

Chapter 7

Public Perceptions of Earthquake Risk and Preparedness in Istanbul: A Mixed-Methods Analysis of YouTube Comments

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ABSTRACT

This study examines public perceptions and awareness of earthquake risks in Istanbul through a mixed-methods qualitative analysis of 765 YouTube comments posted under a video featuring seismologist Professor Naci Görür, recorded as of June 05, 2025. Employing thematic analysis, frequency statistics, and Latent Dirichlet Allocation (LDA) topic modeling, the research identifies seven disaster awareness subdimensions: Risk Perception, Knowledge/Information Level, Preparedness/Preventive Behaviors, Response Awareness, Post-Disaster Recovery Awareness, Social/Societal Awareness, and Fatalism vs. Agency. Findings reveal a dominant focus on Knowledge/Information Level (590 comments) and Preparedness/Preventive Behaviors (135 comments), reflecting a strong public appetite for scientific understanding and proactive measures, driven by Istanbul's proximity to the North Anatolian Fault.

1. INTRODUCTION

Disaster awareness is essential to community resiliency, allowing people or communities to reduce risks, respond, and recover from natural or human-made disasters.

DOI: 10.4018/979-8-3373-6274-8.ch007

Disasters i.e. earthquakes, hurricanes, droughts, extreme meteorological events, floods, and wildfires, are significant threats to life, property, and our environment (Amsalu et al., 2026; Çelik, 2026; Çelik et al., 2026). Disaster awareness - increase awareness of threats, potential consequences, and preparedness - can help people substantially mitigate their vulnerabilities and improve safety. In this chapter we will summarize the importance of disaster awareness, preparedness strategies, and the necessary application of awareness and education together that build community resiliency, supported by academic literature.

Disaster awareness is knowing the hazards that may impact your community, the possible consequences of those hazards, and what actions to take to prepare and mitigate their impact. The United Nations Office for Disaster Reduction (UNDRR) indicates that effectively reducing disaster risk (DRR), requires communities to be aware of hazards in order to anticipate or respond to them (UNDRR, 2020). Awareness is fundamental to proactive and informed actions, which allow individuals to remain conscious in decision-making during a crisis situation.

Disasters can be broadly categorized into two types:

- **Natural Disasters:** These include geophysical events (e.g., earthquakes, volcanic eruptions), meteorological events (e.g., hurricanes, tornadoes), hydrological events (e.g., floods, tsunamis), and biological events (e.g., pandemics).
- **Human-Induced Disasters:** These encompass industrial accidents, terrorist attacks, and technological failures.

Each type presents unique challenges and requires tailored preparedness measures.

The effects of disasters are numerous, including impacts on physical infrastructure, economics, and mental health. For example, when the Haiti earthquake occurred in 2010, it resulted in over 200,000 fatalities, and displacement was estimated in the millions. The earthquake illustrates that lack of preparedness has negative consequences for those live in vulnerable areas, and the more vulnerable area, the more devastation (Bilham, 2010). Hurricane Katrina resulted in an economic loss of over \$125 billion (Knabb et al (2005). In terms of preventative awareness, it should be noted that awareness of a disaster and their mitigations combined with education are all encompassing when it comes to knowing when and how to proactively take disaster awareness to mitigated actions.

Disaster awareness is a major determining factor of preparedness and resilience. Awareness has many measures that include range of influences and is linked to more than a dozen explanatory variables. Various research studies reveal the strong connection between disaster awareness and preparedness behaviors. Patel and Kermanshachi (2020) suggest an economic status including education and income is a reasonable predictor of disaster awareness and readiness. In the educational context,

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