Seismic risk perception in Italy

Crescimbene M.*, La Longa F.*, Camassi R.*, Pino N. A.*, Peruzza L.**
*Istituto Nazionale di Geofisica e Vulcanologia, Rome, Italy
**Osservatorio Geofisico Sperimentale, Trieste - Italy

Istituto Nazionale di Geofisica e Vulcanologia

Contacts:
federica.lalonga@ingv.it
alessandro.pino@ov.ingv.it
massimo.crescimbene@ingv.it
romano.camassi@bo.ingv.it
lperuzza@inoges.it

European Geosciences Union General Assembly 2014
Vienna | Austria | 27 April – 02 May 2014
EGU.eu |

NH 9.8
Geoethics: Ethical Challenges in Communication, Geoeducation and Management of Natutal Hazards

1. The Seismic Risk Perception Questionnaire

The questionnaire on seismic risk perception (SRP-Q) has been constructed by the method of the semantic differential. To compare opposite adjectives or terms a seven point Likert's scale has been used. Assigned to each factor is a number of contrasting terms (eg. unexpected-expected) to which it is possible to assign a value.

	1	2	3	4	5	6	7	
expected								unexpected

The test consists of an informative part and seven sections respectively dedicated to:

- Hazard;
- Vulnerability (home and workplace);
- Exposure (with reference to population and territory);
- Institutions and Community
- Earthquake phenomenon;
- Risk information and their sources;
- Comparison between seismic risk and other natural hazards.

Informative data include: region; province; town of residence; home zip code; work zip code; age; gender; place of birth; nationality; marital status; presence of children; number of children and their age; household composition; presence of disabled persons with reduced mobility in the household; level of education; employment.

The questionnaire allows to obtain the perception score for five factors: Hazard, Exposure , Vulnerability, Institutions and Community, Earthquake phenomenon. These perception scores can be compared with the respective factors that in seismology define the seismic risk: hazard, vulnerability and exposure.

Each factor is investigated by a question associated to a given number of scales.

FACTOR	N. OF SCALES	QUESTION
Hazard	10	If you try to imagine an earthquake in the area where you live, how would you describe it?
Vulnerability	12	In case of an earthquake, how do you imagine your home/workplace?
Exposure	7	Compared to an earthquake, how would you describe the area where you live?
Institutions and community	7	Compared to an earthquake, how would you describe the institutions and the people around you?
Earthquake phenomenon	15	You see the earthquake as an event ...

René Magritte—Call of the peaks (1942)

The questionnaire is online at: www.terremototest.it

2. The Survey on seismic risk perception in Italy

The seismic risk perception survey began on 22 January 2013 and it is still underway. Compilation availability and accessibility has been spread through the social network, the web pages of regional, provincial, and municipal websites and on local online newspapers. The diffusion of the questionnaire was deliberately conducted through general interest locations, avoiding the specialised or official sites of the sector (Department of Civil Protection, INGV, OGS, universities, etc.) in order to limit the bias of educated/ oriented samples.

The survey includes all the Italian regions; on 25 July 2013, 5,585 tests had been compiled, subdivided in Administrative units (Region) and seismic zones.

3. The Sample

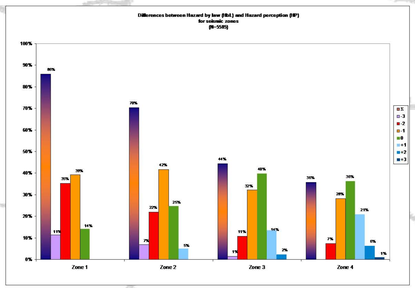
The examined sample consists of 5,585 people with following characteristics.

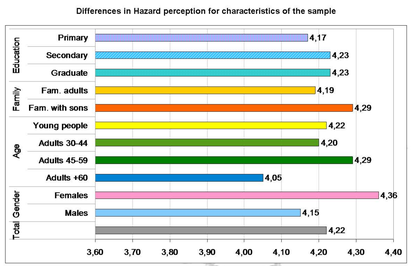
Gender	Females	36%
	Males	64%
Age	Young	15%
	Adults (30-44 years)	40%
	Adults (45-59 years)	35%
	Seniors	10%
Family	With children	55%
	Without children	45%
Instruction level	Primary or secondary school	8%
	Graduate	46%
	Degree	46%

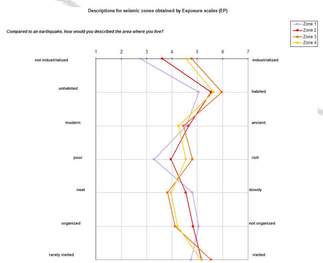
4. Data Processing

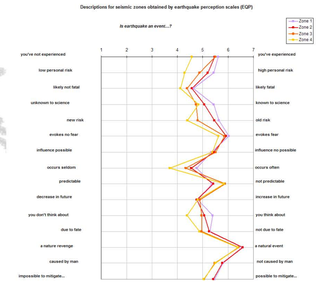
> Interpretation of Hazard Perception scores (HP)

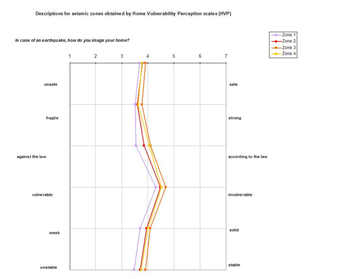
Seismic Zone	Semantic Differential Scores (7 points Likert's Scale) 1-2	2-3	3-4	4-5	5-6	6-7
Zone 1	-3 underestimated of 3 points and over			-2 underestimated of 2 points	-1 underestimated of 1 point	0 good fitting
Zone 2	-3 underestimated of 3 points and over		-2 underimated of 2 points	-1 understimated of 1 point	0 good fitting	+1 overestimated of 1 point
Zone 3	-3 underestimate of 3 points	-2 underestimated of 2 points	-1 underestimated of 1 point	0 good fitting	+1 overestimated of 1 point	+2 overestimated of 2 points
Zone 4	-2 underestimated of 2 points	-1 underestimated of 1 point	0 good fitting	+1 overestimated of 1 point	+2 overestimated of 2 points	+3 overestimated of 3 points

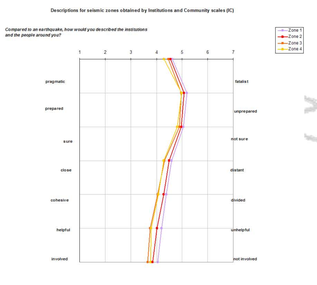


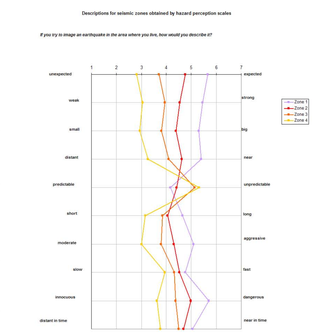












5 Conclusions

The Italian National Statistical System (ISTAT) has accepted the questionnaire as permanent observatory. This will allow us to collect data on seismic risk perception in "continuous" and observe the variations in the short, medium and long term. At the same time, following ISTAT indications, we will conduct a survey on a representative sample at national level.

Possible implementations of the test involving a comparison between the perception and the "real" data have also been foreseen for the other two risk factors: vulnerability and exposure. At present the main obstacles in this direction are related to the difficulty in obtaining accurate and updated data of these two factors.

We think also to implement data analysis according to the semantic differential factors.

We consider that analysis of risk perception data is able to produce useful indications to design seismic risk reduction activities. The processing of the data collected on the seismic risk perception will give us detailed information on the national territory to launch campaigns of awareness and improve risk education. In particular - for the first time in Italy – it will be possible to formulate risk education activities in light of the variables that mainly influence risk perception. This is also in view of the fact that seismic risk education activities are more effective when taken into due consideration are the local realities to which they refer.

This study has benefited from funding provided by the Italian Presidenza del Consiglio dei Ministri - Dipartimento di Protezione Civile (DPC). This paper does not necessarily represent DPC official opinion and policies.