

RISK MANAGEMENT IN VOLCANO TOURISM IN INDONESIA

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Indonesia is a country that is located in the Pacific Ring of Fire and three continental plates. It makes Indonesia has a lot of volcano with its beautiful crater. Today, the volcanoes not only attract the researchers to come but also attract people for the purpose of tourism and recreation. The beautiful sceneries and the unique landscapes make the volcanoes become a tourist destination. But the lack of risk management in that destination gives some contributions to the accidents to the tourist. A qualitative data analysis was conducted in this research and a survey and literature review method used to identify the risk management that was conducted by volcano tourism destination. The aim of the study is to identify how the volcano tourism destinations in Indonesia managed in its relationship to decrease the accidents in volcano tourism

Risk, Risk Management, Volcano Tourism

INTRODUCTION

As a country which is lied in the pacific ring of fire and three continental plate, Indonesia is known as a volcanic country and we can deny that those blessing attract people to come for many reasons like research, sports, recreation and adventures. In the last decade, volcano as tourist destinations growth very fast and create a new typology of tourist attraction which calls as volcano tourism. The growth of volcano tourism has a close relationship with the development of geotourism which volcano tourism became one of its branches.

Viewed from the activities side, volcano tourism can be grouped tp passive and active tourism activities, although in fact volcano tourism activities much more looked as active tourism activities or known as adventure tourism activities. Most of volcano craters in Indonesia located in the summit of the mountains and to get there tourists need skills and knowledge related to outdoor activities and mount climbing. Most of accidents happened in the volcano tourism are caused by the lack of that skills and knowledge.

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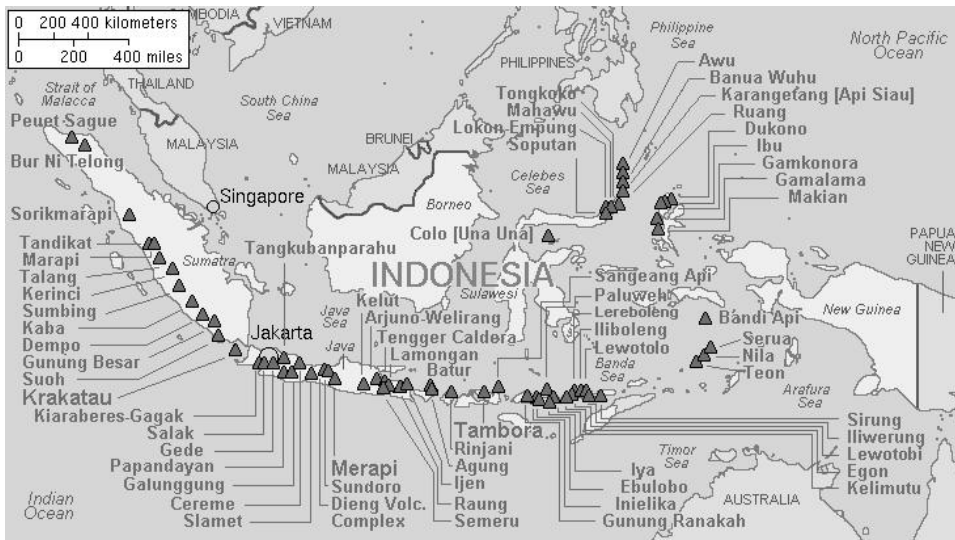


Figure 1. Volcano Mountain in Indonesia

When assessing adventure tourism it is necessary to also refer to adventure recreation, as the latter is at the heart of the former as it is currently defined. The vast majority of studies accept adventure recreation as its integral part (Christiansen 1990; Hall 1989; Johnston 1992). Adventure recreation has its origin in traditional outdoor recreation.

While both types involve activities and specific skills in outdoor settings, they differ, according to Ewert (1989:8) in the “deliberate seeking of risk and uncertainty of outcome” associated with adventure recreation. To him, risk takes on a central role as satisfaction with the experience, and a desire to participate may decrease if risk is absent. In this context, risk is most commonly equated to the physical risk of serious injury or death. This notion characterizes an adventure recreation experience as does the construct of perceived competence (Martin and Priest 1986; Priest 1992), or more accurately the interplay between them (Ewert and Hollenhorst 1989; Martin and Priest 1986).

Walle (1997:269) sought to expand the notion of adventure by arguing that one can distinguish between two types: risk taking adventure and that which is pursued to gain knowledge and insight. Walle continues by stating that according to the conventional risk theory, the adventurer seeks risk for its own sake and because of the emotional rewards provided by experiencing it. Consequently, “adventure involves pursuing risk as an end in itself”. While such an interpretation contrasts rather nicely with his alternative “insight seeking” theory, it is somewhat inaccurate. Numerous studies have shown that risk is not pursued as an end in itself (Ewert 1985, 1993, 1994). In fact, risk often plays a negligible role. Ewert and Hollenhorst note that “although adventure recreators seek out increasingly difficult and challenging opportunities, they paradoxically do not necessarily seek higher levels of risk” (1994:188). However, what they do seek is to match their skills and competence with the situational risk. In summary, an adventure recreation experience is a “search for competence with a valuation of risk and danger” (1989:127). Therefore, learning and gaining insight are not possible side effects of risk/adventure recreation as argued by Walle, they are integral parts. This is particularly pronounced for adventure recreationists at a higher level of engagement (Celsi Rose and Leigh 1993; Ewert 1994).

Brown (1993:31) defines adventure as “a chance of danger or loss; risk, jeopardy; a hazardous enterprise or performance.” Quinn (1990) notes that the human desire or drive to experience what is hidden and unknown initiates adventure. Similarly, Dufrene states: “We are attracted by a deep forest or lake because it gives the impression that there is some truth to discover, some secret to abduct from the heart of the object. It is the eternal seduction of the hidden” (1973:398). The reward for those who seek adventure lies in the discovery and unveiling of the hidden and unknown.

Therefore, adventure is quite obviously linked with exploration. Yet the focus of the latter has changed over the centuries. Originally adventure was associated with the exploration of foreign, faraway places to search for new land, wealth, and scientific advances.

The concept of risk is central to tourist behaviour. With the intangibility of tourism products which make it impossible to evaluate the product precisely before actual consumption on the one hand, and vacation cost representing a fairly large household expenditure on the other side, risk clearly plays a major role in the decision making process of tourists (Roehl & Fesenmaier, 1992). Usually the aim is to help potential tourists during their decision making process to reduce the risk they perceive to be associated with the purchase.

This paper aims to investigating risk management in the context of volcano tourism: a perspective where risk is something tourists actually desire rather than avoid and what tourism stakeholders should do to decrease the risks as is both passive and active tourism activities.

RESEARCH METHOD

This Study used a qualitative data analysis where survey and documentation method was conducted to identify the actual condition of the risk management in volcano tourism destination visited and then analyzed the provision of structure and infrastructure in its relationship with accident that happened at those volcano tourism destinations.

To collect data needed, I visited some main volcano destinations like Mt. Sibayak, Lake Toba, Mt. Kerinci, Mt. Kelud, Mt. Merapi, Kelimutu, Mt. Salak, Mt. Gede, Mt. Galunggung, Mt. Semeru, Mt. Krakatau and Mt. Bromo.

LITERATURE REVIEW

Volcano Tourism

Volcano tourism involves the exploration and study of active volcanic and geothermal landforms. Volcano tourism also includes visits to dormant and extinct volcanic regions where remnants of activity attract visitors with an interest in geological heritage.

Volcano tourism is particularly popular in combination with recreational activities such as skiing, hiking, trekking, climbing and visiting hot springs, as well as many other outdoor activities (Erfurt-Cooper and Cooper, 2009), Volcano tourism is an important sector of geotourism, which includes the geodiversity and the geological heritage of unique landscape features (Dowling and Newsome, 2006), but in particular the attractions of active volcanic and geothermal environments, and it is not uncommon that some tourists, who are looking for a more adventurous getaway, are increasingly planning their travels around active volcanoes (Brace, 2000).

Three main categories have been identified in which visits to volcanic and geothermal environments can be broadly classed with varying degrees of background information, knowledge and experience by the volcano tourist, as well as current activity levels of the destination, and any time frames involved (Brace, 2000):

1. Tours or day trips

- Organized for the majority of general sightseeing tourists of all ages, interests and backgrounds; Exercise, easy to manage;
- Often included in travel and sightseeing itinerary, transport by bus or cruise ship (e.g. Iceland, Japan);
- Are very casual about safety issues, but this group presents the majority of 'volcano tourists'.

2. Excursions and field trips

- Organized by or for interest groups, e.g. scientists and students, photographers;
- Can be day tours, several weeks or even longer;
- Involve awareness of potential risks and dangers at varying degrees; and
- Are a growing market segment of geotourism with special interests in volcanic and geothermal environments.

3. Expeditions and exploration

- For experienced and fit participants able to cope with 'unusual experiences' along the way and prepared to go where only few or even nobody went before (e.g. Erta Ale, Nyiragongo, Kamchatka, Antarctica);
- Can be ultra-extreme, partly also depending on climate and season, and need special equipment and provisions;
- Involve a high awareness of potential dangers; and
- Are minority groups amongst tourists.

Volcanoes are described by Lawrence (1997, p209) as having an incalculable aesthetic value with some people seeking spiritual renewal in their presence. The motives for visiting volcanic and geothermal environments are as varied as the visitor types and commonly there is a combination of more than one reason given by volcano tourists.

The reasons listed below reflect some of the possible visitor motivations:

- sightseeing, part of trip agenda, leisure activity;
- mountain climbing, hiking, general outdoor activities;
- ambition and curiosity, photography;
- collecting information, field research;
- scientific interest, study, education; and
- collecting rock samples.

Risk

Every industry is open to an element of risk, and tourism is no exception. It is therefore necessary to investigate and examine what is meant by risk when describing it as a destabilising factor within the tourism industry. Queensland Tourism (2009) describes risk as the chance of something undesirable happening. Uncertainty causes risk. It is measured in terms of the probability of it happening, and of the cost of the results if the anticipated risk occurs. Dorf & Byers (2008:134) define risk as the chance or possibility of loss, and opine that this loss could be physical, reputational or financial. Tourists and potential tourists are faced with many forms of risk. These could be in the form of physical danger (crime), air disasters (air crashes, hijacking), natural disasters (tsunamis), financial (travel agency closing down, currency deflation), political (riots, change of government), terrorism (9/11), health (contagious diseases, AIDS, malaria, SARS, bird others.

Cooper et al. (2005:356) suggest that, throughout the population, the individual perceptions of *economic, physical, performance, psychological and health risk*, will differ due to age, income and experience differences. The world today is plagued by rising risk and increasing volatility (Daniell, 2000:03). *the degree of uncertainty and the possible potential loss that can be associated with the outcomes from a given behaviour or set there of* and Welsch (2001) cite March & Shapira but being seen as a hazard if things go wrong, how much they can be expected to lose? The success of any business, including those associated with the tourism industry, is dependent on the choices or decisions made. Although these choices are usually well-informed choices, there is always the risk that the wrong choice is made.

Pearce and Robinson (2000:47) emphasise that executives may avoid undesirable levels of risk if the anticipated reward is minimal, and therefore would opt for more conservative strategies that could place the company in a lower category of risk. Executives that are not willing, to a point, to accept risk will rarely support plans for innovation, diversification and rapid growth.

Edwards and Bowen (2005) refer to risk as pervasive, a universal experience and inescapable. Risk is something people and businesses all have to face, some people more frequently and more willingly than others. Although risk surrounds us, some accept it to such an extent that they actually seek it out. Others, conversely, are constantly worried by it. The daily newspapers, ignoring the advertisements, offer a sufficiency of evidence of this point. Perceived pressing issues are discussed by the government and the opposition who draw conclusions and issue statements accordingly. Therefore, and based on the above, risk in the tourism industry can be defined as the possible occurrence of a known or unknown event that may have a negative or positive effect on the business, destination or country. However, not every risk occurrence warrants action to be taken. Depending on the frequency of occurrence and the impact thereof, the operator of a particular business must decide whether to take mitigating action or take no action and so accept the risk. Risks of medium to high magnitude will require action to be taken to minimize an adverse impact on the business or industry. On the other hand, where the effect is negligible, the risk can be accepted. It must also be realized that not every risk of high magnitude has a negative impact, depending on whether the risk occurs domestically or internationally. Internal risks usually present opportunities that can be exploited by the South African tourism industry to increase tourism to the country.

It is, therefore, important to determine whether the outcome of a risk event taking place has a significant impact or not and whether the impact will have a negative or positive effect on the business or industry. The answers to these questions will lead to the making of a decision as to how best to manage the risk. With this view in mind, the concept of risk management will be explored

Risk Management

Baltzan, Phillips and Haag (2009:524) describe the **risk management** as a *process of ongoing risk identification, analysis and developing responses to risk factors*. This process by which challenges and deviations from expected outcomes can be confidently managed by being prepared in advance. Therefore it is very important to identify, assess and analyze the risk issues, as well as plan for the occurrence of risk, including the development of a management system in order to handle risk. This system should be designed to allow for the monitoring of risks to determine how they have changed.

If the economic subjects ignore the risks that apply to business activities that could affect the health and safety of employees and customers, the businesses reputation, credibility and status, the public and customer confidence, the financial

position, the equipment and the environment.

Neitlich (2009) considers, justly, that an adoption of some effective risk management methods and techniques can improve the safety and business performance in the organization and thus ameliorate the potential damage of any risk.

It is important that the risks associated with the tourism industry be identified and that appropriate methods be selected to manage these risks. However, before developing any kind of a model, it is imperative that the differences and/or the combination of processes, strategies and models be known.

According to Cooper and Schindler (2001:53), there are different versions of the definition of these aspects of model derivative. They include the following:

- Processes - a series of actions, directed at a specific aim. A series of natural occurrences that produce change or development;
- Strategy - a carefully devised plan of action to achieve a goal. The art of developing or carrying out a plan;
- Model - something that is used for a related idea, process or system.

Valsamakis et al. (2000:80) postulate that risk management is an ongoing process, not to be seen in isolation or as a single event. Figure 1 shows that the process starts with risk identification, with evaluation being the main feature to identify for risk control (for both business and event risks), before finally providing financially for the consequences of event risk. To manage a risk situation, it must first be recognized and/or identified, before any type of risk management program can be put into action. This part of the process should be viewed as the most important function of the risk management program and should be approached in a structured, systematic and well-managed manner.

According to Allen (2007:426), risk management is a process by which challenges and deviations from expected outcomes can be confidently managed by being prepared in advance.

Risk management as defined by Kerzner (2001:907) is the art or practice of dealing with risk. Risk management includes identifying, assessing and analysing risk issues, as well as planning for the occurrence of risk, and includes developing a management system to handle risk. This system should be designed to allow for the monitoring of risks to determine how they have changed.

According to Queensland Tourism (2009), ignoring the risks that apply to business activities could affect:

- The health and safety of employees and customers
- The businesses reputation, credibility and status
- Public and customer confidence
- Financial position
- Equipment and the environment

By adopting effective risk management, methods and techniques can improve safety and business performance in the organisation and thus ameliorate the potential damage of any risk (Neitlich, 2009).

Mansfeld and Pizam (2006:11), when speaking of risk and crisis management, determined that past experiences have posited that forward-thinking destinations, concerned about security incidents, have been able to deal with the situation in one or both of the following ways: either (1), before the incident took place, having proactive risk management policies as part of a contingency plan, or (2), when an incident occurred and caused some sort of tourism incident, by removing the crisis management plans from their storage drawers and putting them into action. It therefore follows that the well-

prepared destination was more effective in its response to the security crisis. Mansfeld and Pizam (2006:271) firmly believe that risk-free travel is not just the aspiration of every tourist, but that it is in the interests of the tourism industry to ensure safe and incident-free travel for every traveler world-wide.

According to HM Treasury (2004:27), the purpose of managing risk is to change uncertainty into benefits for the organization by constraining threats and taking advantage of opportunities.

Risk management also provides the opportunity to identify risk events occurring elsewhere, for example in other countries that may be exploited to the benefit of the tourism industry. The risk management process therefore covers not only risk identification, but also risk assessment, risk response (action) development and risk control or strategy.

RESULT AND DISCUSSION

Volcano Tourism and Their Accidents in Indonesia

According to data for the past ten years, there are a lot of accidents in the volcano destinations that happened to its visitors and its numbers tend to increase every year. There are three causes why the accidents could be happened to tourist who visit the volcano destinations. The most causes are lost in the mountain, the second ones is dead because of hypothermia and slip and fall to the crater, and the last ones is dead because of heart attack.

Table 1. Volcano Tourist Accidents in Indonesia

| Date | Name of Mountains | Result | Place of Origin | Cause |
|------------------|-------------------|--------------|-----------------|--------------|
| 25 Januari 2007 | Sibayak | Never finded | Austria | unknown |
| 26 Desember 2007 | Agung | dead | Bandung | Bad weather |
| 11 Maret 2007 | rinjani | dead | Mataram | Bad weather |
| Januari 2010 | Salak | Never finded | Jakarta | Unknown |
| 31 Maret 2010 | Batur | dead | Swedia | Slipped |
| Januari 2012 | Salak | dead | Jakarta | Hypothermia |
| 21 April 2012 | Tambora | dead | Jakarta | Heart attack |
| Juni 2012 | Pangrango | Never finded | Jakarta | Unknown |
| 9 Juni 2012 | Agung | dead | Karangasem | Slipped |
| 21 Desember 2012 | Batur | dead | Singapura | Heart attack |
| 7 Maret 2013 | Sibayak | Never finded | Jepang | unknown |
| 23 Mei 2013 | Galunggung | dead | Majalengka | Slipped |
| 5 Agusturs 2013 | Merapi | Never finded | Rusia | Unknown |
| 3 November 2013 | Merapi | Never finded | Surabaya | Unknown |
| 28 Oktober 2013 | Tampomas | dead | Sumedang | Hypothermia |
| 11 November 2013 | Lawu | dead | Karanganyar | Tired |
| 24 Desember 2013 | Gede | dead | Bekasi | Hypothermia |
| 25 Desember 2013 | Semeru | dead | Jakarta | Heart attack |
| 19 Januari 2014 | Welirang | dead | Surabaya | Hypothermia |
| 22 Januari 2014 | Salak | dead | Jakarta | Hypothermia |
| 22 Januari 2014 | Kendang | dead | Bandung | unknown |

Source: from many source, 2014



Figure 2. Tourists At Mt. Krakatau

Volcano Tourism Management in Indonesia and Its Relation with Tourist Risk

Risk management in volcano tourism in Indonesia still not a main consideration although some destinations make some tight conditions before the visitors do their activities but that conditions are not followed by a good structures and infrastructures. The main focus of the government is on the volcano eruption mitigation with established The National Board of Disaster Countermeasure and Volcanology (BNPB), a board under the Ministry of Energy and Mineral Resources, but it's only for volcano eruption mitigation not for tourist prevention who visit the volcano destinations from accidents.

The volcano destinations management only act after there is an accident to rescue the victim with the support of Search and Rescue Board, but never act to prevent the disaster to the tourist. That's why the victims in the volcano tourism tend to increase every year.

There are some factors that enhance the tourist accidents in the volcano destinations, which are:

1. Only some destination that make some tight condition before they enter the attraction like the provision a health recommendation letter from the doctor and check the tourist equipment. There are only two places that have the rule to their tourists to provide the doctor recommendations before they climb. Those place are Mt. Semeru and Mt. Gede-Pangrango.
2. Although some destinations have some conditions to the tourist like health recommendation letter from the doctor but in fact that letter is very easy to get without the doctor check.
3. Some volcano attraction is managed by local tourism office with no appropriate facilities to protect tourists.
4. Lack of warning sign that informed tourist about the danger they will meet in the area. Mt Batur , Mt Galunggung, Mt Merapi and Mt Rinjani are the big four that have tourist accidents in volcano tourism. Fell to the crater was the most frequent accidents. We can't find sign warning and prohibition warning to the tourist.
5. The quality of the fences around the crater are very poor and too close to the crater.

6. A lot of unknown trail in the forest or mountain that used by visitors to avoid for ticket payment.
7. The visitors tend to do their activities without guide especially for the amateur or beginner volcano tourist and that situation make them easy to get lost and get fall in the cliff.
8. Lack of interpretation facilities. Interpretation facilities are one of the most important thing in tourism development. It's not only for the provision of knowledge but also gives direction to the tourists to the attractions.
9. Some volcano destinations only record the visitor identity without check their preparation before did their activities. Volcano tourism generally is an active tourism activities that means need stamina, endurance and climbing equipments from the tourists.

Table 2. Risk Management Provision At Volcano Destination

| No | Volcano Attractions | Sign warning | Prohibition sign | Fences | Human Resources | SOP | Interpretation Facilities | Health check | Equipment check | Tourist activities watch | Safety organization |
|----|---------------------|--------------|------------------|--------|-----------------|-----|---------------------------|--------------|-----------------|--------------------------|---------------------|
| 1 | Krakatau | ✓ | ✓ | - | ✓ | - | ✓ | - | - | ✓ | - |
| 2 | Kerinci | - | - | - | - | ✓ | - | - | - | ✓ | ✓ |
| 3 | Galunggung | - | ✓ | ✓ | - | - | - | - | - | - | - |
| 4 | Gede-Parangrango | ✓ | ✓ | ✓ | ✓ | - | ✓ | ✓ | ✓ | ✓ | ✓ |
| 5 | Merapi | - | ✓ | - | ✓ | - | ✓ | - | - | - | ✓ |
| 6 | Bromo | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | ✓ | ✓ |
| 7 | Rinjani | - | - | - | ✓ | ✓ | - | - | - | - | - |
| 8 | Batur | ✓ | ✓ | ✓ | ✓ | - | ✓ | - | - | - | - |
| 9 | Tambora | - | - | - | - | - | - | - | - | - | - |
| 10 | Semeru | ✓ | ✓ | - | ✓ | ✓ | - | ✓ | ✓ | - | ✓ |

A lot of accidents happened at volcano tourism destinations because there are no preventive actions from the volcano destination management and it's still become a big issue in the volcano tourism destination. The lack of human resources availability to handle the tourist who come make the monitoring of the tourist very limited.

Beside that, the risk management plan is become a rare document for volcano tourism managers. The volcano tourism master plan is still not involving the risk management plan to prevent tourist from the accidents. Many of them consider that the risk management plan is the responsible of other boards like National Search and Rescue Board or National Board Disaster Countermeasure and Volcanology. But in fact those boards have different responsible.

CONCLUSION

The volcano tourism destination needs to identify and investigate the risk that could be happened in the volcano tourism activities. The managers should be make a risk management plan that integrate with the master plan of the volcano destination.

The risk management plan should include the rules of conduct that must be followed by the tourists and monitoring system that check the preparedness tourist who visit and do some activities there. The facilities like tourist signage, warning sign and first aid kit should be provided at every point that has a potential danger. The appropriate numbers of human resources must be provided to handle tourist in the peak seasons.

References

- Allen, K.R. 2007. *Growing and managing an entrepreneurial business*. 2nd Alternative Energy Institute (AEI) 2010. Alternative energy. The Alternative Energy Institute (AEI). Boston, Mass.: Houghton Mifflin
- Baltzan, P., Phillips, A. & Haag, S. 2009. *Business driven technology*. 3rd ed. New York: McGraw-Hill International.
- Brace, M. (2000) 'Ring of fire', travel.guardian.co.uk/print/0,,3962210-104895,00.html, accessed 28 July 2009
- Brown, L., ed. 1993. *The New Shorter Oxford English Dictionary*, Vol. 1, Oxford: Clarendon Press.
- Celsi, R. L., R. L. Rose, and T. W. Leigh. 1993. *An Exploration of High-Risk Leisure Consumption through Skydiving*. Journal of Consumer Research 20(1):1–23.
- Christiansen, D. R. 1990. *Adventure Tourism*. In *Adventure Education*, J. C. Miles and S. Priest, eds., pp. 433–441. State College PA: Venture.
- Cooper, C., Fletcher, J., Gilbert, D., Shepherd, R. & Wanhill, S. 2005. *Tourism: principles and practice*. 5th ed. Harlow: Pearson Education.
- Cooper and Schindler. 2001. *Business research methods*, 7th ed. Boston, Mass.: McGraw-Hill Irwin.
- Daniell, M.H. 2000. *World of risk: next generation strategy for a volatile era*. Singapore: World Scientific.
- Dorf, R.C. & Byers, T.H. 2008. *Technology ventures: from idea to enterprise*. 2nd ed. Boston, Mass.: McGraw-Hill.
- Dowling, R. and Newsome, D. (eds).2006. *Geotourism*, Elsevier Butterworth Heinemann, London
- Edwards, P.J. & Bowen, P.A. 2005. *Risk management in project organizations*. Sydney: Butterworth-Heinemann.
- Erfurt-Cooper, P.J. and Cooper, M.J. 2009. *Health and Wellness Tourism: Spas and Hot Springs*. Bristol, UK: Channel View Publishing.
- Ewert, A. 1985 Why People Climb: The Relationship of Participant Motives and Experience Level to Mountaineering. Journal of Leisure Research 17:241–250. 1987 Recreation in the Outdoor Setting: A Focus on Adventure-Based Recreational Experiences. Leisure Information Quarterly 14:5–7. 1989 Outdoor Adventure Pursuits: Foundations, Models and Theories. Columbus OH: Publishing Horizons. 1993 Differences in the Level of Motive Importance Based on Trip Outcome, Experience Level and Group Type. Journal of Leisure Research 25:335–349. 1994 Playing the Edge: Motivation and Risk Taking in a High-Altitude Wildernesslike Environment. Environment and Behavior 26:3–24.
- Ewert, A., and S. Hollenhorst. 1989. *Testing the Adventure Model: Empirical Support for a Model of Risk Recreation Participation*. Journal of Leisure Research 21:124–139. 1994 Individual and Setting Attributes of the Adventure Recreation Experience. Leisure Sciences 16:177–191.
- Hall, C. M. 1989. *Special Interest Travel: A Prime Force in the Expansion of Tourism?* In *Geography in Action*, R. Welch, ed., pp. 81–89. Dunedin: Department of Geography, University of Otago.
- H.M. Treasury. 2004. *Management of risk principles and concepts*. New York: McGraw-Hill Professional.
- Johnston, M. E. 1992. *Facing the Challenges in the Mountains of New Zealand*. In *Special Interest Tourism*, C. M. Hall and B. Weiler, eds., pp. 159–169. London: Belhaven.
- Kerzner. 2001. *Project management: a systems approach to planning, scheduling, and controlling*, 7th ed. New York: Wiley.

- Kuratko, D.F. & Welsch, H.P. 2001. *Strategic entrepreneurial growth*. Fort Worth, Tex.: Harcourt Brace.
- Lawrence, B. S. 1997. *Restless Earth: Nature's Awesome Powers*. National Geographic Society. Washington DC.
- Mansfeld, Y. & Pizam, A. 2006. *Tourism, security and safety: from theory to practice*. New York: Butterworth-Heinemann.
- Martin, P., and S. Priest. 1986. *Understanding the Adventure Experience*. Adventure Education 3(1):18–21.
- Neitlich (2009), *The importance of risk management for business owners* <http://www.evancarmichael.com/Management/1034/The-Importance-of-Risk-Management-for-Business-Owners.html>. Date of access: 18 December 2009.
- Pearce, J.A. II. & Robinson, R.B. 2000. *Strategic management: formulation, implementation, and control*. 7th ed. London: Irwin McGraw-Hill.
- Queensland Tourism. 2009. *Risk management & crisis planning*. Error! Hyperlink reference not valid. Date of access: 20 February 2010.
- Quinn, B. 1990. *The Essence of Adventure*. In Adventure Education, J. C. Miles and S. Priest, eds., pp. 145–148. State College PA: Venture Publishing.
- Roehl, W. S., & Fesenmaier, D. R. 1992. *Risk Perceptions and Pleasure Travel: An Exploratory Analysis*. Journal of Travel Research, 30(4), 17.
- Walle, A. H. 1997. *Pursuing Risk or Insight: Marketing Adventures*. Annals of Tourism Research 24:265–282.
- Valsamakis et al. 2000. *Risk management*, 2nd ed. Sandton: Heinemann