



Profile of mountain bikers. Trotamons Bike Race

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Cite this article:

Dorado, V., Farías-Torbidoni, E-I., Labrador-Roca, V. & Seguí-Urbaneja, J. (2022). Profile of Mountain Bikers. Trotamons Bike Race. *Apunts Educación Física y Deportes*, 147, 63-73. [https://doi.org/10.5672/apunts.2014-0983.es.\(2022/1\).147.07](https://doi.org/10.5672/apunts.2014-0983.es.(2022/1).147.07)



Editor:

© Generalitat de Catalunya
Departament de la Presidència
Institut Nacional d'Educació
Física de Catalunya (INEFC)

ISSN: 2014-0983

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Section:

Sports management,
active leisure and tourism

Original language:

Spanish

Received:

March 5, 2021

Accepted:

June 3, 2021

Published:

January 1, 2022

Cover:

Women Ski
Cross Competition.
Winter Youth Olympic
Games 2020.
Lausanne (Switzerland)
© EFE/ Gabriel Monnet

Abstract

In recent years there has been an increase in the practice of open-air physical-sporting activities in Spain, among which we find the speciality of mountain biking (MTB). The objectives of the study were to advance the generic characterisation of MTB practitioners in order to identify relevant aspects that favour the promotion and management of this sporting speciality. The methodology used consisted of distributing a questionnaire among the participants in the popular Trotamons Bike Race 2019 event ($N = 461$). Among the main results obtained, the identification of a somewhat uniform profile characterised by being: men, middle-aged, with a medium-high educational level, salaried, married or with a partner, with more than 5 years practising this sport and with a low level of environmental sensitivity. The results obtained were discussed as they relate to the management and promotion of this sporting speciality.

Keywords: events, mountain biking (MTB), practitioners, practitioner profile, sports speciality.

Introduction

Mountain biking (MTB) is a cycling speciality undertaken in a natural environment with a mountain bike (RFEC, nd).

During the last two decades, there has been a change in the perception of physical-sports activities in the natural environment by the general population. Practices that were previously the reserve of minority groups, have, in a few years, come to be seen as one more alternative for the active use of free time. As a result of this expansion, there have been significant changes, not only in social behaviour, but also in the perception and effect that this type of activity has on the natural environment (Inglés et al., 2016; Luque-Gil, 2011; Olivera and Olivera, 1995; Sans and Inglés, 2021).

It is worth mentioning that, according to the data available in the latest survey of sporting habits in Spain (MECD, 2015), it is estimated that more than 53% of the Spanish population regularly practices some type of physical-sports activity, of whom almost 46% usually do it outdoors. Data which, in this case, agrees with the figures published in the latest Eurobarometer (European

Commission, 2018), especially for the practice of physical-sporting activities in the open air, which places Spain, with 53%, in third position, behind Finland (67%) and Austria (54%). On the other hand, according to data from the Ministry of Education and Vocational Training (MECD, 2015), more than 63% of those surveyed living in Spain declared that they have a bicycle at home. Therefore, it is not surprising to find cycling (in all its variants) among the four most practised types of sport, at 38.7%, ahead of swimming (38.5%), hiking/mountaineering (31.9%) and running (30.4%).

One more example of the relevance of mountain biking can be found in the proliferation of sporting events that include this sport. As an example, as shown in Figure 1, see the increase in the number of events registered on one of the most popular web pages for the publicising of this type of sporting event nationwide. While the number of events registered was 62 in 2010, by 2019 this number reached some 1,800, which represents an annual growth rate (CI) of 52%, with peaks in the years 2011 and 2013, with an increase of around 153% and 172%, respectively.

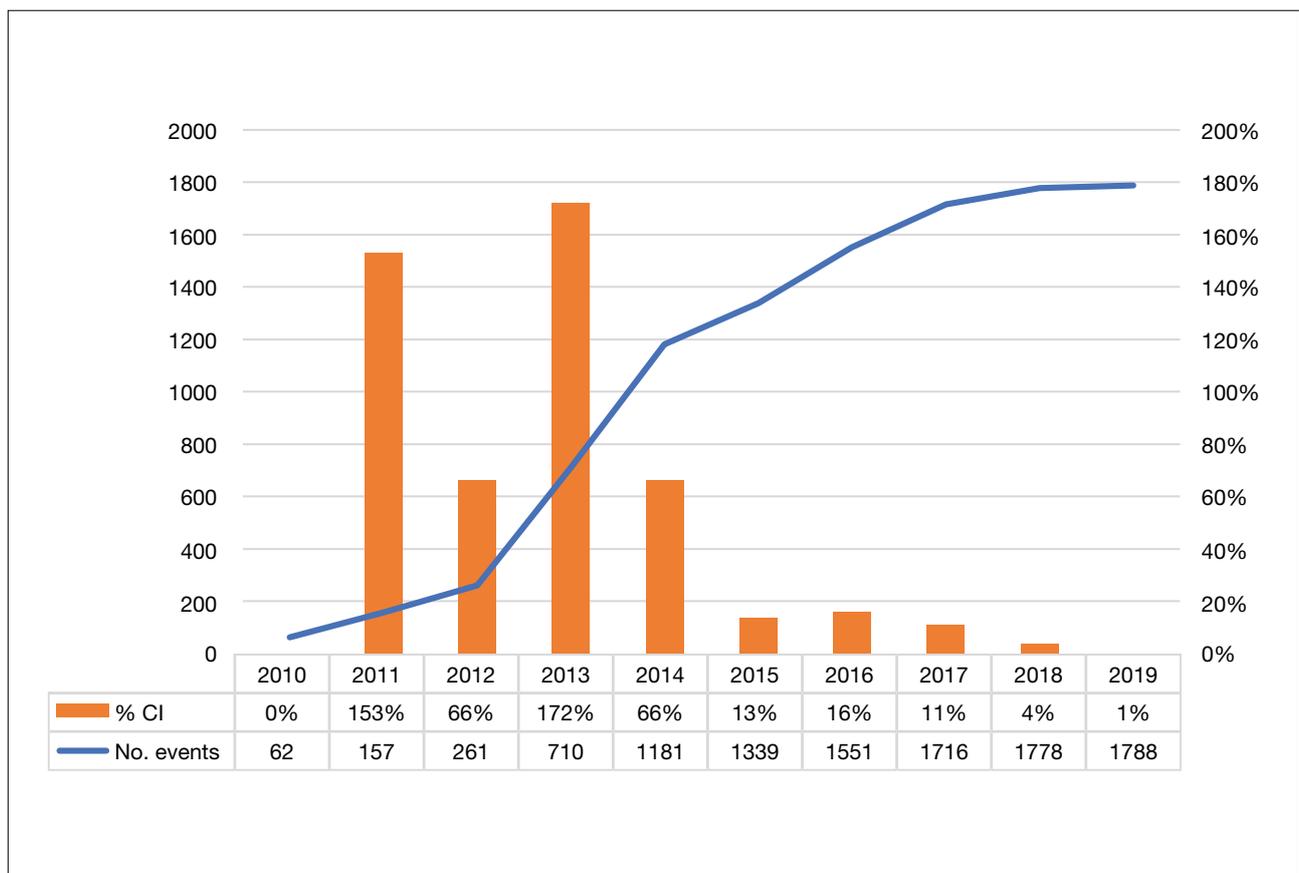


Figure 1
Evolution and annual increase (%) of mountain biking (MTB) events in Spain.
Source: produced internally, based on data provided by the Runedia website (2019).

At a more specific level, and with respect to the study of the practitioners themselves, it is worth highlighting the existence of a varied group of studies that have tried to advance the knowledge of this sporting speciality by addressing various aspects, such as: identification of the main motivations for practising or participating in events by the practitioners of this sporting specialty (Bordelon and Ferreira, 2019; Getz and McConnell, 2011; Kruger et al., 2016; Santos et al., 2016; Taylor, 2010), or the environmental consequences caused by the practice of this speciality (Evju et al., 2021; Fariás-Torbidoni, 2015; Morey et al., 2002; Mueller et al., 2018; Newsome and Davies, 2009; Pickering et al., 2011), in addition to the classification of the health benefits that can come from this sport (Roberts et al., 2018).

At this point, it is worth highlighting the diversity of results found in the study of the motivations for participating by authors such as Santos et al. (2016), Taylor (2010), Bordelon and Ferreira (2019), Getz and McConnell (2011) and Kruger et al. (2016). While the studies by Santos et al. (2016) and Taylor (2010) into the motivations for participating in general do not agree with each other, possibly due to the use of different methodologies (quantitative and qualitative), they do so when compared with the results obtained by Bordelon and Ferreira (2019), Getz and McConnell (2011) and Kruger et al. (2016) into the analysis of the motivations derived from the participation in MTB events.

From a more global perspective, it is also interesting to highlight the studies carried out by Cessford (1995), Seguí-Urbaneja et al. (2020) and Rejón-Guardia et al. (2020), which, despite having been carried out in different contexts (international, regional and national) and in different years, provide interesting data on age, gender, years of experience and even frequency of practice, with special relevance to the presence of certain constants such as a clear predominance of male bikers with a medium-high level of training and with a weekly frequency of practice of between once and twice.

However, despite the existence of a large number of studies, at both the international and national level, there are few studies that have addressed in depth the identification of the generic profile of these practitioners at the national level, so important when deploying any type of promotional or commercial activity policy for this sport, especially for the speciality of mountain biking.

Starting from here, the objectives that were set in the performance of this study were to advance the characterisation of the generic profile of MTB practitioners, specifically their motivation, habits and preferences in practicing and participating in sporting events, and to identify aspects

relevant to the promotion and management of this sports speciality.

Methodology

This research was based on performing a survey of habits, motivations and preferences. This survey was carried out during the 16th edition of the popular Trotamons Bike Race - Fraga event, in 2019, in the on-line format, using the Kobotoolbox platform, in two languages (Catalan and Spanish). The survey was sent to the 1096 people signed up for that race once the event was finished. The link on the Kobotoolbox platform was available for ten days after the event. During this period, two reminders were sent to the participants. 461 answered questionnaires were obtained, a response rate of 42%.

The survey model used was structured taking into account three dimensions: sociodemographic characteristics (gender, age, education, occupation, habitual place of residence, family situation, number of minor children at home, environmental awareness and sensitivity), sports practice habits (years of practice, sports initiation, sporting experience, federative relationship, physical condition, frequency of training and practice of other sports and specialities), and motivation and preference for practice and participation in events (motivation for practice, participation in events, preferences in route design and importance and satisfaction in services and equipment). The validation of the questionnaire was carried out using expert judgement (consisting of three people) who assessed using a Likert scale (1 totally disagree - 5 totally agree) the lack of ambiguity and the relevance of all the questions included in the initial survey version. There were a total of 22 questions in the final version of the survey.

This study received the approval of the Ethical Committee for Clinical Research (CEIC) of the Sports Administration of Catalonia, as number 09/2019/CEICEGC. All the people who participated in the study did so voluntarily, being informed of and accepting the confidential processing of their responses which is subject to the guarantees of Organic Law 3/2018, of December 5, on the Protection of Personal Data and guarantee of digital rights.

The data obtained were transformed and coded using the SPSS program, version 25.0. The data analysis was based on the application of descriptive statistical analysis according to characteristics and distribution (normality test) of the various variables: frequencies, mean, maximum and minimum values, median, interquartile range (IQR).

Results

Sociodemographic characteristics

Table 1 shows the results for the sociodemographic characteristics of mountain bikers. A predominance of the male gender (94.4%) was observed over the female (5.6%), with 43.4% in the age range from 36 to 45 years, and with a mean age of 43.49 (8.97) years. In turn, a profile was identified of a high educational level (36.4% having been to university), an employee (57.9%) and habitually residing in Catalonia (61.6%). As for the family situation, the most common was that of married or with a partner (79.8%) with a median number of minor children at home of 1.00 [0.00-2.00].

In terms of environmental awareness and sensitivity, more than 67.2% considered that their practice did not produce any impact on the environment. On the other hand, we found that 32.9% believed that mountain biking events did produce some type of impact, these being split into two levels: 25.6% believed that the impact produced was minimal and should not be considered. On the other hand, 7.2% showed the need to consider the impacts that could arise from the practice. Likewise, 27.5% of the practitioners were able to detect during the event various actions to minimise the impact carried out by the Trotamons Bike Race organisation, with waste management as the most highly valued action among practitioners, at 13.2%.

Table 1
Sociodemographic characteristics of mountain bikers.

Variable	N = 461	Total
Gender		
Male (%)	435	94.4
Female (%)	26	5.6
Age		
16-25 (%)	13	2.8
26-35 (%)	61	13.2
36-45 (%)	200	43.4
46-55 (%)	149	32.3
56-65 (%)	34	7.4
> 65 (%)	4	0.9
Age (years). Mean (SD)	461	43.49 (8.97)
Education		
Primary school (%)	58	12.6
Secondary school (%)	91	19.7
Baccalaureate - FP (%)	144	31.2
University undergraduate (%)	118	25.6
Postgraduate studies - masters (%)	44	9.5
Postgraduate studies - PhD (%)	6	1.3
Occupation		
Student (%)	12	2.6
Unemployed (%)	2	0.4
Public employee (%)	84	18.2
Employee (%)	267	57.9

Note. Continuous data are expressed as mean (SD) or median (IQR) depending on their distribution. SD = standard deviation; IQR = interquartile range. (*) These values were calculated for an $n = 151$. (**) These values were calculated for an $n = 122$.

Tabla 1 (Continued)
Sociodemographic characteristics of mountain bikers.

Variable	N = 461	Total
Business owner - self-employed (%)	87	18.9
Stay-at-home partner (%)	1	0.2
Retired (%)	7	1.5
Other (%)	1	0.2
Place of residence		
Aragon (%)	125	27.1
Catalonia (%)	284	61.6
Other autonomous communities (%)	49	10.6
Other countries (%)	3	0.7
Family situation		
Single (%)	62	13.4
Married or with a partner (%)	368	79.8
Widowed (%)	2	0.4
Divorced - separated (%)	22	4.8
Other (%)	7	1.5
Number of minor children at home		
Less than 1 (%)	187	40.7
1 (%)	111	24.1
2 (%)	140	30.4
More than 2 (%)	22	4.8
Children under 18 (children). I [IQR]	460	1.00 [0.0-2.0]
Environmental awareness and sensitivity		
Impacts		
Think not (%)	310	67.2
Think so (low level) (%)	118	25.6
Think so (to be considered) (%)	33	7.2
Minimisation of impacts (organisation)*		
Yes (%)	127	27.5
No (%)	24	5.2
Minimisation actions detected**		
Waste management (%)	60	13.2
Organiser information (%)	14	3.1
Organisation staff (%)	14	3.1
Refreshments (%)	12	2.6
Signage (%)	8	1.8
Trail selection (%)	7	1.5
Other (%)	7	1.5

Note. Continuous data are expressed as mean (SD) or median (IQR) depending on their distribution.

SD = standard deviation; IQR = interquartile range. (*) These values were calculated for an $n = 151$.

(**) These values were calculated for an $n = 122$.

Sports practice habits

Table 2 shows the data gathered in the study on the sporting habits of mountain bikers. Among the main results found, the fact that more than 95% of the cyclists surveyed stated that they were regular practitioners of this sporting speciality stood out, with a median experience of 8.00 [5.00-15.00] years of practice, of whom 72.9% said they had been doing it for more than 5 years.

Likewise, and in relation to previous experience in the practice of sports activities, 15.2% of users had changed from road cycling to mountain biking. Thus, in reference to physical activity experiences prior to mountain biking, the majority of users stated that they had done other sports (74.6%). However, 25.4% declared that they started directly in mountain biking.

As for federation membership, a high percentage of membership was observed, 43.6% to be exact, of whom some had more than one federation license; A total of four different federations were found of which the practitioners

who participated in the survey were members. These were: the Royal Spanish Cycling Federation (RFEC), Catalan Cycling Federation (FCC), Spanish Federation of Mountain and Climbing Sports (FEDME) and the International Cycling Union (UCI).

On the other hand, the answers obtained in the physical condition question revealed that 61.2% of the practitioners considered themselves at an intermediate level, with a mean of 2.87 (0.68) on a scale going to 5. In this respect, the practitioners recorded a median of 2 [2-3] weekly training sessions linked to the practice of mountain biking. 49.7% were in the range of 1-2 weekly training sessions while 40.3% were in the range of 3-4 training sessions.

Among the most practised sports and specialities were found road cycling, with the highest representation, at 28%; mountain racing (TR, trail running) in second place, at 14.9%, followed by fitness, swimming and mountaineering/mountain climbing, at 11.1%, 9.9% and 9.8%, respectively.

Table 2
Sporting habits of the practitioners.

Variable	N = 461	Total
Regular practitioner		
Yes (%)	442	95.9
No (%)	19	4.1
Time practising		
Less than 1 year (%)	24	5.2
More than 1 year (%)	437	94.8
Between 1-3 years (%)	62	13.4
Between 4-5 years (%)	39	8.5
More than 5 years (%)	336	72.9
< 1 year of practice (months). M_e [IQR]	22	7.00 [4.00 - 9.25]
> 1 year of practice (years). M_e [IQR]	439	8.00 [5.00-15.00]
Came to MTB from cycling		
Yes (%)	73	15.8
No (%)	388	84.2
Experience in physical activities before mountain biking		
Yes (%)	344	74.6
No (%)	117	25.4
Federation member		
Yes (%)	201	43.6
No (%)	260	56.4

Note. Continuous data are expressed as mean (SD) or median (IQR) depending on their distribution. SD = standard deviation; IQR = interquartile range. (*) These values were calculated for an $n = 213$. (**) These values were calculated for an $N = 685$.

Table 2 (Continued)
Sporting habits of the practitioners.

Variable	N = 461	Total
Federation type*		
Royal Spanish Cycling Federation (RFEC) (%)	138	29.9
Catalan Cycling Federation (FCC) (%)	39	8.5
Spanish Federation of Mountain Sports and Climbing (FEDME) (%)	18	3.9
International Cycling Union (UCI) (%)	18	3.9
Physical condition		
Physical condition	461	
Beginner (%)	10	2.2
Amateur (%)	105	22.8
Intermediate (%)	282	61.2
Expert (%)	61	13.2
Performance (%)	3	0.7
Physical condition (Likert 1-5 scale). Mean (DT)	461	2.87 (0.68)
MTB training frequency (per week)		
Less than 1 (%)	9	2.0
1-2 (%)	229	49.7
3-4 (%)	186	40.3
5-6 (%)	33	7.2
7-8 (%)	3	0.6
More than 8 (%)	1	0.2
Weekly MTB training sessions. M _e [IQR]	461	2.00 [2.00 - 3.00]
Practice of other sports and specialties**		
Cycling (%)	192	28.0
Mountain running (%)	102	14.9
Fitness (%)	76	11.1
Swimming (%)	68	9.9
Mountaineering/mountain climbing (%)	67	9.8
Skiing (%)	57	8.3
Paddle (%)	41	6.0
Other (%)	82	12.0

Note. Continuous data are expressed as mean (SD) or median (IQR) depending on their distribution. SD = standard deviation; IQR = interquartile range. (*) These values were calculated for an $n = 213$. (**) These values were calculated for an $N = 685$.

Motivation and preference for practice and participation in events

For motivation, two questions were taken into account, both valued on a scale of 1 to 5. In the first, a list of statements that justified the love of mountain biking was scored. In the second, the main motivation that had led the practitioner to take up the sporting event were assessed.

In the breakdown of the answers given to both questions, it was found that the motivation for the practice most valued by the practitioners were: the enjoyment of practising the sport, with a score of 4.55 (0.66). In second position, at 4.54 (0.63) was improvement in health and fitness. Finally, in third and fourth position, related to psychological health, were the motivation of disconnection

and the improvement of various levels (psycho-physical-emotional), with values of 4.36 (0.77) and 4.42 (0.71), respectively (Figure 2).

Regarding the motivation for participation (Figure 3), the motivation of enjoyment produced by participating

in a mountain biking event with a 4.43 (0.72) stood out above the rest, followed by the improvement in physical condition that occurs during the competition, with a 4 (1.02). Finally, in third place, was the motivation for personal improvement that the event itself produces.

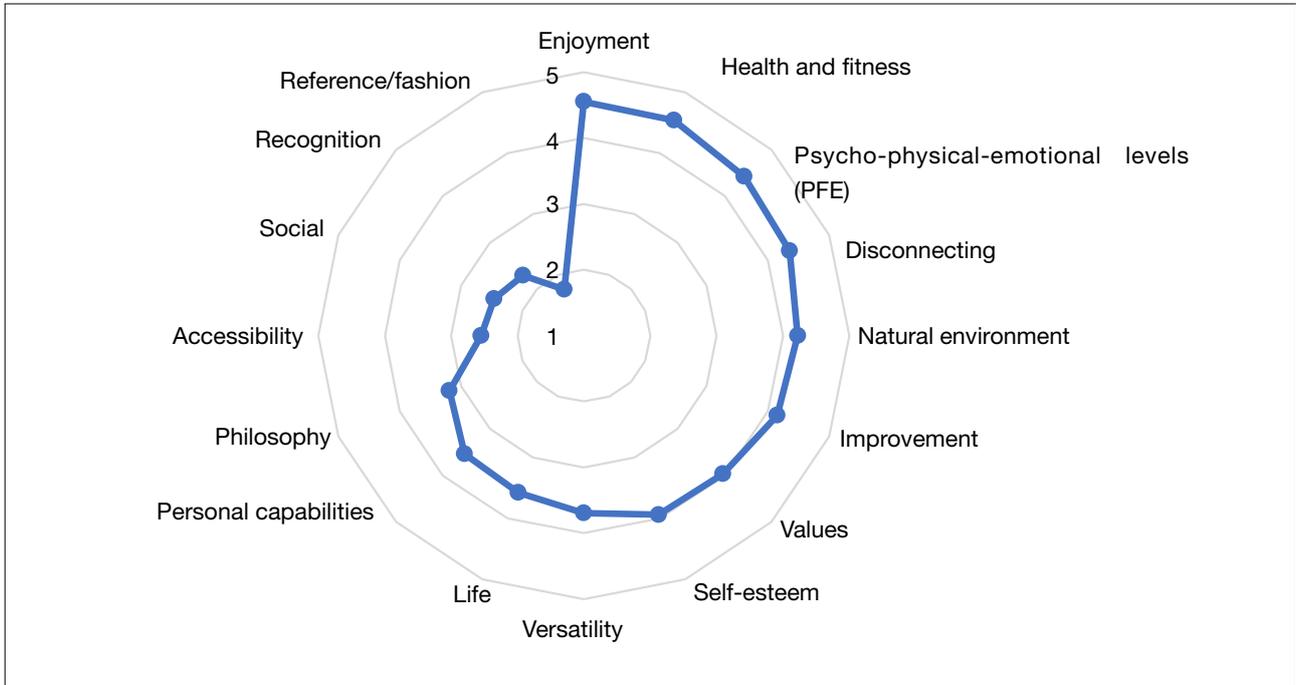


Figure 2
Motivations for the practice (Likert scale 1-5).

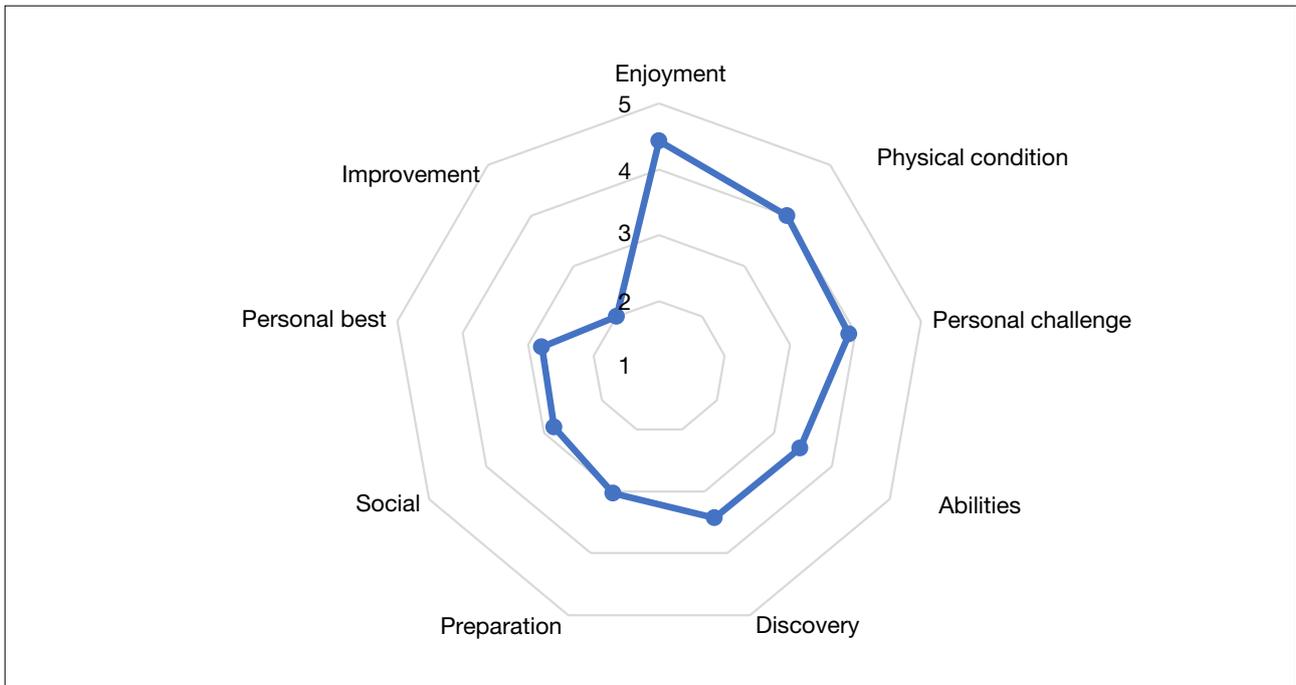


Figure 3
Motivations for participating (Likert scale 1-5).

Regarding the preferences in the design of mountain bike races (Figure 4), there were nine attributes valued by the practitioners on a scale going to 4, with social resources (support staff, care, etc.) as the attributes given the highest

level of importance, at 3.59 (0.51), closely followed by the logistics of the event (parking, public transport, etc.), at 3.53 (0.55), and the physical resources of the organisation (arrival, departure, refreshments, etc.), at 3.51 (0.58).

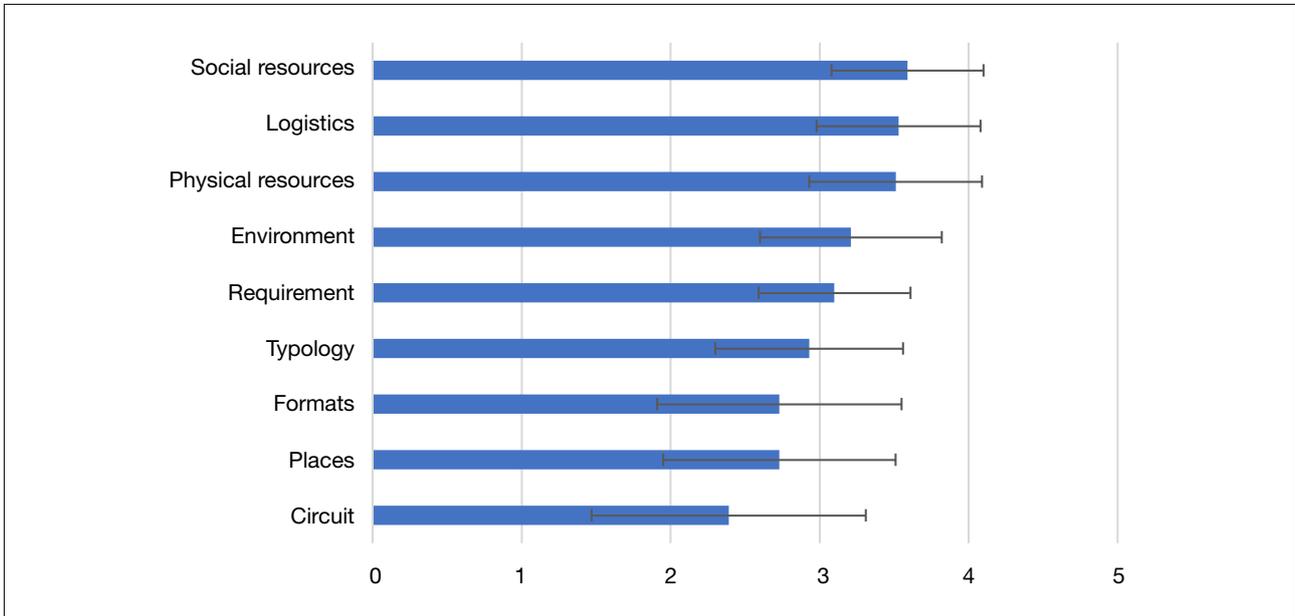


Figure 4
Preferences in the design of MTB races (Likert scale 1-4).

Finally, Figure 5 shows the importance that practitioners gave to the services and equipment in mountain biking events. Attention to the practitioner was found to be the most valued, at 4.52 (0.63), followed by the race route, at 4.37 (0.70).

In third and fourth place were the refreshment stations, at 4.31 (0.80), and the entrances and parking, at 4.28 (0.77).

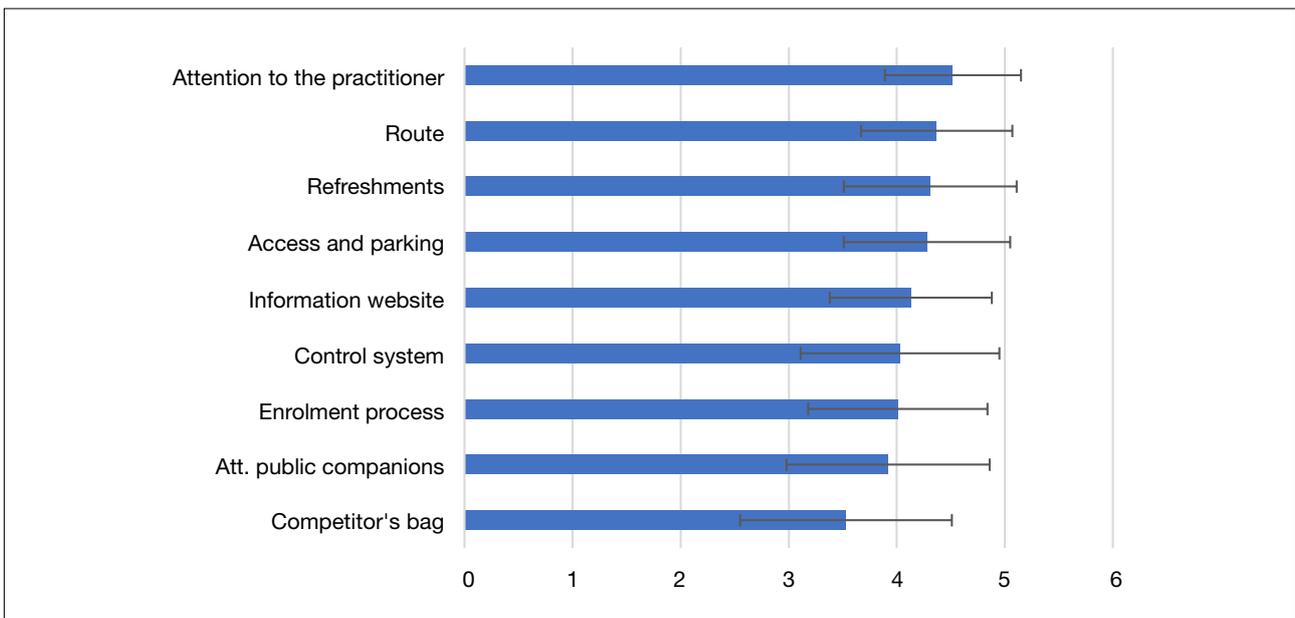


Figure 5
Level of importance of services and equipment in mountain biking events (Likert 1-5 scale).

Discussion

With regard to sociodemographic characteristics, the results produced by this study, in line with those of previous studies, such as those carried out by Cessford (1995), Rejón-Guardia et al. (2020), Roberts et al. (2018) and Seguí-Urbaneja et al. (2020), showed a great predominance of males over females, with a clear presence of a medium-high educational level. However, as regards the age range, differences were found with respect to the studies by Cessford (1995) and Rejón-Guardia et al. (2020), an aspect that agrees with the studies by Roberts et al. (2018) and Seguí-Urbaneja et al. (2020).

Regarding sporting habits, agreement was observed in the frequency of training (between one and two weekly sessions) with the results obtained by Cessford (1995), Rejón-Guardia et al. (2020) and Seguí-Urbaneja et al. (2020). However, with regard to how long the sport had been practised for (more than 5 years), differences were again found with respect to the studies by Cessford (1995) and Rejón-Guardia et al. (2020), agreeing with the study by Roberts et al. (2018) and Seguí-Urbaneja et al. (2020).

Regarding the level of environmental sensitivity, the difference to the study carried out by Fariás-Torbidoni et al. (2021) at a mountain race event, the results found in our study showed the presence of a 20% lower level of sensitivity compared to mountain runners. Taking into account Heer et al. (2003), this could be related to the academic level of the participants surveyed. These data, in our case, were 24.6% below the results found by Fariás-Torbidoni et al. (2021).

It is necessary to point out the similarity of the results obtained for the motivations receiving the highest score from the practitioners, both in relation to the practice itself and with the participation in mountain biking events: enjoyment, the improvement in physical condition and in psychological health. These agree with the two main motivations for participation in events found by Kruger et al. (2016). The differences in the motivations found in the results of the studies by Bordelon and Ferreira (2019) and Getz and McConnell (2011) could be justified by the recreational-competitive nature of the Trotamons Bike Race event, that has taken place for many years in the town of Fraga and which has great symbolism among the local population and the surroundings, compared to the events covered by those authors (large MTB events).

Finally, regarding the results obtained for the most valued aspects of the organisation of the Trotamons Bike Race event, it is worth highlighting the highest score achieved by these three items: attention to the runner, design of the route and supplies, with the competitor's bag being the least valued. This result should be taken into account when prioritising actions and resources in the organisation of a mountain biking event, in which a significant part of the economic resources is usually allocated to the preparation of the competitor's bag.

Conclusions and recommendations

The study carried out has made it possible to establish a profile of the mountain biker, with the following characteristics: mostly male (94.4%); with a mean age of 43.49 (8.97) years; university level studies (36.4%); salaried (57.9%); married or with a partner (79.8%); with more than 5 years of practising the sport (72.9%); with low environmental sensitivity (67.2%); taking part in more than one sport and speciality (74.6%); with high federation membership (43.6%); in medium physical condition (61.2%) and with a training frequency of 1-2 sessions per week (49.7%), with the following main motivations for practising this speciality and participating in mountain biking events identified: the enjoyment and the improvement of physical condition and of psychological health.

Based on the results obtained, the need to generate promotional strategies in order to increase the participation of women in this type of sporting event is obvious. On the other hand, taking into account the environmental problems that the practice of mountain biking creates and the history of best practice guides in other sports (mountain running), there are two recommendations one can get from the results obtained in this regard: an increase in actions that promote environmental awareness and sensitivity from the organisations that promote MTB events (giving visibility to the actions they perform to minimise impacts) and a greater integration of the structure these events consist of (improving publicising and communication of the results of the studies of the environmental consequences of this sport).

Finally, the preferences of the practitioners have made it possible to identify the social resources (staff, sportsperson care, etc.), the logistics of the event (entrances, parking, public transport, etc.) and the physical resources (refreshments, assemblies, etc.) as the most valued aspects in the design of a MTB event, in which a greater effort should be made in the management, prioritising these aspects over others such as: that the event is included in a race circuit, that there is a tourist offering associated with the event or the type of MTB event itself (recreational, competitive, charity, etc.), being less important to the practitioners.

Limitations and future prospects

Limitations. Data collection was carried out at a single MTB event (a popular one), so the results cannot be extrapolated to the general population.

Future perspectives. Expand the case studies taking into account the level of the competitive races (beginner, intermediate and performance) to characterise the profile of the mountain biker at the regional level.

Acknowledgements

The authors are grateful to the Runedia group for the selfless transfer of the MTB event database. We also appreciate the collaboration and facilities of the organising team of the Trotamons Bike Race, without which it would not have been possible to distribute the questionnaire, as well as all those who have participated by answering the survey and have collaborated to identify the generic profile, motivations and preferences of the MTB practitioner.

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Conflicto de intereses: las autorías no han declarado ningún conflicto de intereses.



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