

TEN YEAR HISTORY OF HIKING ACCIDENTS/INCIDENTS IN THE BUCEGI MOUNTAINS, SOUTHERN CARPATHIANS, ROMANIAN CARPATHIANS



Mihai Radu JULA
West University of Timișoara, Romania
mihai.jula88@e-uvv.ro

Mircea VOICULESCU
West University of Timișoara, Romania
mircea.voiculescu@e-uvv.ro

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Introduction

This study was designed as an analysis of mountain accidents and incidents along the hiking trails of the Bucegi Mountains during the summer seasons (1st May to 31st October), between 2011 and 2020. We excluded the winter seasons, as some trails are officially closed due to snow depth, snow storms and avalanches.

Objectives

Our study aims to highlight:

- (i) the dynamics of accidents/incidents between 2011 and 2020;
- (ii) the characteristics of accidents/incidents and factors that contribute to their occurrence along hiking trails;
- (iii) the characteristics of the accidents/incidents victims.

Study Area

The Bucegi Mountains, reaching 2505 m at Omu peak, are located in the eastern part of the Southern Carpathians (Fig.1). Their eastern side, named Prahova Valley Escarpment, has slopes greater than 45°, altitude differences of more than 1000 m, deep and narrow valleys, waterfalls, structural thresholds and sharp ridges. The central region consists of a large structural plateau, with gentle slopes. Both attract numerous tourists for hiking at least one of the 7 major hiking trails, especially during summer season.

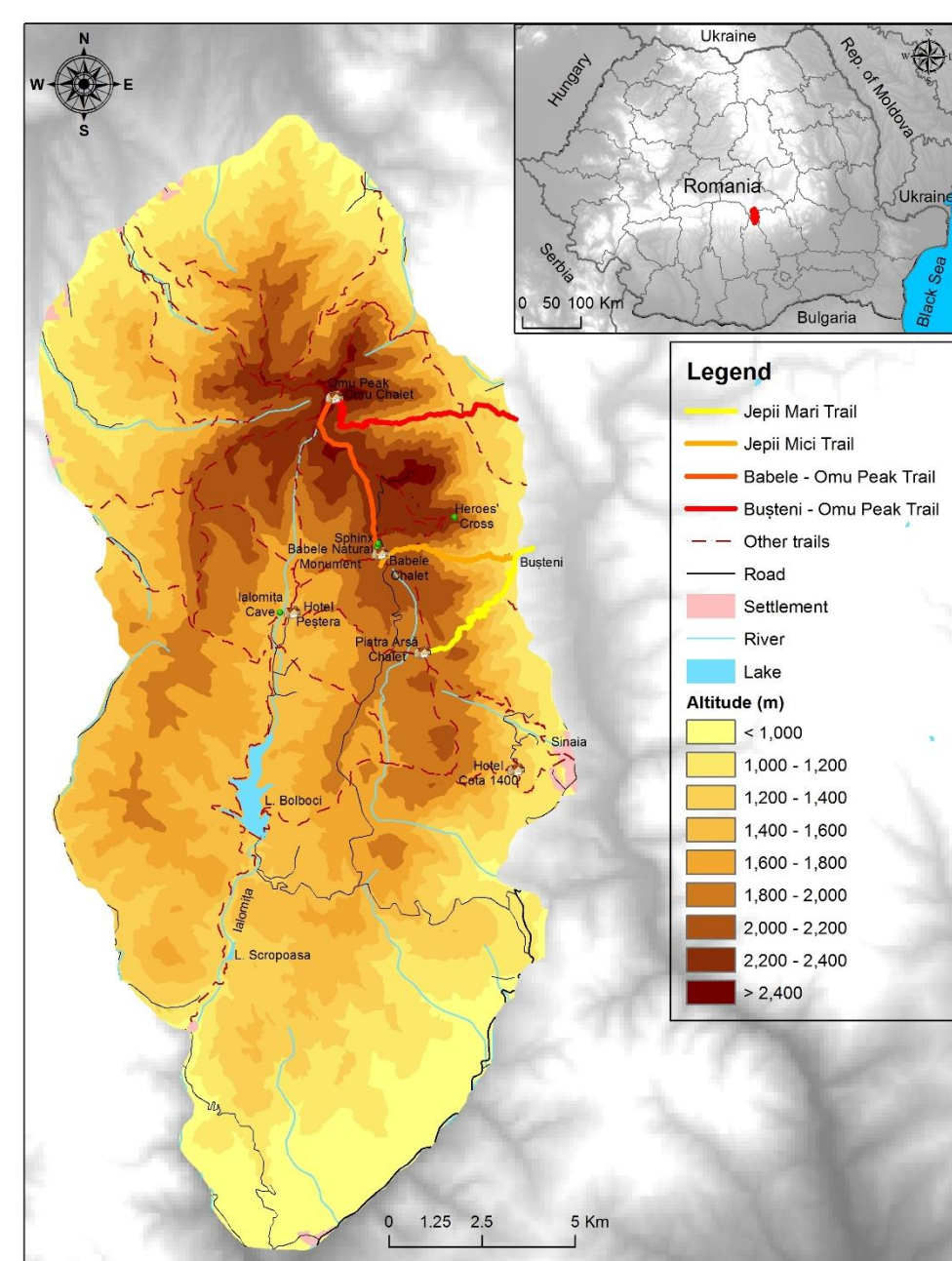


Fig. 1. Location of the Bucegi Mountains and the tourist trails with the most accidents/incidents between 2011 - 2020

Methodology

The following circumstances that contribute to the onset of accidents/incidents were considered: elements of a hiking trail (marked or outside of the trail), direction (ascending/descending), day of the event (weekday or weekend), relief (slippery surface, steep slope, residual snow), meteorological conditions (heavy rain, fog, snowfall), and the use of adequate equipment. Some medical events were also analysed (Chamarro and Fernández-Castro, 2009; Faulhaber *et al.*, 2017; Zürcher *et al.*, 2020).

Bibliography

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2. Faulhaber, M., Pocecco, E., Niedermeier, M., Ruedl, G., Walter, D., Sterr, R., Ebner, H., Schobersberger, W., Burtscher, M., 2017. Fall-related accidents among hikers in the Austrian Alps: a 9-year retrospective study. *BMJ Open Sport Exerc Med.* 3: e000304;
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Results

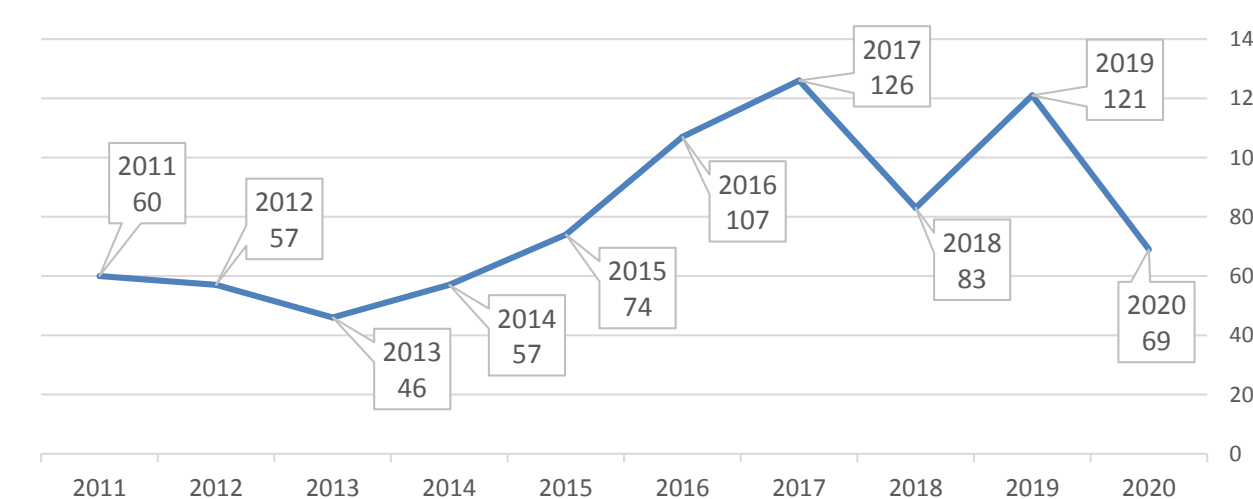


Fig. 2. Evolution of the number of accidents/incidents between 2011 and 2020

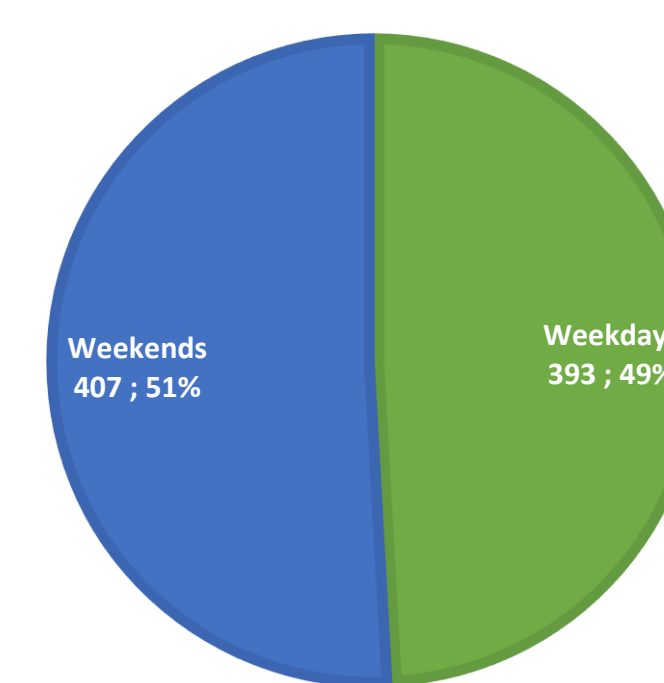


Fig. 4. Number of accidents/incidents on weekdays, versus weekends

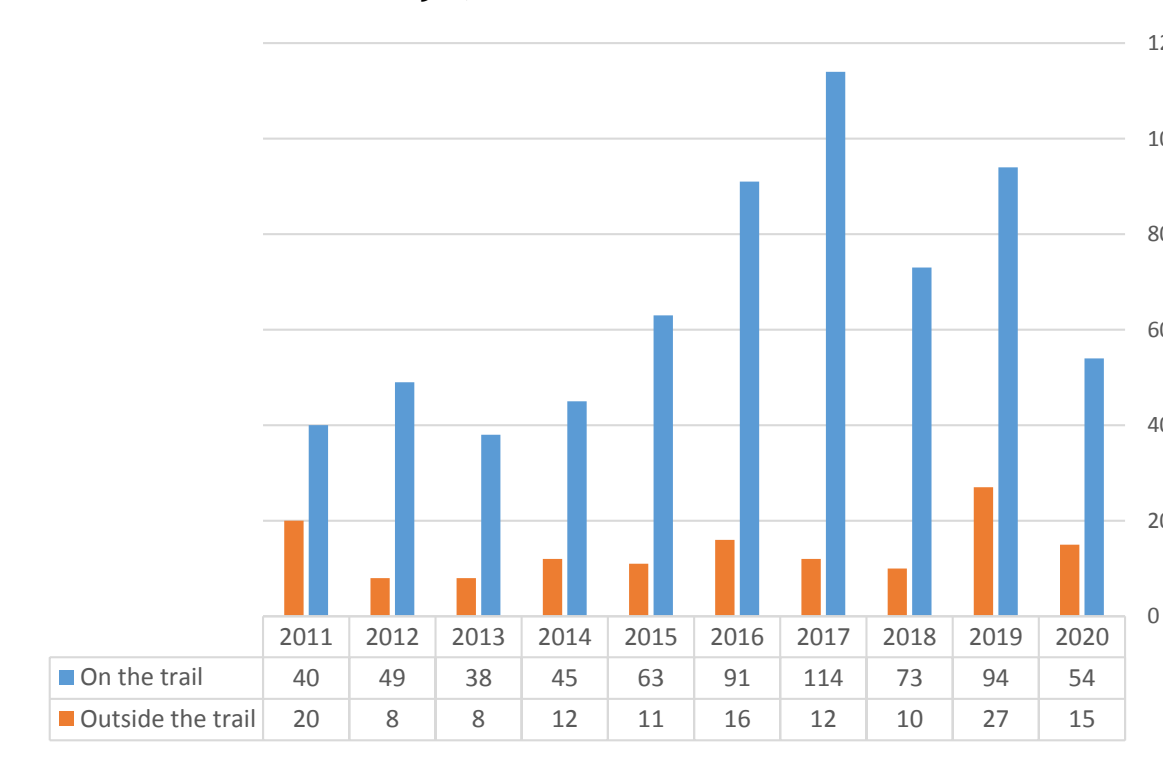


Fig. 6. Number of rescue events on/outside the trails

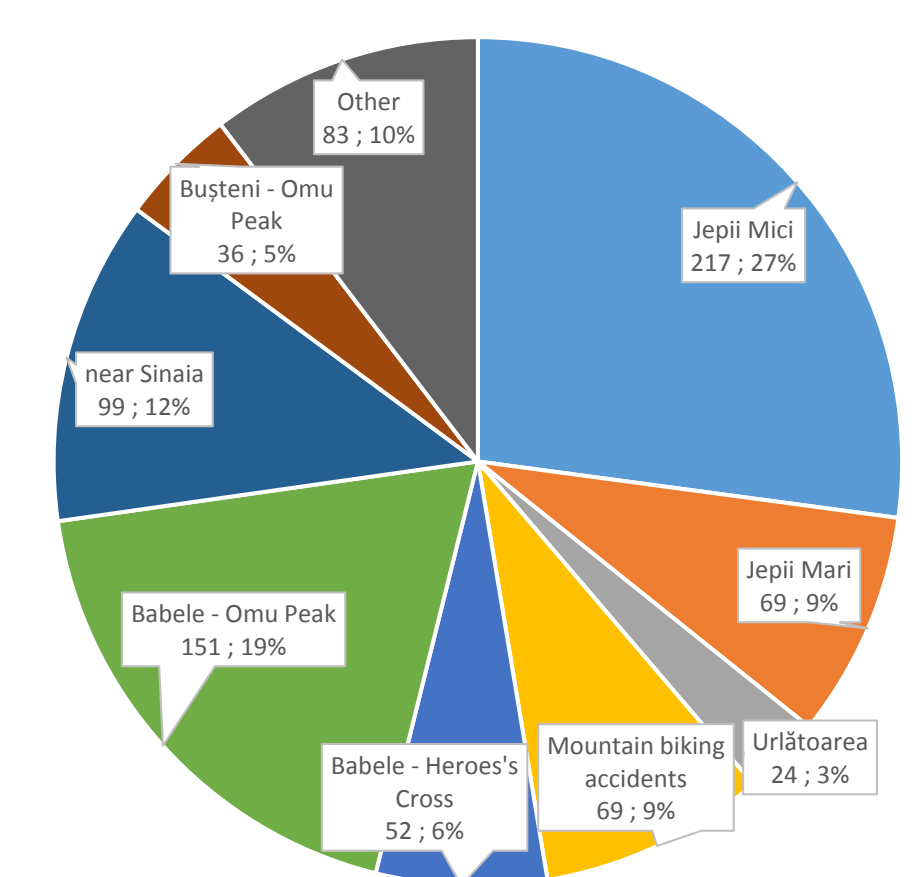


Fig. 3. Distribution of accidents/incidents among the hiking trails

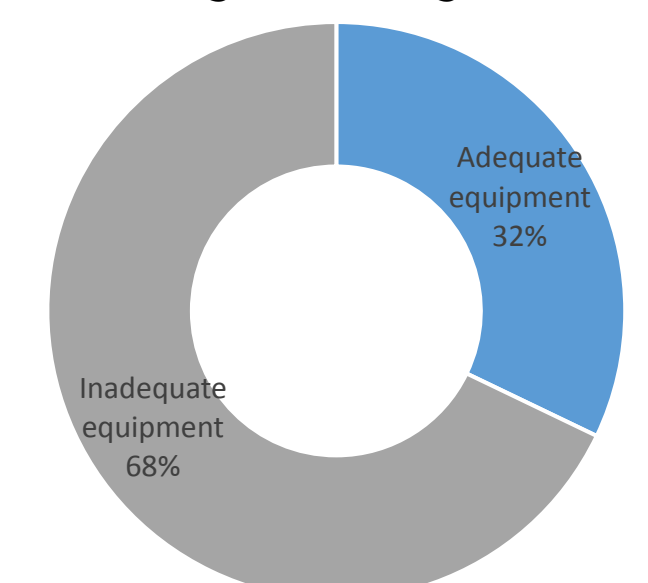


Fig. 5. Use of adequate equipment by rescued tourists

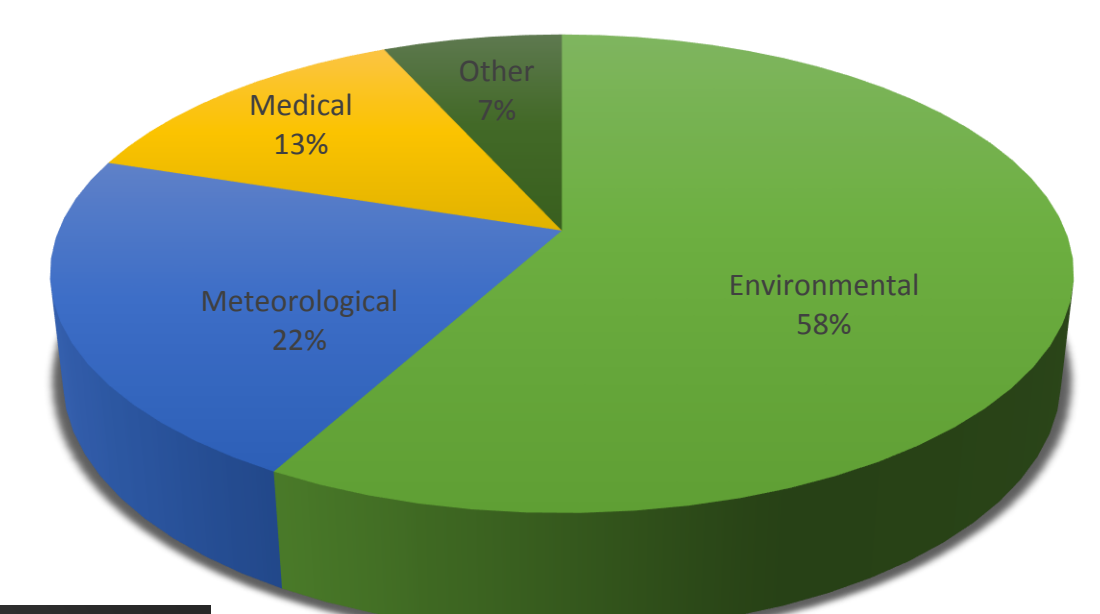


Fig. 7. Classification of the accidents/incidents, according to their causes

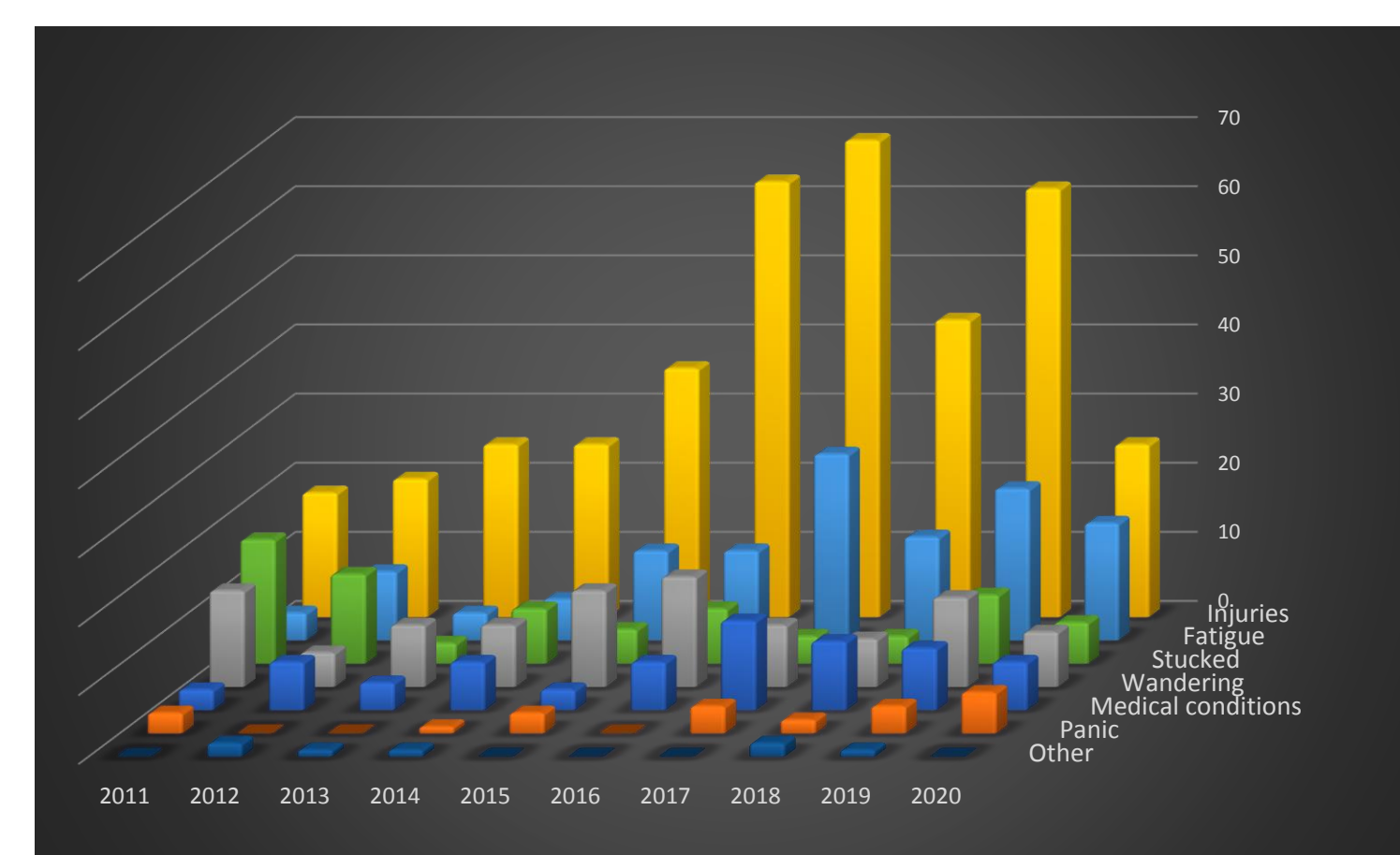


Fig. 8. Main reasons for the emergency calls (2011-2020)

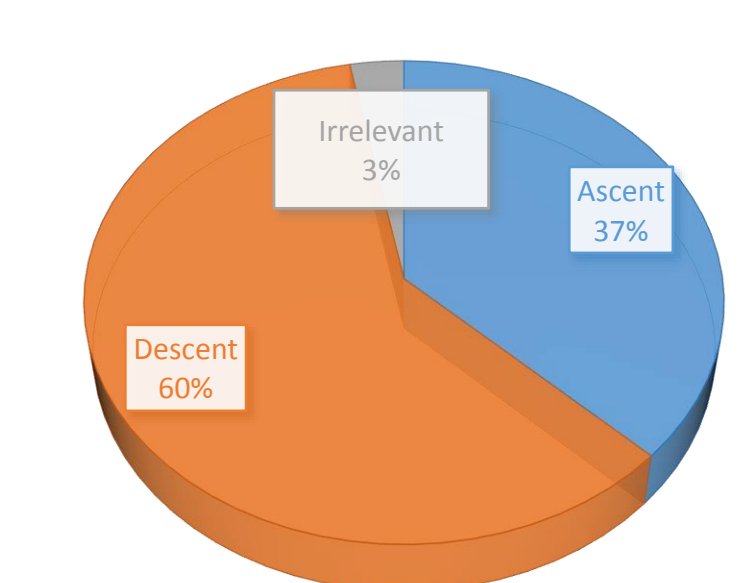


Fig. 9. Influence of the direction of travel on the occurrence of events

Discussion

Approximately one third of the total number of rescues were also reported by local and even national media. Tourists receive little guidance for behaviour and rules to follow, so regardless of the cause of the accidents, they are driven by a series of errors and non-compliance with rules, such as ignoring bad weather reports or the advice of the mountain rescue teams.

Conclusion

The safety of tourists must be improved and requires managerial involvement. Along Jepii Mici trail, work was conducted in summer 2018 to restore the trail with a series of safety elements.