

Ski Mountaineering: Spectator Interest and Potential Upcoming Changes for a New Olympic Sport

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The inclusion of ski mountaineering in the 2026 Winter Olympic Games in Milano/Cortina d'Ampezzo marks a significant milestone in the sport's development. This study examines consumer interest and anticipated popularity, as well as changes in commercialization and environmental impact. Using an online survey (N = 279), we analyzed attitudes toward ski mountaineering's Olympic debut. While only 27.2% of participants expressed a strong interest in watching the sport, 54.5% expected a significant increase in popularity due to increased media coverage. The study also highlights concerns about commercialization and potential environmental consequences, with 74.6% emphasizing the importance of sustainable development strategies. These findings suggest that while Olympic inclusion may boost participation and economic opportunities, it also necessitates careful management to strike a balance between growth and sustainability.

Keywords: Ski Mountaineering, Olympics, Sport Popularity, Commercialization, Environmental Impact, Audience Engagement

Introduction

In order to remain the biggest sports event, the Olympic games must continue to be innovative. One way to achieve this is to implement new sports into the Olympic program. This trend began with the introduction of the snowboard halfpipe event at the 1998 Olympic Games and has continued in recent editions, which have included sports such as skateboarding, BMX, freestyle, sport climbing, and surfing (Falcao et al. 2021; Renfree et al. 2024). Reasons for including action and adventure sports can be found in the International Olympic Committee's efforts to rejuvenate the Olympic Games and make them more attractive to younger spectators (Falcao et al. 2021; Wheaton & Thorpe 2018). Ski mountaineering as a competitive sport includes formats such as individual races, vertical races, sprint races, team races, and relays, which vary in the amount of uphill and downhill sections as well as duration. These formats have already been used in competitions such as the first ski mountaineering competition such as the World Championships in the year 2002 (Schöffel et al. 2023). The inclusion of Ski mountaineering as a new discipline of the Olympic program for the 2026 Winter Games in Milano/Cortina d'Ampezzo reflects the International Olympic Committee's (IOC) efforts to expand the Olympic Program with new sports (Toohey & Veal 2007). Ski mountaineering first appeared as a military patrol event in the 1924 Winter Olympic Games held in Chamonix. However, this event was removed from

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the Olympic program due to a lack of public attention. It was then held as a demonstration sport during the following editions of the Olympic Games. However, it was removed in 1948 due to several avalanche deaths, which led to its complete removal from the Olympic program (Schöffel et al. 2018). The inclusion of a sport in the Olympic program represents a considerable step in developing the sport. It provides a unique canvas for this sport to be presented to millions of spectators, which could lead to further growth (Toohey & Veal 2007). However, this inclusion in the Olympic program can also lead to significant changes within the sports (Thorpe & Wheaton 2011). The Tokyo 2020 Olympic Games saw the first appearance of sport climbing on the Olympic stage (Schöffel et al. 2020). Sport climbing is a sport that, in its competitive form, consists of three distinct disciplines: lead, boulder, and speed (Lutter et al. 2017). However, in the 2020 Olympic Games, sport climbing was represented with a changed competition format (Schöffel et al. 2020). The format change observed in sport climbing makes it reasonable to expect possible developments in ski mountaineering's race structure as well. Especially since the disciplines such as team relay and team sprint will be introduced to the sport during the Olympic Games (Schöffel et al. 2023). Further developments, similar to those observed in the inclusion of previous sports into the Olympic program, include 3D animation, optimized camera work, and specialized commentators, which may lead to a more professionalization of the sport (Lutter & Schöffel 2020). Professionalization and commercialization often alter the values and practices of outdoor sports as they transition from recreational activities to competitive disciplines (Bautev & Robinson 2022). Individuals within the outdoor sports community are often averse to being governed by organizations that do not appreciate the sports culture and value, as they fear that the sports might lose their independence and cultural origin (Thorpe & Wheaton 2011). Thus, while the inclusion of a sport in the Olympic Program will bring more attention, there is a high probability that this can cause tensions within the sports community, as has been observed in different sports in the past (Renfree et al. 2024). As seen with other winter sports, the inclusion of a sport into the Olympic program can lead to economic benefits, ecological stress, and potential conflicts (Reiterer 2019). Therefore, this study examines the anticipated changes that will follow the inclusion of ski mountaineering in the Olympic Games. These changes can be observed in the sport itself, as well as in other areas, such as tourism and the impact on the natural environment. The research question of this paper is: What are the expected effects of ski mountaineering's inclusion in the 2026 Winter Olympics on consumer interest, media coverage, and environmental sustainability?

Materials and Methods

The study follows a direct primary empirical research design focusing on consumers' perspectives on the sport of ski mountaineering. An online survey was conducted to answer the research questions. The questionnaire was available in German and had been tested beforehand for clarity of wording and logical structure, and revised accordingly. The participant's recruitment was based on the snowball principle, and no eligibility criteria were applied. The survey period was 30 days, from

November 12th to December 11th, 2024, and was accessible via the SoSci Survey online platform. Where possible and appropriate, a five-point Likert scale was used, with options ranging from (1) disagree/ unlikely to (5) agree/ likely, to answer the questions. These scales have been widely used since they best reflect the participants' perspectives (Li et al. 2008; Revilla et al. 2014). The participant's recruitment was based on the snowball principle; no eligibility criteria were applied, and no incentives for participation were provided. The questionnaire was structured as follows (Table 1). The first section included socio-demographics, such as age, gender, and income. The following section focused on the participants' immersion in ski mountaineering by asking questions like "How often do you go ski mountaineering during the winter season?" The following section focused on the participants' expectations for changes within the sport of ski mountaineering itself, asking questions such as "Do you expect ski mountaineering to grow in popularity?" The final section addressed potential changes that could occur in various fields, including tourism and conservation of nature. Therefore, questions like "How strongly do you estimate the environmental impact resulting from an increase in ski mountaineering popularity?" If necessary, brief explanations were provided before the questions were asked to ensure that all participants had a similar understanding of the specific topic in question

Table 1. *Structure of the Questionnaire and Brief Description of Items*

Item	Description	Level of Scale
Demographics	Age, gender, level of education, and income	Nominal and interval
Personal immersion	Amount of participation and general interest in ski mountaineering	Ordinal
Ski mountaineering and the Olympic Games	Increase in media attention, sponsors, and competition	Ordinal
Tourism and nature	Effects on tourism in mountainous regions, conflict with other sports, and adverse effects on nature	Ordinal

The data were initially analyzed descriptively, and a series of Spearman rank correlations and Pearson's correlations were conducted to calculate the correlations. Group differences were calculated using linear regression (ANOVA) with a Bonferroni post hoc test. The data were analyzed using IBM SPSS Statistics Version 29.0.2

Results

A total of 431 questionnaires were completed. After removing questionnaires due to missing data, 279 could ultimately be used for the evaluation.

Participants

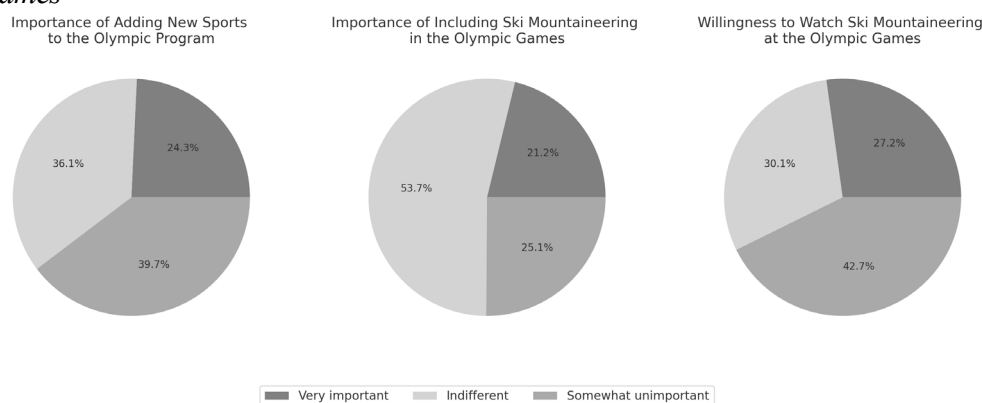
Of the participants, 42.3% (n = 118) are female, and 57.7% (n = 161) are male. The largest age group is 82.8% (n=231) between 18 and 29 years, and the largest net income group is 33.5% (n=99) between 2001 and 2500€. Regarding education, 65.9%

(n = 184) hold a high school diploma, followed by 22.6% (n = 63) with a university degree. 52.3% (n = 146) of the participants stated they are generally active in winter, and 15.1% (n = 42) participate passively.

Ski Mountaineering as a New Olympic Sport

Of the participants, 14.7% (n=41) have a (very) high interest in ski mountaineering in general, and 56.2% (n=157) have a medium to low interest. The general inclusion of new sports into the Olympic program is seen by 24.1% (n=69) as (very) important and by 39.4% (n=110) as (somewhat) unimportant. The inclusion of ski mountaineering in the Olympic Program is seen by 21.2% (n=59) as (very) important and by 53.7% (n=150) as (somewhat) unimportant. 27.2% (n=76) show a strong willingness to watch ski mountaineering during the Olympic Games, whereas 30.1% (n=84) are indifferent, and 42.7% (n=119) show a low willingness. Figure 1 illustrates the findings regarding the inclusion of new sports in the Olympic Games, as well as the inclusion of ski mountaineering and the willingness to watch ski mountaineering at the upcoming Olympic Winter Games.

Figure 1. *Participant's Perspective on the Importance of New Olympic Sports, Ski Mountaineering, and Willingness to Watch Ski Mountaineering during the Olympic Games*



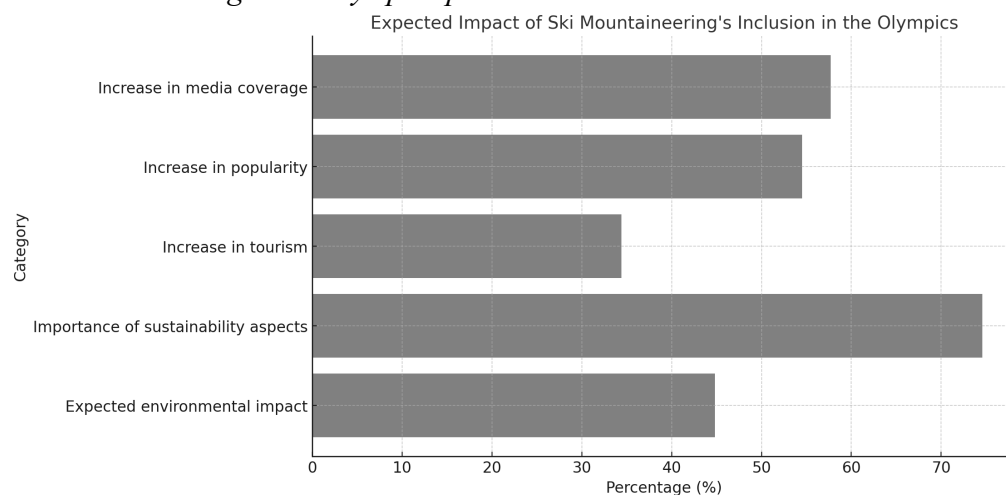
Regarding whether this inclusion will influence the general interest in the sport, 36.6% (n=102) believe there will be an increase, whereas 26.5% (n=74) do not see a potential increase, and 36.9% (n=103) are indifferent. No significant differences in socio-demographic factors were found for the results presented.

Changes in the Future of Ski Mountaineering

57.7% (n=161) expect the media coverage to increase (very) strongly, and 54.5% (n=152) expect the popularity of ski mountaineering to increase (very) strongly. Increased popularity is expected to result from increased media coverage ($r = .652$, $p < .001$). 62.4% (n = 176) expect a (very) substantial increase in potential sponsors for the sports. This increase is expected to result from higher media coverage ($r = .518$, $p < .001$). Furthermore, the amount of competition is expected by 43.1 % (n=126) to (very) substantially increase, and 21.5 % (n=60) expect a medium increase. This

increase is expected to result from increased media coverage ($r = .481, p < .001$) and popularity ($r = .438, p < .001$). From a touristic perspective, 34.4% ($n=96$) expect a (very) high and 36,2% ($n=101$) a medium increase in recreational ski mountaineering as a result of increasing polarity ($r=.361, p < .001$). This increase in tourism is not expected to lead to a higher potential for conflicts between different winter recreational sports ($r = -.103, p < .001$). However, the increase in tourism is expected to harm the environment ($r = .166, p < .001$). In general, the adverse effects on the environment are expected to be minor by 26.4 % ($n=74$), and 44.8 % ($n=125$) expect (very) strong effects. Therefore, 74.6% ($n = 209$) rate the incorporation of sustainability aspects as (very) important in promoting ski mountaineering. 42.7% ($n = 119$) expect changes in nature conservation due to the inclusion of ski mountaineering in the Olympic Games. Figure 2 illustrates these findings.

Figure 2. *Participants' Expectations of the Potential Upcoming Changes surrounding Ski Mountaineering as an Olympic Sport*



Between the genders, a significant difference was observed for the expected effects on the environment ($r = .217; p < .001$) as well as for the need to incorporate sustainability aspects ($r = .174; p = .005$). The remaining socio-demographic factors revealed no differences for the remaining items. No significant difference exists between individuals who actively engage in ski mountaineering and those who do not. The only exception was a significant difference ($p < .001$) in the perceived importance of ski mountaineering within the Olympic Program.

Table 2 provides an overview of the main findings for the different areas in which changes may occur.

Table 2. *Overview of the main findings*

Category	Main finding
Spectator interest	Low interest in watching ski mountaineering and relatively low need for the inclusion of new sports.
Popularity and media	expect increased popularity and expect strong media coverage
Sport development	More competitions and increased sponsorship.
Tourism	Tourism growth is anticipated, with no conflict expected with other winter sports.
Environmental concerns	Substantial negative impacts are expected, necessitating the implementation of sustainability strategies.

Discussion

This study aimed to assess potential consumer interest and upcoming changes in ski mountaineering as a possible consequence of its inclusion as an Olympic sport during the 2026 Olympic Winter Games. Since almost 83% of this study's participants are between 18 and 29 years old, the results of this study present valuable insights into the perspective of this specific age group, which is also the age group that seems to have a waning interest in the Olympic Games (Flint & Vranica 2016; Thorpe & Wheaton 2011). According to the results of this study, there appears to be a low interest, as fewer than one-third of the participants show a clear interest in watching ski mountaineering events during the Olympic Games. This number is surprising, as more than two-thirds of the participants are generally interested in either active or passive winter sports. This low interest in a new Olympic action sport contrasts with the results of Wheaton & Thorpe (2019), who found that 60% of participants believed that including action sports would lead to them watching more of the Olympic Games. It remains to be seen how the spectator's interest in ski mountaineering will eventually develop. However, there is a risk that ski mountaineering may face issues similar to those seen in other sports. Like windsurfing, introduced to the Olympic Games in 1984, ski mountaineering as a course-racing event has to compete against more media-friendly and more spectacular forms of skiing events for spectator attention (Wheaton & Thorpe 2011). Interestingly, more than half of the participants consider the general inclusion of action sports relatively unimportant. This is a surprising finding since including action sports is supposed to increase the interest of young spectators (Wheaton & Thorpe 2022). This finding might be explained by the fact that multiple action sports have been included over recent years. Therefore, the need for further inclusions might be lower than in previous editions of the Olympic Games. To achieve the goal of reaching younger spectators, the IOC must provide effective media coverage strategies. This includes specialized commentators, optimized camera work, and a way to provide a good digital overview of the current race standings. Presenting the sport in a spectator-friendly way is especially important, as almost one-third of the participants are indifferent and could become more willing to watch ski mountaineering. Since ski petrol, as the preliminary event, has been removed from the Olympic program due to the lack of spectator interest (Schöffel et al. 2018), providing good and media-friendly coverage of the competition formats will be crucial. Even

though there seems to be a low willingness to watch ski mountaineering, the inclusion into the Olympic Games is expected to increase the sport's popularity by almost 55 % of the participants, most likely resulting from increased media coverage. This increase is expected to lead to more competition and more sponsors for the sports. This development would yield economic benefits for athletes and the sport as a whole. These expectations are comparable to those of Bortolan et al. (2021), who stated that including a sport in the Olympic Games will lead to an increased participation rate and growth of the sport and increased investment from the sports industry in this sport. On the one hand, these changes can be viewed as a positive development. However, on the other hand, increased professionalization and commercialization may pressure the sport to create new, competition- and media-friendly formats. Such a change has already been observed surrounding the introduction of sport climbing in the Olympic Games. Since these changes in competition formats have been evident in ski mountaineering (Schöffel et al., 2023), it seems reasonable to assume that further changes will occur in the future.

A growing interest in outdoor activities appears to exist, intensified by the COVID-19 Pandemic (Weed 2020). This growing interest is also evident in the sport of ski mountaineering. In Germany, there has been an estimated increase from fewer than 200,000 in 2000 to more than 600,000 people engaging in ski mountaineering in 2020 (Deutscher Alpenverein 2024). As a result of the COVID-19 Pandemic, when numerous ski resorts were temporarily closed, the number of ski tourers increased significantly (Schlemmer & Schnitzer 2023). Therefore, including ski mountaineering in the Olympic Games might be a good decision, as it appears to be a form of winter activity that has gained increasing interest over recent years. However, the people who engage in ski mountaineering as a recreational activity tend to have an average age of almost 43 years (Deutscher Alpenverein 2022). Since one of the results from this study indicates relatively low interest in ski mountaineering among the younger age group, this sport may not entirely represent the targeted younger audience. A potential explanation could be that ski mountaineering becomes a sport practiced by winter sports enthusiasts later in life, at a stage where other disciplines, such as alpine downhill or freestyle skiing, are seen as too dangerous due to high speeds and acrobatic air maneuvers. Suppose the inclusion will lead to an increase in recreational use. In that case, it will be of high importance for the sports federation to provide educational teaching since ski mountaineering is a sport that involves dangers such as avalanches and crevasses. Since avalanche and crevasse deaths have led to the complete exclusion of the sport from the Olympic Program (Schöffel et al. 2018), the IOC must ensure the safety of participants during the Olympic Games. Suppose there will be an increase in popularity and professionalization. This might lead the sports industry to develop a more versatile range of products, including better or more lightweight options, as well as those that are long-lasting. Therefore, this change could be a valuable opportunity for the sports industry to develop new markets and user groups.

The results of this study highlighted several aspects that need to be considered by sports federations and other organizations to prepare for potential upcoming changes resulting from the inclusion of the Olympic Games. Incorporating sustainability aspects and reducing adverse environmental effects, especially, seems relevant since some two-thirds of the participants view this as (very) important. Almost half of the

participants expect changes in nature conservation. Male participants see the effects on nature as being more prolonged. This could be explained by the fact that male participants, although not significantly, tend to participate in ski mountaineering more often and, therefore, might experience adverse environmental effects more frequently during the execution of the sport. To protect nature and mitigate adverse environmental effects, sports organizations and federations should implement education programs that extend beyond the Olympic Games, focusing on practicing the sport safely and in an environmentally friendly manner. These educational programs are highly relevant since winter recreation can disturb animals and damage vegetation (Rixen & Rolando 2013). Although the participants in this study do not report increased conflicts with other winter recreationists, the education programs should also aim to prevent intergroup conflicts (Miller & Vaske 2016). Strategies such as zoning or educational programs that prevent the rise of conflicts should be considered by the relevant organizations and federations, as well as for tourism destinations. Furthermore, these stakeholders may need to develop effective strategies for sustaining ski mountaineering as a winter tourism activity in the current context of climate change. Therefore, incorporating nature and climate protection strategies appears to be crucial.

This study has some limitations. One limitation of this study is the use of online surveys as a convenience sampling method with a snowball sampling approach, which may limit the generalizability of the findings. Another limitation of this study is evident in the relatively low rate of people engaging in ski mountaineering. This might explain the low interest in watching ski mountaineering. Further, ski mountaineering does not seem to be very well known; therefore, during the Olympic Games, it needs to be presented in a way that can increase attention. However, since the participants primarily represent the age group that appears to be targeted by the IOC through the inclusion of action sports, this can be seen as a strength of this study.

Conclusion

This study provides valuable insights into the potential changes for ski mountaineering resulting from its inclusion in the Olympic Games. Since the majority of participants believe that including action sports will encourage them to watch the Olympic Games, the IOC's strategy may be effective. However, since interest in ski-mountaineering appears to be relatively low, the IOC must devise a compelling strategy to increase spectators' interest in the sport. If this increase in attention is successful, the expected changes can lead to economic benefits for athletes, the sport, and tourism, resulting from increased popularity. This increase in popularity might also lead to adverse environmental effects. Therefore, sports organizations and federations need to develop sound strategies to prepare for potential upcoming changes. Future research should monitor whether the aspects identified in this study occurred or what other changes resulted from including ski mountaineering as an Olympic Sport. Furthermore, future studies should investigate how different age groups perceive the inclusion of ski-mountaineering as a new Olympic discipline.

References

- Bautev M, Robinson L (2022) *Organizational Evolution and the Olympic Games: The Case of Sport Climbing*. In G. Dumont & H. Thorpe (eds.), *The Professionalization of Action Sports*.
- Bortolan L, Savoldelli A, Pellegrini B, Modena R, Sacchi M, Holmberg HC, Supej M (2021) Ski Mountaineering: Perspectives on a Novel Sport to Be Introduced at the 2026 Winter Olympic Games. *Frontiers in Psychology*, 12(737249).
- Deutscher Alpen Verein (2022) *Forschungsbericht Skitouren und Freeride 2019 – 2022. Ein Projekt der DAV Sicherheitsforschung*. Deutscher Alpen Verein.
- Deutscher Alpenverein (2024) *Zahlen und Fakten zum Skitourengehen in Deutschland*. Access at <https://www.alpenverein.de/verband/presse/hintergrundinfos/zahlen-und-fakten-zum-skitourengehen-in-deutschland>, on February, 11th 2025.
- Falcao TB, Sotiriadou P, Uvinha R (2021) Olympic Games and Adventure Sports: The Inclusion of Surfing in the Tokyo 2020 Edition. *The International Journal of the History of Sport*, 40(4), 334-349.
- Flint J, Vranica S (2016) *NBC's ratings for Rio Olympics fall behind London*. Wall Street Journal. <https://www.wsj.com/articles/nbcs-ratings-for-rio-olympics-fall-behind-london-1471185907>
- Li M, Pitts BG, Quarterman J (2008) *Research Methods in Sport Management*. Fitness Information Technology.
- Lutter C, El-Sheikh Y, Schöffl I, Schöffl V (2017) Sport climbing: medical considerations for this new Olympic discipline. *Sports Medicine*, 51(1), 2-3.
- Lutter C, Schöffl V (2020) *Ausblick – Klettern als Olympische Disziplin*. In V. Schöffl, I. Schöffl, T. Hoichholzer & C. Lutter (eds.), *Klettermedizin: Grundlagen, Unfälle Verletzungen und Therapie* (S. 243-248).
- Miller AD, Vaske JJ (2016) Winter Recreationist Conflict and Management Approaches at Vail Pass, Colorado. *Journal of Park and Recreation Administration*, 34(2), 1-11.
- Reiterer MJ (2019) *Trendsport Ski-Slopestyle im Schulsport: Planung einer Skisportwoche zum Thema Freestyle-Skiing*. Dissertation, Karl-Franzens-Universität Graz.
- Renfree G, Cueson D, Wood C (2024) Skateboard, BMX freestyle, and sport climbing communities' responses to their sports# inclusion in the Olympic Games. *Managing Sport and Leisure*, 29(1), 171–185.
- Rixen C, Rolando A (2013) *The Impacts of Skiing and Related Winter Recreational Activities on Mountain Environments*. Bentham.
- Revilla MA, Saris WE, Krosnick JA (2014) Choosing the Number of Categories in Agree–Disagree Scales. *Sociological. Methods and Research*, 43(1), 73–97.
- Schlemmer P, Schnitzer M (2023) Research note: Ski touring on groomed slopes and the COVID-19 pandemic as a potential trigger for motivational changes. *Journal of outdoor recreation and tourism*, 41(100413).
- Schöffl V, Pöppelmeier O, Emmler J, Schöffl I, Küpper T, Lutter C (2018) Ski Mountaineering – Evaluation of a Sports Specific Performance Diagnosis. *Sportverletzung Sportschaden*, 32(4), 233-242.
- Schöffl V, Tischer T, Lutter C (2020) Sportklettern als olympische Disziplin. *Sports Orthopedics and Traumatology*, 36(1), 5-11.
- Thorpe H, Wheaton B (2011) Generation X games, action sports and the Olympic movement: Understanding the cultural politics of incorporation. *Sociology*, 45(5), 830–847.
- Toohey K, Veal AJ (2007) *The Olympic games: a social perspective*. CAB International.
- Weed M (2020) The role of the interface of sport and tourism in the response to the COVID-19 pandemic. *Journal of Sport and Tourism*, 24, (2), 79-92.

- Wheaton B, Thorpe H (2011) 'Generation X Games' Action Sports and the Olympic Movement: Understanding the Cultural Politics of Incorporation. *Sociology*, 45(5), 830–847.
- Wheaton B, Thorpe H (2018) Action Sport Media Consumption Trends Across Generations: Exploring the Olympic Audience and the Impact of Action Sports Inclusion. *Communication and Sport*, 7(4), 415–445.
- Wheaton B, Thorpe H (2022) *Action Sports and the Olympic Games. Past, Present, Future*. Routledge.