

A CONCEPTUAL MODEL OF TRUST BEHAVIOUR IN EMERGENCY EVACUATION: EVIDENCE FROM INDONESIAN VOLCANO ERUPTION

Hilya Arini

Tim Bedford, John Quigley, Calvin Burns

Volcano Eruption in Indonesia



Indonesia sits along a volatile seismic strip called the **'Ring of Fire'** in the **Pacific**. From Indonesian National Board for Disaster Management, volcanic eruptions can provide **26.1% from total percentage of people died during 1815-2016.**



Merapi is one of the world's most active volcano. It has erupted more than 80 times within century.

The survey conducted to Merapi villagers indicated that **37%** villagers would ask **the village chief/spiritual guardian, 35%** to **some friends, neighbours or family members,** and only **28%** to **the civil authorities or civil defence** (De Coster, 2002)



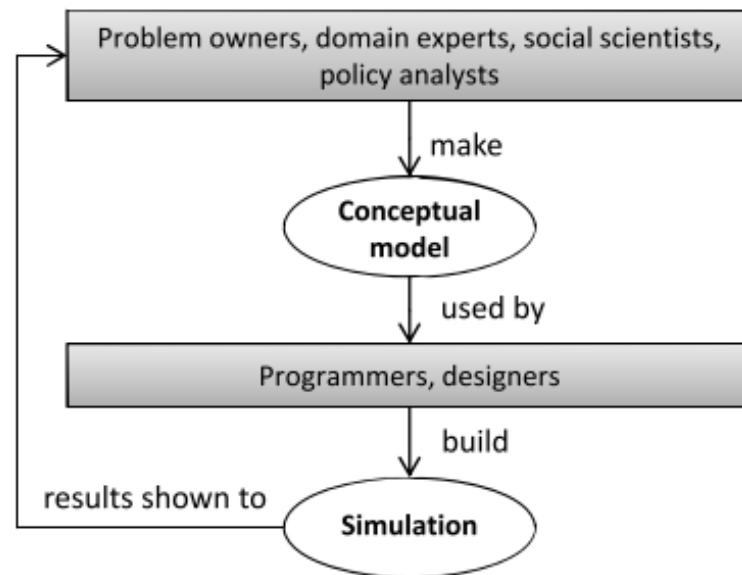


Trust is “*a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another*” (Rousseau et al., 1998, p. 395).

Unfortunately, trust is **dynamics behaviour** (Tansey & O’riordan, 1999). Slovic (2000) states that **trust can develop slowly, over time, but it can also be destroyed in an instant.**

Research Objective

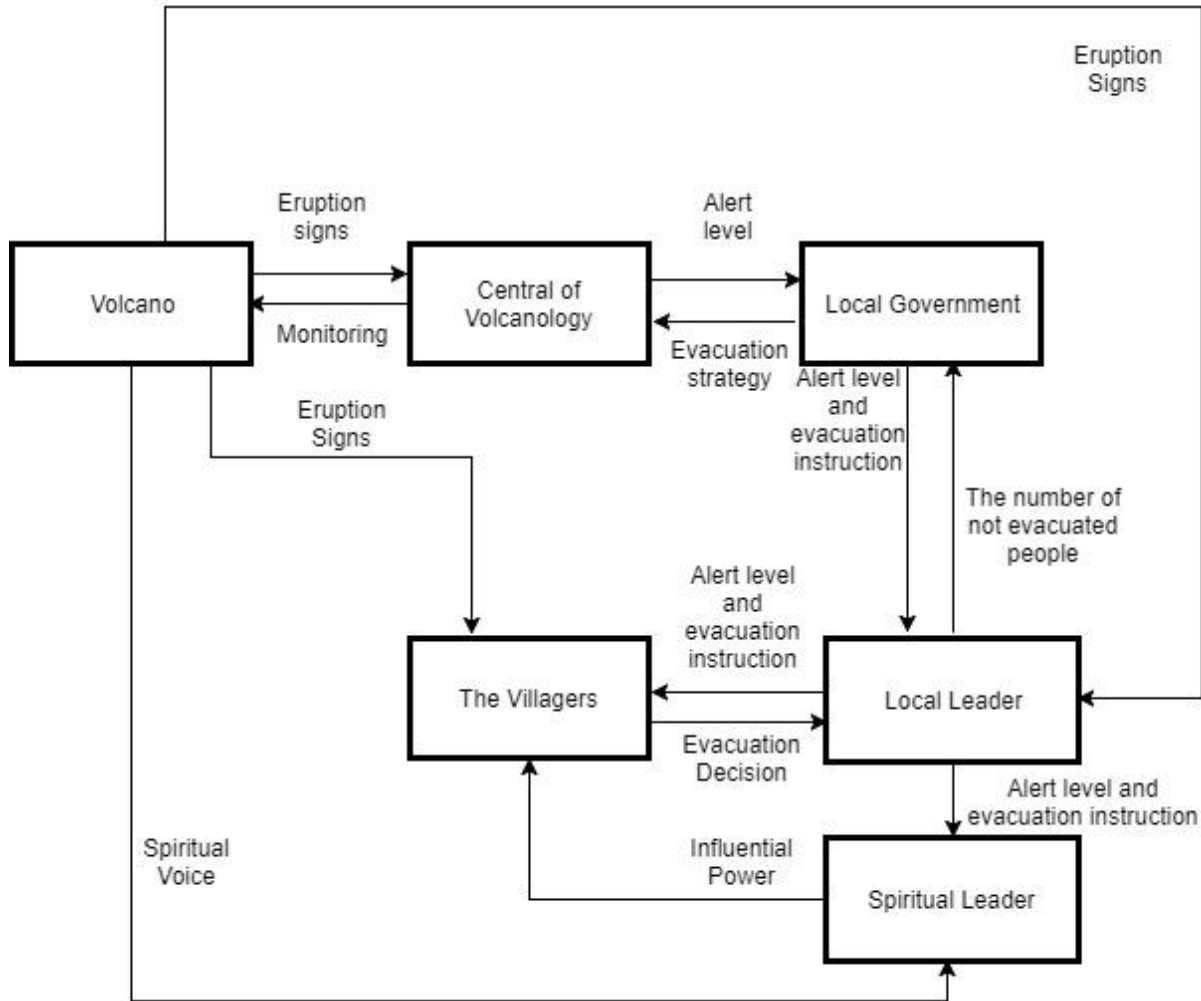
Develop a conceptual model of trust behavior during volcano eruption in Indonesia



Method

Semi-structured interview to 12 village leaders, 1 spiritual leader, 8 government leaders and 3 anthropologists

The Information Flow



The Agents



Local
leader



Spiritual
leader



Individualist



Egalitarian



Fatalist



Formal
Hierarchy



Traditional
Hierarchy

The Objective of Agents

Local leader



Inform alert status from local government and evacuate all people in the village

Egalitarian



Survive from the eruption by trusting to family and neighbours

Spiritual leader



Survive from the eruption by considering the spiritual voice

Fatalist



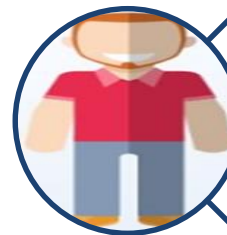
Survive from the eruption because they resign to their destiny

Individualist



Survive from the eruption independently

Formal Hierarchy



Survive from the eruption by trusting to the local leader

Traditional Hierarchies



Survive from the eruption by following the spiritual leader reaction

The Attribute of Agents



- Individualist
- Egalitarian
- Fatalist
- Formal Hierarchies
- Traditional Hierarchies

1. **Statics:** location of village from the summit of volcano, age, gender, education level, job, the number of livestock, pre-movement time, evacuation time, duration at the shelter, re-evacuation time, transportation mode, experience, evacuation knowledge.
2. **Dynamics:** Risk perception, self-efficacy level, trust level to the government, trust level to the spiritual leader, family and neighbourhood engagement level

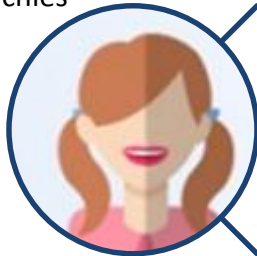
The Differences amongst Agents

Individualist



Has high self efficacy and risk perception

Traditional Hierarchies



Has high trust level to spiritual leader

Egalitarian



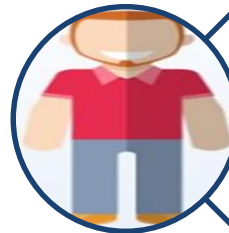
Has high level of family and neighbourhood engagement

Fatalist



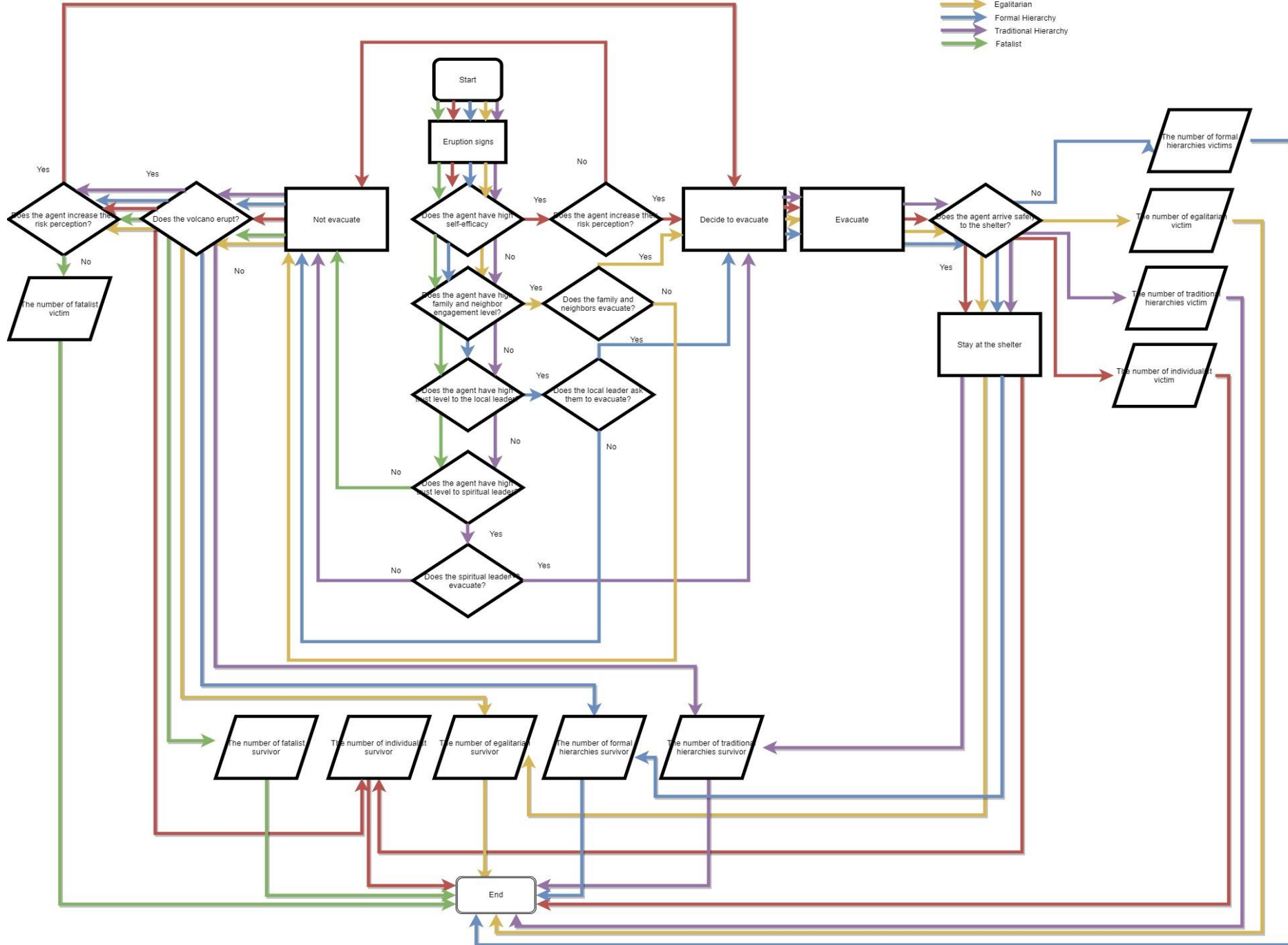
Low level in self-efficacy, distrust to spiritual leader and government, low level in family and neighbourhood engagement

Formal Hierarchy



Has high level of trust to the government

- Individualist
- Egalitarian
- Formal Hierarchy
- Traditional Hierarchy
- Fatalist



Current Activity

- Conducting survey to people in Merapi

Further Activity

- Developing ABMS



University of
Strathclyde
Glasgow