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A new method to assess the sustainability performance of events: Application to the 2014 World Orienteering Championship

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ABSTRACT

Nowadays an increasing attention of public and private agencies to the sustainability performance of events is observed, since it is recognized as a key issue in the context of sustainable development. Assessing the sustainability performance of events involves environmental, social and economic aspects; their impacts are complex and a quantitative assessment is often difficult. This paper presents a new quali-quantitative method developed to measure the sustainability of events, taking into account all its potential impacts. The 2014 World Orienteering Championship, held in Italy, was selected to test the proposed evaluation methodology. The total carbon footprint of the event was 165.34 tCO_2eq and the avoided emissions were estimated as being 46 tCO_2eq. The adopted quali-quantitative method resulted to be efficient in assessing the sustainability impacts and can be applied for the evaluation of similar events.

1. Introduction

After the year 2000, the awareness of the importance of sustainability in events has been increasing in planners and stakeholders' thoughts as well as the interest in their performance assessment. Introducing and implementing sustainability in events mean considering each planning aspect as a potential factor in generating polluting emissions, and developing the best possible solution to achieve environmental, social and economic goals related to the event. Since each event is different from others, according to its own nature, size, objectives and several further criteria, it becomes more important to define the correct planning and to measure the related sustainable performances.

In the event industry, as much as in different fields of application (Bond et al., 2012), the environmental impact assessment becomes a bigger and more inclusive process, the sustainability assessment (Bond and Morrison-Saunders 2011, derived from Hacking and Guthrie 2008), in which all the environmental and social aspects are included in the calculation. The event will be described according to quantitative data (e.g. CO_2eq emissions) and qualitative features, such as "green" policies for urban and natural areas, the use of low-emission transport or suggesting best daily sustainable practices to people. The international literature has often faced this topic studying single aspects, such as the use of carbon footprint for events (McLennan et al., 2014), or the planning of a sustainable event from the idea to its development (Jones, 2014).

International researchers have often focused their studies on the consequences of event activities on different aspects related to environment, respectively underlining the importance of a correct environmental impact assessment for such actions. Studies can be found about the relationships between events and environment (Case, 2013), the strong connection between events, tourism and environment — analysing particular aspects, such as uncertain environmental items in tourism (Oreja-Rodriguez and Yanes-Estevez, 2007) or the relationships between climate change and tourism (Shani and Arad, 2014). Events have also been often considered as tourist attractions, included in a bigger pattern of sustainable development and sustainable tourism (Getz, 2008).

The literature review shows that both theory models and assessment (Tang, 2014) – sometimes defining environmental indicators to evaluate tourism (Hunter and Shaw, 2007) – have been adopted, and conclusions are more linked to real and practical aspects, such as environmental implications in destination marketing (Gössling et al., 2014), or sustainability assessment in the organisation of theme events, such as birding festivals (Lawton and Weaver, 2010) or international conferences (Orsi, 2012).

Focusing the attention on the case study of this work, scientific records show several case histories about environmental impact and/or sustainability assessment of different – big and small – sports events, e.g. rugby (Werner et al., 2015), basketball (Dolf et al., 2011), football and rally (Collins et al., 2009), as well as considered different sports

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annual seasons (Dolf and Teehan, 2014). Instead, the International Orienteering Federation (IOF) investigated on 2001 World Orienteering Championship (WOC) in Finland (Parker et al., 2002) and 2004 World Master Orienteering Championship (WMOC) in Italy (Parker and Viti, 2005), concentrating its attention more on nature-related aspects than on environmental impact generated by the event planning.

Differently from the examples mentioned above, the aim of this research, having the 2014 World Orienteering Championships (WOC) held in Italy as case study, is to define new tools able to help the event planning, according to environmental and social sustainability principles and to calculate the event's carbon footprint at the same time. This way, the event planner will have a fundamental report to be communicated and to be analysed to improve the planning of similar events, as much as future editions of the same event.

The specific tool developed and applied to the case study is named EBI 2012[1] (EBI is an Italian acronym for "Low Impact Events"). The case of 2014 WOC, therefore, aims at presenting a new method in planning and managing a big sports event with a sustainable approach, following defined guidelines in the planning stage, supervising and checking the whole implementation process according to the criteria expressed in the reference standard, EBI 2012.

Such an analysis allows one to plan how each activity could weigh on the impact generated by the event, collecting the data necessary to verify the first assumptions related to this topic in different moments of the event planning, implementation and management process. The resulting correspondence between the hypothetical scenario written in the earliest stage of planning and the real in-loco measurements will constitute the basis for the future planning of the next edition of the event or, in unique events such as 2014 WOC, the organisation of similar scaled-down initiatives.

This work aims at doing a further step to link a sustainable event planning, the calculation of event's carbon footprint and a qualitative analysis of activities implemented to reduce the event's impact. The definition of a circular process could constitute an improvement for national federations in order to organise small, medium or big events in their countries, starting from real data and managing each action according to their specific performances. The measurement of the real performances during the events will prove whether or not the choice of one or more activities has been successful for the event. The conclusive observations will be analysed and considered as a whole, creating a planning pattern that can be replayed again in future events, making it suitable to the particular features of its competition.

2. Methodology

The attention to the sustainability of anthropic systems is increasing both at global and local levels and several tools are used in this regard, such as Life Cycle Assessment-based methods, Carbon Footprint and Ecological Footprint. The latter is more and more investigated as a tool to be used at local scale (Scotti et al., 2009) and, similarly, the attention to carbon dioxide emissions is increasingly turning to the evaluation of the contribution of individuals (Padgett et al., 2008) or sectors (Kern et al., 2014). In this context, the abovementioned approaches are commonly used to evaluate the impact of private or public events and, with them, also different tools are used to deal with their sustainability (ISO 20121, APEX/ASTM). Within EBI 2012, the new standard developed, the quantitative calculation of environmental impact, commonly used to assess the sustainability of a process (or, in this case, of an event), is integrated in a qualitative analysis of the activities implemented in the phases of event planning and management. Such an approach allows the assessment of the event's impact (EBI 2012 contains a calculation methodology according to international standards and regulations) and also the evaluation of the effectiveness of actions and strategies for impact reduction.

[1] www.ecocongress.it/ebien.html.

EBI 2012 can be used together with the other standards regarding events sustainable management, such as the ISO 20121 (ISO 20121, 2012). It consists of a textual part, which provides a framework of guidelines and suggested actions for sustainability, and of a set of evaluation sheets, one for each specific category of the event. As explained better in the following sections, the evaluation sheets are used to define the sustainability assessment of the event, considering the scores obtained in each sheet (and, by extension, the scores obtained for each category of the event). Moreover, the calculation of the Carbon Footprint (CF) of the event brings to two different statements: first, as we will see later, CF is one of the activities which contributes to gain point in the sustainability assessment; on the other hand, it can be put in correlation with sustainability assessment itself in order to evaluate the sustainable performance of the event under different aspect, as much as providing an element of comparison between two similar events.

2.1. The proposed scoring method

In Sustainability Assessment (SA) it is generally necessary considering multiple aspects and the interrelations and interdependencies among them, accounting for the different importance they might have and adopting different degrees of aggregation (Cinelli et al., 2014). Multi Criteria Decision Analysis (MCDA) is considered appropriate to perform SA, since it allows to clearly account for multiple criteria (different sustainability pillars, perspectives, stakeholders, values, uncertainties, etc.) in support to ranking, comparing and/or selecting alternatives (O'Neill et al., 1999; Belton and Stewart, 2002; Munda, 2005; Gasparatos et al., 2008; Bond et al., 2012; Gasparatos and Scolobig, 2012).

In this regard, rating methods are extensively used in different sectors to build up the ranking, aggregating the information from individual aspects, and the subjectivity in assigning weights and scores is recognized as an issue in the literature. Weighting procedures imply the significance and importance of different criteria, although it is very difficult to compare and grade different elements (Retzlaff, 2009), and they are considered as a very theoretically controversial aspect within the SA systems (Alwaer et al., 2008; Retzlaff, 2009). The subjectivity in weighting and scoring criteria (Garde, 2009; Retzlaff, 2009; Vakili-Ardebili and Boussabaine, 2007) makes this procedure vulnerable to ambiguity (Kajikawa et al., 2011). Sharifi and Murayama (2013) selected and analysed different Neighborhood SA tools in order to highlight strengths, weaknesses, successes, and failures, while other authors (Chandratilake and Dias, 2013) explored the issue of subjectivity in weighting and scoring in sustainability rating systems for buildings. Literature also deals with qualitative methods for impact assessment (Toro et al., 2013) and with specific sustainability ranking tools (Lauder et al., 2015), but there is relatively little on this kind of evaluation systems regarding events. Kim et al. (2015) developed and tested a multidimensional scale to evaluate the perceived social impacts of a large-scale sports tourism event, while Gursoy et al. (2004) proposed an instrument to measure the festival and special event organisers' perceptions of the impacts of festivals and special events on local communities.

At the aim of sustainability assessment, EBI 2012 works dividing the system "event" into six categories, representative of the macro-areas affecting both the event success and the impact it can have on the surrounding macro-environment:

- Organisation;
- Venue;
- Food & Beverage;
- Transport;
- Marketing & Communication;
- Hospitality.

In addition to these categories, the category "Planning" is also considered, since the pre-event step, during which strategies and actions are defined, is crucial in order to achieve event's sustainability.