What's the seismic risk perception in Italy?

1. Risk perception

Risk perception is a fundamental element in the definition and the adoption of preventive counter-measures. In order to develop effective information and risk communication strategies, the perception of risks and the influencing factors should be known. Due to the complexity of risk perception, in order to build a seismic risk perception questionnaire we needed an agile and flexible method, able to investigate complex variables and to return measurable values. We opted for the semantic differential method (Osgood et al. 1957), which is conceptually similar to the semantic images indicated as a very promising approach for risk perception studies by Washinger & Renn (2010). Furthermore this method has already been used in similar research on risk perception, (e.g. Werner & Flipo, 2006). Our method can be framed as psychometric and cultural theory of risk approach, with in addition some components to obtain a better overview on possible influences on risk perception: causes attributed to disasters, images of and associations on nature and environment (Szabay & Deese, 1979), several personal and demographic characteristics, and experience from past events.

2. The questionnaire

The questionnaire was constructed on the factors that determine the seismic risk: hazard, exposure, and vulnerability. Other factors related to institutions and people and to Earthquake perception in general were also considered.

The whole test consists of an informative part and seven sections respectively dedicated to:
- Hazard
- Vulnerability (home and workplace)
- Exposure
- 4. Perception of institutions and people
- 5. Earthquake phenomenon
- 6. Risk information and their sources
- 7. Comparison between earthquake and other natural hazard

Assigned to each factor is a set of scales, to which it is possible to assign a score from 1 to 7, Likert scale (Likert, 1932). The questionnaire makes it possible to obtain a perception score for each factor. Hazard, Exposure, Vulnerability, Institutions and People, Earthquake phenomenon.

The complete questionnaire is accessible at: http://www.terremototest.it.

3. The survey

The seismic risk perception survey began on 22 January 2013 and it is still underway. Collection 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 test was deliberately conducted through general interest locations, avoiding the specialized 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 31 July 2014, 9,272 questionnaires had been compiled, subdivided in: Adiministrative units (Region) and seismic zones (hereinafter described) as shown in the table. Veneto Region represents over 1/4 of the sample, as a local newspaper in the Verona area advertised the initiative.

4. Data processing

Interpretation of Hazard Perception scores (HP)

<table>
<thead>
<tr>
<th>Zone</th>
<th>1-2</th>
<th>2-3</th>
<th>3-4</th>
<th>4-5</th>
<th>5-6</th>
<th>6-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone 1</td>
<td>underestimation of 3 points and over</td>
<td>underestimated 2 points</td>
<td>underestimated 1 point</td>
<td>good fitting</td>
<td>overestimated 1 point</td>
<td></td>
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<td>underestimated 2 points</td>
<td>underestimated 1 point</td>
<td>good fitting</td>
<td>overestimated 1 point</td>
<td></td>
</tr>
<tr>
<td>Zone 3</td>
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<td>underestimated 2 points</td>
<td>underestimated 1 point</td>
<td>good fitting</td>
<td>overestimated 1 point</td>
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<td>Zone 4</td>
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<td>underestimated 2 points</td>
<td>underestimated 1 point</td>
<td>good fitting</td>
<td>overestimated 1 point</td>
<td></td>
</tr>
</tbody>
</table>

5 Future developments

The research was funded by Italian Civil Protection Department (DPC) for the second year (2014-2015).

By 2014, a national survey on a statistical sample for regions and earthquake areas will be conducted. The interviews will be conducted by CATI (Computer Assisted Telephone Interviewing) and an adaptation of the questionnaire may be necessary.

We want to compare the data of perception with the "real" data of the Exposure and Vulnerability of buildings.

We also plan to implement new interpretations of the data on the perception closer to the classical approaches of risk perception research ad the factors of semantic differential method and psychometric paradigm.