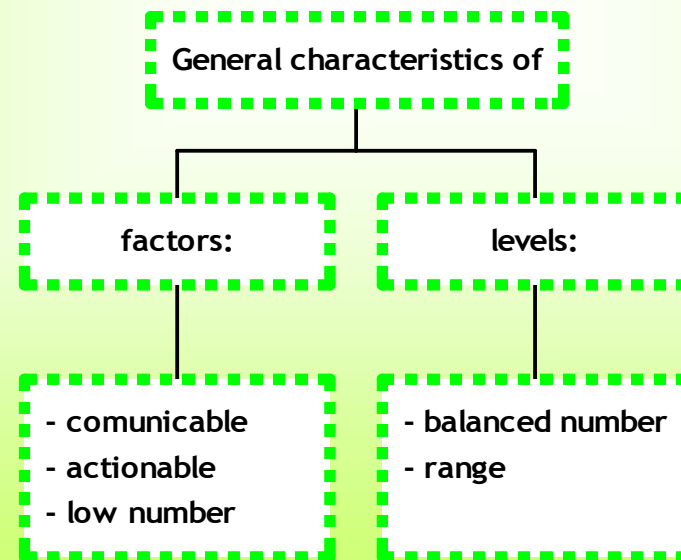


- estimating the part-worth and the values of relative importance of factors for groups, homogeneous with respect to the preferences expressed,
- comparing the identified groups in terms of relative importance of each factor (comparison of the group profiles).

2. *Designing Stimuli:* *Representation of Factors and Levels*

Procedure

1. Identification of the important factors
2. Identification of the levels for each factor



FACTORS FOR EACH AMBIT

for the definition of the stimuli

- ***human relations***

- a. family relations
- b. neighbourhood relations
- c. interpersonal relations, included friends
- d. relations with the work colleagues

- ***urban services***

- a. public transports
- b. access to the town center
- c. cycle tracks
- d. surveillance

- ***urban environment***

- a. urban green (parks, gardens, open spaces)
- b. quality of the water
- c. road maintenance
- d. urban lighting

- ***cultural-commercial offer***

- a. tourist presence
- b. presence of artistic structures
- c. high-education proposals
- d. quality and advantage of commercial products

Such factors point out aspects of a particular town typology to which Florence belongs.

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- ***urban environment***

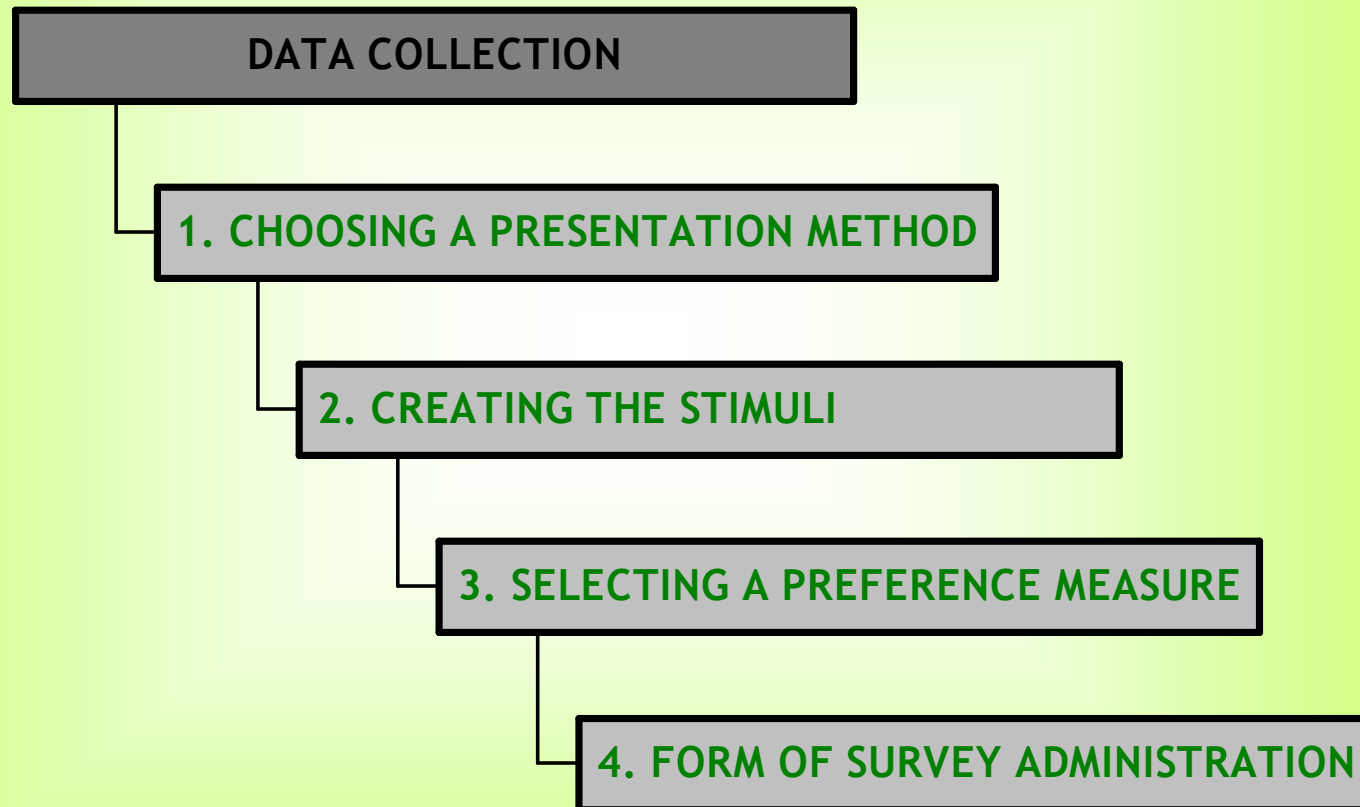
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- b. quality of the water
- c. road maintenance
- d. urban lighting

- ***cultural-commercial offer***

- a. tourist presence
- b. presence of artistic structures
- c. high-education proposals
- d. quality and advantage of commercial products

The identified factors certainly turned out to be restrictive. However the definition of a high number of factors would have compromised the intelligibility of the stimuli to be submitted to the respondents.

STAGE 3



1. *Choosing a Presentation Method*

Particular attention was dedicated to
the form of representation of the stimuli

We decided to adopt
different criteria
for the stimuli of each ambit

PRESENTATION METHOD FOR EACH AMBIT

for the definition of the stimuli

- **human relations**

- ✓ essential graphics (minimum presence of particulars)
- ✓ presence of dialogues between characters
- ✓ absence of *guide-character* (low possibility of self-identification)

- **urban services**

- ✓ absence of graphics
- ✓ synthetic and schematic verbal description of each stimulus

- **urban environment**

- ✓ complex graphics with detailed set
- ✓ absence of dialogues
- ✓ presence of a *guide-character*
- ✓ each factor represented in a very similar way through the various set

- **cultural-commercial offer**

- ✓ absence of graphics
- ✓ synthetic and schematic verbal description of each stimulus

A professional designer was involved in the representation of the stimuli

PRESENTATION METHOD FOR EACH AMBIT

for the definition of the stimuli

- **human relations**

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Difficulty

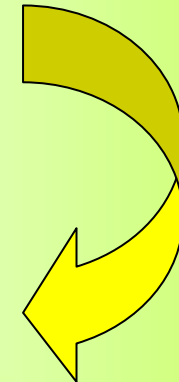
to find concrete every-day-life situations that allowed the representation of both factors and levels (previously defined in abstract way)

2. *Creating the Stimuli*

Definition of different combinations of the levels of the identified factors

For a realistic statistical estimate of the part-worths

combinations of all positives or all negatives levels were avoided



FOUR COMBINATIONS FOR EACH AMBIT

Ambit: RELATIONS		Factors			
		Family	Neighborhood	Interpersonal	Colleagues
Stimuli	A	Supporting	Formal	Indifferent	Collaborative
	B	Intolerant	Formal	Superficial	Friendly
	C	Utilitarian	Intolerant	Friendly	Collaborative
	D	Utilitarian	Helping	Superficial	Competitive

FOUR COMBINATIONS FOR EACH AMBIT

Ambit: URBAN ENVIRONMENT		Factors			
		Urban green	Water	Roads	Lighting
Stimuli	A	Houses in the greenery	Drinking	In disorder	Feeble
	B	Well-kept public gardens	Not for drinking	Neglected	Excellent
	C	Deteriorated public gardens	Sound and delicious	Neglected	Feeble
	D	Well-kept public gardens	Drinking	Well-kept	Absent

FOUR COMBINATIONS FOR EACH AMBIT

Ambit: URBAN SERVICES		Factors			
		Public transports	Access to the town center	Cycle tracks	Surveillance
Stimuli	A	Excellent	By shuttle	Badly organized	Zonal
	B	Frequent	By shuttle	Absent	Vast
	C	Punctual	By ticket	Badly organized	Sporadic
	D	Punctual	Parking areas around the center	Well organized	Sporadic

FOUR COMBINATIONS FOR EACH AMBIT

Ambit: CULTURAL- COMMERCIAL OFFER		Factors			
		Tourist presence	Presence of artistic structures	High- education proposals	Quality/advantage of commercial products
Stimuli	A	Seasonal	Absent	Wide	Reasonable
	B	Continuous	Limited	Absent	High quality
	C	Seasonal	Intense	Poor	High quality
	D	Absent	Limited	Poor	Reasonable

3. Selecting a Preference Measure

non-metrical preference measure

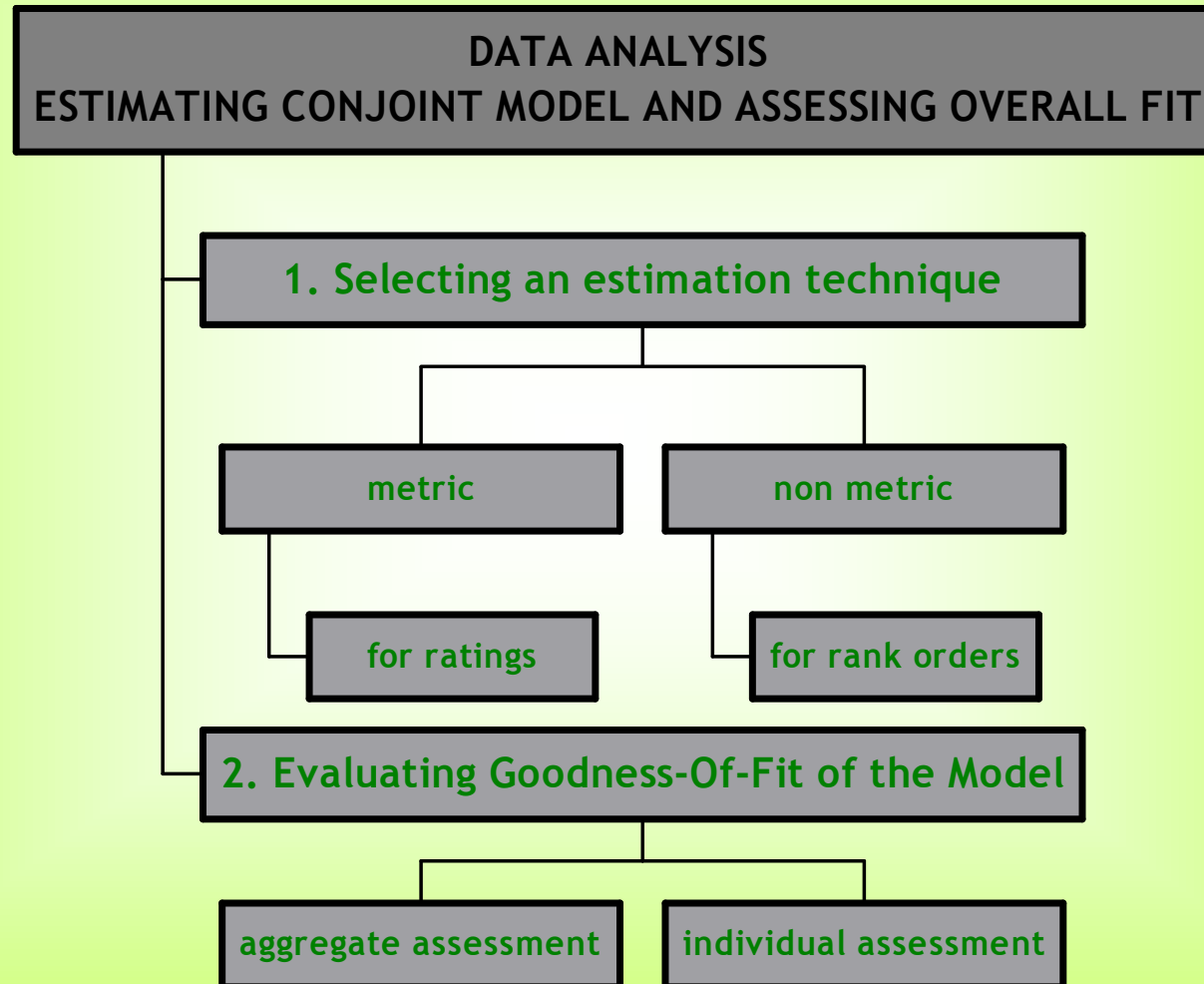
*for each ambit
each respondent ordered the submitted stimuli
in preference order
with negative polarity
(value 1 attributed to the favourite situation)*

4. Survey Administration

during opening lessons
of the course of Statistics
at the Faculty of Psychology of the
University of Florence (Italy)
(2003)

Each student answered the whole questionnaire
after a short presentation
Duration: one hour

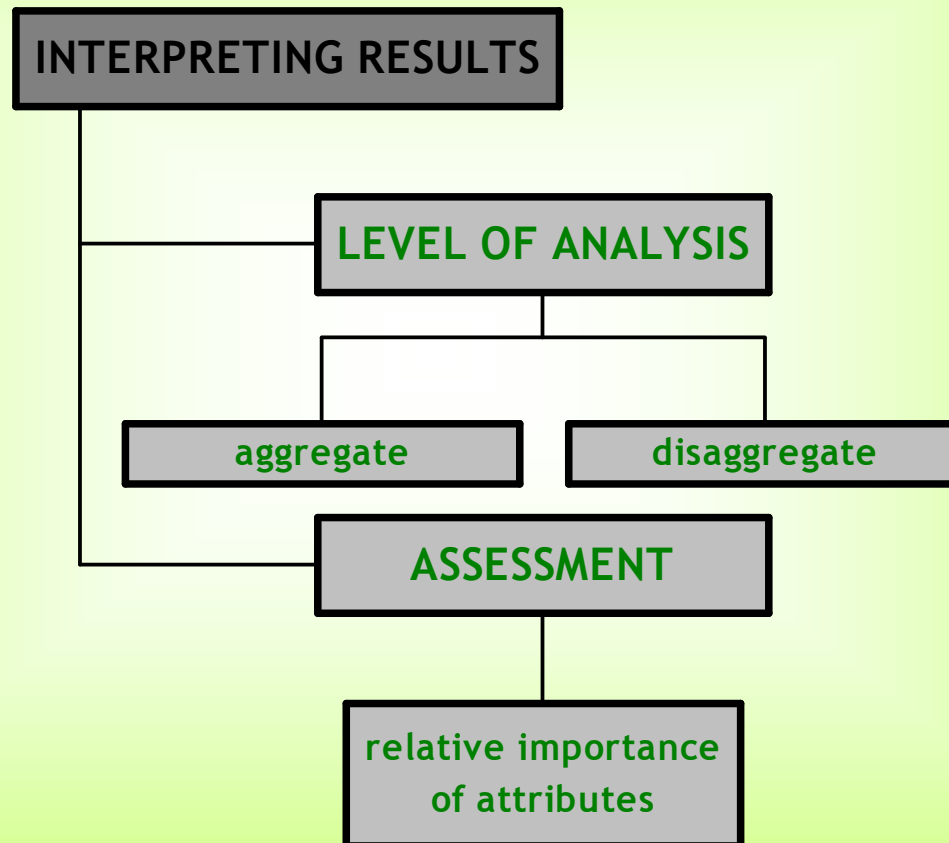
STAGE 4



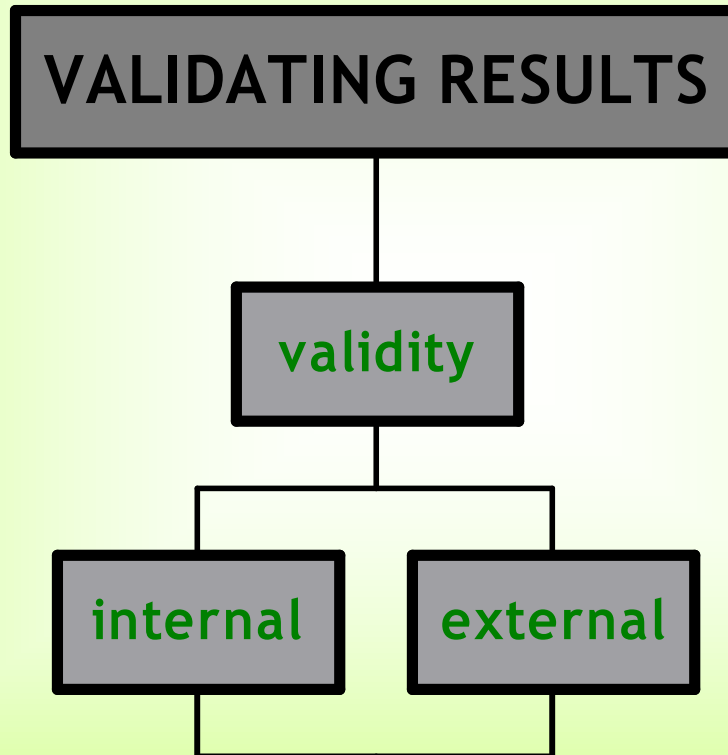
data analysis procedure

1. Identification, for each defined ambit, of homogeneous groups among respondents with regards to the preferences expressed in terms of “order”.
2. Identification of the most important factors and levels for each individual group; analysis, for each identified group, of the values of part-worth registered for each factor.
3. Comparison between the groups as regards to the relative importance of the factors.
4. Interpretation of the differences between the groups by means of external variables.

STAGE 5



STAGE 6



CONJOINT ANALYSIS APPLICATION

RESULTS



ONLY RESULTS OF ONE AMBIT WILL BE PRESENTED

CONJOINT ANALYSIS APPLICATION

RESULTS



urban environment

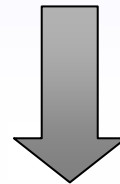
1. Identification of homogeneous groups among respondents with regards to the preferences expressed in terms of “order”

Preference expressed in terms of “order”

Ambit: URBAN ENVIRONMENT		Rank order			
		1	2	3	4
Stimuli	A	25	16	3	4
	B	9	16	16	7
	C	10	12	9	17
	D	4	4	20	20

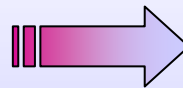
1. Identification of homogeneous groups among respondents with regards to the preferences expressed in terms of “order”

Statistical method



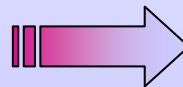
hierarchical cluster analysis
on individual profiles formed by rank order values

distances between individual profiles



gamma coefficient (by Goodman-Kruskal)

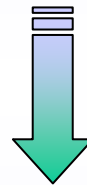
distances between groups



complete linkage technique

1. Identification of homogeneous groups among respondents with regards to the preferences expressed in terms of “order”

Definition of the profile for each group



median of the rank values expressed
by respondents of the same group

1. Identification of homogeneous groups among respondents with regards to the preferences expressed in terms of “order”

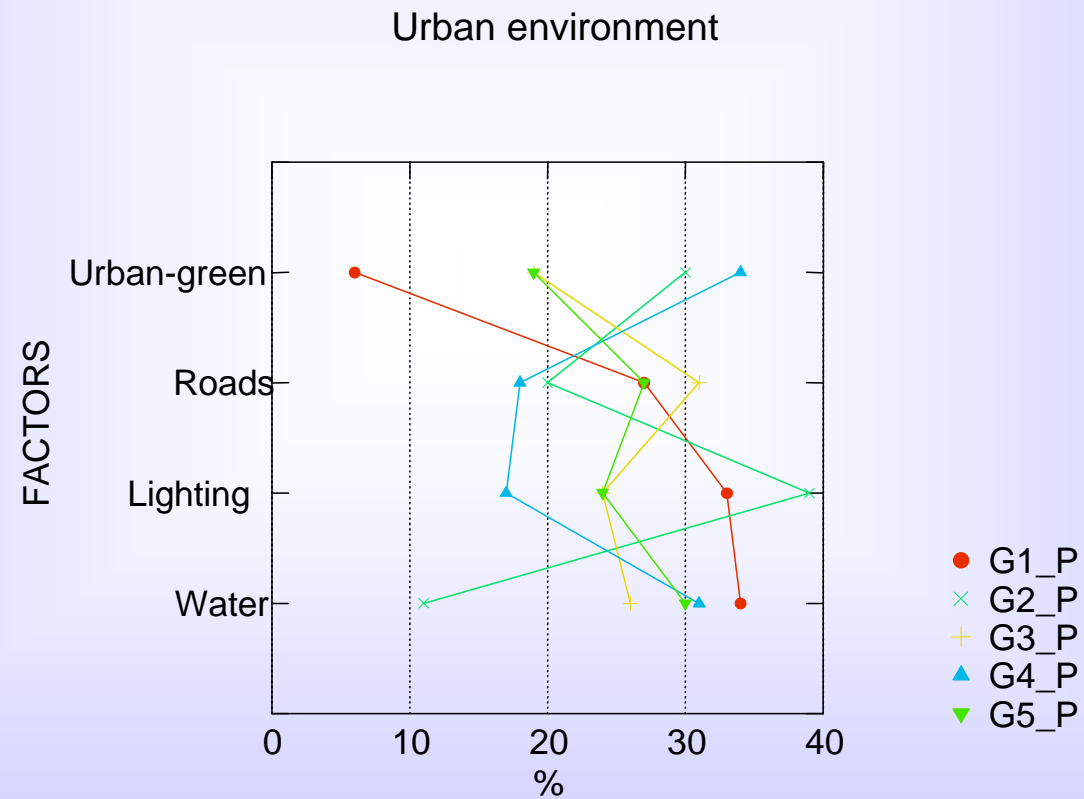
Ambit: URBAN ENVIRONMENT		Factors				Rank order values for each group				
		Urban green	Water	Roads	Lighting	1	2	3	4	5
Stimuli	A	Houses in the greenery	Drinking	In disorder	Feeble	1	1.5	2	1	4
	B	Well-kept public gardens	Not for drinking	Neglected	Excellent	4	3	3	2	1
	C	Deteriorated public gardens	Sound and delicious	Neglected	Feeble	2	1.5	4	4	2
	D	Well-kept public gardens	Drinking	Well-kept	Absent	3	4	1	3	3

**2. Estimates of the parameters:
identification of the most important factors
and levels for each group.**

3. Comparison between the groups as regards to the relative importance of the factors

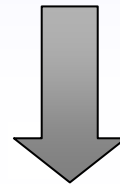
Ambit: URBAN ENVIRONMENT		Relative importance of factors for each group (%)				
		1	2	3	4	5
FACTORS	URBAN GREEN	6	30	19	34	19
	WATER	34	11	26	31	30
	ROADS	27	20	31	18	27
	LIGHTING	33	39	24	17	24
<i>Factors range</i>		2.19	2.31	2.54	2.55	2.52
<i>Goodness of Fit (Kendall's tau)</i>		1.00	0.91	1.00	1.00	1.00

3. Comparison between the groups as regards to the relative importance of the factors



4. Interpretation of the differences between the groups through external variables

Statistical method



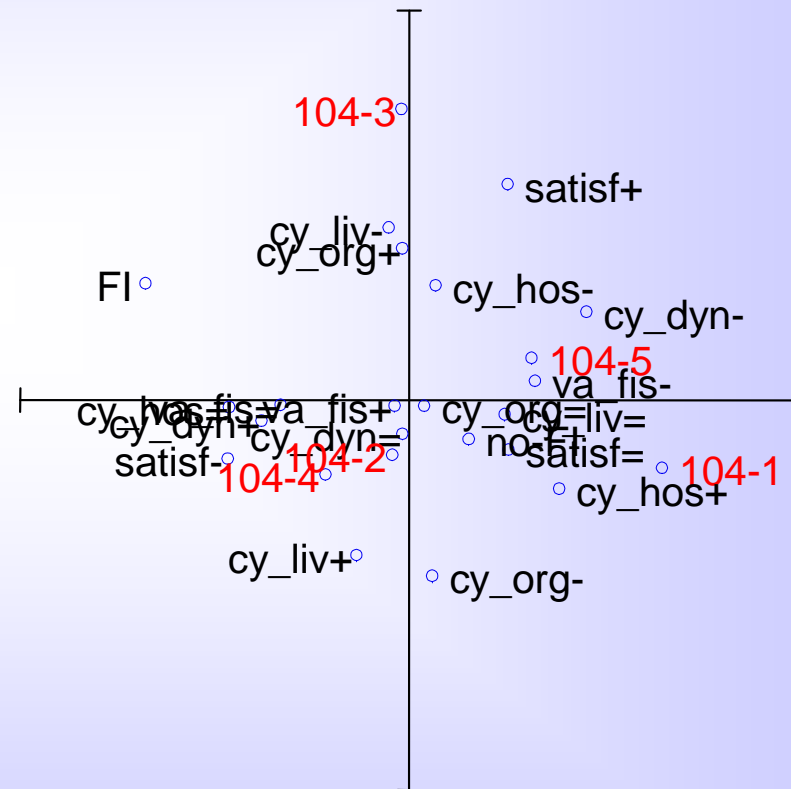
Correspondences analysis
on individual profiles formed by external variables



The analysis allows the description of each group in terms of individual variables (gender, age, ..)

4. Interpretation of the differences between the groups through external variables

example



Evaluation of the application

General issues

The presented application encourages future applications of the conjoint approach in the study of citizens' preferences in the field of quality of life studies

Final observations

Great attention has to be paid to

1. *the definition of the levels of each identified factors:*
they are greatly influenced by the reality that the researcher has and that should be the same of the respondent

Final observations

Great attention has to be paid to

2. *The form of representation:*

the choice between presence and absence of graphics is crucial. Some intermediate solutions can be found

Final observations

Great attention has to be paid to

3. *The interpretation of the results:*
more significant when is supported by other personal information concerning individual characteristics (also collected by a questionnaire).

Final observations

Great attention has to be paid to

4. *Data analysis approach:*

aggregation of individual preference data allows to find many application of conjoint approach to different situation in the field of personal quality of life studies especially focused on the investigation of recurrent individual model of preferences that can connected to individual level of satisfactions.