

Ridgecrest Earthquake Sequence Research

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Research Team

Public Responses to the 2019 Ridgecrest Earthquake Sequence and ShakeAlert

(October 2019 – May 2020)

- **Jeannette Sutton, U. of Kentucky, Lexington**
 - Qualitative Lead
- **Michele Wood, CSU Fullerton**
 - Quantitative Lead



Purpose

- To understand how the public responded during the 7/5/19 Ridgemont earthquake series with an explicit focus on ShakeAlert (and related apps)



Study Aims

Examine

Perceptions and self-protective actions among the public in response to the Ridgecrest earthquake and ShakeAlert

Document

Baseline knowledge and attitudes relating to ShakeAlert (and other earthquake alerting apps) across Southern California

Understand

Public reactions to ShakeAlertLA during this event



Quantitative

Multi-Method Approach – Survey

- Online survey
- CSUF Social Science Research Center
- Sample obtained through Qualtrics
- Quotas and sample weights
- Geographic regions:
 - **Sample 1** ($N=1,000$) – Southern CA (baseline perceptions and behaviors related to ShakeAlert)
 - **Sample 2** ($N=384$) – 4.0+ MMI (Perceptions and experiences during the Ridgecrest earthquake sequence)

Qualitative

Multi-Method Approach – Content Analysis

- **Tweets** collected July 4-8, 2019, that include the hashtag #shakealert
 - Descriptive summary of:
 - ✓ Tweet volume
 - ✓ Key words
 - ✓ Expressed sentiment
 - Analysis of representative sample of tweets (n~3,000) to identify public perceptions about ShakeAlert in the aftermath of the earthquake sequence
- **Open-ended survey items** about ShakeAlert and ShakeAlertLA
 - Content analysis



Potential Impact

Implications

1. Better understanding of cognitive and behavioral responses to earthquakes and immediate impact alerts
2. Test of theory underpinning warning message design and protective action decision making for immediate threats
3. Improved understanding of policy-making and organizational response to public perceptions of warning limitations



Potential Impact

Implications (Cont.)

4. Established baseline for tracking changes in public perceptions and behaviors related to ShakeAlert (theory-based)
5. Cross-disciplinary training for students from social and geo-sciences
6. Findings presented to USGS, State and local emergency management agencies, and the annual meeting of the American Geophysical Union
7. Potential impact on the design, development, and implementation of ShakeAlert pre-event education



Questions?

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