Natural Hazards and Disaster Risk Reduction Policies

Loredana Antronico - Fausto Marincioni
Editors

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Cover: A woman shovels mud from her driveway in the aftermath of the October 2010 debris flow that affected the Province of Vibo Valentia (Calabria, southern Italy).

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CONTENTS

3. People, places and volcanoes. A study on risk perception in the Azores (Portugal)

Isabel Estrela Rego[1], Sofia Morgado Pereira[2], Mariana Paim Pacheco[3]

Abstract

Volcanic vulnerable areas are often populated, despite the risk of an eruption, with severe long-term consequences. Thus, understanding risk perception is of major importance, as it can foster effective risk communication and inform interventions to reduce vulnerability and enhance resilience. Volcanic areas are often beautiful and fertile, therefore used for multiple purposes, creating the perception of benefits. The affective relationship between people and places also provides feelings of safety, belonging and connectedness. This study explores the relationship between the perceived living place benefits and the volcanic risk perception of 530 residents in the Azores, following a mixed-methods approach and using a self-completion questionnaire. Participants perceived volcanic risk as moderate, contradicting previous studies. Results point to risk devaluation. The most mentioned living place benefits were natural benefits and benefits contributing to well-being and satisfaction. No significant risk perception variations between groups of perceived benefits were found. It is assumed that the negative affect associated with an eruption conflicts with the perceived positive living place benefits, leading to minimization of cognitive dissonance and denial of volcanic hazard, reinforcing the need to foster volcanic educational efforts in the Azores.

Keywords: volcanic risk perception, living place benefits, volcanic risk devaluation, affect heuristic, cognitive dissonance.

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1. Introduction

Extreme natural events in populated areas cause death, massive destruction, material losses and social disruption, affecting the lives of entire communities or countries, sometimes for many generations. Therefore, the presence of people in natural vulnerable areas contributes to the occurrence of disasters and magnifies their impact (Alcántara-Ayala, 2002; Leonard *et al.*, 2008). Nevertheless, thousands of people live in natural vulnerable areas despite the risk they face. For example, around 500 million people live near volcanoes (Thouret, 1999), they often tend to devaluate the risk of an eruption and fail to prepare appropriately (Basolo *et al.*, 2009; Bird and Gísladóttir, 2012; Sutton and Tierney, 2006). Volcanic eruptions have short- and long-term severe consequences such as mortality of people, animals and plants, health problems related to contact with ash, destruction of buildings, roads, and water and electricity infrastructures, contamination of water, economic losses (e.g., interdiction of airspace affecting tourism), and loss of livelihoods (e.g., reduction or destruction of soil fertility used for agriculture) (Bird and Gísladóttir, 2012; Lebon, 2009).

Research on risk perception have attempted to address the underlying reasons for these risk devaluations. Findings have indicated that perception shapes the interpretation of risk messages and warnings (Haynes *et al.*, 2008) and can also influence the adoption of protective measures (Chaney *et al.*, 2013; Perry, 1990). Notwithstanding, some authors found lack of correlation or negligible correlations between risk perception and hazard adjustments (Lindell and Prater, 2000; Lindell and Whitney, 2000).

Risk perception, being a product of cognition, is a complex and dynamic process influenced by several variables and mechanisms (Lindell and Whitney, 2000), socially constructed, and permeated by bias, subjectivity and affect (Slovic, 1999). In contrast to expert, citizens risk perception seem to be majorly influenced by the qualitative characteristics of the risk, namely dread, voluntariness, familiarity, perceived personal control, perceived institutional control, artificiality of risk source, blame and distribution of risks and benefits (Renn, 2008).

Other processes, such as cognition biases and the inverse relation between the risk and the perceived benefits of living with it can also cause this devaluation. Regarding cognitive biases, the optimistic bias that is characterized by lower estimations of being affected by a hazard, comparatively to others (Solberg, Rossetto, and Joffe, 2010), and it can be present in populations living in volcanic areas. Likewise, the relationship between perceived risk and benefits of living with it is well documented in research (Finucane *et al.*, 2000; Slovic *et al.*, 1982; Slovic *et al.*, 2004). It is assumed that if the perceived benefits are great, the perceived risk will be low, and vice-versa, and that this relation is mediated by affect. If the risk object (e.g., situation, activity) is associated with positive affect, then the risk will be downsized, and the converse is also true (Slovic *et al.*, 1982; Slovic *et al.*, 2004). Slovic *et al.* (2004), presenting the case of cigarette smokers, state that an affective heuristic, which is cognitively activated more quickly than analytic reasoning, can dominate the risk judgments, leading to little attention to or absence of conscious thoughts about the risk, ultimately resulting in risk disregard. The authors added that contact with information about health and risk often leads the cigarette smokers to weighing health risks and benefits of smoking, conducing to the desire to quit.

Particularly, volcanic risk perception also seems to be influenced by proximity to the volcano (Perry, Lindell, and Greene, 1982), hazard knowledge and experience (Gaillard and Dibben, 2008). Moreover, infrequent events tend to be underestimated in terms of probability of occurrence (Tversky and Kahneman, 1974), thus, because of the long quiescence periods of volcanic activity, volcanic risk is often disregarded (Davis *et al.*, 2005; Perry, 1990),

The present study addresses the relationship between volcanic risk perception and the perceived benefits of living in a volcanic area. The perceived benefits of living in a certain area derive from the relationship between people and the places where they live. Environmental psychology has addressed this relationship, exploring concepts such as place attachment, place identity and sense of place (Giuliani, 2003). The research indicates that people establish long-term strong affective bonds with their living environment (Giuliani, 2003; Lewicka, 2011; Hidalgo and Hernandéz, 2001) and express feelings of irreplaceability, desire for closeness, positive feelings of familiarity and security when in the place of connection and negative feelings, such as mourning, when away from that place (Fried, 2000; Giuliani, 2003). This relation includes the social bonds established within a community and the symbolism attributed to the physical characteristics of the place where these interactions occur, which represent a continuity of the social interaction, defining the barriers of group identity (Fried, 2000). Therefore, if people are emotionally bonded to a place it will be considered a source of benefits, because it promotes feelings of safety, belongingness and connectedness (Fried, 2000). Furthermore, according to Fried (2000), the permanence in a given place, chosen or imposed, implies the acceptance of the environment, in this case, acceptance of the associated risk. Our choices seem to be determined by affect. Normally there is a tendency to choose what is related to positive affect (Zajonc, 1980), but in the case of the living place, this may be different. We assume that people are born in a place, live there and establish strong bonds with it in such a way that the choice to move is questioned because that place is seen as irreplaceable and there is a desire for closeness.

A beneficial living place can include positive social interactions, physical characteristics of the place such as an attractive landscape, and purposes of livelihood. Volcanic areas often possess these characteristics; they are beautiful locations visited by tourists, used for leisure, and for work due to their fertile soil (Davis *et al.*, 2005; Perry, 1990; Lebon, 2009). Populations use these locations to engage in social interactions and to develop activities of subsistence, favoring the perception of these places as a source of benefits (Perry, 1990; Teixeira *et al.*, 2014) and positive affect.

When studying earthquake risk perception, Armaş (2006) found that affective bonds to place could lead to devaluation or denial of risk due to the perceived security associated with the place. Studies conducted in the Azores (Dibben, 1999; Dibben and Chester, 1999), where the present study takes place, found low levels of volcanic perception among residents of Furnas village within a volcano caldera. Dibben (1999) speculated that this denial could be due to an effort to minimize the cognitive dissonance between living within a volcano and knowing that the risk of eruption is present, resulting in risk denial and reinforcement of perceived benefits of the place.

As postulated by the social psychologist Leon Festinger (1957), cognitive dissonance involves having contradictory beliefs about an issue, causing emotional stress and creating the tendency to minimize this discomfort through minimizing the conflict. Dibben and Chester (1999) report that residents in the same village mentioned the beauty of the living place as the major benefit of living in a volcanic area. Likewise, Ricci *et al.* (2013) found perceptions of beauty of the living place and cultural aspects to be the most often mentioned benefits of living in a volcanic area, supposing that the awareness of the living place benefits was greater than the perception of volcanic risk.

The authors believe that the relation between perceived living place benefits and risk perception is yet to be fully understood. Therefore, this chapter explores the relationship between the two concepts, aiming to verify if the living place benefits perceived by residents of a volcanic area are related to different levels of volcanic risk perception, explaining devaluations of risk. Considering previous studies in the Azores and elsewhere (Dibben, 1999; Dibben and Chester, 1999; Ricci *et al.*, 2013), we expected to find: (a) low volcanic risk perception, (b) mention of benefits related to natural environment and beauty of the living place, (c) significant volcanic risk perception differences between groups of participants mentioning different perceived living place benefits.

2. Method

2.1. Location of the Study

The Azores are a Portuguese volcanic archipelago with nine islands (see Figure 1), located on a triple junction of tectonic plates in the middle of the Atlantic. It is constituted by the Mid-Atlantic Ridge, the East Azores Fracture Zone, the Gloria Fault and the Terceira Rift (see Figure 2). Due to its location, there is persistent low-magnitude seismicity of volcanic and tectonic origin (Silveira *et al.*, 2003).

After the settlement in the 15th century, approximately 28 volcanic eruptions occurred in the Azores. Of these, 13 occurred at sea (Gaspar *et al.*, 2015). The eruption of the Capelinhos volcano (Faial, 1957-58) was the most recent to affect residents, causing 11 fatalities, significant material damage (around 15 million US dollars, at 2008 values), massive social disruption, and the emigration of about 40% of the population (Coutinho *et al.,* 2010). Historical volcanic eruptions in the Azores are presented in Figure 3 (Gaspar *et al.*, 2015).

Besides the possibility of an eruption, the islands are also exposed to indirect volcano hazards, such as gas emissions, landslides, earthquakes, floods and tsunamis (Wallenstein *et al.*, 2007).

Regarding potentially active volcanic structures in the islands included in this study, S. Miguel Island has three volcanoes, Fogo, Furnas and Sete Cidades; and Terceira Island has two volcanoes, Pico Alto and Santa Bárbara, and the Fissural system of Terceira. Santa Maria Island has no potentially active volcanic structures.

To the authors’ knowledge, volcanic educational efforts from official authorities are nonexistent on the archipelago.

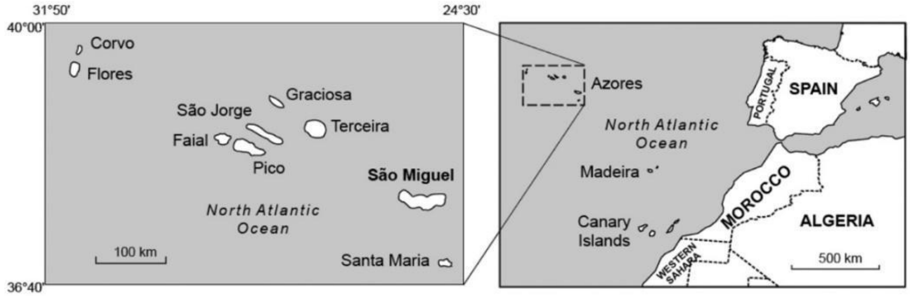

Figure 1 - *Map of Azores location. Reprinted from Wallenstein et al. (2015). Copyright [2015] by the Geological Society of London.*

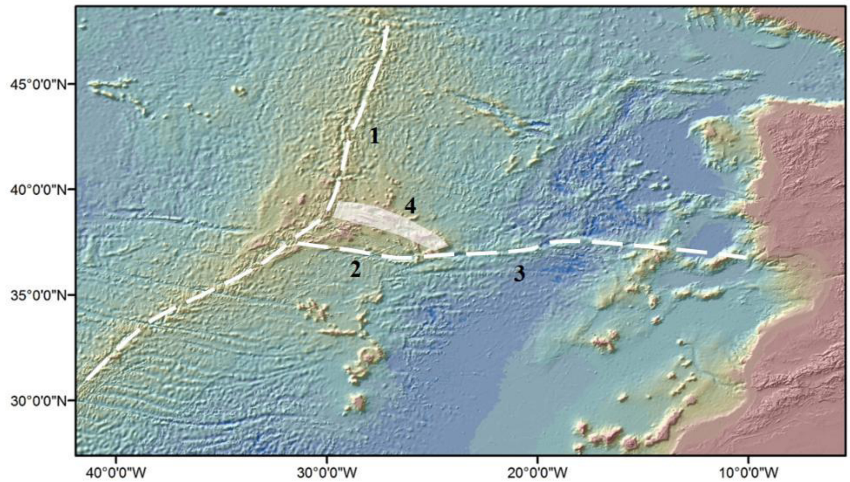

Figure 2 - *Tectonic setting of the Azores: 1, Mid-Atlantic Ridge; 2, Azores-Gibraltar Fracture Zone; 3, Gloria Fault; 4, Terceira Rift. Adapted from Carmo (2013) with permission.*

2.2. Participants

A convenience sample of residents of the archipelago was used because of time constraints and lack of funding, making it impossible to generalize results. However, this type of sample is usually used to test basic psychological mechanisms (Siegrist and Cvetkovich, 2010), which suits the exploratory purpose of this paper.

A sample of 530 residents of the Azores participated in this study, living in the Islands of S. Miguel (n = 481), Terceira (n = 44), and Santa Maria (n =1). Four participants did not mention their island of residence. Participants' ages ranged between 18 and 79 years (M = 36.12; SD = 11.600). Of these, 56.8% (n = 297) were male. Around 55% (n = 290) of participants had completed high school education, followed by 32.3% (n = 169) with a college education, 6.5% (n = 34) with a middle school education, 3.1% (n = 16) who completed the second year of middle level education, and 2.7% (n = 14) with an elementary school education.

The most mentioned municipalities of residence were Ponta Delgada (54.3%, n = 284), followed by Ribeira Grande (19.1%, n = 100), Angra do Heroísmo and Lagoa (7.1%, n = 37, each), Vila Franca do Campo (5.2%, n = 27), Povoação (3.4%, n = 18), Nordeste (2.5%, n = 13), Praia da Vitória (1.1%, n = 6), and Vila do Porto (0.2%, n = 1). On average, most respondents reported living in the municipality of residence for 18 years (SD = 15.516).

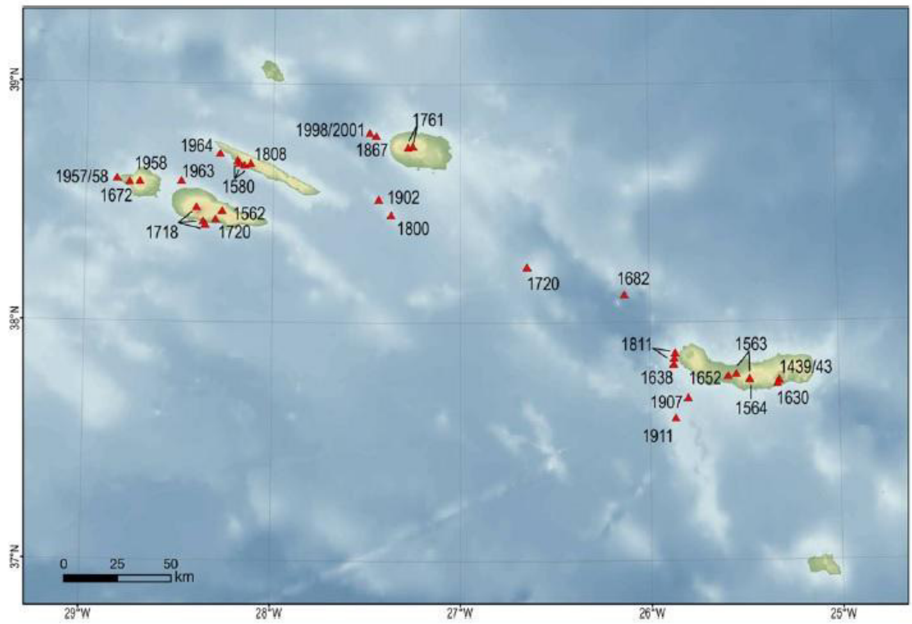

Figure 3 - *Historical volcanic eruptions in the Azores archipelago. Reprinted from Gaspar et al. (2015). Copyright [2015] by the Geological Society of London.*

2.3. Survey

This study is part of a broader research intended to explore the volcanic risk perception and associated variables of Azores residents. For this purpose, a paper-and-pencil survey was designed, consisting of nine items for sample characterization and 63 items concerning: (a) Volcanic risk perception; (b) Volcanic hazard salience; (c) Sense of community; (d) Place attachment and Place identity; (e) Coping Style, tailored to the context of volcanic events; (f) Self-efficacy beliefs regarding protection from volcanic events; (g) Volcanic hazard knowledge; (h) Knowledge of emergency planning and measures; (i) Perceived preparedness of self and entities, tailored to the context of volcanic events; (j) Trust in officials and entities, tailored to the context of volcanic events; (k) Sources of information about volcanic hazard; and (l) Evaluation of the preferred methods of receiving information about volcanic hazard. The items were based on the works of Barberi *et al.* (2008), Davis *et al.* (2005), Ricci *et al.* (2013), Hidalgo and Hernández (2001), Marante (2010), Medeiros (2013), and Pimentel (2013). The questionnaire was pretested and further adapted to ensure full understanding of the items.

To achieve the purposed chapter goals, data on Volcanic risk perception and data regarding the perceived benefits of the living place, included in the assessment of Place attachment, were analyzed.

2.4. Design and Procedures

Data was collected in 2016 and 2017 using two methods of survey distribution, namely, contact with community stakeholders for circulation to their employees and associates and delivery of questionnaires to citizens to distribute them to acquaintances. The questionnaires were returned by hand to the contact person and then handed to the researchers or sent by postal mail.

A mixed-methods approach was adopted for data analysis. Data concerning the perceived living place benefits were analyzed with the qualitative method of classical content analysis, and data on demographic variables and risk perception was subject to statistical analysis.

3. Results and Discussion

3.1. Volcanic Risk Perception

Volcanic risk perception was evaluated considering: (a) the perceived seriousness of consequences of an eruption for participants and their families, and for their place of residence, rated on a five-point Likert scale with 1 meaning 'Nothing', 2 ‘Little’, 3 ‘Somewhat’, 4 ‘Much’ and 5 'Extremely'; (b) the perceived severity of an eruption, asking participants to rate the impact of volcanic products and associated processes in the place of residence on the same five-point Likert scale; and (c) the level of anxiety about a potential eruption evaluated on a five-point Likert scale with 1 meaning ‘Without any fear or concern / absolutely not afraid or worried’, 2 ‘Slightly afraid or worried’, 3 ‘Afraid and worried’, 4 ‘Essentially afraid or worried’ and 5 ‘Extremely afraid or worried’.

Concerning the seriousness of consequences of an eruption, participants claimed that it could affect them and their family (M = 4.07, SD = 1.103) and their place of residence (M = 4.08, SD = 1.068) ‘Much’, indicating a moderately high perception of the seriousness of consequences of an eruption. These results indicate that an optimistic bias is absent. In addition, it is plausible to assume that negative affect associations with an eruption are present. They may be related to knowledge about the impact of the Capelinhos eruption (Faial, 1957-58) or eruptions in other locations.

Regarding volcanic products and processes, Earthquakes were considered the most severe because, a large percentage of participants stated they could have 'Much' impact on the place of residence (41.3%). Other volcanic products and processes such as Drainage of mud or debris (27.2%) and Tsunami/seaquake (23.2%) were also considered to have ‘Much’ impact on the place of residence, whereas Lapilli fall and ash (27.4%), Fall of blocks and bombs (28.5%), and Pyroclastic flows (27.7%) were considered to impact the place of residence only ‘Somewhat’. Lava flows (24.7%) were considered the least severe volcanic product, affecting the place of residence ‘Little’. These results indicate a low perceived severity of an eruption and could be explained by the lack of experience of participants with an eruption and by the absence of volcanic educational efforts in the archipelago, impairing the constitution of a more solid volcanic hazard knowledge, which influences risk perception (Gaillard and Dibben, 2008). Thus, volcanic hazard knowledge should be further researched in the Azores. The persistent seismic activity in the archipelago might also explain the results, justifying why most participants considered earthquakes to be the most severe process associated with volcanic activity.

The level of anxiety about a potential eruption is low, as, on average, participants reported feeling ‘Slightly afraid or worried’ about a potential eruption (M = 2.44, SD = 1.159). These results can have several explanations. First, the nonexistence of volcanic educational efforts in the archipelago might account for the absence of this matter in the lives and minds of the population. Second, the long quiescence periods of volcanic activity can lead participants to worry more about other day-to-day issues rather than the possibility of an eruption (Slovic *et al.*, 2004). Third, it might also be the case that the moderately high perceived seriousness of the consequences of an eruption could be related to negative affect, leading to risk denial or ignorance of the matter, which might explain why participants do not worry about this possibility, avoiding thinking about a possible eruption in the Azores, and thus minimizing cognitive dissonance (Dibben, 1999).

To conduct further analysis, the ratings of the mentioned dimensions of volcanic risk perception were summed to obtain a total score, ranging from 10 to 50 points. The total scores were interpreted considering three levels: (a) Low volcanic risk perception: one to 16 points; (b) Moderate volcanic risk perception: 17 to 33 points; and (c) High volcanic risk perception: 34 to 50 points.

On average, participants exhibit a Moderate volcanic risk perception (M = 33.65, SD = 8.041), with low perceived severity and anxiety levels about a potential eruption, and moderate perception of the seriousness of consequences.

Total scores of volcanic risk perception infirm the initial hypothesis that these would be low, contradicting previous studies in the Azores (Dibben, 1999; Dibben and Chester, 1999).

3.2. Perceived Living Place Benefits

A mixed categorical system was used to analyze the perceived living place benefits. Four categories constitute the system: (a) ‘Physical features’, (b) ‘Social features’, (c) ‘Individual features’, and (d) ‘Absence of benefits’. The first two categories were defined *a priori*, considering research on place attachment, namely works from Giuliani (2003), Hidalgo and Hernandez (2001), Mishra *et al.* (2010), Scannell and Gifford (2010), Wynveen *et al.* (2017), and Worster and Abrams (2005). The last two categories were derived from the survey data.

To assure the reproducibility of the categorical system and to contribute to a more trustworthy analysis, two independent judges categorized the data.

Intercoder agreement was assessed using Krippendorff's alpha (Hayes and Krippendorff, 2007), indicating a strong intercoder agreement ($\alpha = .83$; Krippendorff, 2004). Table 1 presents the categorical system constructed. Participants mentioned a wide range of benefits of living in the Azores, focusing on natural benefits (including beauty of the living place) and factors related to well-being and satisfaction, confirming the initial assumption and in agreement with previous findings (Dibben and Chester, 1999; Ricci *et al.*, 2013).

Table 1 - *Categorical System: Perceived Living Place Benefits.*

Main category	*Sub-categories*	*No. of references*	*Content*
Physical features	Built environment	206	Benefits of location; proximity/short distances/travel time; references to physical characteristics of the neighborhood/village/city/archipelago/country; accesses and accessibility; and absence of traffic.
	Natural environment	759	Climate; absence of environmental problems; natural resources; characteristics of the natural environment and landscape; references to the relationship of man-natural world; geographic characteristics of the natural environment; and beauty of the living place.
Social features	Social ties	46	Characteristics/existence of people; social ties to family and community; and privacy and isolation.
	Culture and Community life	51	Mentions of the word "culture" or references related to specific cultural aspects of the Azores or sports activities; references to security; and demography.
	Economic features	65	Employment and opportunities; access to goods or services, or references to infrastructures that imply the provision of services (e.g., Schools); references to economic activities; and to economic benefits/economic level of life.
Individual Features	Well-being and satisfaction	237	Peace and quiet, quality of life, food, health, and rhythm of life.
Absence of benefits	-	2	Absence of living place benefits.
Total		1366	

3.3. Relation between Volcanic Risk Perception and Perceived Living Place Benefits

To verify if volcanic risk perception scores significantly vary with the type of perceived benefits, a Kruskall-Wallis test was applied considering the identified sub-categories. Table 2 shows the results.

Volcanic risk perception scores did not vary significantly with the type of perceived living place benefits. As mentioned, the beauty of the living place was previously found to be a major benefit of living in a volcanic area (Dibben and Chester, 1999; Ricci *et al.*, 2013). The assumption that the perceived beauty of the living place can cause variations of risk perception was verified with a Kruskall-Wallis test, indicating that volcanic risk perception scores did not vary significantly with the mention of the beauty of the living place as a benefit ($H(1) = 0.970$, $p > .05$). Although the mentioning of this benefit has been identified as a potential factor in several studies, it seems that it alone cannot account for volcanic risk perception differences.

The results indicate that the benefits of living in a volcanic area do not cause variations in volcanic risk perception scores. Although Dibben (1999) explained that the processes of cognitive dissonance minimization produced an enhancement of the perceived benefits and downsizing of volcanic risk, the minimization of the cognitive dissonance may be operating in a different way, similar to what has been explained by Slovic *et al.* (2004) in regard to cigarette smokers. Affect mediates the relationship between perceived risks and benefits (Slovic *et al.*, 1982; Slovic *et al.*, 2004); thus, affect heuristics may be dominating participants' risk judgement. They recognize the seriousness of consequences of an eruption (moderately high results) because, it is plausible to assume, a volcanic eruption is often associated with negative affect, even though participants feel 'Slightly afraid or worried' (on average) and fail to recognize the severity of the event. In addition to living in a volcanic area, participants recognize that they live in a place with major natural benefits and with benefits contributing to well-being and satisfaction. Participants live in a place for about 18 years (on average), during which an eruption could occur, which they recognize could 'Much' affect them. On the other hand, they have never experienced one and live in a beautiful and peaceful location that provides good quality of life and feelings of safety, belongingness and connectedness, an irreplaceable place that creates a desire for closeness.

Two explanations of how risk is devaluated can be advanced. First, the negative affect associated with an eruption may be so strong that it conflicts with the strong positive affect of the living place. In order to minimize the strong negative affect associated with an eruption, participants may be consciously or unconsciously avoiding thinking about the risk, and consequently, not considering the disadvantages of living in a volcanic area, resulting in disregarding or even ignoring volcanic risk. Secondly, it may also be that the pros and cons analysis made by participants includes the pros of living in a place to which participants are bonded to, despite the risk, and the cons of having to move to a safer location that is not comparable or does not provide the same positive affect. In this analysis, affect prevails, and other alternatives besides living with the risk are not considered, so the risk is accepted.

These assumptions should be explored by future research on the negative affect related to volcanic eruptions and cognitive dissonance related to natural hazards. Given that volcanic educational efforts are absent in the archipelago and that, as defended by Slovic *et al.* (2004), the provision of information about the risk could lead to a conscious weighing of risks and benefits in cases where affect heuristics dominate, there is a need to develop volcanic educational efforts in the region. Hazard knowledge is also one of the variables that influence volcanic risk perception (Gaillard and Dibben, 2008), contributing to a more realistic perception and it should be further researched.

Table 2 - *Relation between Volcanic Risk Perception Scores and Perceived Living Place Benefits.*

Perceived Benefits	*Kruskall-Wallis Test*
Built environment	$H(1) = .211$ $p > .05$
Natural environment	$H(1) = .685$, $p > .05$
Social ties	$H(1) = 2.819$, $p > .05$
Culture and community life	$H(1) = 2.048$, $p > .05$
Economic features	$H(1) = .070$, $p > .05$
Well-being and satisfaction	$H(1) = .738$, $p > .05$

4. Final Remarks

This chapter's focus was to determine if there is a significant relationship between the perceived benefits of living in a volcanic area and volcanic risk perception, aiming to explain devaluations of volcanic risk.

The risk perception levels found were moderate, which was higher than initially supposed, contradicting previous studies in the Azores. However, a significant statistical difference between groups of participants with different type of perceived living place benefits and volcanic risk perception scores was not found.

Two explanations are advanced. One is that a cognitive dissonance minimization processes may be present, causing lack of thought about the risk, and consequently, risk is disregarded or even ignored. The other is that strong relations to place may influence the analysis of pros and cons of living in a volcanic area, fostering risk acceptance.

Thus, the major conclusions of this study are that the perception of benefits itself does not seem to explain volcanic risk devaluations. These devaluations seem to be related to the negative affect associated with an eruption and to positive affect related to the place, causing risk to be ignored or accepted.

The results point to the importance of conducting volcanic educational efforts in the archipelago, to exploring volcanic hazard knowledge in the Azores, and the influence of negative affect associated with an eruption in volcanic risk perception. Further research could also explore predictive, mediating and moderating variables involved in the relationship between perceived benefits and risk perception.

A convenience sample was used, limiting the generalizability of the findings, although it did serve the exploratory purpose of this paper. Therefore, the conclusions must be further explored in studies with a representative sample of the Azores population and studies on other volcanic locations.

Research on volcanic risk perception can inform risk communication and contribute to policies and practices to enhance resilience and reduce vulnerability of the population to the effects of a volcanic eruption.

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