Tourism Management 34 (2013) 112–121

Contents lists available at SciVerse ScienceDirect

Tourism Management

journal homepage: www.elsevier.com/locate/tourman

Tourists' and tourism suppliers' perceptions toward crisis management on tsunami

Bongkosh N. Rittichainuwat*

International Program in Hotel & Tourism Management, Siam University, 235 Petkasem Rd., Phasichareon, Bangkok 10160, Thailand

ARTICLE INFO

Article history:
Received 18 May 2011
Accepted 31 March 2012

Keywords:
Tsunami
Crisis management
Tourist perceptions
Thai hotels
Thai tourism

ABSTRACT

This study describes tourists' perceptions toward the importance of safety measures across tourists who stay at different types of accommodation; compares the pre and post analysis of such safety measures during normal time and six months after the disaster and identify safety measures that contribute the most to the sense of beach safety. This study uses a survey, interviews, and observation. The target population was inbound tourists traveling to Thai beaches. It was found that respondents who participated in the survey six months after the March 2011 Japanese tsunami placed more importance on almost all tsunami safety measures than those who did the survey six years after the Indian Ocean tsunami. Guests at guest houses, placed the highest importance on all safety measures, whereas guests at upscale hotels, placed the lowest importance. Moreover, perceptions of beach safety were dependent on the availability of a tsunami evacuation system and a crisis management plan.

1. Introduction

On March 11, 2011, the Japanese earthquake of 9.0 on the Richter scale caused tsunamis, which resulted in massive destruction and loss of life in Japan. Since 1960, this tsunami is one of the most severe tsunami recorded after the Indian Ocean tsunami on December 26, 2004, which killed more than 225,000 people in the region, of which more than 5000 lost their lives in Thailand (Henderson, 2005). Moreover, the Japanese tsunami on March 11, 2011 shows that even the country with the most advanced tsunami warning system could not prevent loss of life and property damage. Unlike in the past, a tsunami is no longer a rare phenomenon but has become a natural disaster that can happen at any time. While Asia may be perceived as the most tsunami risky, other parts of the world have also experienced tsunamis. To illustrate, Australia has encountered tsunamis since its European settlement, South America is statistically the most tsunami-prone destination, followed by Indonesia and the Philippines (Bird & Howes, 2008), and more than 20 tsunamis have hit California, USA in the past two centuries (Green, 2006; Roberts, 1961, pp. 327–340). Though tsunamis are less frequent in the Atlantic and Indian Oceans (Green, 2006), they sometimes occur there, too.

However, while the travel and tourism industry especially beach destinations are increasingly exposed to natural disasters such as tsunamis, only a few studies (Henderson, 2005; Rittichainuwat, 2006, 2008, 2011, 2012; Rittichainuwat & Chakraborty, 2012) have examined a tsunami in the tourism context. More importantly, no study has explored perceptions of tourists and tourism suppliers toward beach safety in case of a tsunami occurrence at unaffected destinations. This study aims to: 1) describe tourists' and tourism suppliers' perceptions toward the importance of safety measures in case of a tsunami occurrence; 2) assess perceived importance of safety measures in the event of a tsunami across tourists who stay at different types of accommodation; 3) compare the pre and post analysis of tourist perceptions regarding tsunami safety measures during normal time and six months after the disaster; 4) identify safety measures that contribute the most to tourists' sense of safety at beach destinations. Understanding perceived important safety measures is helpful to ensure the confidence of tourists and local residents by increasing safety standards at tourist destinations and effectively allocating money for a safety budget.

2. Literature review

2.1. Tsunami

A tsunami is a large and very powerful series of ocean waves caused by underwater disturbances such as an earthquake, a volcanic eruption, or a landslide that causes sudden vertical changes in the seafloor, which in turn causes a large volume of water to be displaced from its position of equilibrium to a new position of

* Tel.: +662 868 4406x1, +662 4570068x5304; fax: +662 868 4406.
E-mail address: ngamson@gmail.com.

0261-5177/$ – see front matter © 2012 Elsevier Ltd. All rights reserved.
doi:10.1016/j.tourman.2012.03.018

rise or depression (Zhang, Yip, & Ng, 2009). When a tsunami approaches a coastal area, the water depth decreases rapidly, and the speed is reduced as the height rapidly increases (Zhang et al., 2009). This change in equilibrium then moves outwards from the source of origin in the form of a tsunami (Zhang et al., 2009).

In Asia, three subduction zones – the Manila subduction zone, the Ryukyu subduction zone, and the North Sulawesi subduction zone – have been identified as having potential to generate destructive tsunamis (Kirby, 2006; Liu, Wang, & Salisbury, 2009). In the South China Sea region, the Manila subduction zone has been identified as a highly hazardous tsunamigenic earthquake source region where no earthquake larger than $M_w = 7.6$ has been recorded in the past 100 years, suggesting a high probability for larger earthquakes in the future. The Manila subduction zone or Manila Trench is where the Eurasian Plate subducts under the Philippines Sea Plate at a speed of 70 mm/year (Lin, 2000; Liu et al., 2009). The Manila Trench, starting from the northern tip of Palawan, Philippines, evolves to the north along the western edge of Luzon, Philippines and ends in Taiwan, with a total length of about 1000 km. Consequently, destinations along the South China Sea, including China, Hong Kong, Taiwan, Cambodia, Vietnam, Malaysia, and Thailand, are in great danger of highly destructive tsunamis (Liu et al., 2009; Ruangrassamee & Saelem, 2009). A South China Sea earthquake could cause tsunamis that would particularly damage the Gulf of Thailand (Ruangrassamee & Saelem, 2009), including Pattaya, Samui, Cha-Am and Hua Hin beaches (Supharatid, 2010). Releasing early warning information on tsunami arrival times and wave height to countries along the Manila subduction zone would help minimize the extent of damage and potential tragedy (Liu et al., 2009).

2.2. Tsunami warning

A tsunami warning is in the form of a message such as a broadcast warning to alert the public without undue delay, so as to allow for immediate action to be taken by local authorities to mitigate potential loss (Zhang et al., 2009). A tsunami warning system is now operational in the Pacific Ocean and has proven its effectiveness and validity during several recent tsunamis (Liu et al., 2009). On the other hand, there was no warning system or adequate knowledge of tsunamis in countries surrounding the Indian Ocean when an undersea earthquake, registered at 9.0 on the Richter scale, occurred in 2004 (Green, 2006). The absence of a warning system and inadequate knowledge of tsunamis led to the failure to evacuate people to high ground after the undersea earthquake occurred (Green, 2006). In addition, most developing countries have poor communication systems and lack awareness of tsunami dangers (Bird & Lubkowski, 2005). Though tsunami warning systems should be located throughout the world (Green, 2006), most tsunami-prone beach resorts in most developing countries do not have such measures.

Currently, there is no consensus as to whether a tsunami warning system is useful during the very short time between an earthquake and a tsunami's arrival. One school of thought believes that the warning system allows time to evacuate people to high-rise areas to escape from the tsunami (Bird & Lubkowski, 2005). Another school of thought believes that such a warning system is useless. For example, the Japanese tsunami on March 11, 2011 shows that even an advanced tsunami warning system is inadequate to successfully evacuate people from the epicenter, as a tsunami can occur within 5–15 min after the initial undersea earthquake, a process where one tectonic plate slides under another, which generally creates the largest earthquakes in terms of magnitude and causes the most devastation (U.S. Geological Survey, 2003 cited in Green, 2006). Moreover, current tsunami warning systems, which mainly rely on the detection of earthquakes of sufficiently large magnitudes and epicenters located in deep waters, have given false 'reports' more than 50% of the time (Bernard, 1998; Chew & Kuenza, 2009). More accurate tsunami forecasting can be made from data collected as field measurements from many unit tsunami sensors placed close to the subduction locations and numerical analysis of that data (Liu et al., 2009). In addition, educating local communities to understand the characteristics of a tsunami and its destructive force and training them to evacuate to higher ground immediately after feeling the ground shaking is the top priority (US National Tsunami Hazard Mitigation Program, 2001 cited in Bird & Lubkowski, 2005).

Despite the fact that an advanced tsunami warning system does not guarantee the success of an evacuation plan at the epicenter, it can at least mitigate the damage and loss of life from the tsunami in places located much further away from the epicenter, allowing more time to evacuate people (Green, 2006; Liu et al., 2009; Wei, Cheung, Curtis, & McCreery, 2003). In addition, the installation of a tsunami warning system increases tourist confidence about beach safety at previously tsunami-hit beach resorts along the Andaman coast (Rittichainuwat, 2008). Furthermore, Rittichainuwat and Chakraborty (2012) found that a tsunami warning system and a crisis management plan have been used as marketing tools in motivating tourists to visit tsunami-hit destinations in Thailand. Specifically, inbound international tourists at tsunami-hit beach resorts perceive the importance of a tsunami warning system, crisis management planning and evacuation system announcements in their language or a major international language (Rittichainuwat & Chakraborty, 2012) (Fig. 1).

2.3. Crisis management

Crisis management plays an important role in tourism marketing. For instance, a written crisis management plan is positively perceived as management's commitment to provide reasonable care to protect their guests and could successfully be used as a marketing tool to attract and retain tourists (Bach & Pizam, 1996) in responding to increasing man-made and natural disasters (Beirman,

Fig. 1. Part of the tsunami warning system at a tsunami-hit beach in Thailand.