

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)

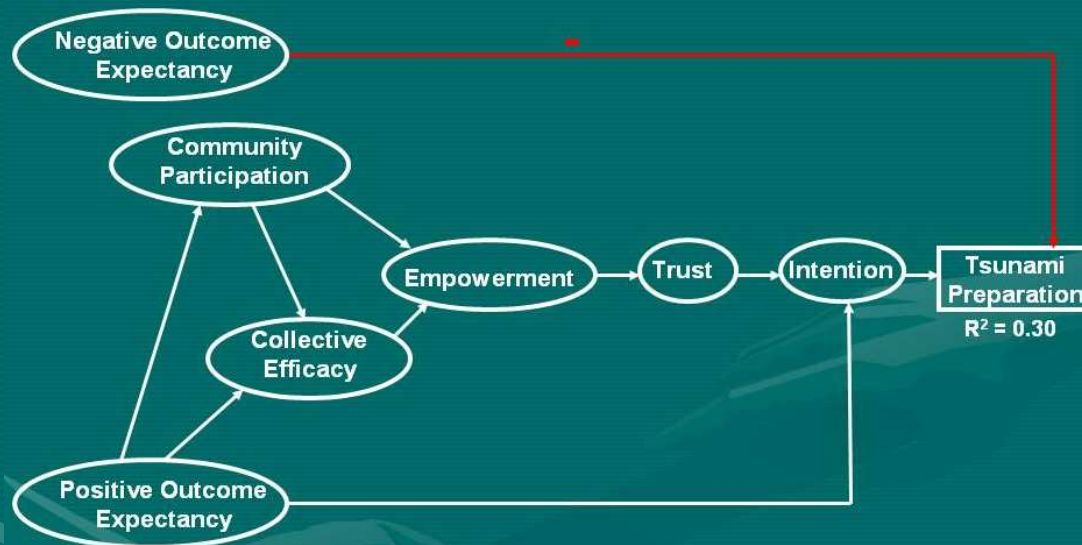
→ Development of Australian Tsunami Warning System

- 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

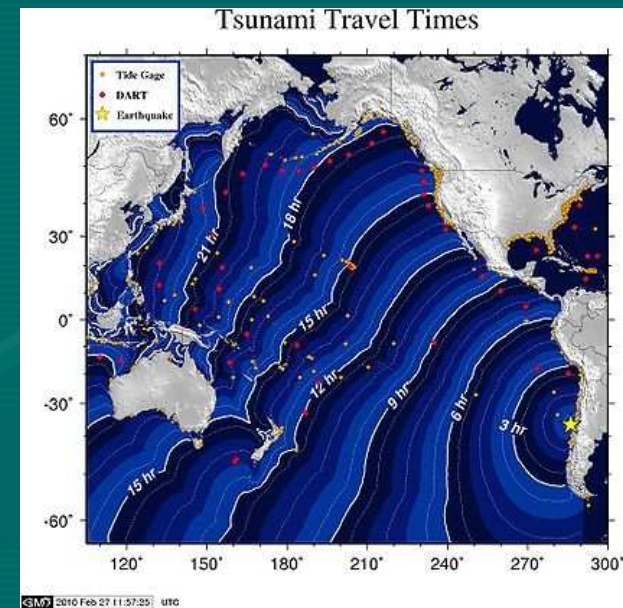
Most recent...

September 2007

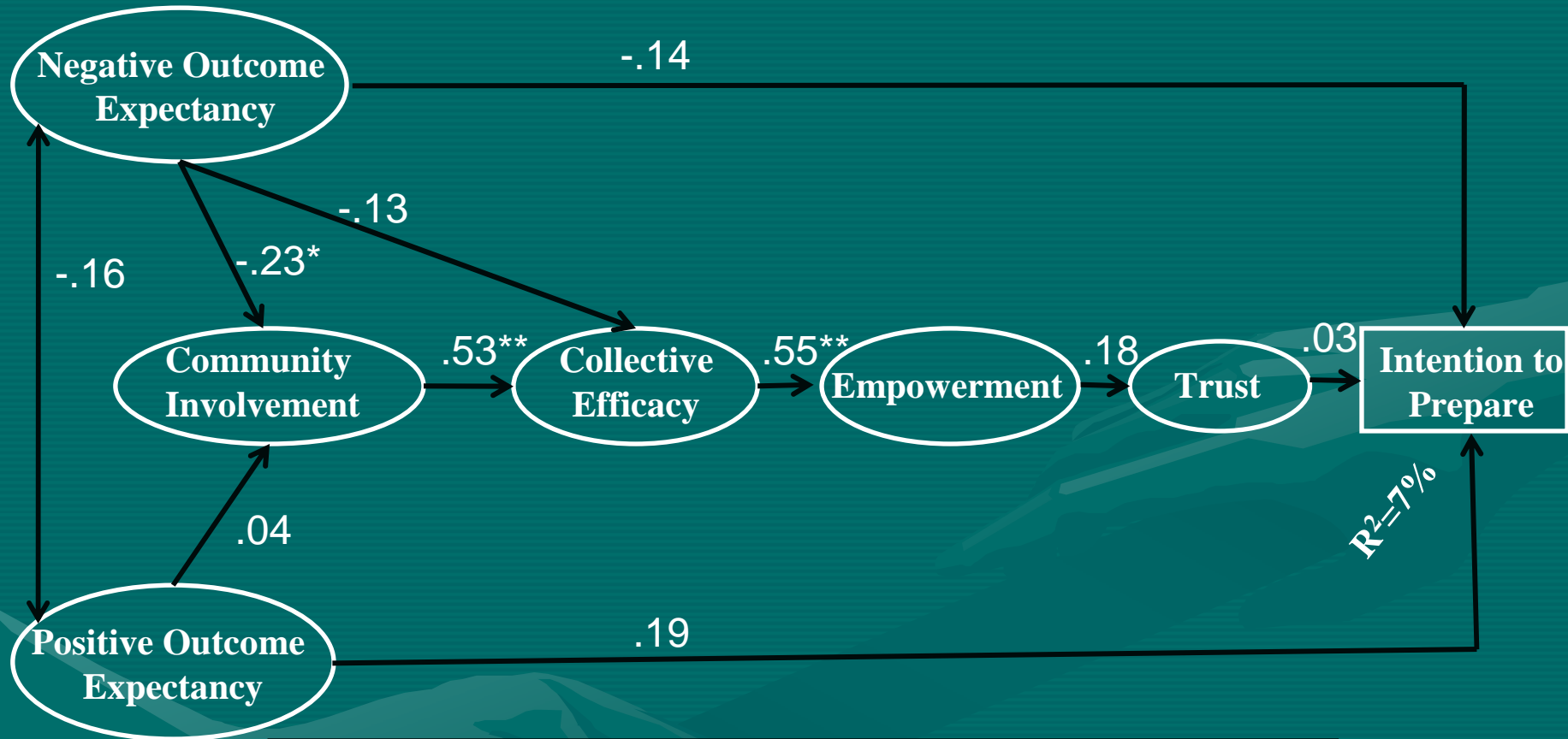
July 2009

Magnitude: 25-30 cm.

Questionnaires distributed July-August 2008



Findings: Original model



Model	χ^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)

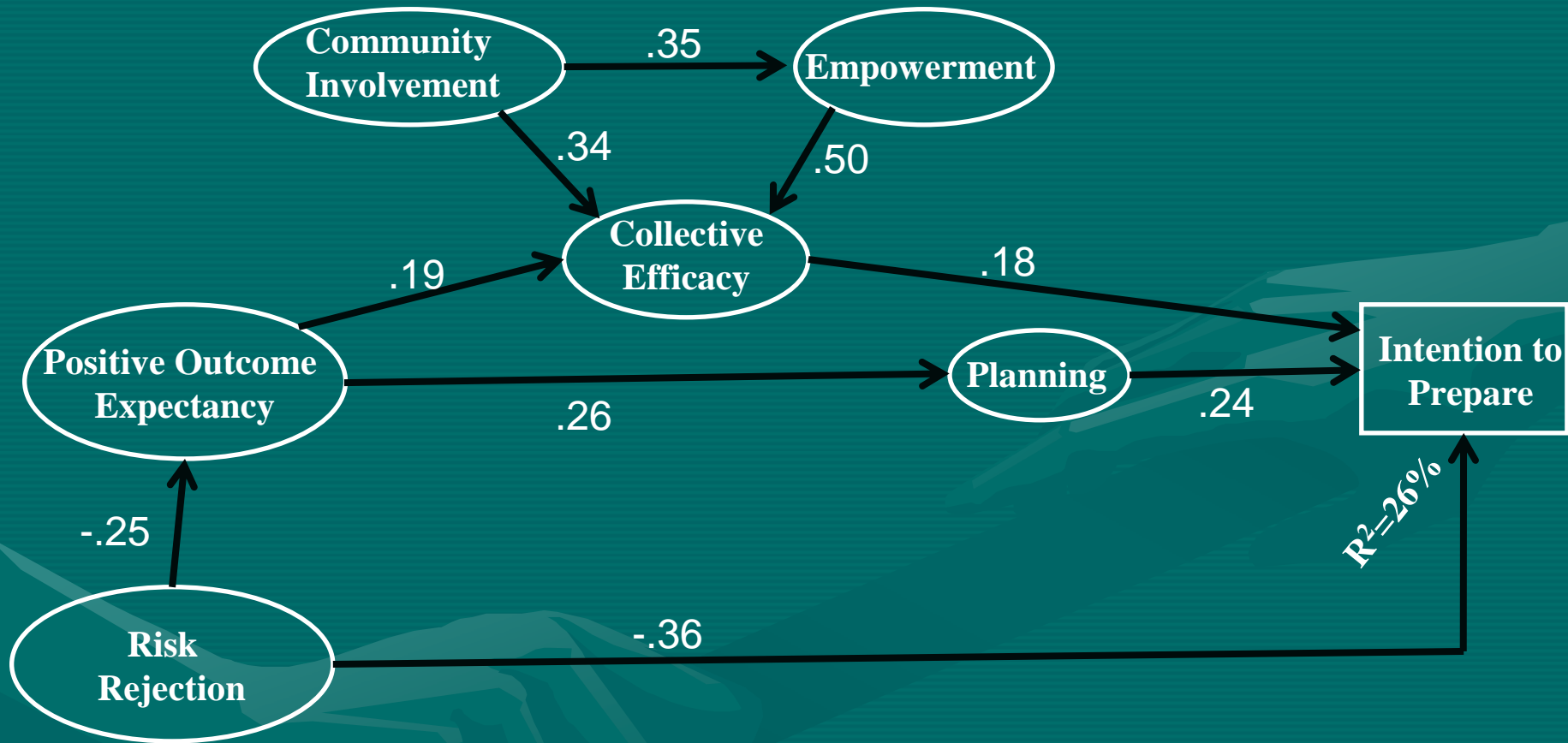
e.g., likelihood of tsunami is exaggerated

2. Planning (competence)

predicts intention to act for unfamiliar events

Schwarzer (2001)

Findings: Revised model

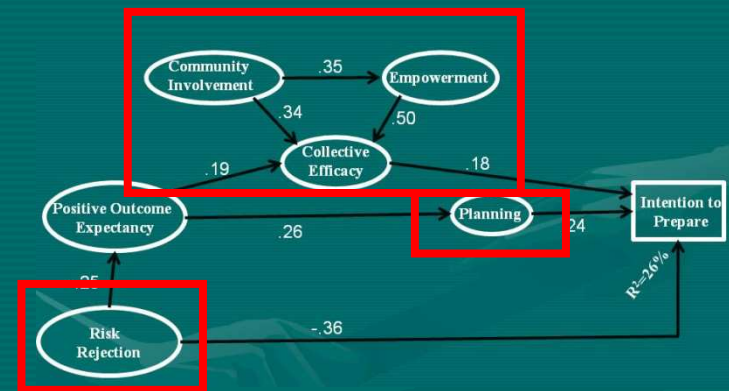


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Confirms role of community involvement, collective efficacy and empowerment as predictors of people's

- 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**