Evaluating the Economic Impact of Active Sports Tourism Events: Lessons Learned from Cyprus

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Abstract It is widely acknowledged that Major Sport or Mega Sport Events have huge economic impact and help promoting sports tourism at the host destination. In fact, many works examine and demonstrate the economic impact of major (passive) sport events, but the importance of active sports events in promoting sports tourism is scarcely examined in the literature. This paper outlines, examines and critically describes the case study of "Active Sports Events for Tourism". This case study aims at exploring the economic impact of active sports events, through a major international swimming event performed in Cyprus. The work is performed in the Research-in-Startups local project, which developed a web platform and recommender system dedicated to a niche market (i.e., active sports events) and conducted a survey with a sample of $N = 51$ (*out of the* 512) participants in an international swimming event. The emphasis in this paper is placed on the analysis of the survey results, which demonstrates the economic impact of active sports events and the potential that such events offer to the growth of a niche market; i.e., active sports tourism.

Keywords

active sports, sports tourism, economic impact, web platform

JEL Classification

Z32 – Tourism and Development, Z21 – Industry Studies

1. Introduction

Different forms of niche tourism are becoming increasingly important and have the potential to help a tourist destination to differentiate from the norm. In overall, development of web platform products and services into niche forms of tourism aim to and can address social and economic regeneration linked to related tourism developments. Gammon and Robinson define a framework in (Gammon and Robinson, 2003) that categorizes "hard sport tourism" as travelling to a mega or major sport event to passively watch the event. On the other hand, they refer to "soft sport tourism" when travelers are actively participating in the sporting activity, e.g., hiking, canoeing or caving. The latter is also referred to in the literature as "active sport tourism" (Greenwell et. al., 2019), which is the definition adopted in this work.

In particular, in the editorial note "The Growing Recognition of Sport Tourism" (Richie and Adair, 2010), the authors define sports tourism as follows: "Sport tourism includes travel to participate in a passive (e.g., sports events and sports museums) or active sport holiday (e.g., running, cycling), and it may involve instances where either sport or tourism are the dominant activity or reason for travel." Moreover, in (Gibson et. al., 2018), the nature and evolution of active sport tourism is portrayed, and how active sport tourism research has evolved in a short amount of time. Research on active sport tourism has evolved from the existing typologies of sport tourism and their limitations, to the development of new frameworks. In addition, existing research is primarily based on the participants' perspective, while there is the need to provide new perspectives, and promote diverse methodologies and technologies to obtain insights

on active sports tourism events both from the participants' and the organizers' perspective.

This paper's key contribution is to demonstrate the economic impact of active sport events and consequently sports tourism. Most research in this area is devoted to global Mega Sport Events (MSEs) or passive sport events (Taks, 2013). Nevertheless, there is currently a huge variety and quantity of active sport events (e.g., marathons, hiking, swimming) that are taking place around the globe. The work in this paper calls for a reflection on how these active sport events contribute to tourism economies and provides evidence on that, based on the results of such an event conducted in Cyprus.

The remainder of this paper is organized as follows: Section 2 presents related work on active sport events and highlights the key research topics examined in these works. Section 3 provides a high-level overview of the SportsTraveler76 (ST76) web platform and recommender system implemented in this work, which facilitates Active Sport Events organization and management. The key contribution of this work is presented in Section 4 that refers to the analysis of the swimming event case study survey results. The survey results show the impact and the economic benefits to the local economy, and showcases that such events can establish Cyprus on the map as an attractive destination for active sports tourism.

2. Related Work

This paper contributes both from a theoretical and practical perspective on the economic impact of sport events and consequently sports tourism. Most research in this area is devoted to global Mega Sport Events (MSEs), most of which refer to passive sport events (Taks, 2013). Nevertheless, there are many more sports events (i.e., non-mega sport events - NMSEs) that are organized around the globe. Many of these NMSEs refer to active sport events. The work in this paper provides evidence on the impact of active sport events to tourism and the economy, and an overview of how technology can assist in the promotion and organization of such events. This section presents some early research work on active sport events.

In (Taks, 2013), the author offers a theoretical perspective on the social impacts of sport events. This work is a comparison on the social impacts and outcomes of MSEs and NMSEs, which concludes that there is reason to believe that NMSEs can be more relevant in creating durable benefits for the local communities that host these events. The paper contrasts and compares social impacts and outcomes of both, MSEs and NMSEs, using four different perspectives: power relations, urban regeneration, socialization, and human capital. In fact, the claim in this work is that this can be explained via the concept of social capital, which indicates that since NMSEs are omni-present, it seems that they have more lasting global benefits. This actually showcases that NMSEs appear to provide a more positive social impact and outcome opportunities for local residents compared to the passive counterparts. The paper calls for a broader research agenda focusing on the true value of small and medium sized sport events for local communities.

The work in (Kaplanidou & Gibson, 2010) performed a research study that focused on the examination of sport event images held by active and passive sports tourists at marathon races in Germany. The study outlines some differences in the perception of event images between active and passive sports tourists, as well as in the perception for different types of destinations. In particular, for active sport tourists the clustering was closer in terms of emotional, physical and organizational image associations. The emotional theme is as valuable as the physical for active sports tourists. As explicitly

stated in (Kaplanidou & Gibson, 2010): "for example, offering special side events which the runners experience during the race (e.g. music bands along the course or running through/past a building for which the destination is renowned)." On the other hand, the study also concluded that for passive sport tourists, social and historical image associations were clustered closer. Finally, the results of the study suggest that the type of the destination also affects and elicits different event images among active and passive sport tourists. The authors explicitly point out in the paper that their research findings have limitations mainly because a single sport event (i.e., marathon) was examined.

Another study (Hallmann et. al., 2010) examined and aimed at understanding the variables that influence the behaviors of active sport tourists within the context of recurring small-scale sport events. The authors explicitly state that small scale active sport events have not been widely observed and examined in the sport and tourism literature. Specifically, the study examined whether the participation of sport tourists in past events, the attitudes toward event participation, the participant's satisfaction with the sport event, and the destination image are accurate predictors of intentions to participate in a sport event again. The study concluded that attitudes towards event participation are important, since it looks to impact behavioral intentions directly, while the sport tourist satisfaction with the event is critical as it formulates positive attitude and most importantly it acts as a direct predictor of behavioral intentions. The authors state that the study examined one sport event with participants over 50 years old, which can limit generalizations of the results to similar events.

Moreover, the study in (Kaplanidou, 2010) attests that: "Sport events can be used as tourist attractions by destinations that seek to attract large numbers of tourists in their locale." It follows that the destination image measurement paradigm to investigate sport event image perceptions of active sport participants. The study asked the active sport tourists (N = 2,000) that travelled abroad for participating in the event to give their opinion, by asking them to indicate three words that come to mind following the completion of the event (i.e., post-trip phase). Both a qualitative and a quantitative approach were performed. The qualitative approach classified the acquired words (n = 1,015) into six image themes – historical, emotional, organizational, physical, environmental, and social, while the quantitative one conducted a frequency analysis of the words associated with each dimension and revealed that the emotional theme was more frequently mentioned by the participants. In overall, the study concludes that active sport tourists' perception of the event image is associated to the six themes, but most predominantly with the emotional aspects of the event.

The above research works cover principally the social impact and the sport tourists' intentions and perceptions relevant to the themes and the image of the event. In fact, as attested in (Richie and Adair, 2002) there was initially little research that analyzed the links between sports and tourism, as well as the social and economic impact of this type of tourism. As can be realized from the above literature, while there is growing research work that examines the social impact of sport events on tourism, and even active sports tourism, there is basically no relevant research that examines the economic impact of active sport events on tourism. In this paper the aim is twofold: 1) principally to perform the analysis of the survey results that showcases the economic impact of active sports events and 2) to present an overview of the developed web platform and recommender system, which enable SportsTraveller76 Ltd to organize and manage successfully active sports events.

3. SportsTraveller76

3.1. The Web Platform

The SportsTraveller76 (ST76) platform started as a unique and extensive source of reference for groups and individuals, who seek to actively participate in any sporting event taking place in Cyprus and Greece under the following categories: (1) Trending Sports: The newest sports trends available to register, (2) Bespoke Sports Events: Sporting opportunities for children and the elderly & Equality sports for people with disabilities, (3) Top Sports Destinations (Sports oriented travel attractions) and (4) Mainstream Sports Directory: A plethora of endorsed sports activities.

The innovation and originality of ST76 comes from the fact that it differentiates from competitors in the following ways: the first group of competitors includes the major providers such as SportsTraveler.net, RoadTrips.com, etc., which focus on passive sport events participation. In particular, they offer the services (e.g., flights, hotel, tickets) for travelling to a country with the primary target to passively participate (i.e., watch) in a major sporting event (e.g., World Cup final, Wimbledon final). The second group of competitors includes major providers such as WorldMarathons.com, FieldsSportsTravel.com, etc. that focus on a specific category of sporting events, e.g., Marathons, and offer the services (e.g., flights, hotel, tickets) for travelling to a country with the primary target to actively participate to that sports event. ST76 is the first platform to provide the full set of services (e.g., flights, hotel, tickets) for travelling to a country with the primary target to participate in any kind of sporting activity/event hosted on the platform.

The ST76 web platform is, to the best of our knowledge, the first web platform worldwide that offers a complete set of services for online booking, management and organization of active sport events. The web platform offers to the company administrator the capability to manage sport events through the backend. Figure 1 shows on the left pane the entire set of features offered to the administrator of the platform, who apart from managing active sport events, is also able to manage users, manage newsletter clients, generate reports, generate recommendations, etc.

Figure 1: ST76 Web Platform – Backend

The administrator, when creating an event hosted on the platform, is able to select one of the following event modes: 1) Only tickets – customers are only able to purchase tickets for participating in the sport event, 2) Only package (hotel) – enables customer to book only hotels for a specific event and 3) Tickets and package (hotel) – enables a customer to book a combined ticket and hotel package price. The option to enable the iFrame for flight booking can be also enabled for an event, while additional facility services (e.g., sporting equipment) can be enabled as options for customers.
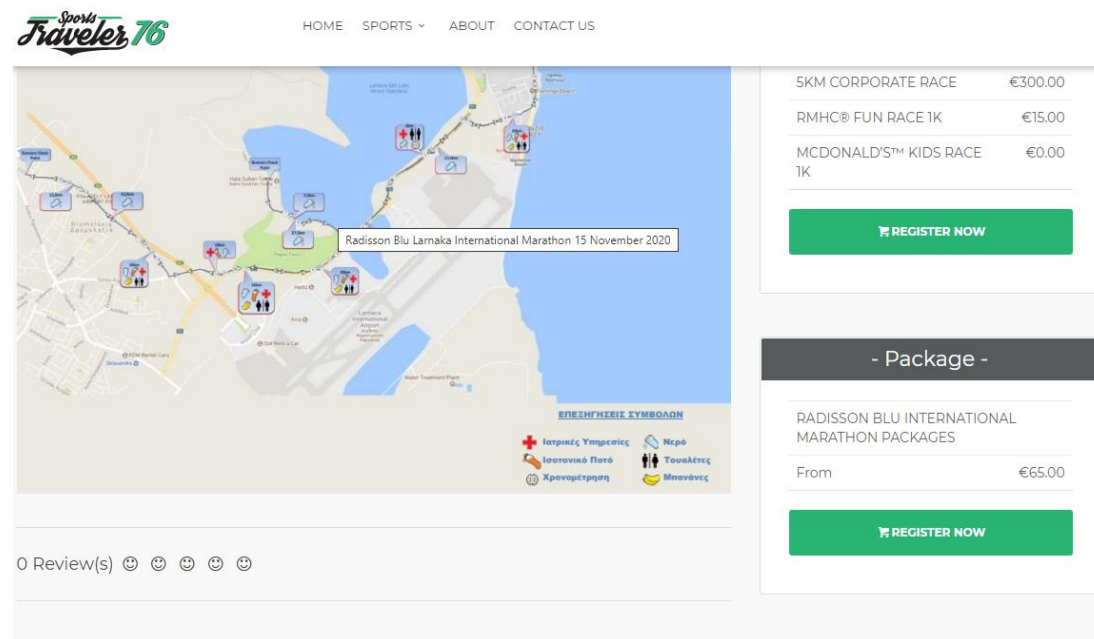
Figure 2: ST76 Web Platform – Frontend

Figure 2 illustrates the end-user view when an event is published, where the customer is able to purchase a ticket or a package based on his/her requirements. For instance, in the case the customer selects a package (ticket and hotel) then the user follows a page-by-page wizard where he/she needs to select the number of rooms, the number of athletes, enter each athlete details and finalise the purchase using an external service provider, i.e., Six Payment services. Finally, the platform allows creating an event where the hotel and flight ticket can be purchased by company's external collaborators (e.g., travel agency) with the help of iFrames [W3C, 2020] that are integrated in the process flow of the customer registration and purchase wizard.

3.2. The Recommender System

The ST76 platform new feature is the ST76 recommender system (ST76_RS). It is a domain specific solution that aims at providing recommendations of users that are more likely to attend a specific type of event based on the similarity between users' contextual information and events' preferences. In particular, the ST76_RS is used as a Software as a Service (SaaS) to the ST76 web platform. The web service is hosted on the cloud (i.e., Windows Server) and is developed leveraging the .Net Core Framework, which ensures scalability, reliability, and reusability. Additionally, the recommendation algorithm with the K-Means machine learning algorithm, is developed on top of the scikit-learn python library, which ensures valid and efficient operation, as well as high performance; it is also hosted on the same server.
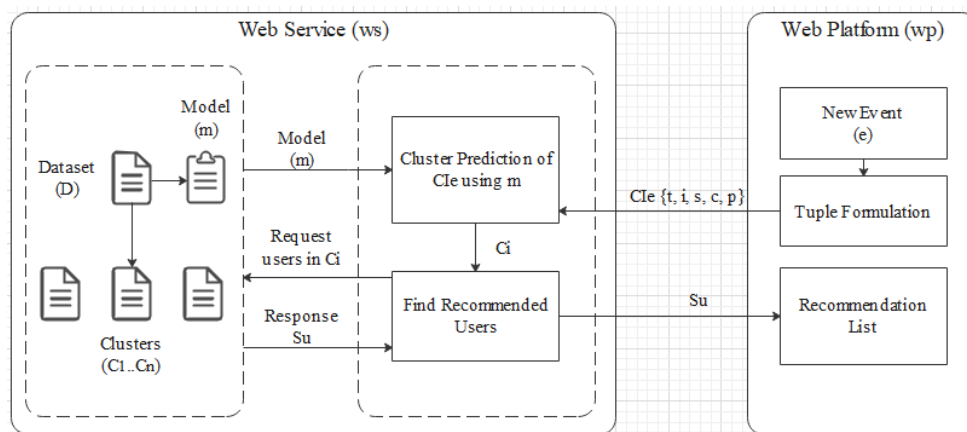
Figure 3: ST76 Recommender System Model

Figure 3 shows the ST76 Recommender System Model: consider a web platform wp (i.e., the SportsTraveler76 web platform) and a web service ws located on server S. Consider a dataset D that contains contextual information of several users clustered into $C1 \dots Cn$ clusters of users, where Ci is composed of users interested for similar events, using a K-means algorithm. Users contextual information include event type t, event intensity i, event season s, user's companion c and participation's regional information p described by the tuple $CI\{t, i, s, c, p\}$. Additionally, consider a prediction model m stored on S that is able to predict which cluster of users Ci is more suitable to attend a new event e, which is represented by the tuple $CIe\{t, i, s, c, p\}$. In this case, wp sends an HTTP Request to ws for a user recommendation based on CIe and ws responds back with a set of users Su that are most likely to attend event e based on their contextual information.

The ST76_RS algorithmic part is composed of two phases:

i. In the **offline or clustering phase**, the dataset is clustered using the K-Means machine learning algorithm (Forgy, 1965). Each cluster consists of user-related entries that include users' contextual information which refers to specific type of events. Thus, each cluster represents one or more events along with the users that are most likely to attend or have already attended the corresponding event(s) based on their contextual information. Hence, a prediction model representing the clusters of users and their contextual information is generated and stored on a central server using the Joblib python library.[1]

ii. In the **online or recommendation phase**, the prediction model of the previous phase is used to predict the cluster with users that their preferences and contextual information matches the profile of a new event.

Finally, in order to provide accurate user recommendations to specific events a proper dataset is needed. In the absence of any existing dataset suitable for our needs, we generated our own ST76 dataset by collecting domain specific data from users' contextual information. In particular, the dataset formulated is a result of 68 users answering a Google Forms questionnaire[2], formulated in a way to obtain users'

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[1] Joblib Python Library: https://joblib.readthedocs.io/

[2] ST76_RS Questionnaire: https://forms.gle/d8Ah7VbeJLuQA3689 (EN version + 19 offline responses), https://forms.gle/6NTYjk8FXuDbBDxcA (GR version)

contextual information. The questionnaire was defined in such a way in order for participants to specify their answers including choices (e.g., user attends trails, marathons) and ratings (e.g., with 5/5 for trails, 3/5 for marathons) for those choices. The different answers, provided by each participant, produced a resulting dataset of approximately 2 thousand entries, with each entry providing contextual information of a user to a specific event type. Contextual information includes information regarding:

1) the type of event (t) ($Official, Leisure, Domestic, Charity$),
2) the intensity of the event (i) ($Scale\ 1-5$),
3) the season event is scheduled (s) ($Autumn, Winter, Spring, Summer$),
4) the user's companion (c) ($Solo, +1, Family, Team/Friends$), and
5) the event's locality (p) ($National, European, International$).

As explained above, each user may have multiple entries into the dataset and each entry describes contextual information about a specific event type, which the user has attended presenting a different user's profile perspective. More information on the ST76 platform and recommender system is out of the main context of this paper, but interested readers can refer to project's system specification deliverable[3]. The main contribution of this paper is the examination and analysis of the economic impact of active sport events, through the international active sport (swimming) event that is presented in the following case study.

4. Case Study: Experiences from Cyprus

In this section, the survey's methodology is defined, the population of the study is presented and finally the analysis of the results is demonstrated for the different dimensions considered in the study, in order to illustrate the economic impact that active sports events have for the tourism economy.

4.1. Survey Methodology

The event organization survey was conducted during the two days of the international swimming event. The survey was defined in the form of a Google Docs questionnaire[4] and the participants were invited during the registration to answer it electronically. The participants were informed that their responses will remain confidential and that responses are collected and stored in digital form are to be analyzed only by the researchers for the requirements of this study. The objective of the survey is to study and analyze the economic impact of active sport events. In fact, the goal is to identify if the participants of active sports events are also engaging in tourism during their stay, as well as the overall economic impact of such events.

4.2. Survey Population

The study presented in this paper was performed at an international swimming event that took place in Cyprus, and involved 51 athletes out of a total of 512 (i.e., 10% of the participants answered the survey). The participants of the event were from 29 countries across the globe, while the gender ratio was 52.9% males and 47.1% females. It is important to note that a large number of participants did not complete the evaluation

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questionnaire, which is a limitation of the study, since from the total of participants (i.e., 512), $N = 51$ of them are valid for analysis.

4.3. Survey Results: The Economic Impact of Active Sport Events

Figure 1 shows the most representative results/charts from the data collected by the survey, which refer to the views of the event participants. In particular, a very important point that is clearly portrayed in the results is that half (i.e., 51%) of the international travelers are actually visiting Cyprus for the first time. Moreover, nearly 70% have booked accommodation for either 2-4 nights or more than 4 nights, which is particularly important since this was a two-day event. This is confirmed by the third pie chart, since 71.7% of the participants stated that they have combined the event with holidays. This explains and confirms the reason why nearly the same percentage has booked accommodation for more than 2 nights. Another important point is that only 21.6% of the participants travelled solo, whereas nearly 80% of the participants travelled with at least another individual. The final pie chart clearly indicates that 9 out of 10 participants are planning to revisit Cyprus again, which is both an indicator of the quality of the event but also of the fact that Cyprus is indeed an attractive tourist destination. This showcases that even new visitors were satisfied and will revisit for sport and tourism purposes as a result of the swimming event experience.

Figure 4: High-Level Survey Results.
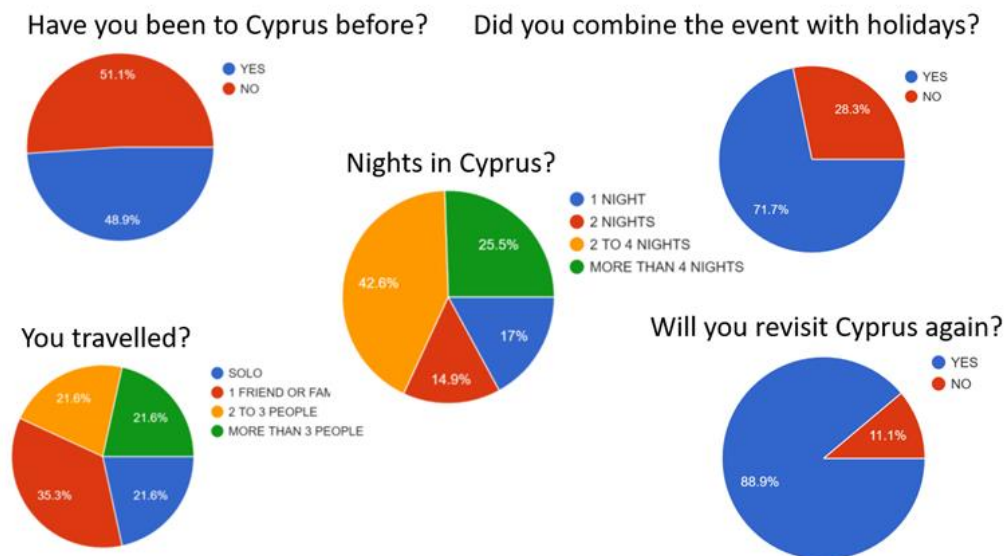
OceanMan was the first international active sport swimming event organized in Cyprus. It attracted 512 participants (79 from Cyprus), from which 186 were women that made a dynamic presence in the swimming event. Despite the fact that it was the first time an international active sport event of this magnitude took place in Cyprus, 433 international participants arrived in Cyprus from 29 countries. Based on the participants registered for the event approximately 1500 people are estimated to have watched the event based on combined data; event registrations and hotel bookings. In particular, from the 512 travel parties, the sample comprised of 79 residents and 433 non-residents, whereas an average of 2.17 persons per travel party was calculated from the survey results. A travel party is defined as one or more individuals travelling together to actively participate or watch the swimming event.

International visitors are the drivers of economic impact. Hence, only international visitors were considered in the calculation of the economic impact of the event. This is because without the international visitors the expenditure in the local economy would not have occurred otherwise. As aforesaid, from the 512 total participants, 51 undertook the survey and based on their responses the economic impact analysis was performed.

A sample from the visitors were asked to undertake the survey and estimate their expenditure patterns in the following three NACE (Nomenclature of Economic Activities) categories: 1) Accommodation & Food Services, 2) Transportation and 3) Trade (Wholesale and Retail). This included principally accommodation, food and beverages, excursions, transportation and retail shopping. Based on the data collected from the survey the IMPLAN Input-Output model was applied to calculate the economic impact of the event. More to the point, the survey data collected the average expenditure per person for the entire duration of their stay, which was then multiplied by the total number of international visitors (433 participants/travel party x 2.17 people per party = 938 visitors), yielding an overall estimate of the total visitor spending. Table 1 showcases that the international visitors estimated total direct spending is at € 365,551.92. The total amount is divided to: 1) 55.43% spending on Accommodation & Food Services, 2) 30.37% spending on Transportation and 3) 14.20% spending on Trade (Wholesale and Retail), e.g., shopping.

Table 1. Regional and Total Economic Benefits: Estimated based on Expenditure by International Visitors

Description	Direct Expenditure	Local Purchasing (RPC-65%)	CY I/O Multiplier (GM18)	Multiplied Effects on Local Benefit	Multiplied Effects on Total Benefit
Accommodation & Food Services	€ 202,621.79	€ 131,704.00	1.66	€ 218,628.92	€ 336,352.18
Transportation	€ 111,025.64	€ 72,167.00	1.79	€ 129,178.33	€ 198,735.90
Trade (Wholesale and Retail)	€ 51,904.49	€ 33,738.00	1.35	€ 47,907.84	€ 73,704.37
TOTAL	€ 365,551.92	€ 237,608.75		€ 395,715.09	€ 608,792.45

Furthermore, the Regional Purchase Coefficient (RPC) allows measuring the true economic impact of tourist spending, e.g., when attending an event (Stynes 1997). In particular, the international visitors that have attended the event purchase goods and services from local businesses. This is in fact, money coming from outside the community that stimulate the economic activities of the region since tourism is linked with the other sectors of the local economy. It is important to note that some of the spending leaves the community, which is the reason why the local purchasing is calculated at the RPC of 65% (Stynes 1997).

Moreover, multiplier effects for each category are considered as illustrated in Table 1. The multipliers for Cyprus economy are adopted from the study in (Giannakis and Mamuneas, 2018). For instance, the expenditure for NACE Rev.2 Classification (CY) – I – Accommodation & Food Services is € 202,621.79, while the multiplier effect for this category is 1.66 or € 218,628.92 in local earnings. In terms of transportation, the multiplier effect is 1.79 or € 129,178.33 in local earnings and for trade it is 1.42 or € 47,907.84 in local earnings mainly due to shopping activities. Hence, *the economic impact at a local level is calculated at a total multiplied effect of € 395,715.09, while the total economy benefits are calculated at € 608,792.45.* It is important to note here that local benefits reveal the true economic impact of tourist spending, since it reflects money that stay within the local community.

5. Conclusions

Major sport events, commonly termed as passive sport events, are an established and proven source of sports tourism that contributes largely to the economy. Still, the economic impact of active sport events is scarcely recognized in the literature. Most research works on active sports events focus on the analysis and evaluation of the social impact of such events (see Section 2). In this work the main contribution is on examining and analyzing via the case study the economic impact that active sport events have for the local economy and to what extent. At the same time, an overview of the implemented platform and recommender system is also presented in the paper. It is evident from the case study results that active sport events can contribute greatly to the local economy and have a significant impact with a positive total effect on the economy. In particular, the economic impact from the international visitors' expenditure for the swimming event is calculated at a total effect of € 608,792.45, while multiplied effects on local benefit are estimated at € 395,715.09.

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