

# Confronting an Unfamiliar Hazard: Tsunami preparedness in Tasmania

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The Eastern Australian coast faces some 8,000km of active tectonic plate boundary

- capable of generating tsunami, that
- could reach Australia within 2-4 hours

Bureau of Meteorology (2008)

→ Development of Australian Tsunami Warning System

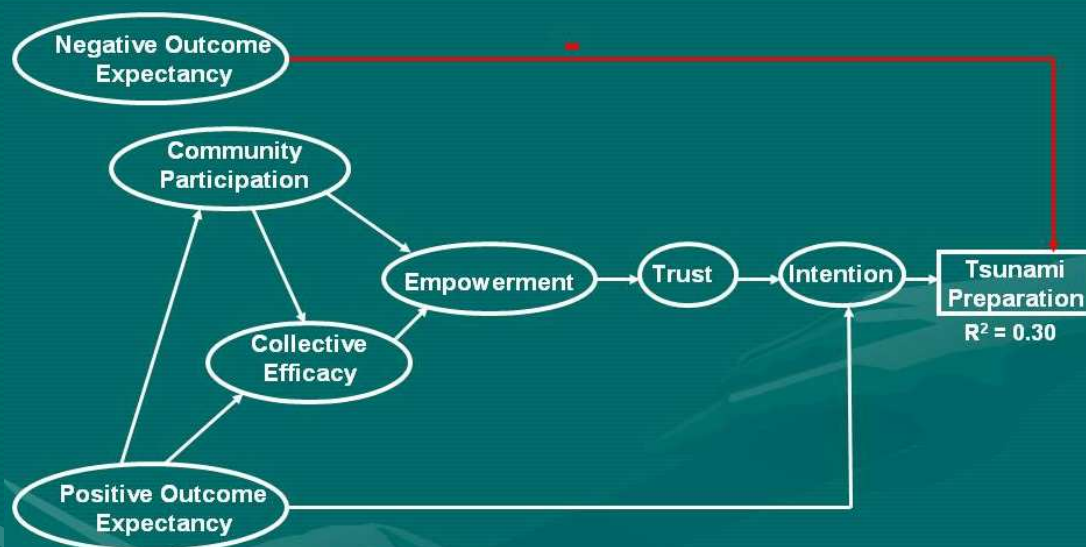
- warnings → manage risk
- effectiveness is a function of people's ability to respond within time frame

How do Australians see the problem?

## Earlier work developed and tested a model of tsunami preparedness using data from high risk areas in the USA (Alaska & Oregon)

Paton et al. (2008)

Paton et al. (2009)



### Could this model be applied to Australian communities?

- EMA funded research on this issue

## Methods

Surveys distributed to  
St. Helens  
Scamander  
Orford  
Lauderdale  
Blackman's Bay  
Kingston



1000 questionnaires - only 136 responses

# Tasmanian Tsunami History

15 events in past 150 years

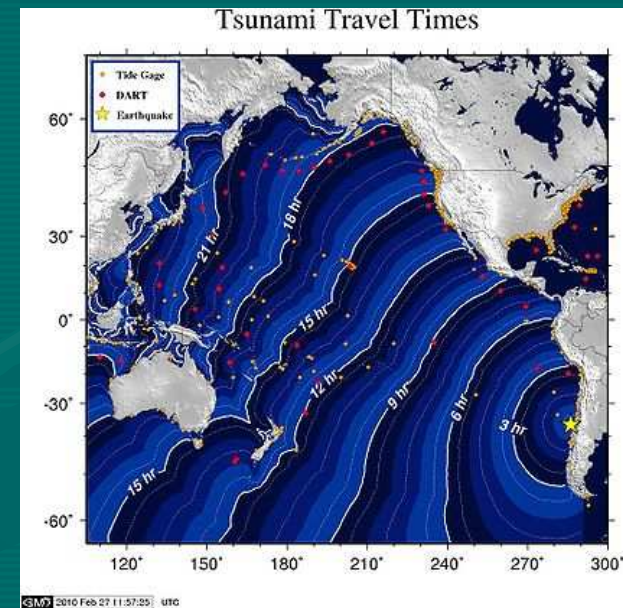
Most recent...

September 2007

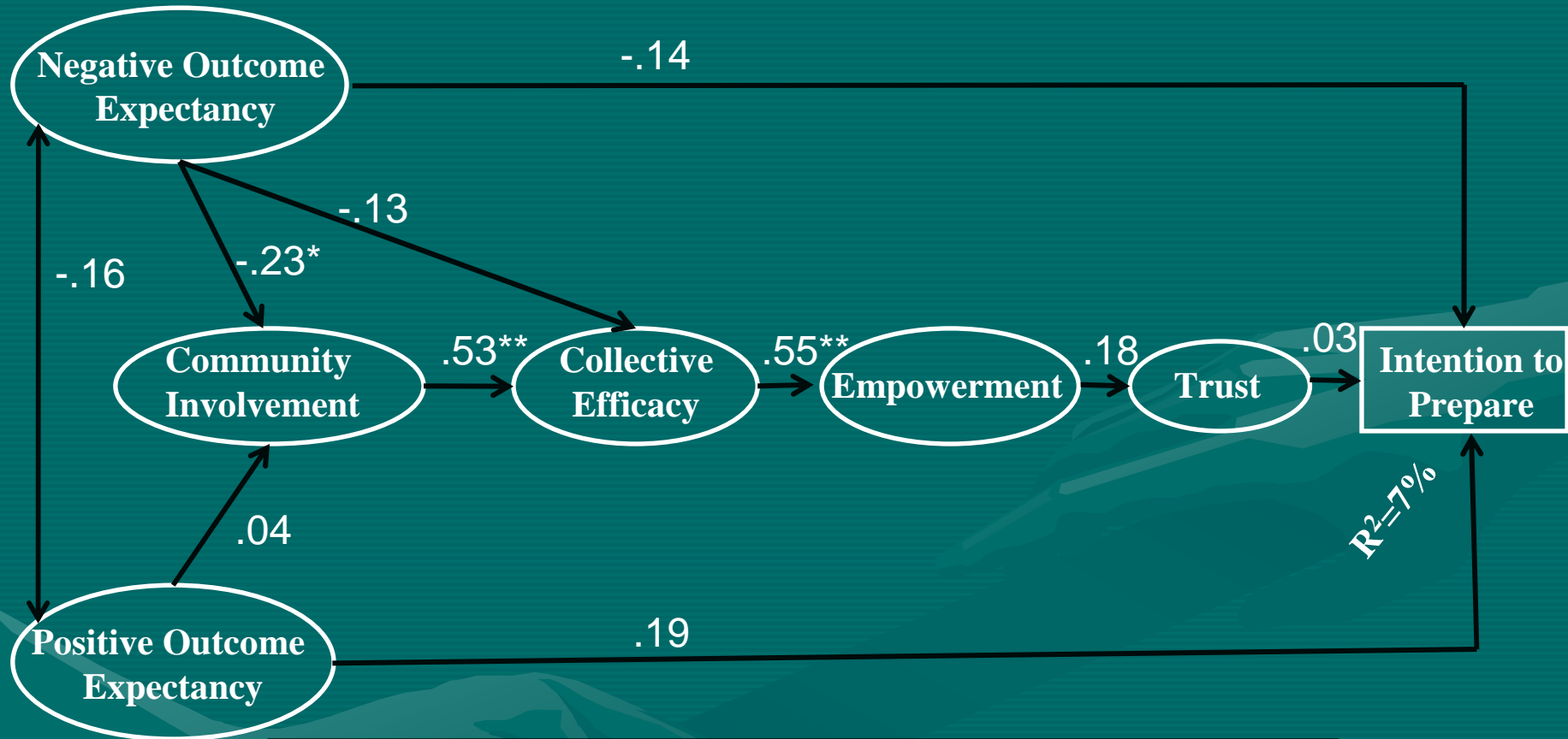
July 2009

Magnitude: 25-30 cm.

Questionnaires distributed July-August 2008



# Findings: Original model



Model	$\chi^2$	<i>p</i>	CMIN/D F	RMSEA	RMSEA 90%	PCLOSE	CFI	IFI
Model 1	454.246	<.000	1.342	.052	.039-.064	.390	.942	.943
Model 3	324.52	<.007	1.208	.039	.022-.053	.896	.968	.969

## Roles of Outcome Expectancy (OE) & Trust

- Not well supported

Why? Trust and OE are only important when people face uncertainty

If a hazard not is recognised as such, trust and OE become irrelevant for people's decision making

- is the hazard seen as something to be worried about?

Interviewed 29 people

Only 1 of 29 people believed that tsunami could be regarded as a threat

Reasons...

- unaware of any tsunami history (incl. 2007 event)
- lack of apparent causes
- no evidence of risk



Gold Coast residents respond to tsunami warning (Chile) 2010



# Implications

Include measures of...

## 1. Risk rejection (beliefs)

Paton et al. (2001)

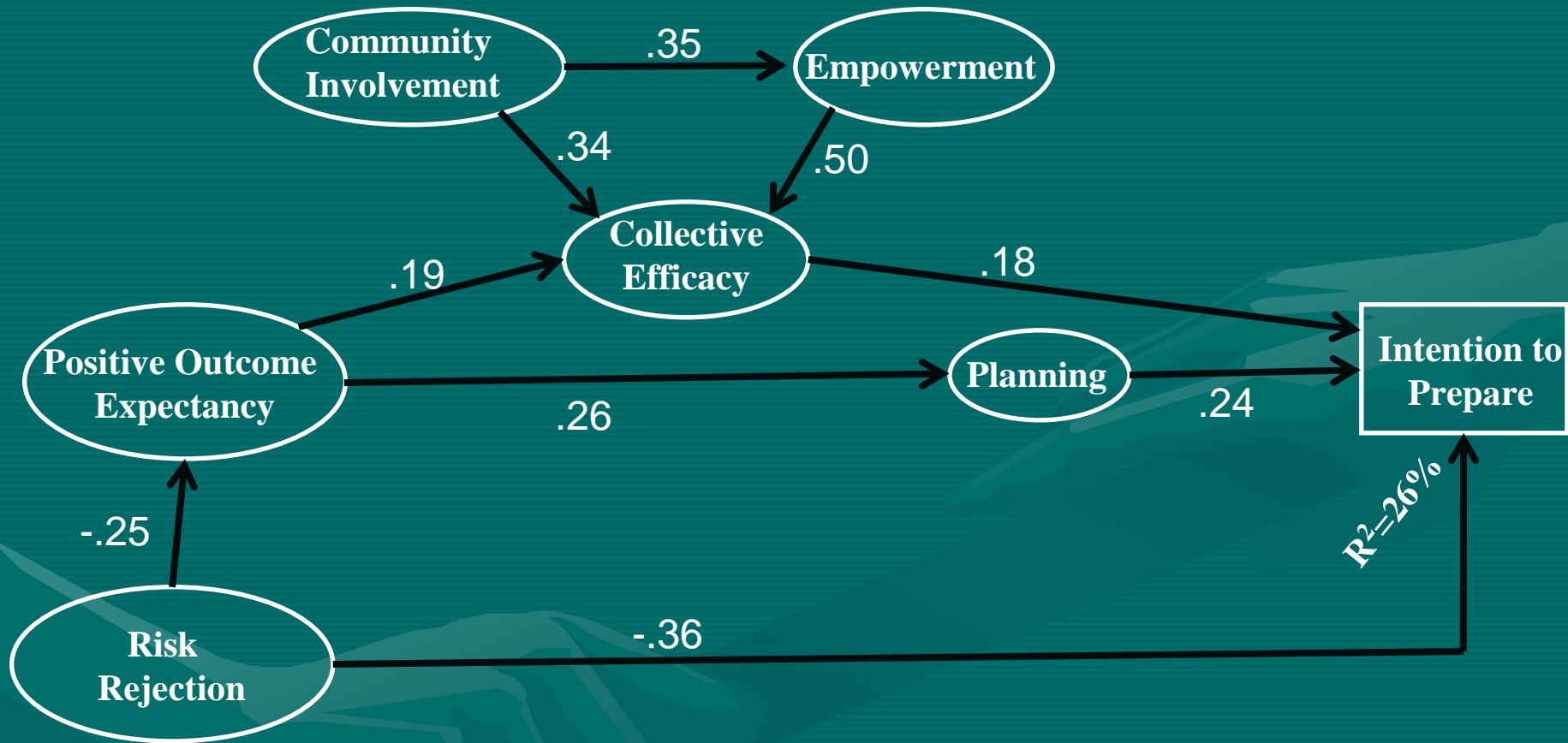
e.g., likelihood of tsunami is exaggerated

## 2. Planning (competence)

predicts intention to act for unfamiliar events

Schwarzer (2001)

# Findings: Revised model

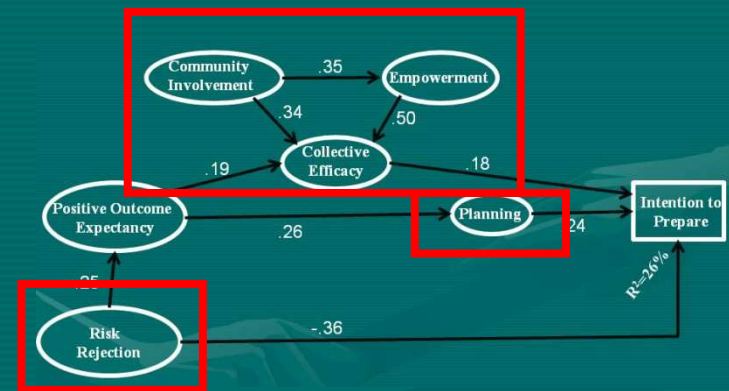


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Confirms role of community involvement, collective efficacy and empowerment as predictors of people's

- adoption of measures to mitigate risk

Lion et al. (2002)  
McGee & Russell (2003)  
Paton et al. (2008)  
Siegrist & Cvetkovich (2000)



Identified benefits of

- risk rejection
- planning

## Risk communication/public education to include:

- risk acceptance/rejection
- community/personal competencies

Not just making information available

Information needs to be provided in a context in which it can be:

- interpreted, and
- used.

Ensuring community members have access to

- social networks (e.g., active participation)
  - interpret/develop/enact risk beliefs
- competencies (e.g., collective efficacy)
  - identify ways to respond
- competencies (e.g., planning)
  - how to put strategies into action
- quality relationships (e.g., empowerment)
  - formal sources (information/resources)  
meet community needs/expectations

**Integrate Risk Management with Community  
Engagement/Community development**