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# Earthquake mitigation and preparedness at the individual level in Istanbul and factors affecting this process

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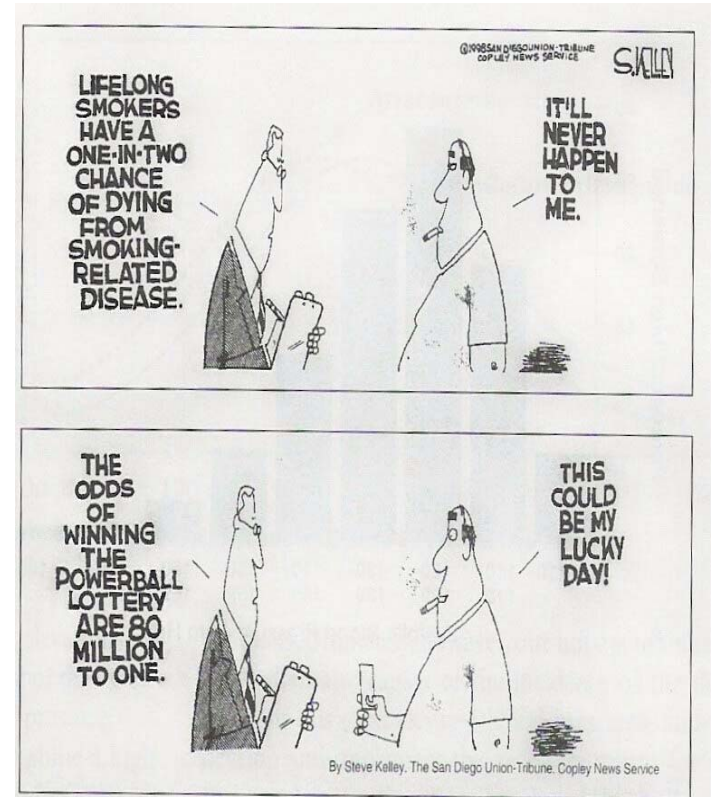
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# Introduction

Disaster risk reduction is a shared responsibility between governments, communities and individuals (ISDR, 2005)

But,

Obtaining the cooperation of individuals and communities is a complex issue with many inherent difficulties.





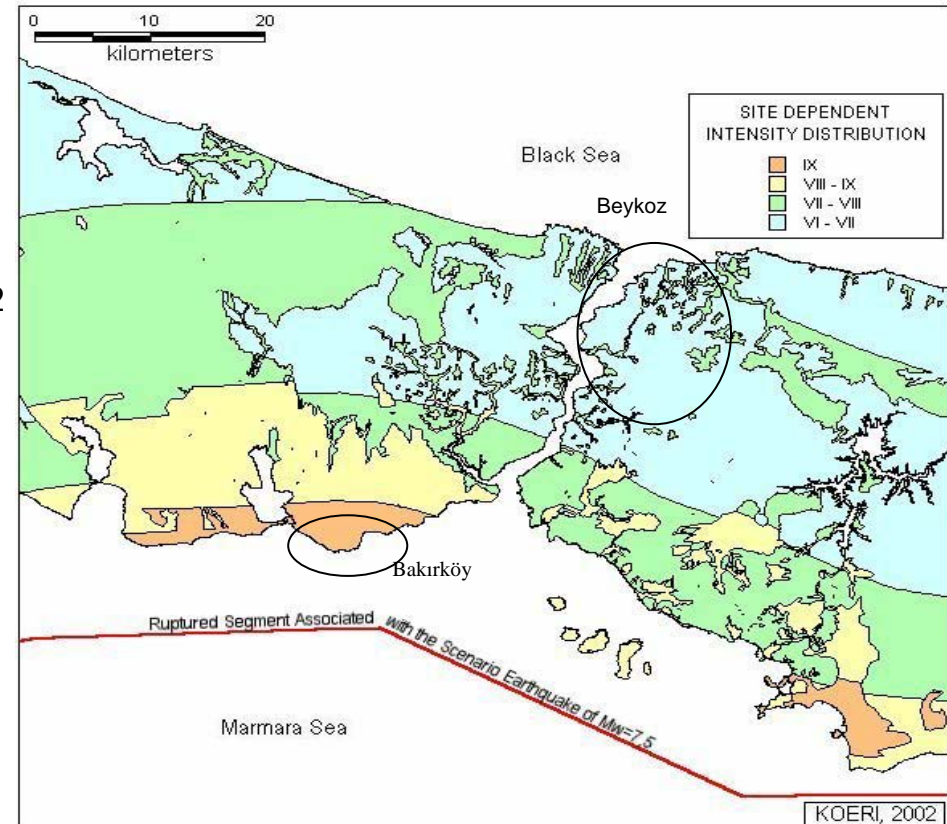
## ***Research Aim***

- To test whether there is a difference considering earthquake **awareness** (*knowledge about the risk and how to cope with it and risk perception*) and **action** (*mitigation + preparedness*) among:
  - Residents of relatively high risk and low risk zones
  - Between groups with different socio-economic levels
- To investigate the process of taking action regarding earthquake preparedness and mitigation and to identify the factors influencing this process.



## Research Site

- Istanbul  
Population: 12,573,836 (2007)  
Annual Growth Rate: ‰  
33.1 (2000)  
Population density: 2420 per km<sup>2</sup>  
(2007)  
Expecting an earthquake with in  
a period of 30 years. (2000)
- Bakırköy  
(has relatively higher risk)
- Beykoz  
(has relatively lower risk)



Source: Boğaziçi Üniversitesi, 2002

Places are marked approximately



# *Research Methods (RM)*

- Part 1: qualitative methods
  - ✓ Focus Groups Discussions (FGDs),
  - ✓ In-depth Interviews
  
- Part 2: quantitative methods
  - ✓ Survey



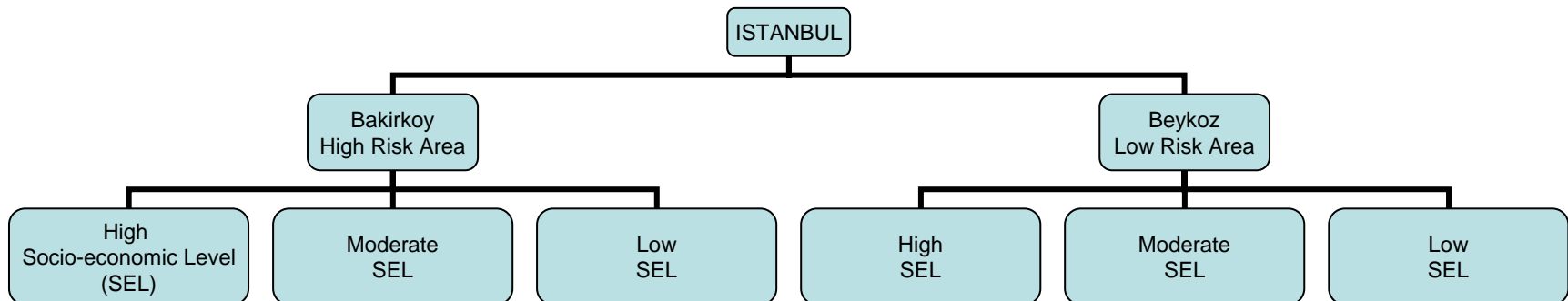
## ***RM - Qualitative methods***

- *12 Focus Group Discussions + Pre-test with people living in high and low risk zones*
  - ✓ Purposeful sampling - existing social groups
  - ✓ Adults
  - ✓ Socio-economic and education levels were considered
  - ✓ Question guide with open ended questions
  - ✓ The groups consisted of 6 to 10 people
- *11 In-depth interviews with experts and professionals*
  - ✓ Experts in the social and natural sciences, administrators and practitioners of various preparedness programs



# RM - Quantitative methods

- *Survey*
  - ✓ Face to face interviews with 1123 people (response rate: 93.6 %; 49% women; mean age: 48 (SD: 15))
  - ✓ Stratification process



- ✓ After this process households were selected from each stratum by a two-stage cluster sampling technique.



## *Findings - qualitative part*

- The level of awareness was considerable.
- There was a difference considering awareness and action between risk zones.
- Relatively bigger difference between socio-economic levels within and between the districts.





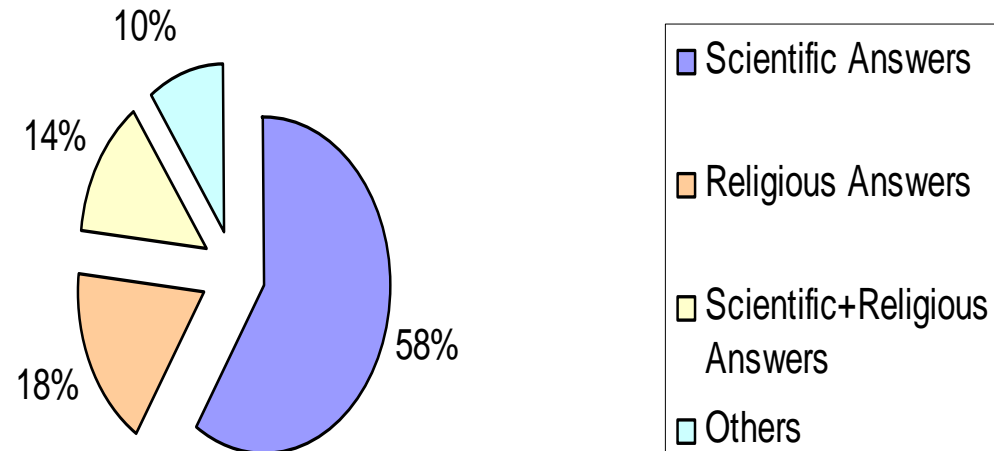
## *Findings - qualitative part*

- Obstacle factors:
  - ✓ Low SEL
  - ✓ Outcome expectancy (absence of belief in microscale, individual and non-structural measures)
  - ✓ Helplessness
  - ✓ Culture of negligence (in context of multiple and/or constant risks in the community)
  - ✓ Lack of trust
  - ✓ Onset time – poor predictability & normalisation bias
- Motivating factors:
  - ✓ Location
  - ✓ Direct personal experience
  - ✓ Higher education level
  - ✓ Social interaction



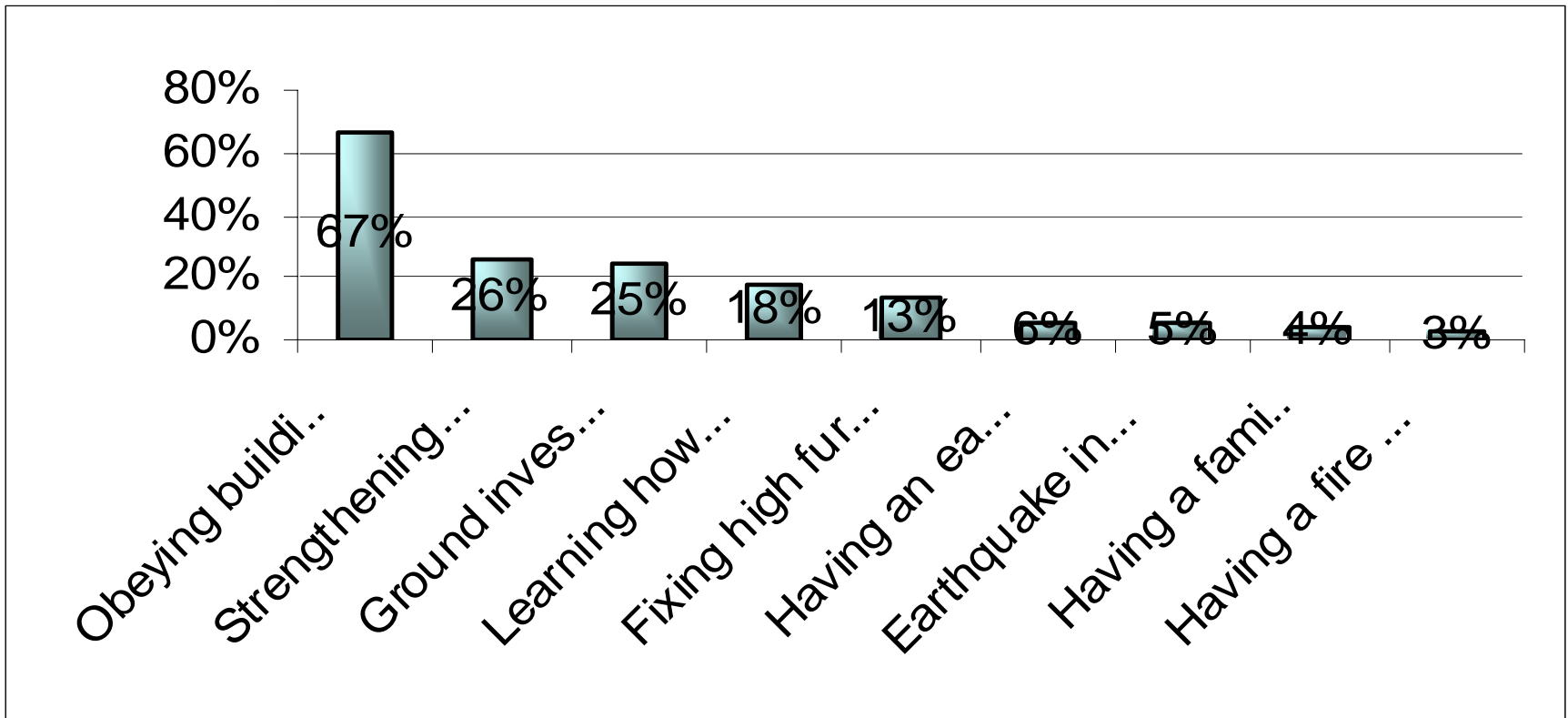
## *Early Findings - quantitative part*

Knowledge about the cause of an earthquake



- 55% of the respondents knew what to do during an earthquake.

Knowledge about the mitigation and preparedness measures



18% Could mention spontaneously at least two of the 9 measures  
(Mean: 1.7, SD: 1.6)

2% Could mention spontaneously all of them

14% Could not mention any of them



Source of information*	Number, N	%
TV	985	89%
Newspapers or magazines	536	48%
Internet	206	18%
School, working place, neighbourhood activities	149	13%
NGOs, CBOs (Community Based Organisations)	133	12%
Official institutions	117	10%
Friends, neighbours, relatives	113	10%
Have not received such an information	27	2%

\* Choices were read to the respondents. Multiple choices were possible.



- The respondents had realistic judgements about the risk of their district.

85% of the respondents living in Bakirkoy thought that their district has a high risk due to geological conditions

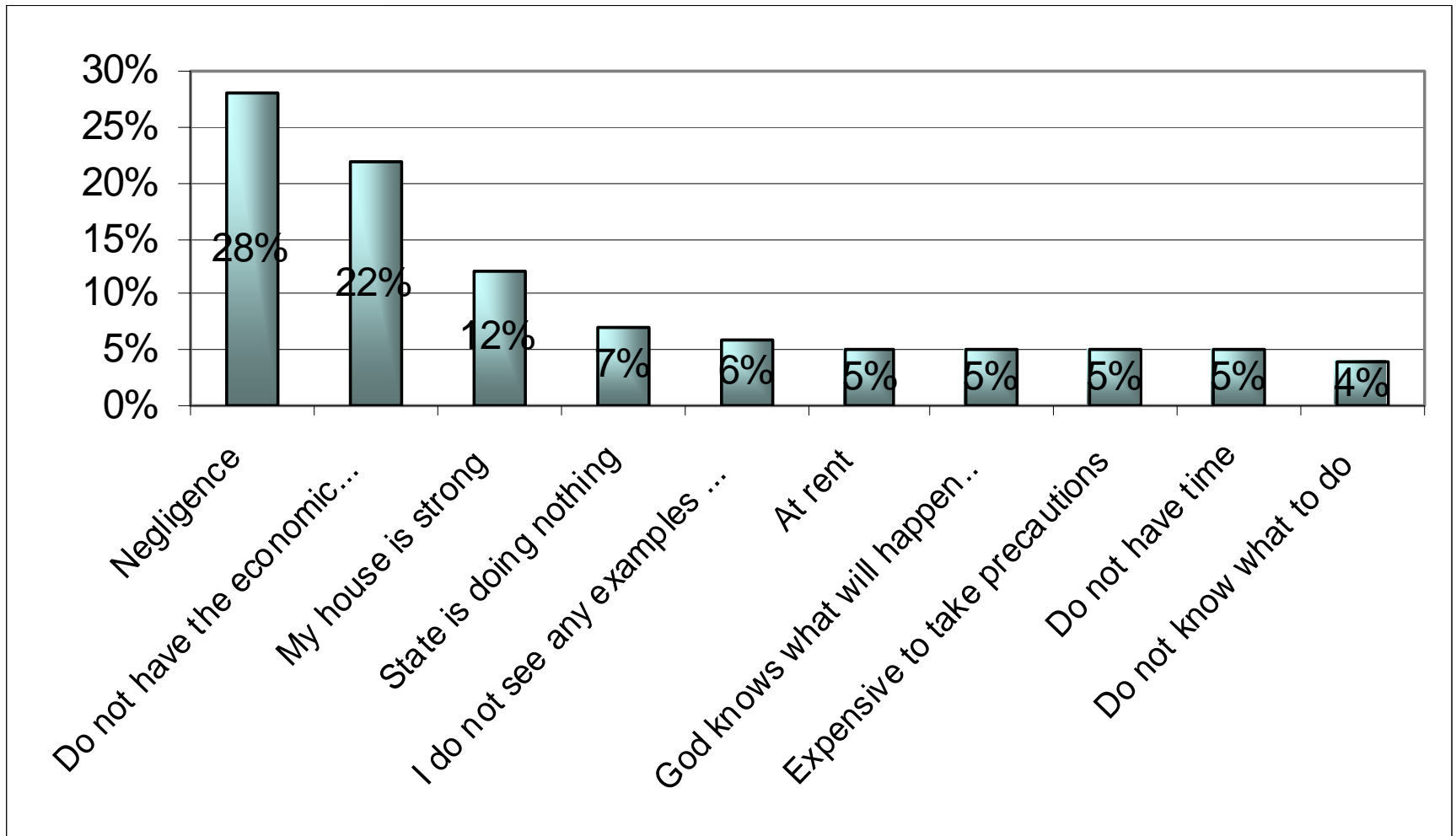
80 % of the respondents living in Beykoz thought that their district has a lower risk.

- In general 43 % of the respondents made realistic judgements about the risk of the buildings they are living in.



- 70 % - totally agree with the statement „There are other threats in daily life that I am more worried about.“
- 50 % - „It is possible to mitigate damage from an earthquake with simple measures.“
- 30 % - „The measures that are taken at home are not very effective.“
- 50% - „When the overall measures are not taken in the community, the measures that I have taken individually has no meaning and no use.“

## Top 10 stated reason for not being ready (N=924)

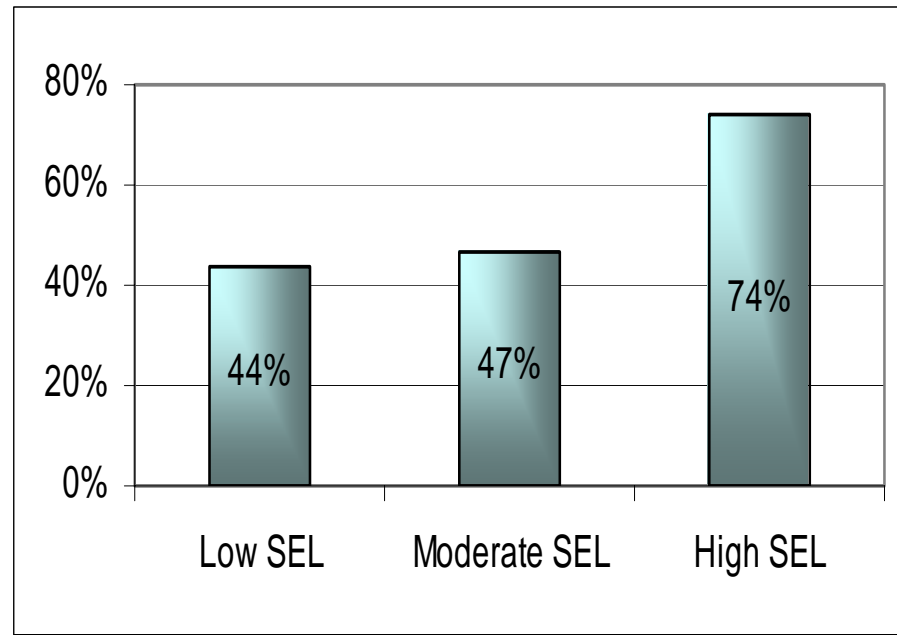
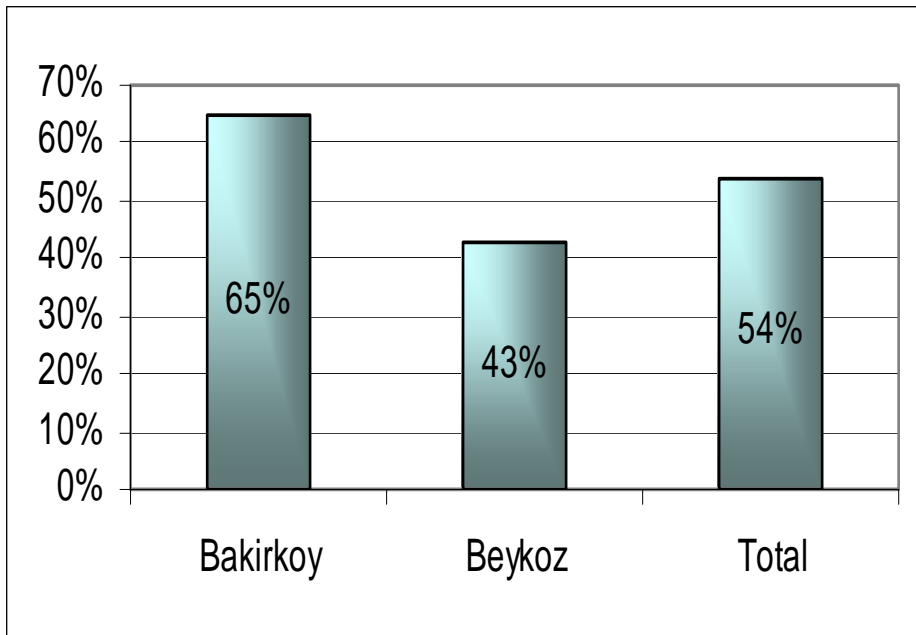


Among 11 mitigation and preparedness measures;

- ✓ Most frequently taken measure: Having the building tested for construction quality (77% in Bakirkoy; 26% in Beykoz)
- ✓ Least frequently: Being a member/volunteer of a related NGO or CBO (3% in both)

Taking at least 3 of the 11 measures

(Mean: 3.17; SD: 2.3)







## *Discussion*

- Further analysis of the quantitative data with cross tables and logistical regression method is on the way, but the descriptive information gathered from the quantitative data are parallel to the findings of the qualitative data.



## ***Conclusion***

- Socio-economic level and location are important factors affecting individual preparedness.
- Awareness programs should be supported by interactive methods enabling people with different backgrounds to personalise the risk, gain the ability and self-confidence to cope with it and to convince them of the usefulness and effectiveness of all measures.
- People with direct experiences with an earthquake may be a key resource for reaching target populations.