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Estimating the Economic Impacts of a Small-Scale Sport Tourism Event: The Case of the Italo-Swiss Mountain Trail CollonTrek

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Academic Editor: Marc A. Rosen

Received: 12 January 2017; Accepted: 23 February 2017; Published: 26 February 2017

Abstract: Evidence from several studies shows that small-scale sport events may have more positive repercussions for the host community than major ones in terms of both economic and social impacts. This study estimates the economic impacts on a small community derived from athletes' expenditure at a specific small-scale sport tourism event, the Italo-Swiss mountain endurance trail CollonTrek. Even if this kind of event is considered a minor sport event, generating very limited economic activity, this study supports the hypothesis that the funds invested by the public administration are compensated for by revenue generated during the trail. In fact, according to the three analyzed scenarios (Conservative, Average and Liberal), for each euro invested by the public administration, an economic return between €17.62 and €18.92 has been estimated, and between €5.64 and €6.9 (32%–36.47%) represent the direct economic return for the local community. Furthermore, in addition to the direct economic benefits, in accordance with the feedback from a sample of participants at the event (n = 180), this kind of event has positive implications in terms of future tourism for the host valley, pointing out how this kind of tourist activities has positive repercussions in terms of economic and social sustainability.

Keywords: sport tourism; mountain trails; economic impacts; economic sustainability; host community; social sustainability

1. Introduction

Mountain races, endurance, and/or Ultratrail have experienced important developments in the last 10 years in terms of both participants and the public, with more than 8300 races posted by the International Trail running Association accredited organizations in 2016, compared to the 1651 in 2015 [1]. Even if, according to Wilson [2], this kind of sport tourism competition is considered a minor sport event, generating limited economic activity, mountain public administrations (i.e., municipalities or union of municipalities) are becoming increasingly interested in hosting these trails in their mountain valleys.

In Italy, the data for 2015 show 183 endurance races in mountain contexts occurring during different months [3], and other circuits have been planned for the coming years [4]. There is, of course, a concentration during the summer months (the high season: June, July, and August), but a significant number of endurance races are organised during the spring and autumn, expanding the tourist season. According to data provided by the Trail-Running Association for 2015 [3], the year of the last edition

of the CollonTrek, the Alpine regions host 108 races (59% of the total), and 60 of these races (56%) are organised during the so-called low season.

Endurance trails represent a particular activity among the events connected with the concept of sport tourism. Although a few events have gained international appeal (above all, the Tor des Geants and the Ultra-Trail Du Mont-Blanc®), there are a limited number of professional athletes involved in this kind of sport activity. On the other hand, the specific context in which these events are held requires the presence of qualified personnel in order to guarantee the participants' safety. Consequently, some specific mountain associations are involved in the organisation of the trail, above all the "Corpo Nazionale del Soccorso Alpino e Speleologico" (National Unit for Mountain and Speleological Rescue; translation provided by the Authors). Another significant peculiarity or this kind of small-scale sport tourism event is the public itself; in fact, differently from the great majority of sport competitions, the public does not need a ticket in order access the trail. Therefore, it is difficult to calculate the direct economic return for the organisation derived from the public because it can be difficult to identify the people who travelled specifically to participate as spectators at the competition.

Furthermore, this kind of sport tourism event may have important consequences for local tourism: in fact, differently from the major sport tourism events, it can be considered as a form of sustainable tourism [1] in terms of economic and social implications thanks to both the direct and indirect impacts on the local community. In fact, in addition to some economic direct effects on the area, it can improve the visibility and attractiveness of the mountain valleys and therefore be a vector for improving the tourist sector.

In this general context, this manuscript presents a specific case study on the last edition of the CollonTrek trail in 2015 (being the Collon Trail a biannual event, the next competition is planned for September 2017) in order to estimate the impact on the economy of the mountain valley in which this race has been hosted and to compare the economic revenue with the public funds invested by the public administrations. Moreover, thanks to a set of devoted questions, the athletes were asked to analyze the social impact of CollonTrek as well as some indirect economic impacts.

This work is organised as follows:

Section 2 provides the conceptual framework on the concept of sport tourism and the different kinds of sport tourist.

Section 3 focuses on the methodological approach adopted in the case study, CollonTrek, in order to analyse the economic implications of the trail as well as the athletes' attitudes.

Section 4 focuses on the main results from the application of the methodology and discusses these results.

Finally, the conclusion presents the strong points and limitations of the research in order to make suggestions for further studies.

2. Conceptual Framework

It is popular opinion that the concept of sport tourism dates back to 1966, thanks to the first formulation by Don Anthony in his book Sport and Tourism [5]. Starting from this work, where the author tried to understand the role of sport in tourists' holidays [6], the literature associated with sport tourism has shown more and more interest from researchers, and this theme has been studied sometimes from the point of view of sport and sometimes from the point of view of tourism.

In effect, the concept of sport tourism is broad, because it is related to both the direct and indirect benefits from tourists who travel in order to actively participate in or attend an event associated with sports [7], with a wide range of activities involved and an increasing attendance [8]. Moreover, some sport tourism fields may include "niche activities", such as adventure sports [9]. Furthermore, as Ritchie and Adair point out, a wide variety of disciplines and sub-disciplines may contribute to the study of the sport tourism phenomenon [10].

Therefore, a univocal and shared definition does not exist [11]. In chronological order, definitions have been offered by Hall [12], Standeven and De Knop [13], Gammon and Robinson [14], Pigeassou [15], and Ross [16].

Despite some differences among the authors, if the attention is paid to the sport tourist, it is possible to divide it into three main categories [11,12,16–21]:

(1) People who travel in order to participate in a competition (Active-based Sport Tourism);
(2) People who travel to participate as spectators at a competition (Event-based Sport Tourism). This category also contains tourists who have the characteristic of "fan";
(3) People who travel to see the most famous sport places for specific events, museums, or personalities (Nostalgia-based Sport Tourism).

These macro-categories can be divided into sub-categories, and, as far as active-based sport tourism is concerned, "amateur" sport events have become more common, and researchers have focused their attention on participants in this kind of event [22,23].

Other typologies of "participants" can play an important role in order to evaluate the economic and social implications of sport tourism events, such as volunteers (for the organisation, the athletes' safety), the media, and residents [24]. Figure 1 summarises the different "actors" involved in a sport tourism event.

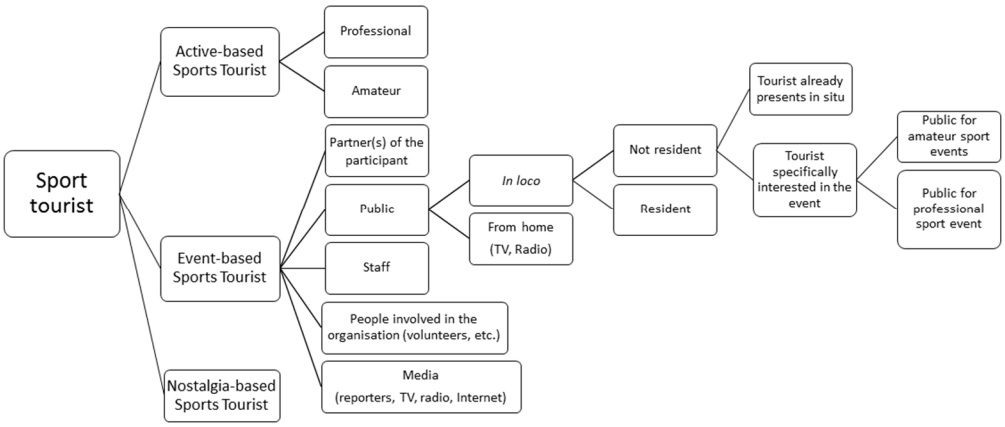

Figure 1. The sport tourist. Source: internal elaboration from Tarfanelli [11], Hall [12], Di Marco et al. [18], Gibson [19], Gibson et al. [20], Hinch and Hingham [21], and Ciampicacigli and Maresca [24].

The different typologies of sport tourists depend on the specific sport tourism event. In accordance with scholars, sport events are classified into five typologies. The categories from A to D ([25], p. 26) have the common wording "major", intended as importance of the consequences of the sport events even if not all major events can have as many major economic implications. This classification was implemented by Wilson ([2], p. 68), who added a fifth category (category E), which takes into consideration minor events, with local consequences, as reported in Table 1 (adapted from Gratton et al. [25] and Wilson [2]).

"Major" or "minor", the links between sport events and their economic implications are recognised by several studies that highlight both the strong and critical consequences of the event on the host area [23,26–28]. These studies often focus their attention on mega events—i.e., the Olympic Games [29,30]—or the so-called "hallmark" events—i.e., the Super Bowl [31]—paying attention also to the social impacts of the events [32]. Other authors, however, turn their attention to the small-medium dimension events [2,23,33], starting from the assumption that the so-called small events (the afore-mentioned category E) may have more positive repercussions on the host community than the mega ones [34,35]. Furthermore, some studies underline that a small-scale sport tourism event can be a viable form of sustainable tourism for a local community [36,37]. The concept of sustainable

tourism emerged in the '90 as an evolution of sustainable development [38], deriving from the Report "Our common future" [39]. Even if scholars have debated the terms as well as the definitions since the beginning, in this study the authors refer to the official definition provided by UNEP/WTO in 2005. According to this definition, sustainable tourism is a "*Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities*" ([40], pp. 11–12).

Table 1. Typology of sport events.

Type A	Irregular, one-off, major international spectators events generating significant economic activity and media interest (e.g., Olympics, Football World Cup, European Football Championship)
Type B	Major spectator events, generating significant economic activity, media interest and part of an annual domestic cycle of sports events (e.g., FA Cup Final, Six Nations Rugby Union Internationals, Test Match Cricket, Open Golf, Wimbledon)
Type C	Irregular, one-off, major international spectator/competitor events generation limited economic activity (e.g., European Junior Boxing Championships, European Junior Swimming Championships, World Badminton Championships, IAAF Grand Prix)
Type D	Major competitor events generating limited economic activity and part of an annual cycle of sport events (e.g., National Championships in most sports)
Type E	Minor competitor/spectator events, generating very limited economic activity, no media interest and part of an annual domestic cycle of sports events (e.g., Local and regional sport events in most sports.)

Source: Gratton, Dobson and Shibli [25] and Wilson [2].

As far as the economic impact of small-scale sport events is concerned, however, some evidence from past studies indicate that the most important economic benefits at the local level are related to two main fields: food and accommodations [41,42]. Daniels and Norman [42], for instance, comparing seven events in South Carolina, USA, in 2001, show that lodging and meals held the top two positions for each event. On the other side, "entertainment" ranked lowest in each case, except for one (the youth softball tournament). In their discussion, the authors show how their study supports previous research carried out by Nogawa, Yamaguchi, and Hagi [43], who concluded that sport tourists spend little on activities outside the sport event.

3. Research Aim

The main aim of this study is to evaluate the following hypotheses:

(1) The highest percentage of the economic return of the public funds invested by the municipalities of the Unité du Grand Combin for CollonTrek can be considered a direct benefit for the local community (economic dimension of sustainability);
(2) There may also be indirect benefits (social and economic) for the host area from the organisation of the trail.

The answers to these questions can offer useful information to the public administrations—and the citizens—to evaluate their investment and to speculate on future initiatives.

4. Materials and Method

4.1. The Case Study

The CollonTrek trail is a transnational mountain race competition that is held every two years on the first weekend of September. For the last event, in 2015, the days chosen by the organisation were the 4th and 5th of September.

The path of the trail is located between the Unité du Grand Combin (Aosta Valley, Italy) and the Val d'Herens (Canton du Valais, Switzerland) northwest of the Pennine Alps. As far as the Aosta

Valley is concerned, the Unité du Grand Combin consists of 11 municipalities, each contributing €1000 for the organisation of the event (a total contribution of €11,000).

The trail starts from the Municipality of Valpelline (Italian side) and, after 22 km and 2500 m of difference in altitude, reaches the Municipality of Arolla in Switzerland, crossing the Alps through the "Col du Collon" alpine pass (3080 m a.s.l. (above sea level)). Therefore, the path is distributed as follow: 48% mountain path, 30% hiking path, 16% glacier, and 2% road.

Figure 2a contains the official map of the trail, Figure 2b shows the territory, whereas Figure 2c represents the location of this alpine transnational area.

Figure 2. (**a**) The Collon Trek Trail. Source: Collon Trek official internet site (http://www.collontrek.com); (**b**) Collon Trek area of interest. Source: Google map; (**c**) The area. Source: Google map.

Differently from all other endurance trails in the mountain context, a significant part of the CollonTrek trail is on a glacier (the Arolla Glacier at about 3000 m a.s.l.). Therefore, participating athletes need special sport equipment (crampons), and special safety procedures have to be planned. The CollonTrek 2015 edition involved 920 participants, of which 915 took part in the competition. According to the data provided by the organisation, most of the athletes were amateurs.

4.2. Data Collection and Analysis

Primary data were collected in two ways.

On the one hand, the CollonTrek organisation had its own complete statistics, collected during the athletes' registration, on the gender, age, and country of the participants. Furthermore, data related to accommodations were also available thanks to the official statistics of the organizing committee that achieved them directly from the hotels involved.

For the collection of other data related to the evaluation of the economic and social implications of the endurance trails, the methodology consisted of a questionnaire provided to the participants two weeks after the end of the CollonTrek trail.

The questionnaire was sent to all the 915 athletes and after a week, a reminder was sent. After the first mailing, 121 athletes responded (13.8%), and after the reminder, another 59 athletes responded (6.7%).

Furthermore, the research group carried out a semi-structured interview with the president of the organising committee in order to examine some aspects of the organisation of the trail related to the identification of suppliers. This semi-structured interview was necessary to better understand the amount of total revenue that can be considered a direct economic impact for the host community. In particular, the interview was focused on sharpening the data related to the registration fee, the cost and the origin (local or regional) of the athletes' meals, the origin of the suppliers, sponsorships and the public funds provided by the Unité di Grand Combin municipalities for the organisation of the event. This information was necessary to estimate the economic revenue from the Collon trek that can be considered as a direct benefit for the host valley.

The questionnaire provided to the athletes was divided into four sections related to:

(1) Personal data.
(2) Preliminary questions.
(3) Athletes' expenditure.
(4) General considerations.

4.2.1. Personal Data

Despite the availability of official statistics provided by the organisation, the questionnaire contained fields related to age, gender, education and origin. The collection of these data in our survey was useful in order to evaluate if the respondents could be considered as a sample of all the participants. Furthermore, statistical analysis were made in order to evaluate the role of origin, age and education.

4.2.2. Preliminary Questions

The preliminary section contained three questions. The first question was useful in order to divide the athletes between professionals and amateurs, the second in order to determine whether the athletes came alone or with other people, and the third for verifying whether the athletes paid for lodging in the Valpelline Valley.

4.2.3. Athletes' Expenditure

According to other studies focused on small-medium scale sport tourism events [30,38], the fields on the athletes' expenditure take into consideration the following categories: restaurants, bar and pub, souvenirs, local food products, sport equipment, informative materials, local public transport, fuel (only if in the valley), and culture (e.g., museums). A specific field (hike with guide) was added because it was a specific added activity provided by the organisation.

4.2.4. Athletes' Social and Economic Perceptions

This section of the questionnaire was composed of 13 questions in order to understand the participants' attitude/evaluation connected with the social and economic aspects of the event. Using a Likert scale [44], for each affirmation the athlete could answer using a scale from 1 (strongly disagree) to 5 (strongly agree).

4.2.5. Data Analysis

The data analysis was carried out using descriptive statistics: frequency, percentages, means, medians, and statistical indexes: Cramer's V, Mann-Whitney U-test and Kruskal-Wallis $\chi 2$ test.

5. Results

5.1. The Athletes' Profile

In total, the survey involved 180 athletes, representing 19.7% of the total. Table 2 reports the profile of the athletes.

Table 2. Profile of the athletes (n = 180).

Variables		Frequency	Percentage
Gender	Male	102	56.7
	Female	78	43.4
Age	<25	12	6.7
	26–40	65	36.1
	41–55	86	47.8
	56–70	16	8.9
	>71	1	0.6
Origin	Switzerland	119	66.1
	Italy	58	32.1
	France	1	0.6
	United States	1	0.6
	The Netherlands	1	0.6
Origin of the Italian athletes (n = 58)	Aosta	52	89.8
	Turin	1	1.7
	Milan	2	3.4
	Savona	1	1.7
	Varese	2	3.4
Education	Elementary school	10	5.6
	Junior high school	27	15
	Senior high school	46	25.6
	Degree	97	53.8
Occupation	Full time employee	94	52.2
	Part time employee	18	10
	Freelance/Businessman	43	23.9
	Occasional work (short term contract)	2	1.1
	Student	10	5.6
	Retired	9	5
	Retailer	2	1.1
	Housewife	2	1.1
	Unemployed	0	0

The comparison between the statistics provided by the organisational committee (related to all participants) and the data we obtained on gender, age and origin showed that the 180 respondents can be considered as a sample of all of the participants on the trail because the differences between the

sample and all the athletes are always minus then 5%. Only for the Age variable, the class age 41–55 is slightly overrepresented in spite of the class age 26–40.

Consequently, the declared expenditure provided by the sample was considered as the basis on which the total athletes' expenditure was estimated. Out of the 180 athletes, 175 (97.2%) defined themselves as amateurs and 5 as professionals. Ninety-five participants (52.8%) joined the competition with other people. The total number of accompanying people was calculated at 217. Referring to all the respondents (n = 180), this means an average datum of 1.5 accompanying people for each participant.

Table 2 contains a segmentation by origin of the Italian athletes. This subdivision has been proposed in order to show the "weight" of the local athletes (from Aosta Valley, the region in which the trail is organized) respect to other Italian regions. This aspect, in fact, may affect some outputs of the study both in terms of expenditure (accommodation and fuel, see Section 6.1—The athletes' expenditure) and the athletes' opinions on some social and economic implications of the trail (see Section 6.2—Athletes' social and economic perceptions).

5.2. The Athletes' Expenditure

For the athletes' expenditure, two kinds of data were taken into account:

(1) Primary data provided by the organisational committee concerning the registration, transport, accommodations, and sport equipment;
(2) Data from the answers offered by the 180 participants in this study for the other considered fields.

Apart from the public funds, the most important economic items were the athletes' registrations, the private sponsors, and the transports. The registration for the 2015 event was fixed at €63 for the Italian side and 95 Swiss francs (€88) for the Swiss side. Private sponsors contributed wit €50,000, as the president of the organisational committee pointed out. In this case, the sponsorship money was paid to the local organizing committee, composed by the Unité of Grand Combin and the Association des Communes du Val d'Hérens. Furthermore, the transfer of the Swiss athletes from Arolla (Switzerland) to Valpelline (Italy) by bus the day before the trail was provided by the organisation. The cost was fixed at €22 for each participant. Finally, Table 3 reports the number of pairs of crampons purchased or rented by the athletes. The organisational committee provided this specific sport equipment for the participants. All other participants had to bring their crampons with them.

Table 3. Revenue from registration, transport and sponsors (in €).

Item	*N*	€	Total (€)
Registration (Italy + Switzerland)	920		74,510
Registration (Italian side)	258	63	16,254
Registration (Swiss side)	662	88	58,256
Sponsor			50,000
Transfer	481	22	10,582
Pair of crampons	291		5876
Purchase	29	40	1160
Rental	262	18	4716
TOTAL (€)			140,968

Table 4 estimates the athletes' expenditure related to accommodations.

Table 5 reports the estimations of the athletes' expenditure for the other fields of the questionnaire. Table 5 is divided into three different scenarios: conservative, average and liberal scenario. In fact, the athletes have been asked to indicate an amount of expenditure depending on a range. In Table 5—Conservative scenario—the responses offered by the respondents were multiplied with the minimum value of the category (i.e., for the category €1–€10, the average value considered was €1). In Table 5—Average scenario—the responses offered by the respondents were multiplied with

the average value of the category (i.e., for the category €1–€10, the average value considered was €5). Finally, in Table 5—Liberal scenario—the responses offered by the respondents were multiplied with the maximum value of the category (i.e., for the category €1–€10, the average value considered was €10). Only for the field "fuel (only if in the valley)" was the highest value of the category always adopted (i.e., for the category €11–€20, the value considered was €20), starting from the assumption that fuel is normally done in "factor 10".

Table 4. Expenditure for accommodations (in €).

Typology	€	No. of Rooms	No. of People	Expenditure (Per Room) (€)
Hotel 3 ***—1 person	54	0	0	0
Hotel 3 ***—2 people	93	43	86	3999
Hotel 3 ***—4 people	146	8	32	1168
Hotel 2 **—1 person	49	1	1	49
Hotel 2 **—2 people	78	89	178	6942
Hotel 2 **—4 people	136	4	16	544
B&B—1 person	39	0	0	0
B&B—2 people	68	25	50	1700
B&B—4 people	122	1	4	122
Auberge (hostel)—1 person	25	0	0	0
Auberge (hostel)—2 people	50	56	112	2800
Auberge (hostel)—4 people	100	7	28	700
TOTAL		238	507	18,024

** Two stars Hotel; *** Three stars Hotel.

Table 5. Athletes' expenditure (in €; n = 180).

Categories of Expenditure	Restaurants	Bar, Pub	Souvenirs	Local Food Products	Informative Materials	Local Public Transport	Fuel (Only If in the Valley)	Culture (e.g., Museum)	Hike with Guide
Conservative Scenario									
1–10	16	33	5	13	7	4	120	2	0
11–20	253	330	66	352	22	110	280	0	0
21–30	567	252	21	399	21	84	210	0	0
31–40	558	124	0	93	0	0	160	0	0
41–50	328	41	0	164	41	41	250	0	0
51–60	255	51	0	51	0	51	300	0	0
61–70	183	0	0	0	0	0	0	0	0
71–80	142	0	0	71	0	0	0	0	71
81–90	243	0	0	0	0	0	90	0	0
91–100	182	0	0	91	0	0	0	0	0
101–150	101	0	0	0	0	0	0	0	0
Total (€)	2828	831	92	1234	91	290	1410	2	71
TOTAL (€)						6849			
Average Scenario									
1–10	80	165	25	65	35	20	120	10	0
11–20	345	450	90	480	30	150	280	0	0
21–30	675	300	25	475	25	100	210	0	0
31–40	630	140	0	105	0	0	160	0	0
41–50	360	45	0	180	45	45	250	0	0
51–60	275	55	0	55	0	55	300	0	0
61–70	195	0	0	0	0	0	0	0	0
71–80	150	0	0	75	0	0	0	0	75
81–90	255	0	0	0	0	0	90	0	0
91–100	190	0	0	95	0	0	0	0	0
101–150	125	0	0	0	0	0	0	0	0
Total (€)	3280	1155	140	1530	135	370	1410	10	75
TOTAL (€)						8105			
Liberal Scenario									
1–10	160	330	50	130	70	40	120	20	0
11–20	460	600	120	640	40	200	280	0	0
21–30	810	360	30	570	30	120	210	0	0
31–40	720	160	0	120	0	0	160	0	0
41–50	400	50	0	200	50	50	250	0	0
51–60	300	60	0	60	0	60	300	0	0
61–70	210	0	0	0	0	0	0	0	0
71–80	160	0	0	80	0	0	0	0	80
81–90	270	0	0	0	0	0	90	0	0
91–100	200	0	0	100	0	0	0	0	0
101–150	150	0	0	0	0	0	0	0	0
Total (€)	3840	1560	200	1900	190	470	1410	20	80
TOTAL (€)						9670			

Considering the particularity of this kind of competition and, more specifically, of the CollonTrek trail, the research tried to point out whether it was possible to outline a correlation between the athletes' expenditure and the participants' origin.

Table 6 contains the Cramer's V statistical index calculated on the same fields as in Table 5.

Table 6. Cramer's V.

Variables	Cramer's V—Origin
Restaurants	0.473
Bar, pub,	0.237
Souvenirs	0.145
Local food products	0.426
Informative materials	0.294
Local public transport	0.335
Fuel (only if in the valley)	0.66
Culture (e.g., museum)	0.042
Hike with guide	0.054

Finally, Table 7 shows the revenue of the event divided into two main categories. "Revenue A" contains data provided by the organisational committee thanks to its official statistics, whereas "Revenue B" reports the data from the study conducted with the 180 athletes. Starting from the results of the sample, a proportion to all 915 participants was calculated. According to the different scenario adopted, the calculated proportion of Revenue B is divided into three patterns: Revenue B_a (Conservative scenario), Revenue B_b (Average Scenario) and Revenue B_c (Liberal scenario).

Table 7. CollonTrek revenue (in €).

Revenue	€		
Revenue A			
Sponsors	50,000		
Registration	74,510		
Crampons (purchase + rent)	5876		
Transport (only for the day before the trail)	10,582		
Accommodations	18,024		
Total "Revenue A"	158,992		
Revenue B (estimate)			
	Revenue B_a	Revenue B_b	Revenue B_c
Restaurants	14,376	16,674	19,520
Bar, pub	4224	5873	7930
Souvenirs	468	712	1017
Local food products	6273	7778	9658
Informative materials	463	687	966
Local public transport	1474	1882	2389
Fuel (only if in the valley)	7168	7168	7168
Culture (e.g., museum)	10	51	102
Hike with guide	361	381	407
Total "Revenue $B_{(a, b, c)}$"	34,816	41,206	49,156
Total (A + $B_{(a, b, c)}$) (€)	193,808	200,198	208,148

The second important issue in this study is related to estimating the percentage of the economic revenue from the trail that can be considered as a direct benefit for the host community, the Unité du Grand Combin.

An interview with the president of the organising committee was carried out in order to analyse some specific aspects of the organisation related to the supply of the raw materials and the identification of the suppliers in order to determine the short-range (Unité du Grand Combin) suppliers. According to the organising committee, for the athletes' meals (two meals included in the registration fee were provided by the organisation to 920 participants), the related cost was 7.5 €/person. Out of this total, €5 (2/3) were invested in the area of the Unité du Grand Combin for the purchase of local food products (e.g., cheese, wine).

All other suppliers were identified in the Aosta Valley (media, transport of the athletes, helicopter for the media, etc.—medium-range) or out of the region (for the crampons provided by the organisation, the companies are located in Austria—long-range).

Table 8 contains all of the items that can be considered short-range and, consequently, the direct economic impacts on the host community.

Table 8. Short-range revenue (estimate, in bold).

Revenue	**€**		
Accommodations	**18,024**		
Meals provided by the organisation (Two meals for 920 athletes)	13,800		
Local food products (Unité di Grand Combin) (2/3)	**9200**		
Products purchased in Aosta town (1/3)	4600		
	Revenue B_a	Revenue B_b	Revenue B_c
Restaurants	14,376	16,674	19,520
Bar, pub	4224	5873	7930
Souvenirs	468	712	1017
Local food products	6273	7778	9658
Informative materials	463	687	966
Local public transport	1474	1882	2389
Fuel (only if in the valley)	7168	7168	7168
Culture (e.g., museum)	10	51	102
Hike with guide	361	381	407
Total	**62,040**	**68,430**	**76,380**

Finally, Table 9 reports the direct economic return for the host valley of the Collon Trek, comparing it with the global economic return datum for the three different scenarios.

Table 9. Economic return on the host valley.

Conservative Scenario			**Average Scenario**			**Liberal Scenario**		
Total Economic Return (€)	**Host Valley (€)**	**%**	**Total Economic Return (€)**	**Host Valley (€)**	**%**	**Total Economic Return (€)**	**Host Valley (€)**	**%**
17.62	5.64	32	18.2	6.2	34.07	18.92	6.9	36.47

5.3. Athletes' Social and Economic Perceptions

As previously mentioned, the questionnaire contained 13 questions related to the evaluation of the social impact of CollonTrek as well as some indirect economic impacts.

The athletes were asked to give their opinions indicating a value between 1 (strongly disagree) to 5 (strongly agree), in accordance with the Likert scale.

Some of the fields of the questionnaire concentrated on the perception of social aspects of the trail, according to previous studies that, on the one hand, affirm the role of this kind of sport tourism event in providing more social benefits than big events [45] and, on the other hand, suggest that small-scale sport events have fewer environmental impacts [37].

Due to the particularity of this sport event and in accordance with other studies carried out in this area [46,47], a specific focus on the consequences on the mountain paths was proposed. Figure 3 reports the average data.

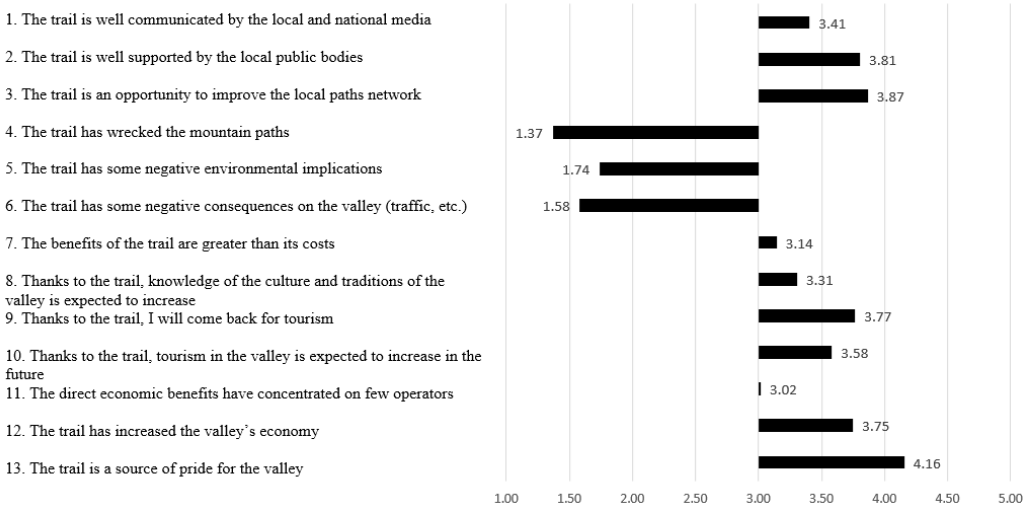

Figure 3. Athletes' perception on the trail (average data; n = 180).

The non-parametric Mann-Whitney U-test and Kruskal-Wallis $\chi 2$ test were used in order to identify the role of origin (Italians and Foreign), age and education in evaluating the athletes' perception (Table 10).

Table 10. Athletes' perception (n = 180).

Athletes' Perception	Mean	Standard Deviation	Differences by Origin (Mann-Whitney U-Test)	Differences by Age (Kruskal-Wallis $\chi 2$)	Differences by Education (Kruskal-Wallis $\chi 2$)
The trail is well communicated by the local and national media	3.41	1.09	3242	4.68	0.794
The trail is well supported by the local public bodies	3.81	0.03	3319.5	11.804	1.452
The trail is an opportunity to improve the local paths network	3.87	0.94	2623.5 ***	7.254	2.136
The trail has wrecked the mountain paths	1.37	0.69	2284 ***	8.456 *	4.229
The tail has some negative environmental implications	1.74	0.93	3012.5 *	9.408 *	7.347 *
The trail ha some negative consequences on the valley (traffic, etc.)	1.58	0.83	3200	6.155	3.028
The benefits of the trail are greater than its costs	3.14	1.1	3140.5	1.723	6.253
Thanks to the trail, knowledge of the culture and traditions of the valley is expected to increase	3.31	1.05	3353.5	1.298	0.544
Thanks to the trail, I will come back for tourism	3.77	1.02	2397.5 ***	8.824 *	7.160 *
Thanks to the trail, tourism in the valley is expected to increase in the future	3.58	0,87	3077	6.642	0.899
The direct economic benefits have concentrated on few operators	3.02	1.1	3029.5	5.790	1.269
The trail has increased the valley's economy	3.75	0,98	3288	3.879	6.023
The trail is a source of pride for the valley	4.16	0.91	2639 ***	8.127 *	5.379

Note: Levels of significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table 11 reports the differences in mean by the Athletes' origins.

Table 11. Differences by origin.

Athletes' Perception	Mean	
	Italians	Foreign
The trail is an opportunity to improve the local paths network	4.138	3.738
The trail has wrecked the mountain paths	1.241	1.426
Thanks to the trail, I will come back for tourism	3.345	3.967
The trail is a source of pride for the valley	4.431	4.025

Note: Italians respondents = 58; Foreign respondents = 122.

6. Discussion

6.1. The Athletes' Expenditure

Even if, as Table 4 reports, the data for the field "accommodations" concern 507 participants out of 920, two aspects should be taken into consideration: on the one hand, the athletes coming from the Aosta Valley did not sleep in the municipalities of the Unité du Grand Combin, and, on the other hand, the whole accommodation capacity of the valley was filled—all the hotels as well as informal accommodation as B&B and Auberge have been recommended by the organisation. As reported in the "Results" section, Table 5 contains three scenarios: conservative, average and liberal scenario. According to the data provided by the sample and reported in the table, the athletes' expenditure can be evaluated estimated in €6849 (Conservative), €8105 (Average) or €9670 (Liberal). Dividing the total amount of the expenditure for the number of athletes (n = 180), it is possible to deduce an average expenditure for each participant of about €38.05, €45.02 or €53.7, depending on the supposed scenario.

Analyzing the possible correlations between the athletes' expenditure and their origin (as reported in Table 6), only the field "fuel (only if in the valley)" shows a certain degree of dependence between the athletes' origin and their expenditure (Cramer's V = 0.66). This is probably because this trail is characterised by a strong polarisation of the participants, who are divided into two main categories: residents of the Aosta Valley and those from Switzerland. The residents of the Aosta Valley, as previously shown, did not sleep in the accommodations of the Unité du Grand Combin but reached the trail by car.

As far as the first important issue of this study, i.e., the estimating the percentage of the economic revenue from the trail, the Unité du Grand Combin, Table 7 shows that the total economic return can be estimated in €193,808 (Conservative scenario), €200,198 (Average) or €208,148 (Liberal). In other words, considering the €11,000 in public funds provided by the Unité di Grand Combin municipalities, for each € of public funds invested by the public bodies in the event, €17.62, €18.2 or €18.92 were generated (Table 9).

Finally, the second important issue in this study is related to estimate the percentage of the economic revenue from the trail that can be considered as a direct benefit for the host community, the Unité du Grand Combin. Table 8 shows that the direct economic implications on the Unitè du Grand Combin considering the three scenarios: Revenue B_a—Conservative scenario—Revenue B_b—Average Scenario—and Revenue B_c—Liberal scenario. In accordance with the data reported in Table 8, the direct economic implications amounted to about €62,040, €68,430 or €76,380 (with €34,816, €41,206 and €49,156 that are represented by estimations provided by the study). In other words, always considering the €11,000 in public funds provided by the Unité di Grand Combin municipalities, for each € invested by the community, €5.64, €6.2 and €6.9 represent a direct economic return for the host valley (in percentage: 32%, 34.07% or 36.47%, as reported in Table 9).

6.2. Athletes' Social and Economic Perceptions

As reported in Figure 3, the athletes' perceptions of the social and economic impacts of the trail were positive for the majority of the items considered in the analysis.

Firstly, and as previous studies point out [33,34,48], data clearly show that CollonTrek improves community pride (4.16). Secondly, there is a distinct perception that the trail has improved the economy of the valley (3.75), and that thanks to the CollonTrek tourism in the valley is expected to increase in the future (3.58). In fact, the sample affirms the intention of coming back for tourism in the future (3.77). Even if satisfaction with the sport event is not a direct indicator of the intention to come back to revisit the destination, as Kaplanidou and Vogt point out [49], and the relationship between motivation, attachment and loyalty within an event tourism needs to be still completely investigated, as a recent paper by Kirkup and Sutherland stresses [8], it is undeniable that the athletes' behaviour has a positive influence on their intentions for future visits.

As far as the environmental dimension of sustainability is concerned, the athletes evaluate how the trail seems to have positive repercussions in lieu of negative implications on the environment. In fact, the trail does not have negative environmental implications (1.74) or consequences on the valley—i.e., traffic, etc. (1.58). Lastly, the fields purposely focused on the paths show how the athletes consider a trail as a way for improving the local paths network (3.87) than a potential cause of damage (1.37).

According to the findings deriving from the non-parametric Mann-Whitney U-test and Kruskal-Wallis $\chi 2$ test (Table 10), differences by age and education do not influence the athletes' perceptions. In the last case, however, it is necessary to underline that the respondents can be considered a sample of the all the participants in terms of age, gender and origin (see Section 5.1—"The athletes' profile"). As far as the education variable is concerned, the organisation did not have data regarding the athletes; consequently, future studies may sharpen this aspect (as highlighted in the limitations of the paper, Section 7—"Conclusions"). On the other hand, difference by origin (Italians or not Italians) has some impacts in terms of opportunity to improve the local paths network (Utest = 2623.5, $p < 0.01$), wrecking the mountain paths (Utest = 2284, $p < 0.01$), coming back for tourism (Utest = 2397.5, $p < 0.01$) and trail as a source of pride for the valley (Utest = 2639, $p < 0.01$). More in detail, Table 11 shows that the foreigners are more inclined to return for tourism in the Unité du Grand Combin after their trail experience, while the Italians consider more the Collon Trek as a source of pride for the territory. In this last case it is important to note, however, that 52 out of 58 participants come from the Aosta Valley (89.7%) in which the Unité du Grand Combin is located. As far as the path is concerned, it is interesting to note that foreigners tend to have a more critical approach (even if always positive) on the consequences of the trail on the interested path.

7. Conclusions

This paper discussed the estimation of the economic impact of a particular small-size sport event, a mountain trail. At the same time, the study aimed to analyse the athletes' evaluation of the social implications of the event.

As far as the hypotheses of the research are concerned, it is possible to affirm that all are supported by the results, because:

(1) An important economic return on the public funds invested by the municipalities was estimated by the researchers with an economic multiplier from 17.62 to 18.92 depending on the scenario adopted. In other words, for each euro invested by the public administration of the Unité of Gran Combin, an economic return form €17.62 to €18.92 has been estimated. Furthermore, the highest percentage of the economic value from the trails, specifically 32% (Conservative scenario), 34.07 (Average scenario) or 36.47 (Liberal scenario), can be considered a direct benefit for the host community.

(2) There may also be indirect benefits for the host area coming from the organisation of the trail, especially due to the intentions expressed by the foreign athletes to return to this area for tourism.

According to the research findings, these kinds of minor sport events are the roots of sustainability in terms of economic and social implications of the sport tourist activities.

This paper, moreover, seems to support the idea that it is possible to consider a small-size sport event of this kind as a hallmark for the host community, and, in the case of CollonTrek, this regular event has significant potential for the local valleys. Additionally, the work also supports some of the benefits highlighted by Higham ([34], p. 85): "local community more likely to share the positive economic benefits associated with sport", "greater levels of local access to sporting occasions", and "infrastructure generally existed". Furthermore, this specific sport tourism activity may be used, if not for mitigating tourist seasonality [50], at least as a vehicle to expand the high season to the first week of September. In line with others studies [41,42], however, this research seems to confirm the conclusions of Nogawa, Yamaguchi, and Hagi [43], highlighting how the direct economic impacts from the event are polarised into two specific fields: accommodations and food. As the data show, the athletes did not invest their money in fields not strictly connected with the competition (i.e., culture and hike with guide).

This study has some limitations, and the main of them is recognisable in the respondents. Firstly, as reported in "The athletes' profile" section (Section 5.1), the 180 respondents can be considered as a sample of all of the participants for the variables related to age, gender and origin. For the Age variable, moreover, the class age 41–55 of the sample is slightly overrepresented in spite of the class age 26–40. Future studies should sharpen the sample in order to include other characteristics, i.e., the education and occupation in order to sharpen the analysis. Secondly, due to the specificity of this kind of event (the spectators in loco do not pay to attend the event, and it could be difficult to determine the real sport tourists from the "only" tourist), the survey took into consideration only the athletes. As shown, though, an average datum of 1.5 accompanying people for each athlete was estimated. This datum, taken together with the athletes' perceptions related to tourism after the event (numbers 9 and 10 of Figure 3), suggests that the indirect economic impacts may be interesting, but more research is necessary in order to find out the real impact on the host community. Therefore, a direct engagement with spectators in future studies should be taken into consideration.

Acknowledgments: This research was carried out thanks to the participation to the Italo-Swiss Transfrontier cooperation project V.E.T.T.A.—Valorisation of Experiences and Transfrontier Tourism products at medium and high Altitude, commissioned by the Regione Piemonte. The Authors would like to thank Fabio Giannetti of IPLA Piemonte (Institute for the environment and wood) and Paolo Caligaris of the Piedmont Region for their suggestions. Heartfelt thanks are due to Maurizio Lanivi, Mayor of Valpelline and President of the Organisational Committee of the CollonTrek trail for his support and for providing the official statistics of the trail. Finally, we would like to thank all the athletes that answered the survey.

Author Contributions: The authors contributed full and equally to this work. Both author contributed to research design and have read and approved the final manuscript.

Conflicts of Interest: The authors declare no conflict of interest.

Abbreviations

The following abbreviations are used in this manuscript:

UNEP	United Nations Environment Programme
WTO	World Tourism Organization

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