

# Master's Thesis: Master Sustainable Business and Innovation

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## SPORT EVENTS AND SUSTAINABILITY, A HAPPY MARRIAGE?

A case study on the influence of sustainability on the  
reputation of sport events.



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“Sport has the power to change the world.  
It has the power to inspire.  
It has the power to unit people in a way that little else does.  
It speaks to youth in a language they understand.  
Sport can create hope where once there was only despair.  
It is more powerful than government in breaking down racial barriers.  
It laughs in the face of all types of discrimination.”

- **Nelson Mandela, 2000.**

## Abstract

Over the last decades the importance of sustainability increased due to environmental concerns. The critical role of organisations was recognised in the transition to more sustainable circumstances, which led to different approaches to include all dimensions of sustainability equally. One of the most used and recognised approaches is corporate sustainability, which helps organisations to adopt sustainability throughout the whole organisation. Since then, sustainability became important for the overall evaluation and thus the organisational reputation. To investigate the relation between sustainability and reputation the sport industry and in particular sport events are chosen as case(s). This is because of its association mainly to positive aspects, even though negative aspects and controversies towards sustainability occur occasionally. The following research question is answered during this study:

*How does the importance of sustainability topics in building a reputation differ across sport events and how do these topics relate to other essential topics?*

During this study corporate sustainability is used alongside with the concept of organisational reputation, which can be determined as the most important sustainability driver. To answer the research question, topic modelling is used, which is a quantitative method to analyse the qualitative data that is considered in this study. Out of the internal data that originates from sport organisations and external data from news and media organisations, different topics are determined. These topics are interpreted and categorised through which conclusions could be drawn. First of all, out of the external data no sustainability topics are determined which states that news and media organisations does not, or in very small numbers, publish about and evaluate sport events on sustainability aspects. Secondly, in the internal data fourteen different sustainability topics are determined. These topics are mostly focused to the social, and in much lesser extent, to the environmental and economic dimension of sustainability. Additional, the importance of sustainability topics differ between events but on average the most important topics for the reputation of sport events are, in order of importance, sport, organisation, and sustainability topics. When it comes to the relatedness between events it can be concluded that the sport, organisation, and sustainability topics are strongly related to each other. This study contributes to the understanding of the relation between sustainability and organisational reputation. Ultimately, this study contributes to a more sustainable world for this and future generations.

*Keywords: Corporate Sustainability, Reputation, Topics, Categories, Sport Organisations, News and Media Organisations, & Sport Events.*

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## Introduction

In the 1960's, the first ecological concerns and fears of resource scarcity emerged. Since then, sustainability has become an important topic in environmental policies and research to describe the relation between humans and the global environment (Brown, Hanson, Liverman & Merideth, 1987; Baldassarre, Keskin, Diehl, Bocken & Calabretta, 2020). From then onwards, an increase in scholarly fields and numbers of research papers associated with sustainability occurred (Caradonna, 2019). The term sustainable development made its entry in the 1980's with the introduction of the Brundtland report. This report, which is seen as a global agenda for change, is focussing on long-term environmental concerns, defining these concerns, and how to strategically address them. The term sustainable development is defined in the Brundtland report as: "meeting the needs of the present without compromising the ability of future generations to meet their own needs." (World Commission on Environment and Development, 1987, p. 16).

Even though this development strategy incorporates and recognises the economic, environmental, and social dimensions of sustainability, there was still a concern. To make real environmental progress, the social and economic dimensions have to be addressed more than they were at the time. To do so, industries have to be involved because of their relatedness to the social and economic dimension and since their activities are major contributors to environmental issues on a global scale (Brown et al., 1987; Wilson, 2003; Elkington, 2004; Gimenez, Sierra & Rondon, 2012; Sitnikov, 2013). On the other hand, organisations have access to the necessary resources to address these issues (Baldassarre et al., 2020). The essence of business involvement was also recognised by Elkington (2004), who created the Triple Bottom Line (TBL). This framework, which is one of the most recognised for companies to account for their impacts, incorporates all three dimensions as equal shares, which creates a balance between economic, environmental, and social issues (Wilson, 2003; Elkington, 2004; Slaper & Hall, 2011; Gimenez et al., 2012). Even with the introduction of the TBL, it was not sure how to integrate sustainable development into organisations. Besides the appearance of this question, the concept of corporate sustainability was introduced and became widespread in the business world (Montiel & Delgado-Ceballos, 2014). This concept describes that, to successfully integrate sustainable development, it has to be adopted in all levels of the organisation and mostly requires cultural changes (Linnenluecke & Griffiths, 2010; Lozano, 2013; Baumgartner, 2013; Engert, Rauter & Baumgartner, 2016). Moreover, for successful integration it is essential to consider internal and external stakeholders, who are affected, can affect, and contribute to this integration (Epstein & Roy, 2001; Howard-Grenville, 2006; Linnenluecke & Griffiths, 2010).

Since the introduction of corporate sustainability, this concept became important for the overall evaluation of organisations and thus influences an organisation's reputation. In these studies, an organisation's reputation is based on their identity and image (Barnett, Jermier & Lafferty, 2000; Chun, 2005). An organisation's identity is constructed of what it says and states about itself towards their external environment (Wartick, 2002; Chun, 2005). Contrary to identity, the image is based on how the external stakeholders see and evaluate an organisation (Wartick, 2002). The incorporation of corporate sustainability in organisational evaluation introduced a shift from a situation in which some aspects were irrelevant, and in most cases even invisible (for instance carbon emissions and working conditions), to a situation where these aspects were critical, became publicly visible, and were evaluated (Gehman, 2012). While, on the one hand, the image of an organisation gets influenced by

this shift as external stakeholders adopt new evaluation criteria, on the other hand, organisations want to create legitimacy by adjusting their identity based on these criteria. So, this shift influences both the identity and image of an organisation and thus affects their overall reputation. Even though this change in evaluation is noticed in all industries, there is a lot of variety between them. This variety and inequality in focus on sustainability elements and external pressure are identified among industries but also between different organisations inside of specific industries (Epstein & Roy, 2001).

One of the industries that mostly possess a positive reputation, is the sport industry, which is for instance associated with health, exercising, uniting people, and entertainment (Morin, 2019). However, from its origin, this industry has been adopting and speaking out about waves of change, such as equality and political issues in both positive and negative ways, around the world (McCullough, Pfahl & Nguyen, 2015). This adoption also applies to the rising wave of environmental concerns, which catalyses the shift in evaluation in the sport industry and brought to light negative aspects such as carbon emissions, human rights violation, and depletion of natural resources (Dolles & Söderman, 2010). These negative aspects create external pressure and influence the image and indirectly the reputation and legitimacy of the industry. Still, the sport industry is fast growing and has a strong position globally, which is strengthened by its close relatedness to other industries such as tourism, construction, and leisure industry (Kearney, 2014; Statista, 2020; UWI, nd). Nevertheless, these negative aspects can be a concern for the sport industry. Especially because reputation is one of the key aspects in the sport industry to ensure revenue streams and relations with fans and sponsors, among others (Bauer, Sauer & Schmitt, 2005).

Sport events are one of the largest contributors to the success of the industry and represent the cyclical element in the sport industry because of their appearance every one to four years (Kearney, 2014). Sport events, which can be seen as global media events, gather a lot of attention, publicity, and audience, which gives them a podium to present their identity and create legitimacy (Flemming, Lünich, Marcinkowski & Starke, 2016). Contrary, this podium can damage their image through negative external evaluations. Also, events, including sport events, are generally defined as transitory and limited in time, which opposes the definition of sustainability (Getz, 1990; Stiernstrand, 1995; Raj & Musgrave, 2010). The opposing nature and negative aspects regarding sustainability are contrasting towards the in general positive aspects of health and social dimensions related to sport events. Because of this challenging and to some extent contradictory relation between sustainability and sport events, this study focuses on the influence of sustainability on the reputation of these events and possible variety across them. The following research question is answered in this study:

*How does the importance of sustainability topics in building a reputation differ across sport events and how do these topics relate to other essential topics?*

The importance of sustainability within the context of sport events is also recognised by researchers, who have been focussing on this for the last decades. This was mainly done by assessing and evaluating one or multiple dimensions of corporate sustainability per event or by a comparison between multiple events (Chalip, 2006; Collins & Flynn, 2008; Dolles & Söderman, 2010). These studies examine how sport events are addressing these dimensions and how they incorporate them throughout an event (Chalip, 2006; Collins & Flynn, 2008). Besides that, they show the negative impact or contributions of the sport events on these dimensions (Dolles & Söderman, 2010), including the impact of non-mega



sport events (Chalip, 2006). What has not been investigated is the influence of including sustainability topics in the organisational evaluation on the reputation of sport events (Chalip, 2006; Collins & Flynn, 2008; Dolles & Söderman, 2010). This study focuses on four aspects, namely the identification of topics in internal and external communication, determining (mis)matches between them, finding relations among them, and comparing them between the selected cases. First of all, the topics that are considered internally and externally and thus are included in the identity and image of sport events are identified. From these identified topics, matches, as well as mismatches, will be determined between the identity (internal) and image (external). Besides that, relations between topics, in particular sustainability topics, and other topics are determined. Subsequently, these (mis)matches and relations will be compared between the selected sport events. These aspects determine the influence of sustainability on the overall reputation and possible difference in, for instance, the urge to implement corporate sustainability.

This study attempts to extend the already existing body of knowledge about sustainability in combination with the sport industry and in particular sport events. Even though a lot of aspects are already researched, there is still a research gap when it comes to the influence of sustainability on the reputation of sport events. The objective of this study is to create a better understanding of the influence of internal and external processes and factors on the most important driver for sustainability, which is organisational reputation (Lozano & von Haartman, 2017). On the one hand, this attempts to fill the research gap in the literature on sport events specifically, and on the other hand extends and contributes to the literature on reputation building in terms of sustainability in general. In this way, this study contributes to the general understanding of how the concept of organisational reputation in today's society is affected by sustainability.

Corporate sustainability is one of the most essential elements for the transition towards more sustainable circumstances. Because of this, the sport industry should not be exempt when it comes to this transition and implementing sustainability. By determining the role of sustainability in reputation building of sport events, this study helps to understand how this reputation functions as a sustainability driver for organisations in the sport sector. In the light of recent controversies around the UEFA Euro 2020 and FIFA World Cup Qatar 2022 in terms of sustainability (among others, discrimination, human rights violation, and working conditions), this research could contribute by illuminating the possible role of sustainability on reputation building of sport events and in this industry. Besides industry specific implications, a better understanding of the role of organisational reputations in corporate sustainability could contribute to the transition to a more sustainable world.

This study is structured as follows; first of all, there is a theory section that includes all relevant concepts and theories used in this study. Followed by a case description in which the theory is applied to the sport industry and the cases are selected. After that, the methodology section describes the research strategy alongside the research design, case description, and data sampling and collection. This data is used in the data analysis which is part of the methodology. After the data analysis, the results section analyses the gathered results. This results section includes a general overview of results followed by an in-depth description per sport event and a comparison between them. The discussion and conclusion are presented in the final two chapters.



## Theoretical Framework

In this section, the relevant background theory and concepts are described. Starting with the concept of corporate sustainability, followed by the drivers for sustainability. Afterwards, there is an elaboration on the concept of reputation, which is considered as the main concept of this study. The section ends with a description of the concept of topics, which is used for the data analysis.

### Corporate Sustainability

With the publication of 'Our Common Future' by the WCED in 1987, the term sustainable development became increasingly important and popular (Montiel & Delgado-Ceballos, 2014). Sustainable development is a concept used to meet the needs of the present and ensure that future generations can meet theirs. The concept includes and balances three different dimensions which are the environmental, social, and economic dimensions (Linnenluecke & Griffiths, 2010; DISD, 2018). Driven by these dimensions, the business environment is rapidly changing and the need to incorporate organisations in the concept of sustainability increased (Engert et al., 2016). For organisations the challenge was not whether to implement sustainability but how, because of difficulties of improving social and environmental aspects as well as achieving the organisational objectives and profits (Epstein & Roy, 2001; Linnenluecke & Griffiths, 2010).

Corporate sustainability, based on sustainable development, was introduced and became widespread to include organisations in the transition to more sustainable circumstances and help them implement sustainability practices (Montiel, 2008; Montiel & Delgado-Ceballos, 2014). Even though there is no consensus on the definition of corporate sustainability, one of the most used and recognised ones is by Dyllick and Hockerts (2002, p. 13): "meeting the needs of a firm's direct and indirect stakeholders [...], without compromising its ability to meet the needs of future stakeholders as well". Corporate sustainability entails all dimensions of sustainable development by considering an organisation's needs and prosperity, while protecting and sustaining human and natural resources in the present and future (Baumgartner & Ebner, 2010; Engert et al., 2016).

Although the number of organisations that incorporate corporate sustainability increases, many are still struggling with integration, because of a lack of clarity on how to implement it and shortage of priority (Galbreath, 2009; Linnenluecke & Griffiths, 2010; Hahn, 2012; Engert et al., 2016). One of the main reasons for this is that primary drivers to adopt the concept were external of the organisation. These external drivers consist of, for instance, environmental regulation, pressure from society, and standards set by governments. However, the importance of the inside (internal stakeholders) of the organisation was neglected (Howard-Grenville, 2006; Linnenluecke & Griffiths, 2010). Recent studies have shown the importance of these internal factors such as firm loyalty, workplace satisfaction and top management support for implementing sustainability (Linnenluecke & Griffiths, 2010). Because of the importance of corporate sustainability towards external as well as internal factors the concept became more alluring to implement. It is essential for organisations to take in consideration their total environment, which includes external and internal factors and stakeholders, to successfully implement corporate sustainability.

### Drivers for Sustainability

The number of organisations discussing and increasing corporate sustainability practices is increasing. Additionally, the motives to do so are identified. From a system thinking

approach, the importance of internal and external factors are also recognised. Because of the interaction between organisations and their environment, organisations could best be understood as semi-open systems. In these semi-open systems resources enter, exit, and stay in the system, meaning that an organisation is influenced from the inside, by the outside, and interaction between inside and outside (Lozano, 2012; Lozano, 2013). The influence from the inside and outside is the reason why organisations change to secure their long-term survival. Where anticipating to change represents an opportunity, can companies that fail to respond to change be side-lined and encounter economic losses (Collins & Porras, 2002). The drivers to change towards a more sustainable state come from the organisations' stakeholders (Crittenden, Crittenden, Ferrel, Ferrel & Pinney, 2010). These stakeholders can be, just like factors, internal as well as external (Lozano, 2013). Internal stakeholders are part of the organisation and include, for instance, employees, shareholders, and financial institutions. External stakeholders for example include NGOs, suppliers, customers, media, among others (Marques, Bernardo, Presas & Simon, 2019; Minning, 2020).

Internal and external stakeholders create sustainability drivers which are catalysing the change of an organisation from their status quo to a more sustainable state. During the last decades, there has been a lot of research concerning these sustainability drivers (Bansal & Roth, 2000; Lozano, 2013). Several authors focused on these drivers with either an external or internal perspective, considering only internal or external drivers (Lozano, 2013). Internal drivers are drivers that deal with all processes and stakeholders inside of the organisation. These internal drivers can vary from the top to the bottom of the organisation and include aspects such as leadership, employees, productivity, quality, and processes. These types of drivers tend to be more proactive for the integration of corporate sustainability practices (Lozano, 2013). On the other hand, external drivers are seen as reactive drivers since the organisation reacts to their environment which always puts them one step behind (DeSimone & Popoff, 2000). This environment includes all the external stakeholders and aspects outside of the organisation. Even though these drives are seen as reactive, external drivers are considered as the ones which played an important role in the driving of corporate sustainability (DeSimone & Popoff, 2000; Lozano, 2013).

As already described, organisations are semi-open systems operating in an interconnected system. This means that every organisation has to deal with internal as well as external drivers for sustainability. Besides, there is an interaction between internal and external stakeholders which creates a new category where drivers of both types are connecting. These drivers can offer a more in-depth understanding of the interconnectedness and are called connecting drivers (Lozano, 2013).

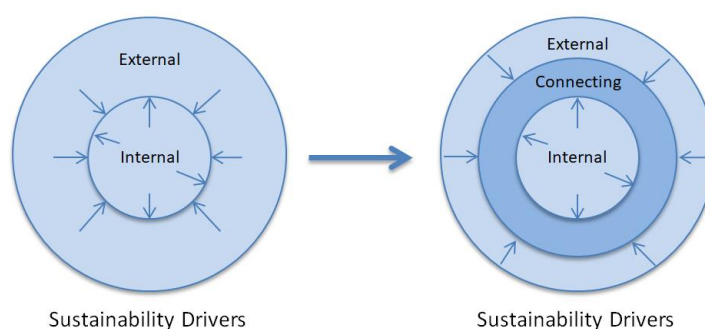


Figure 1: Categorisation of sustainability drivers.

These connecting drivers are drivers that are important for the internal and external stakeholders. Due to this importance and involvement of both types of stakeholders, these shared drivers are creating the base of implementing corporate sustainability (Lozano, 2013).

The most important drivers for sustainability are reputation (Lozano & von Haartman, 2017) and legitimacy (Bansal & Roth, 2000). First of all, reputation is considered as the most important driver for sustainability by companies in a study by Lozano and von Haartman (2017). The importance of reputation is caused by its strong correlation with stakeholder pressure, regulations and policies, and economic indicators such as market share and profit (Taghian, 2012; Lozano & von Haartman, 2017). Reputation is categorised as a connection driver which means that this is influenced by external and internal stakeholders (Lozano & von Haartman, 2017). In another study by Bansal and Roth (2000) legitimacy is considered as one of the most important and most frequently mentioned drivers for sustainability by organisations. Legitimacy is seen as important since it is related to sustainability, long term survival, and license to operate of an organisation. Legitimacy refers to the minimum requirements and standards that are set by the external environment for an organisation to operate and avoid fines, penalties, bad publicity, among others (Bansal & Roth, 2000; King & Whetten, 2008). Because of this, legitimacy can also be considered as a connecting driver since it includes internal and external aspects (Bansal & Roth, 2000).

In both strands of studies, the most important driver tends to be a connecting driver which again describes the importance of the internal as well as the external environment and stakeholders of an organisation. Because legitimacy is associated with the minimum standards of an organisation this study will focus on reputation. Reputation is associated with the ideal standards of an organisation and is one of the most valued organisational assets (Gibson, Gonzales & Gastanon, 2006; King & Whetten, 2008).

### **Reputation**

Reputation is arguably the single most valued intangible organisational asset and has a positive and linear relationship with the organisation's success (Vogler, Schranz & Eisenegger, 2016). A positive reputation fosters success and contrariwise a negative one damages and could possibly destroy an organisation (Gibson et al, 2006). Reputation indicates a judgement over time about the organisation's attributes by stakeholders. This judgement will influence the willingness to provide or withhold support to the organisation (Gray & Balmer, 1998). The concept of reputation can be defined as: "the perception of an organisation which is built up over a period of time and which focuses on what it does and how it behaves" (Balmer, 1998, p. 10). Different topics contribute and influence, strongly or to a lesser extent, the reputation of an organisation. These topics and influence vary globally but also between industries and even organisations. On a global average, the most important topics are; quality of products or services, quality of employees, and quality of customer services followed closely by others (Weber Shandwick, 2020; Cutting Edge, 2020). Reputation is built on two separate concepts namely the image and identity of an organisation (Gotsi & Wilson, 2001; Wartick, 2002; Chun, 2005; Barnett et al., 2006).

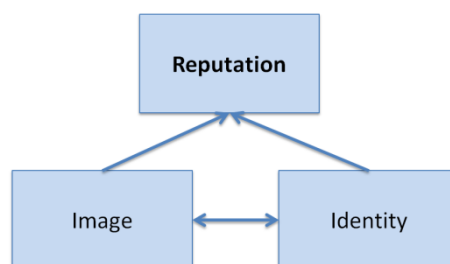


Figure 2: Reputation and underlying concepts.

The identity relates to the activities of internal stakeholders and consists of the status and uniqueness of an organisation (Wartick, 2002). This status and uniqueness contains the organisation's strategy, culture, symbols, activities, among others (Grey & Balmer, 1998). The identity of the company comprises what it says and states about itself (Chun, 2005). Statements of organisations about themselves are considered correct and legitimate in this study. When an organisation is not legitimate in what they say and state about themselves it can be seen as corporate fraud (Wells, 2017) or, when it comes to corporate sustainability, as greenwashing (Siano, Vollero, Conte & Amabile, 2017; Kurpierz & Smith, 2020). The most common and influential way of spreading the identity is by communication to the stakeholders. In this way an organisation can communicate about, in their opinion, important topics possibly including sustainability topics. When the identity is communicated to external stakeholders it can influence the image of the organisation and thus the reputation. Because of this, communication towards externals can be seen as the link between identity and image and the way for an organisation to shape and influence their environment and stakeholders (Gray & Balmer, 1998; Vogler et al., 2016). These stakeholders can be influenced through different ways by an organisation. So, to gather a representative overview of what an organisation states about itself, it is important to include as many communications methods as possible, including for instance published reports and website articles (Gray & Balmer, 1998; Eberle, Berens & Li, 2013).

Corporate image is the mental picture that the audience has of an organisation. This is what comes up when they, for instance, see or hear the organisation's name or logo (Gray & Balmer, 1998). Opposite to identity, the image is related to the external stakeholders (Wartick, 2002). Since organisations can influence and are being influenced by their environment it is important to know how there is talked about it publicly (Vogler et al., 2016). Almost all stakeholders are influenced by news and media since this is one of the primary ways they learn and get informed about an organisation (Einwiller, Carroll & Korn, 2010; Vogler et al., 2016). Because of this, news and media organisations have a big influence on the topics that are highlighted, discussed, and are being emphasized regarding the evaluation of an organisation. Generally, the media creates more damage to the image than it creates enhancement (Einwiller et al., 2010). The importance and influence of the media on the image is also assured by organisations itself. This can be seen because most organisations have a media strategy, public relations department or a manager handling media affairs (Einwiller et al., 2010). So, for this study news and media organisations, including news articles and reports, are considered as the main influencer of the image of an organisation.

### Topics in Reputation Building

Originally, organisations are classified and related to others based on their 'blueprint' which includes aspects as the formal structure, patterns of activities, and the normative order (Hannan & Freeman, 1977). Insights by prior research are that the evaluation and classification is based on cognitive categories of individuals. These cognitive categories are categories based on acquired knowledge, thoughts, experiences, and senses build through time (Deephouse & Carter, 2005; Fischer & Reuber, 2007). Different classes of organisations, in which organisations are combined on similarity of their core features, are established based on these cognitive categories. In this way, individuals are able to understand which organisations are comparable and which are disparate. The other way around the same occurs, where organisations use stereotypical topics that are shared with other organisations whom they perceive to be related to, to identify and communicate about themselves (Fiol & Romanelli, 2012). Due to this stereotyping by organisations itself, it is even more likely that individuals classify organisations with related organisations in the same class.

Identical to the classification of organisations, the reputation of organisations is based on cognitive categories. As already stated, reputation is an evaluation of the organisation over time by stakeholders (Gray & Balmer, 1998). Prior research states that the most common way of judging organisations by stakeholders is, similar to the classification, through associating them with pre-existing knowledge and cognitive categories (Fiske & Neuberg, 1990; Aldrich & Fiol, 1994; Gregan-Paxton & John, 1997; Bargh, 1999). This helps to form first impressions that typically does not adjust until these individuals have more or different information (Bargh, 1999; Fischer & Reuber, 2007). Due to this, these cognitive categories are important in the process of building an organisational reputation. The category or categories stakeholders associate with an organisation depends on the characteristics of the organisation and organisations that are in the same class. Because of this, the categories that are used to evaluate an organisation can be seen as some sort of stereotyping (Deephouse & Carter, 2005; Fischer & Reuber, 2007). Sport events are for instance classified through stereotyping aspects such as: tournament, championship, health, entertainment, matches, supporters, sponsors, sports, and athletes.

Even though the categories on which an organisation is judged differ for every organisation, over the past several decades, sustainability became an increasingly important category for the evaluation and thus reputation of all organisations (Gehman, 2012). The categories associated with an organisation can be seen as a cluster of different topics and contrary these accessory topics suggest a particular label for the overarching category (Fischer & Reuber, 2007). Topics can be seen as the constituents of a category and are used to make a, more explicit, judgement of an organisation and compare it to other organisations (Deephouse & Carter, 2005). This comparison between organisations is important to create a benchmark and build a legitimate organisational reputation. So, it can be stated that organisational reputation is built out of categories that consists underlying topics (Deephouse & Carter, 2005; Fischer & Reuber, 2007).



## Case Description

The sport industry and in particular sport events are used as case(s) for this study. The sport industry is one of the most influential and fast-growing industries in the world and consists of three main segments (Kearney, 2014). These segments are: sport performance, sport production, and sport promotion (Pitts, Fielding & Miller, 1994). With these three segments, the sport industry has a value of over €350 billion in 2020 and is still growing. Besides that, it has a strong global position, due to its close relatedness to other industries such as tourism and construction (UWI, nd). One of the major contributors to the success and growth of the sport industry are the events of different sports, with an occurrence that can vary from weekly events to events that occur once every four years (Kearney, 2014). The growth results from aspects as rapid urbanisation, growth in emerging economies, rising sponsorships, emergence of different channels to capture viewership, among others. Even though the sport industry grew a lot in recent years, there are also aspects that negatively influence this growth such as the COVID-19 pandemic, doping scandals, and sustainability related concerns (The Business Research Company, 2021).

Since the beginning, the sport industry has been influenced and adopted waves of change, both negative and positive, around the world. This started in the early twentieth century with social issues such as discrimination, gender inequality, and social injustice. The discrimination and social injustice issues started a wave in the sport industry, beginning with statements about this by Jesse Owens at the Olympics in Berlin of 1936. This was followed by Jackie Robinson by breaking the racial barriers in the Major League Baseball. Alongside the wave against discrimination and social injustice, the equality wave for women started to increase throughout the sport industry. This was strengthened by individuals such as Sybil Bauer (first woman to break a men's record in swimming) and Babe Didrikson Zaharias (Olympian on multiple sport disciplines) and created inclusion of women into the sport (McCullough et al., 2015). The same occurred when environmental concerns increased. Especially because all types of sport have an impact on the environment, the need to examine these impacts became urgent (Trendafilova et al., 2014; McCullough et al., 2015; McCullough, Orr & Watanabe, 2020). Even though some athletes make statements about and take action on environmental concerns, the majority comes from the organisations in the sport industry (World Athletics, 2019).

With the introduction of corporate sustainability, the integration of all dimensions of sustainability in the sport industry, and sport events in particular, became more straightforward. Due to this, all three dimensions of corporate sustainability are adopted more regularly by sport events (Sheth & Babiak, 2009). Besides that, this adoption accelerated due to stakeholders creating internal and external pressure on sport organisations (Trendafilova, Babiak & Heinze, 2013). The 1994 Winter Olympics in Lillehammer became the first sport event which addressed environmental aspects by initiating more than twenty sustainable projects to ensure its environmental friendliness. Since then, environmental aspects are adopted more often by the sport events. This is done through reducing their ecological footprint and raising environmental awareness (Trendafilova et al., 2014). This ecological footprint differs between sport events and includes aspects such as pollution, building facilities (stadiums, Olympic park, fan zones, among others), and emission of traveling by athletes and fans. When it comes to addressing these practices, sport organisations begin with highly visible and easily implemented sustainability practices such as recycling programs and community focused events (McCullough & Kellison, 2016). Nowadays, a lot of

organisations have their own sustainability strategy including the practices that, in their opinion, are most important and have the most impact. For instance the FIFA is shifting towards sustainable or more sustainable stadiums and the Tour de France is committing to the protection of different natural habitats along the route (Le Tour de France, 2020; FIFA, 2021). Even the host election of events is influenced by sustainability practices. The Summer Olympics were hosted by Rio de Janeiro due to the reduced environmental impact, since the sport facilities were already existing, from other sport events, and only had to be renovated. Additionally, they made commitments in their bid to subjects such as improving water and air quality, waste management, soil protection, and deforestation, among others (Boykoff & Mascarenhas, 2016; Trendafilova, Graham & Bemiller, 2017). In this way, sport organisations are using their unique resources, mass media distribution, social interaction, and communication power to create more awareness about sustainability related aspects and reduce their impact (Smith & Westerbeek, 2007; McCullough et al., 2020). Even though, it appears that their main focus is on aspects that are included in the social dimension of corporate sustainability and thus are less likely to focus on the economic and environmental dimension. Aspects that are mainly covered have primary focus on education, health and wellbeing, communities, and youth (Sheth & Babiak, 2009). Examples of the inclusion of the social dimension are campaigns like #WeRaceAsOne of the Formula 1 and the 250 million commitment of the NFL to combat systemic racism, discrimination and inequality (Battista, 2020; Formula 1, 2020). When it comes to the different sustainability practices, it can be stated that the lesser majority of organisations is communicating about them. But when they do, most of the communication exists within website articles, blogs, newspapers, among others (Mallen, Stevens, Adams & McRoberts, 2010). Even though it is rare, it has to be noted that some sport organisations do report specifically about sustainability practices. When it comes to these reports, they offer inconsistent measures and formats, ad hoc assessment tools, narrow scopes, and are not comparable between organisations (Mallen et al., 2010; McCullough et al., 2015; McCullough et al., 2020). Despite this poor reporting, the adoption of sustainability practices benefits the strategic position, image, legitimacy, and economic objectives of the sport organisation and thus can be seen as tremendously important (Seth & Babiak, 2009; Trendafilova et al., 2013; McCullough et al., 2020).

Alongside the adoption of sustainability practices by the organisations itself, sport events have been researched and evaluated on a variety of aspects such as impact on the environment, quality of life for host city residents, social aspects, image of host country, national economic, among others (Burgan & Mules, 1992; Collins & Flynn, 2008; Preuss & Alfs, 2011; Knott, Swart & Visser, 2015). Besides that, news and media organisations, which are considered as the most important external stakeholder due to their influence on the image and thus reputation of sport organisations, publish about and evaluate sport events on these practices. These publications can reach from positive to negative and includes all dimensions of sustainability. For instance some publish, in a positive way, about all the sustainability practices of the FIFA World Cup in Qatar including, among others, sustainable stadiums and the saving of water (Sustainability Knowledge Group, 2020; Diario AS, 2021; Goal.com, 2021). Where others criticise this event by stating that most aspects are questionable or even false promises (BBC News, 2015; MINIWIZ, 2020). Besides that, some media criticised sport events, such as the Summer Olympics 2016 by publish about the Olympic park in Rio de Janeiro, which should have a function after the event, but nowadays is abandoned. Alongside, most aspects to which was committed such as improving water quality, did not hold stand after the event (BBC News, 2020). Even though, news and media



organisations are mainly focused on their own economic objectives during a sport event. Since they are heavily dependent on the number of viewers on their publications for revenues and advertising, they mainly publish about the interests of these viewers. These publications are mainly about the sport event itself but can include for instance scandals, other negative headlines, or sustainability. So, the subject of the publications of media and news organisations strongly depends on the interest of the audience, possibly neglecting unpopular aspects and subjects (Flemming et al., 2016). Besides that, media and news organisations are used to improve for instance the hosts' image and economic benefits. This is done by the concept of signalling in which governments and local authorities state positive aspects on which media and news organisations must make publications. In this way the media and news organisations contribute to a more positive, focussed on specific topic, and less objective body of information about these events (Preuss & Alfs, 2011). It can be concluded that, even though some publish about sustainability practices regarding sport events, their publications are in more or lesser extent influenced by multiple factors and sometimes subjects are even neglected (Preuss & Alfs, 2011; Flemming et al., 2016).

### Case Selection

To select the cases, which are investigated during this study, a non-probability sampling method is used. Due to the use of non-probability sampling, not all cases have an equal chance to be selected. The non-probability sampling method that is used is purposive sampling. Additional criterion sampling is used to, based on different criteria, select only cases that are relevant to the research question (Bryman, 2016). The case selection is based on two criteria, namely the number of views of the event and the time between occurrences of the event. The number of views of the event is considered as most important since it represents the visibility of the event and the accompanied media attention. This media attention is necessary because of its importance in building an image and thus to answer the research question. The other criterion is used to select cases based on their difference in interval between occurrence (Bryman, 2016). This could possibly lead to considerable differences in characteristics between cases, out of which conclusions can be drawn to answer the research question. Based on these criteria, even though there is no consensus on exact numbers of viewers, four exemplifying cases are selected that are visualised in figure 4 (BBC News, 2014; Chase, 2018; Baker, 2020; Pledge Sports, 2020; Total Sportek, 2020). Firstly, the Summer Olympics and the FIFA World Cup, with an occurrence once every four years, are selected. These cases can be seen as little representative for once in four year events and thus are identified as extreme cases when it comes to size, audience, and possibly sustainability (Gerring, 2009; Bryman, 2016). The location where these cases take place changes every occurrence, this involves the building of new facilities, and infrastructure, among others (Kim, Gursoy & Lee, 2006; Americas Quarterly, 2012; Maenning & Zimbalist, 2012). Considering this, it is more likely that there will be more focus on sustainability due to their enormous environmental impacts. The other selected cases can be identified as extreme cases for the yearly events (Gerring, 2009; Bryman, 2016). The Tour de France and Wimbledon are selected because of the number of views and occurrence once a year. With their appearance in the same location or country these events will possibly experience less focus on sustainability due to their assumable lower environmental impact and possibly focus on other sustainability aspects.

Due to the use of the selected criteria and extreme cases, the selected cases can help to understand the importance of sustainability on organisational reputation and why there are differences between sport events. Especially because of the variation in characteristics such

as location and size between the yearly event and events with an occurrence once every four year, differences are more likely. Due to the difference in characteristics, the cases help assessing both aspects of the research question. Besides, by selecting two yearly events and two events with an occurrence once every four years, there is a legitimate representation of the time cycles of sport events (Bryman, 2016). To ensure similar circumstances the cases that are investigated are from 2018, except for the Summer Olympics. Because of dissimilar cycles, the last event of the Summer Olympics is chosen which took place in 2016.



*Figure 3: Logos of the selected sport events.*

## Methodology

This section describes the chosen research strategy, the research design, and research process. Afterwards, there is an elaboration on the data that is required to answer the research question, how this data is collected, and how it is analysed. The outcome of the analysis of the collected data are the results of this study.

### Research Design

To answer the research question of this study a quantitative research strategy is used. This study focuses on qualitative data, which can be identified as non-numerical data or words (Bryman, 2016). Even though the focus is on qualitative data a quantitative method is used which includes a very limited number of qualitative analysing aspects. Topic modelling is used as analysis method, which is a quantitative research method to analyse qualitative data. This method will be further described in the data analysis section.

Where a case study focuses on providing an in-depth examination of one single case, the multi-case study focuses on multiple cases and consists a comparative part. This study specifically focuses on the concept of reputation, on which a case study can provide an in-depth examination of this concept (Bryman, 2016). By using a multi-case study this in-depth examination can be done for multiple sport events and additionally a comparison between them can be performed (Bryman, 2016). Besides that, concepts that are relevant to emerging and already existing theories are suggested (Crowe et al., 2011; Bryman, 2016). Especially because the influence of sustainability on the reputation of sport events has not been explored, the first objective of this study is to establish a situation in which a theory can be built and verified. Additional, the variety in influence and relationship between different topics is identified and compared between the selected sport events. Besides the multi-case study will help to contribute to existing literature which is the second objective of this study. Lastly, there are time and resources constraints, nevertheless this research design should keep the research manageable, concrete, and relevant (Bryman, 2016).

Because of the decision for a multi-case study design, the following research process is used, which is based on the research question. Afterwards, cases are selected out of all available sport events. Specifically on these cases data is collected and analysed during the analysis phase. The outcome of this phase are results on which the discussion and conclusion is based (Kähkönen, 2014).

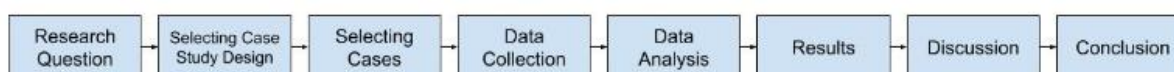


Figure 4: Research process of multi-case study design with topic modelling method.

### Data Collection and Sampling Strategy

The focus of this study is explicitly on existing qualitative data. This means that there is no collection of new bodies of data using for instance interviews or surveys (Bryman, 2016). The data that is used for this study is collected by the use of desk research and originates from a predetermined timespan. Data that is published from half a year prior to the selected sport events till half a year after the events is used. This time span is used to contain data with a possible previewing, reviewing, and analysing nature. These different angles of incidence give a legitimate overview of all publications regarding the sport event. Official documents, specifically related to the sport events such as the annual report, are included even though these are published outside of the predetermined timespan. This is done because of the

importance and informing nature of these documents. An example of the used timespan, in the case of Wimbledon that started on 2 July and ended on 15 July 2018, is that data from 2 January 2018 till 15 January 2019 is considered along with the official report of the organisation of the event of 2018. All event specific timespans can be found in table 1.

Similar to the division made in the theory section and in order to answer the research question the data collection and sampling is divided between 'internal' and 'external' data. The internal data represents the identity while the external data represents the image of an organisation. The internal data is focused on documents published by the sport event itself or by the overarching organisation of the sport event. In some cases, the event itself does not have an official website or other communication channels but are directly linked to the overarching organisation. For instance, the Rio 2016 Summer Olympics does not have an official website but the organisation behind the event (IOC) devoted a part of their website to information on the event. External data originates from international news and media organisations that adhere to Nexis Uni and include sources as newspapers and journals, among others (LexisNexis, 2020; Utrecht University, 2020).

For the internal data purposive sampling and in particular maximum variation sampling is used. Using this purposive sampling method means that the selection is not on a random basis but based on strategic manners to only select relevant data for this study. To ensure a legitimate overview of the data a maximum variation sampling method is used. In this way the widest possible variation of data associated with internal topics is included (Bryman, 2016). The selected internal data consists of publications, such as website articles and reports by the organisation of the sport events. Essential for this data is that it is originated from and published by the organisation of sport events through the official communication channels. The data that is collected consists of two aspects namely all relevant available published reports, such as the annual report, financial report, and sustainability report, and articles and website publications. The published reports are mostly found under the official documents header of the website, where the articles and website publications are found under different headers such as: news, publications, articles, and statements. To be selected, the documents need to meet the criteria of being related to the selected sport events and being published in the particular timespan of these cases. This approach creates a thorough overview of the internal topics that are communicated to the externals. Because the total communication towards externals is seen as the most common way of spreading the identity by organisations and includes the topics that are, in the organisation's opinion, most important (Gray & Balmer, 1998; Vogler et al., 2016). In this way, the data that is collected is representable for the identity of the organisations. Specific focus of the researcher on topic-specific reports, such as sustainability reports, is neglected in this study since this can give a flattered and biased indication of the internal topics and thus organisations' identity (Bryman, 2016). The number of collected documents per sport event, or sample size, can be found in table 1.

The external data consist of news articles and reports of international news and media organisations. For the collection of this data the database of LexisNexis, which is made available through Utrecht University, is used which is called Nexis Uni (LexisNexis, 2020; Utrecht University, 2020). Only the data that originates from a broad range of news and media organisations, that are included in Nexis Uni, is used in this study. This database consists of news articles from national and international news sources. News and media organisations are considered as the most important external actors to influence the image of

an organisation (Einwiller et al., 2010; Vogler et al., 2016). Therefore, the news category is selected to only include articles published by news and media organisations, alongside the associating timespan, search terms, and filters (Utrecht University, 2020). The search criteria consist of general filters, namely English as language and Newspapers as type of publication, which are the same for every event. Alongside, specific terms and publication types are used for every specific sport event, these can be found in table 1. Guiding search terms, such as sustainability or negativity, are neglected because these tend to include and/or exclude certain topics which would influence the overall representativeness.

Due to two limitations in Nexis Uni, it is not possible to use a probability sampling strategy and thus give all articles an equal chance to get chosen. The first limitation is that it is only possible to download the first thousand hits. The second limitation is the fact that the articles cannot be ordered randomly but always have some sort of order such as alphabetical. Within these limits the selection of articles is made as random as possible to, in combination with the sample size, ensure representability of the selected articles to the total body of available data (Fleetwood, 2020). Nexis Uni only allows the sorting of documents on relevance, document name, and publication date. Because of this, the sort option relevance is chosen to be most random and this does not exclude any articles from a specific timespan or starting with a specific letter or word.

Due to the limitation on sampling size in Nexis Uni, it is important to identify if this maximum sample size is sufficient and representative for the whole body of data. This size of the sample does matter to a certain extent. Although a larger sample does not necessarily mean that it will be richer on information (Morse, 2000), it can be stated that if a sample is larger it is more likely to be representative for the whole dataset, independent of the total data size (Bryman, 2016). Additionally, this study focuses on identifying all topics that are discussed outside of an event, which could be in a broad and differs range. When it comes to a possible broad range of topics it is more challenging to reach saturation. To reach towards this saturation point, the sample size has to be large or as large as possible (Morse, 2000). Even though a large sample size is expedient, it depends on certain limitations during most studies (Bryman, 2016). The same applies to this study, because Nexis Uni only allows downloading the first thousand search hits, the maximum sample size is limited to this number. To achieve a sample size as large as possible, for every sport event, the first thousand hits are used. This means that for the Tour de France all possible hits are used which is hundred percent. The sport event with the most hits, the FIFA World Cup, has the lowest coverage of the total sample size with nine percent. This lowest coverage of nine percent is still far above multiple sampling standards and strategies, discussed by Krejcie & Morgan (1970), MacCallum, Widaman, Zhang & Hong (1999), and Israel (1992) for sample sizes and thus presumed to be sufficient for this study.

In table 1, the specific search terms, publication type(s), timespan, number of hits, and sample size of the external as well as internal data can be found.

Table 1: Search criteria, publication type, timespan, and number of hits per selected case.

Specific Search Terms	Publication Type	Timespan	Number of Hits External Data	Sample Size External	Sample Size Internal
<b>Wimbledon Tennis Championship</b>					
Wimbledon; Championship; Tennis; 2018	Newspapers	02/01/2018 – 15/01/2019	2.336	1.000	227
<b>Le Tour de France</b>					
Tour de France; 2018	Newspapers; Newswires & Press Releases; Web-Based Publications	07/01/2018 – 29/01/2019	1.000	1.000	101
<b>FIFA World Cup</b>					
FIFA World Cup; 2018	Newspapers	14/12/2017 – 15/06/2019	11.101	1.000	627
<b>Summer Olympics</b>					
Summer Olympics; 2016	Newspapers	05/02/2016 – 21/02/2017	4.269	1.000	187

## Operationalisation

To measure reputation and to answer the research question of this study, the following concepts are used. As already described in the theory section, reputation is built out of identity and image (Gotsi & Wilson, 2001; Wartick, 2002; Chun, 2005; Barnett et al., 2006). Identity is related to the organisation of a sport event, in which reports and website articles and publications of the organisation itself are considered as the most important aspect of communicating the identity to externals (Gray & Balmer, 1998; Wartick, 2002; Chun, 2005; Vogler et al., 2016). The image is related to the mental picture the audience has of the organisation. For establishing an image, news and media organisations are recognised as the most important actors that could create and influence this (Einwiller et al., 2010; Vogler et al., 2016).

Both identity and image are composed of one or multiple categories with underlying topics (Deephhouse & Carter, 2005; Fischer & Reuber, 2007). The categories and topics that are found in the documents of the organisation can be seen as most important for the identity. Othersides, the categories and topics that are determined in the documents of the news and media organisations can be seen as most important for building an image. Topics can be found with the use of topic modelling methods, because a document, containing written information, consists out of one or a mixture of multiple topics (Wallach, 2006; Hu, Boyd-Graber, Satinoff & Smith, 2013). This means that a document can be associated with multiple topics and vice versa these associated topics describe and represent what a document is about (Blei, Ng & Jordan, 2003). Comparable to a document having multiple topics, a topic is built out of a specific 'bag-of-words' (Mohr & Bogdanov, 2013). This 'bag-of-words' consists of a set of words that frequently occur together and/or are related to each other (Alghamdi & Alfalqi, 2015). When words occur more often together with others, the probability that these words are included in a specific topic is higher. The words with the highest probability to be included in a topic tends to label what that topic is about and is often closely related to what a human would call a topic (Blei et al., 2003; Hu et al., 2013; Mohr & Bogdanov, 2013).

For both identity and image, the identified topics, which consists of different words, are interpreted and labeled. In this way, the topics can be divided into sustainability and non-sustainability related topics and attributed to certain overarching categories. With the identification of these categories, the number of underlying topics, and their coverage of the



corpus, something could be said about the importance of sustainability on the reputation of sport events and how topics relate to other topics. The operationalisation framework is shown below:

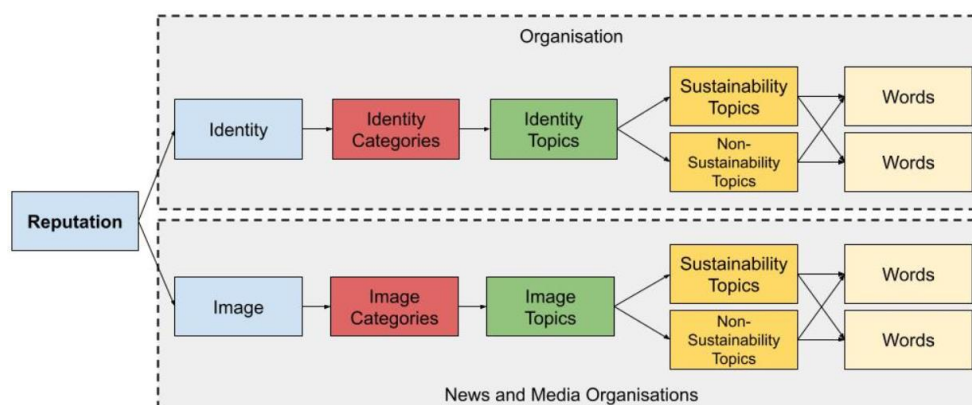


Figure 5: Operationalisation of the concept of reputation.

## Data Analysis

The collected data consist of qualitative data. For this study content analysis is used to analyse the large bodies of textual data. Content analysis is an approach that focuses on inferencing and interpreting communication data (Bryman, 2016). This can be done manually or by using computer software. In this study machine learning was used to analyse qualitative data and generate quantitative outcomes (Altaweel, Bone & Abrams, 2019). The software program RStudio, which is a software environment for statistical computing and graphics, is used to perform the content analysis (R-Project, 2020). The following packages are used during the content analysis and plotting visualisations: *quanteda*; *ldatuning*; *tm*; *stm*; *topicmodels*; *wordcloud*; *stringr*; *tidytext*; and *ggplot2*.

Due to the emerging availability of large bodies of data it becomes more difficult to identify what is important and needs to be considered texts. Instead of focusing on predefined topics, topic modelling helps to organise, search, and identify all topics (Blei, 2012). In this way a non-biased and more representative projection of all topics that are included in the text is presented. The identification is done by statistical methods that analyse texts and determine the topics that run through and connect different texts. The result of the topic modelling are all detected topics, which are based on particular words or a combination of words, and their frequency of appearance (Blei, 2012). The goal of this study is to identify the influence of sustainability on the reputation of sport events. By the use of topic modelling possible sustainability related topics can be identified. Besides, other non-sustainability topics can be identified. Analysing these topics, by the use of different LDA packages in RStudio, leads to the identification of different topics, the influence of topics on the corpus, and possible relatedness between them. In addition, these topics are categorised manually based on interpretation of the researcher, which can be seen as a qualitative analysing method. By the identification of the importance of the categories and underlying topics, including relationships among them, the research question can be answered.

## Topic Modelling Process

There are various methods for topic modelling, all with their own specific use. One of the most used and popular methods is Latent Dirichlet Allocation (LDA)(Jelodar et al., 2018), which is also used in this study to analyse the collected data. In figure 6, the topic modelling



process is shown. This process includes a preparation phase, besides that, the optimisation phase and visualisations and analysis are displayed.

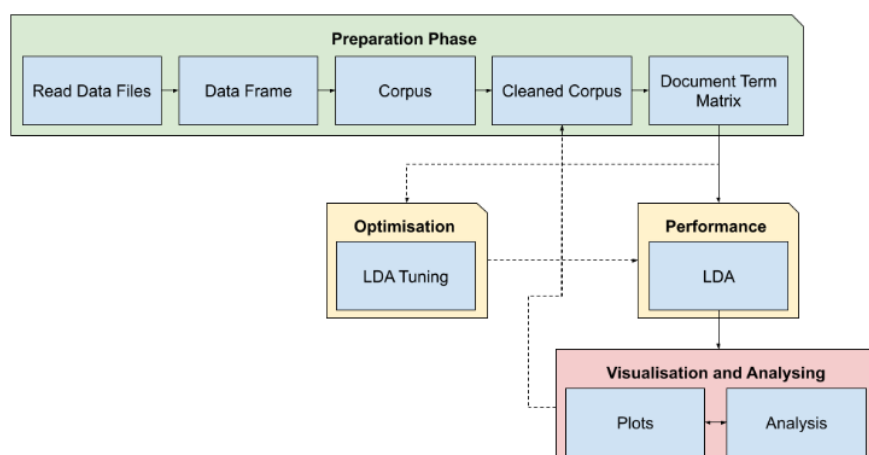


Figure 6: Topic Modelling Process.

Before the data is ready for LDA, it is converted and cleaned. The first step in this process is to read all the text documents into RStudio. Out of these documents a data frame is created with all the documents in it. Out of this data frame, a corpus is created which creates the base for a document term matrix. But before this document term matrix is created the corpus is cleaned. This cleaning specifies different aspects, firstly the punctuation and whitespaces are removed. Secondly, all capital letters have to be lowered because RStudio identifies a letter and a capital letter as two separate identities. Lastly, 'waste' is removed, such as stop words, single letters, abbreviations, and names and trademarks included by Nexis Uni. This cleaned corpus is then transformed into a document term matrix. This document term matrix is a table with in the first column the name of the document, followed by a column for every specific term that occurs in a document. Due to the structure of this table, in combination with documents that consist of hundreds or thousands of words this can be an enormous table. Subsequently, RStudio uses this document term matrix to identify different terms and the frequency of these terms per document.

Because a LDA will not identify the number of topics on its own it is required to insert the number of topics manually into the LDA. It is hard to identify the most optimal number of topics for a dataset. Methods like trial-and-error are time consuming, are influenced by the researcher, and leave a lot of space for discussion. A more reliable and objective method is LDATuning which is based on prior research that specifies four methods to identify the optimal number of topics (Griffiths & Steyvers, 2004; Cao, Xia, Zhang & Tang, 2009; Arun, Suresh, Veni Madhavan & Narasimha Murthy, 2010; Deveaud, SanJuan & Bellot, 2014).

Out of this LDATuning a graph can be composed (figure 7), which visualises the results of all four methods. The values of the Arun (2010) and Griffiths (2004) methods should have a value as low as possible, while for the CaoJuan (2009) and Deveaud (2014) methods the opposite applies, these values should be as high as possible. In the figure below the LDATuning plot of external data of the FIFA World Cup is visualised. At the top of this graph the two methods that together should be as low as possible are shown, contrary, the two methods that should be as high as possible are on the bottom.

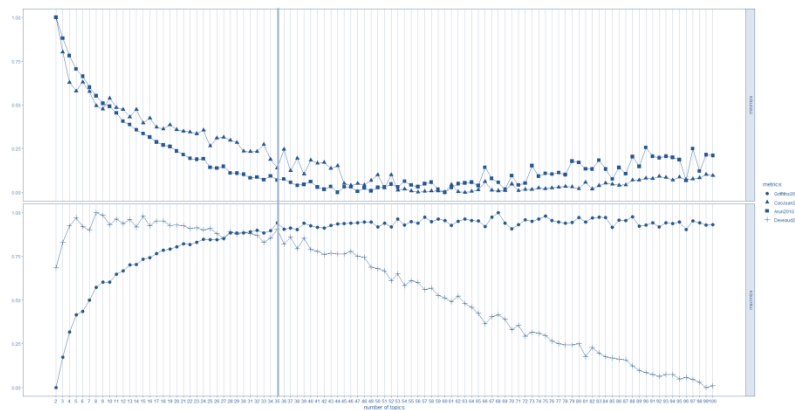


Figure 7: Plot of LDATuning FIFA World Cup External Data.

Based on the values of the four methods, there is a certain point on which the four methods combined are at their optimal point. This point is addressed, in figure 7, with the vertical line. As stated, this is the most optimal point of all four methods together which can differ from the optimal point of a specific method. Even though there are differences in optimal number of topics per method, the combination of these four can be seen as solid and accurate (Moore, 2020). The optimal point resembles the number of topics that can be used as input for the LDA. This LDATuning is performed for the internal and external datasets of every sport event, resulting in eight tables from which the optimal number of topics can be determined (Appendix 1). Even though the use of the LDATuning method, some topics were undefinable and could not be related to a certain category. The appearance of these undefinable topics is very common in topic modelling since there is a difference in what a software program identifies as a topic, based on for instance algorithms, and what humans do (Hu et al., 2013). Even by influencing the number of topics, based on trial-and-error, these topics are appearing to a greater or lesser extent. Because of this, LDATuning is used as a benchmark for the number of topics. The optimal number of topics of the sport events' internal and external dataset is shown below:

Table 2: Optimal Number of Topics of Every Sport Event.

Optimal Number of Topics		
Event:	Internal:	External:
FIFA World Cup	28	35
Summer Olympics	21	38
Tour de France	18	34
Wimbledon	16	40

When the LDA is performed numerous different plots can be made to analyse. One of the most important plots is the one that shows the top 'N' words of a topic. Besides, plots like word clouds and topic coverage of the corpus can be visualised. During the analysis of these visualisations, mistakes (e.g. combined words, leftover interpunction) that occurred have to be removed from the corpus. By looping back from the visualisations and plots to cleaning the corpus a flawless corpus can be created which makes the results more interpretable.

### Visualisation and Analysing

The analysis of the plots and visualisations are the base of the results of this study and supported answering the research question. Below a short elaboration on the methods, which are used during the analysis, is given.

First of all, to better understand the data it was necessary to categorise all the internal and external topics, this is done by analysing the top hundred words of every topic and labelling them. These categories include topics which are not identical to aspects that are used to classify organisations but are in some cases strongly related. In this way, nine different categories are created, which are shown and shortly explained below:

- **Sustainability:** This category includes topics which can be related to the social, environmental, and economic aspect of sustainable development (e.g. environment, stadiums, code of ethics, doping).
- **Sport:** Includes all topics that are, in a broad way, sport related (e.g. competition and athletes).
- **Organisation:** Topics in this category are linked to aspects about the organisation of the event such as different committees, ticketing, and programs.
- **Fans:** Related to aspects considering fans, such as fans zones and completions and games in which fans could participate.
- **Regulations:** Topics that are about regulations that need to be addressed before, during, and after the event are included in this category (e.g. new regulations of games and referees).
- **Sponsoring:** This category includes topics about commercial aspects and mainly sponsors of the sport event.
- **Broadcasting:** Includes the topics that are related to broadcasting information of the sport events such as broadcasts, broadcasters, and presenters.
- **Politics:** This category is about politics outside of the event and is mainly about national politics.
- **Undefinable:** Topics in this category are undefinable and cannot be related to one of the above categories or can create a category on their own. The appearance of these topics is common in topic modelling since humans cannot interpret all topics which are made by a software program. Despite this fact, these topics do not have to influence the results (Hu et al., 2013).

After categorising the internal and external topics, the percentage a category covers of the whole corpus must be identified. Looking at the number of topics in a category can distort the results. Since a category that includes five out of twenty topics will have a coverage of 25 percent off all topics. However, when looking at the coverage every topic has of the corpus, and thus the number of documents, this can be a significantly higher or lower percentage. Including the coverage of the corpus of every category gives a better understanding of the dominance and thus the importance of a category. This analysis is done based on a graph that is composed with the software program RStudio (figure 8). Based on this graph the coverage of every topic can be determined. The topics that are included in a category are combined, all topics combined together represent the coverage of the corpus of this specific category. All categories together are responsible for a hundred percent coverage of the data corpus.

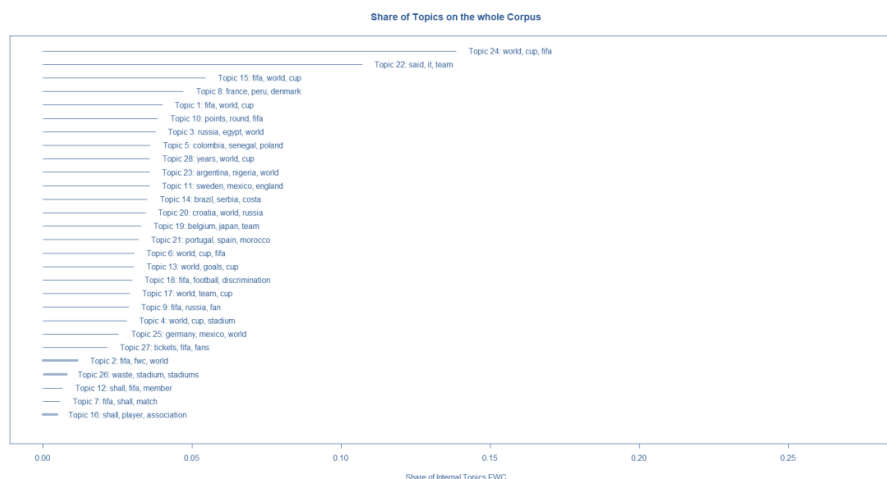


Figure 8: Share of the data corpus per topic of the internal data FIFA World Cup.

After analysing the coverage of all topics and categories an extra dimension is given through identifying the coverage of sustainability related aspects in the internal and external data. This is done by searching for the frequency of occurrence of sustainability related words in both data corpuses. Because there is no standard wordlist of sustainability related words that can be used for this analysis, two wordlists are composed. One of these wordlists is composed out of all sustainability topics that occur in the internal data. Only words that can be associated with sustainability are included which means that 'waste' such as non-sustainability related words are neglected since these can distort the results. This internal list of sustainability words consists of 143 words. The second list consists of sustainability related words based on external sources (Appropedia, 2021; Going Green, 2021; Related Words, 2021). This wordlist can be seen as more objective since it is composed of multiple wordlists from different sources. Besides there is no influence of the defined sustainability topics such as in the internal wordlist. The external list of sustainability words consists of 620 words. Using both, internal and external wordlists, gives a general overview of how frequently sustainability related terms are used. Both lists result in an average number of sustainability words per document. The use of both lists gives a more objective view on the number of sustainability words. In this way conclusions can be drawn about the influence of sustainability related words.

To indicate possible relationships between topics a co-occurrence analysis is made. There are three different steps in this analysis. First of all the articles in which the sustainability topics are included are selected. This is done by selecting the documents in which the sustainability topics are included for 25 percent or higher. This number was arbitrarily chosen since there are no specific guidelines on when a topic can be considered as a topic. This threshold is identified through the use of trial-and-error. By analysing the documents for the thresholds of 10 percent, 25, percent, and 50 percent it can be stated that the 25 percent is the most appropriate. When the threshold is lower, the topic dissolves in smaller documents and contrary a higher threshold results in a majority of topic-specific documents. After the selection of the documents in which the sustainability topics are present the co-occurring topics can be found. This is done by selecting another threshold, namely from 10 percent or higher. The same applies to this threshold as for the other one, it is selected by trial-and-error. Thresholds of 5 percent, 10 percent, and 25 percent are used, out of which the 10 percent threshold is most applicable for identifying co-occurring topics. For the 25 percent

threshold only a very limited number of other topics occurred in the documents. This number became significantly higher with the 10 percent threshold, which creates a better illustration of possible relationships between topics. The number of topics that occurred by using the 5 percent threshold did not significantly increase. The latter combined with the fact that it is hard to manually identify a topic that only covers five percent of a document, this threshold is not sufficient. Because of this, the 10 percent threshold is used to identify co-occurring topics. These co-occurring topics are subsequently analysed to find the category to which these belong. The number of occurrences and category of this topic could possibly identify relationships between sustainability topics with other (non)sustainability topics.

### **Research Quality Criteria**

To determine the quality of a research, the concepts of reliability and validity are most commonly used. Research that focuses on qualitative data considers internal and external validity and reliability, while in a multi-case study only external and measurement validity and reliability are considered as most important (Bryman, 2016). Due to the involvement of personal biases of the investigator, which could potentially influence the reliability, during the selection of cases different criteria and sources are used as verification (Ekanayake, 2015). By using this approach it tried to minimise the influence of biases on the case selection. The external reliability is about the replicability of the research, which can be very difficult for multi-case studies, but can be assured to a certain level by documenting the critical steps and aspects along the research (Ekanayake, 2015; Bryman, 2016). During this study, critical aspects in the data collection and analysis phase are documented. This includes aspects concerning the case selection, sampling strategies, and analytical choices. In addition, aspects such as search criteria, terms and filters, and choices in sampling are documented. Using this documentation, the research will be replicable for the exact time spans and cases.

The generalisability of the results is captured in the external validity, which tends to be difficult in multi-case studies (Ekanayake, 2015; Bryman, 2016). Because of the objective of multi-case studies, including this study, to in-depth investigate certain processes, generalisability is not essential and cannot be fully assured (Bryman, 2016). To assure this generalisability to some extent only events with a certain number of views and difference in time cycle are selected. Due to the inclusion of the different time cycles the results are to some extent generalizable for mega sport events.

Because of the use of topic modelling during the data analyses the measurement validity can be questionable (Bryman, 2016). The topics resulting from this method could not be representative to the topics that are discussed in the real world or are not related to the concept that is measured. To ensure the measurement validity, the data collection is critical. Because of this, only two sources are identified that are most influential on the identity and image and thus reputation, which are the organisations of sport events and news and media organisations. Additional, the data is collected based on different criteria. Because of this, only the data that can be directly linked to the concept that is analysed and the selected sport events is collected. This specification helps to ensure that what has to be measured is measured and thus ensures the measurement validity to a certain extent.

## Results

A general overview of the main results, found in this study, are shown in figure 9. This overview is followed by an in depth representation of the results per sport event. The section ends with a comparison of the results of all the sport events to identify (mis)matches between them.

In the overview below four results can be found. First of all the total number of internal and external topics, as well as how many of these topics are sustainability related for every sport event. Besides this, the figure shows the distribution of sustainability topics over the three main sustainability dimensions: social, economic, and environmental. Furthermore, the topics that most often co-occur with sustainability topics in the documents are shown, which indicate what topics are related to sustainability in the formation of reputations of the sport events. Last, and most important, the share of the most important topics (sport, organisation, and sustainability) for building the reputation of sport events is shown.

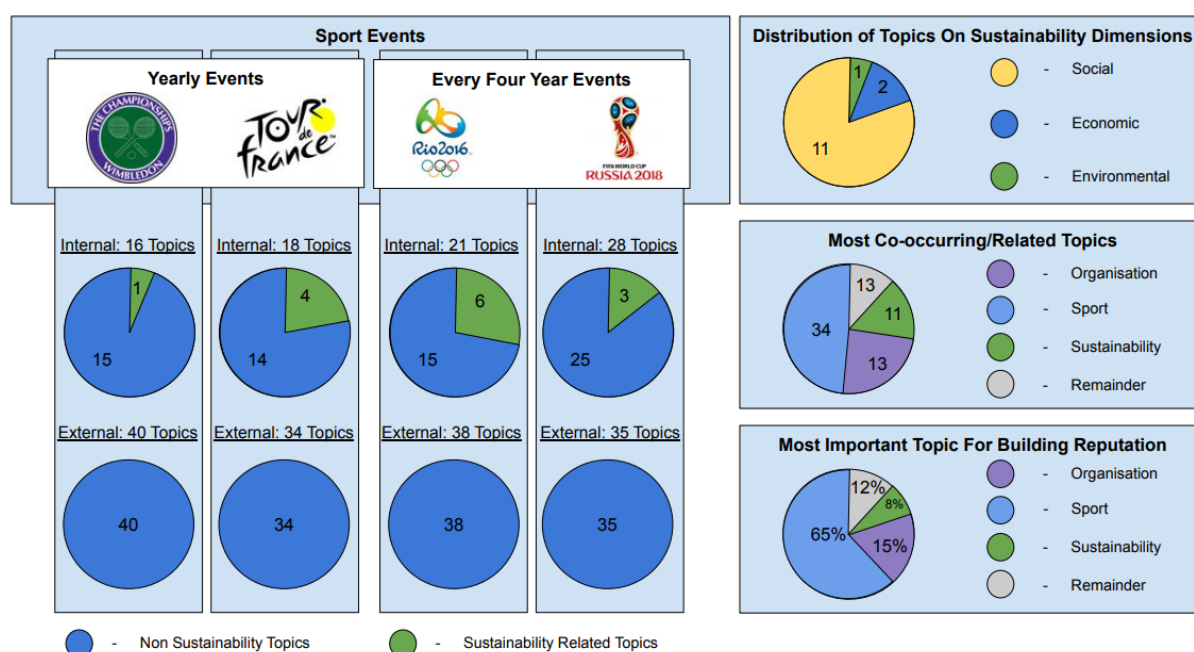


Figure 9: Overview of the Sustainability Topics, Related Topics, and Most Important Topics for Reputation.

When it comes to the internal topics it can be seen that every sport event has a minimum of at least one and a maximum of six topics that is related to sustainability. The event with the most sustainability related topics is the Summer Olympics. One or multiple topics related to sustainability could indicate that the organisation of the events publish website articles and reports about sustainability and thus take sustainability into consideration in their identity. On the other hand, regarding the external topics, none of the topics is related to sustainability in any other way. Because all external data originates from media and news organisations it indicates that these organisations do not, or in very minimal numbers, publish articles regarding sustainability or aspects related to sustainability. Due to this it can be concluded that sustainability is not examined in building the image of sport events.

To further examine if sustainability is included into the external data two wordlists are used to actively search for the topic. In order to do so, two lists are used based on the words used in the sustainability topics in the internal data and one based on external sources. Even when the list of sustainability words are used to explicitly search for sustainability words throughout



all the documents to detect sustainability topics, hardly any results came up. When it comes to the wordlist based on internal data the average document is only covered for 1.5 percent with sustainability words, while for the wordlist based on external sources this percentage is only 2.4 percent. Based on this, it is almost impossible to compose sustainability related topics. This shows an interesting finding in how the reputation of these sport events is constructed. Where the events are to some extent including sustainability in their identity, the media and news organisations seem not so much concerned with evaluating these events, and thus influence their image, in terms of sustainability. This already shows an interesting finding in how the reputation of these sports events are constructed.

To identify the most important topics for building the reputation of sport events all categories of all events are added to each other and compared. In this way it can be stated that, unsurprisingly, the sport category is most important and influential on the reputation of these events. The second most important category is the organisation category. Almost half as important as the organisation category is the sustainability category. This means that this category is the third most important and influential on the reputation, although it is very limited compared to the sport and even to the organisation category. Besides that, the remainder consists of the politics, broadcasting, sponsoring, fans, regulations, and undefinable categories. All these categories have a share of one or two percent coverage except for the undefinable topics that cover seven percent.

Analysing the sustainability topics in specific, it can be stated that the social dimension is the most dominant. The economic and environmental dimensions are only minimally represented in these topics. From this can be concluded that the social dimension is seen as the most important by sport events themselves, this reflects the trend of the sport industry at large but is contrary to the concept of corporate sustainability. Besides that, these sustainability topics are strongly related to three types of topics, namely sport, organisation, and other sustainability topics. This can be seen as an unsurprising finding since these are, as already stated, the most dominant topics. The remainder consist of the fans, broadcasting, regulations, and undefinable categories. The broadcasting category only has one co-occurrence, where the fans and regulations have three. The undefinable category has six co-occurrences.

### **FIFA World Cup**

Out of the data of the FIFA World Cup there are 28 internal and 35 external topics determined. Only three internal topics out of 63 topics in total are sustainability related. To understand what these topics are about a word cloud is composed. These word clouds are a visual representation of the topics and are constructed out of the most frequently used terms of the topic.





Figure 10: Topic 3.



Figure 11: Topic 18.



Figure 12: Topic 26.

The first topic (figure 10) is an all encompassing topic which is mainly focussing on the environmental dimension and includes aspects from green-house-gasses, climate, and emissions to stakeholders, food, and waste. The second topic (figure 11) is mostly related to the social dimension including aspects such as diversity, discrimination, LGBT, incidents, and change. The last topic (figure 12) is related to the construction, buildings, and environmental impact of the event. It specifically focuses on the stadiums that are used during the event and the management of for instance energy, water, and waste. Besides that, building materials and terms related to building with and using these materials as sustainable as possible can be found. Last but not least, a certification method for sustainable buildings, namely BREEAM, is present in the word cloud. Two out of three topics are focussed on the environmental dimension. This is logical since organisations tend to report about sustainability practices to counteract their impacts, such as the impact of constructions of new stadiums. Twelve stadiums were used during the event, of which seven are newly built and two are extensively redeveloped (FIFA, 2020). Since this has the most impact and is most influential on the three dimensions it is expected that the main focus, of the sustainability topics, is on the environmental dimension and even includes a topic specified on the stadiums.

Now that it is known that there are three sustainability related topics, which only occurred out of the internal data, it is essential to indicate what the non-sustainability topics are about. The internal and external topics are divided into six categories which are created based on analysing all internal and external topics. These categories are: Sustainability; Regulations; Organisation; Fans; Sport; Sponsoring; and Undefined.

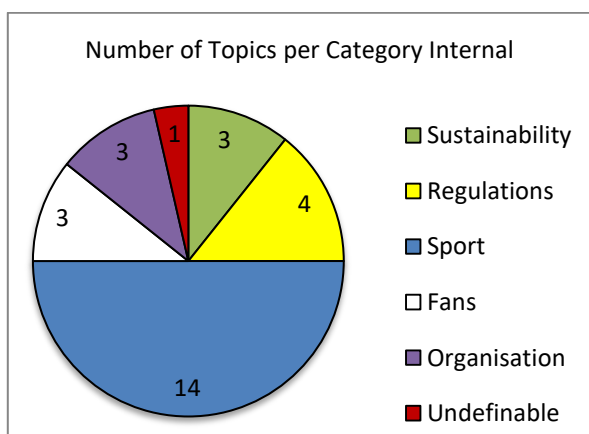


Figure 13: Number of Topics per Category Internal FWC.

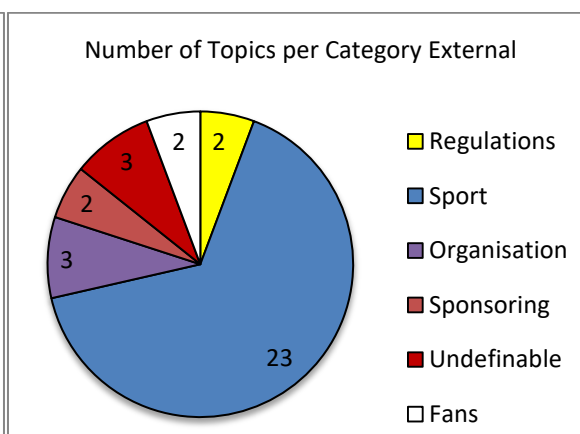


Figure 14: Number of Topics per Category External FWC.

Out of these categories the sport category is the most dominant for the internal as well as external data. This category is followed by the organisations, fans, and regulations categories, with almost all equal numbers of topics in the internal and external data. Besides that there are four topics, one for the internal data and three for the external data, that are undefinable. What is noticeable, comparing the internal and external categories, is that there are two categories which only occur out of the internal or external topics. Internal there are three topics that are related to sustainability whether this category does not occur external. The other way around applies to the sponsoring category which only occurs external.

To avoid distort results and to better understand how these categories, and in particular the sustainability category, are contributing to the whole corpus it is important to express them into percentages. The percentage of every internal as well as external category can be seen below.

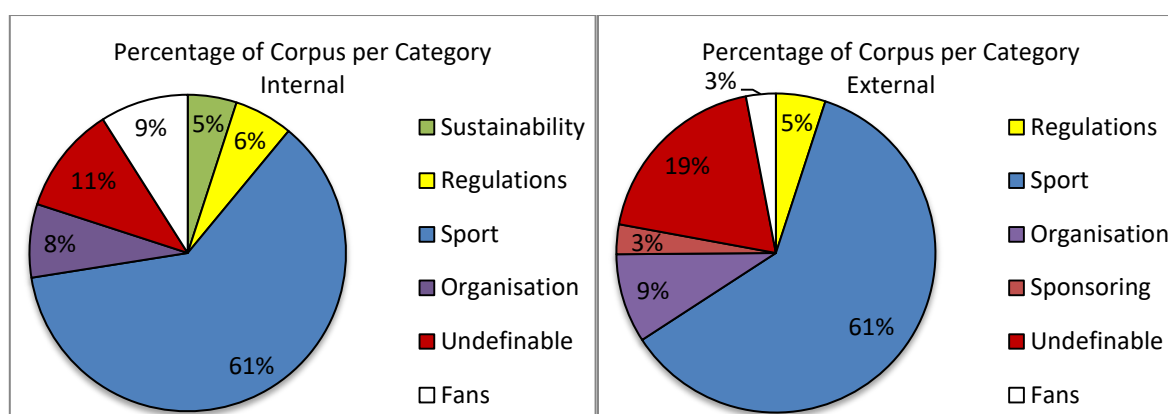


Figure 15: Percentage of Corpus per Category Internal FWC. Figure 16: Percentage of Corpus per Category External FWC.

The sport category has an equal share in the internal and external data, both 61 percent, which makes it the most dominant category. This shows that the organising event and the news and media organisations agree on the importance of the sport topics. The sport category is followed by the organisations, fans, and undefinable category which have a respectable share in both internal and external data corpus. Even though the sustainability category has a eleven percent share when it comes to the number of topics, it only has a share of five percent when it comes to the contribution to the internal data corpus. Because of this, the importance of sustainability is considered limited by the organisation of the FIFA World Cup, even though their huge impacts on, especially, the environmental dimension.

To get a further understanding of how these categories and thus topics are related to each other the co-occurrence of the topics in articles is measured. The chart below shows all the topics that co-occur with the sustainability topics in the internal documents for the FIFA World Cup. In this way, on forehand invisible, relations between sustainability topics and other topics are made visible.

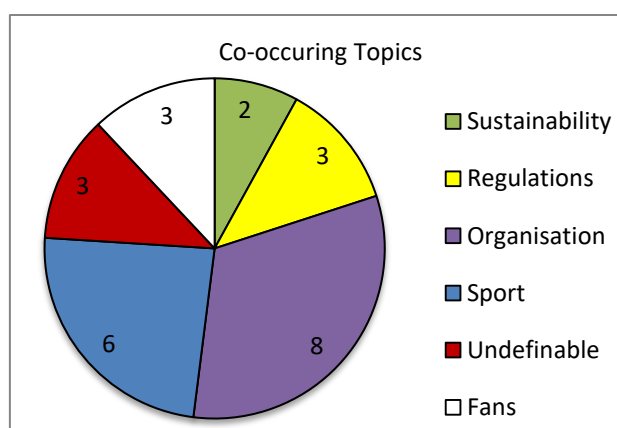


Figure 17: Co-occurrences Sustainability Topics FWC.

In the articles that are related to the sustainability topics the topics inside of the organisation category are mostly co-occurring. As shown above, this is not the largest category, but it is when it comes to co-occurrences with sustainability topics. So, there seems to be a relation between the sustainability topics and the organisation topics of this event. This relation can be related to the focus on the environmental dimension and the subjects that occur in the topics. Since these are focussed on the impacts around the event and the stadiums it is conceivable that aspects related to the organisation are discussed together with sustainability topics. Further, sustainability topics are related to other sustainability topics, fans, and to the regulations category that all contribute to a relatively small share of the corpus but have a relatively bigger share when it comes to co-occurrences. The sport category has six co-occurrences which makes it the second largest and thus indicates a relationship.

The co-occurrences can be characterised as diverse since it includes six categories. This diversity refers to documents that have the same characteristics. It can be concluded that the FIFA World Cup, identical to sport events in general, does not dedicate reports or publications specific to sustainability aspects, but these are always discussed in conjunction with other topics. Besides, considering the dominant share the sport topics have in the total corpus, it is quite clear that sport topics are not regularly discussed in combination with the sustainability topics. This suggests that the dominant role of the sport as a topic in the reputation building of FIFA World Cup might be one of the reasons why sustainability is only discussed to a limited extent and not at all in the external data.

### Summer Olympics

The data corpus of the Summer Olympics is built out on 21 internal and 38 external topics. Again, only in the internal topics sustainability related topics are identified. Here, six different sustainability topics are identified out of a total of 59 topics. To identify what these topics are about, a visual representation in the form of a word cloud is made.

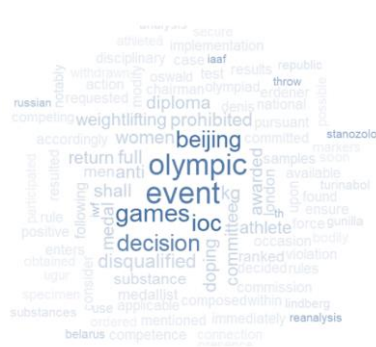


Figure 20: Topic 11.

[illegible]

Figure 23: Topic 18.

32

accommodating spectators and athletes had to be built, increasing the environmental impact. However, Rio de Janeiro submitted its bid to host the Summer Olympics including a lot of environmental objectives and sustainability practices such as improving water and air quality, renewable energy use and management, and soil protection, among others. It could be due to these precautions and statements that the internal data does not consist any environmental related topics. However, it is surprising that while the bid did include environmental objectives, this does not return in the internal documents of this analysis.

With the insight of what these sustainability topics are about, it is important to indicate where the non-sustainability topics are about to invent, where the whole corpus is about and how these categories do relate. Out of the analysis of all the internal and external topics are eight categories created: Sustainability; Sport; Organisation; Fans; Sponsoring; Regulations; Politics; and Undefinable.

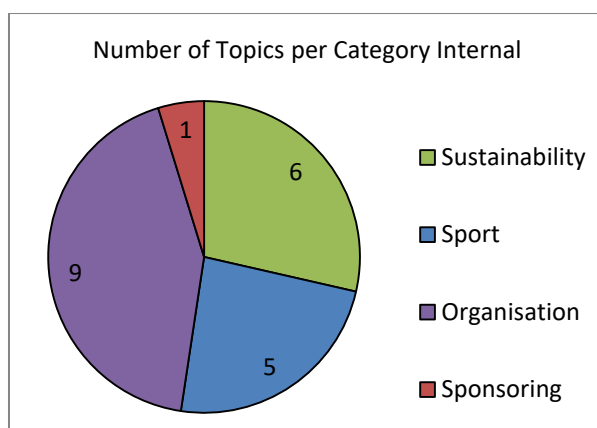


Figure 24: Number of Topics per Category Internal SO.

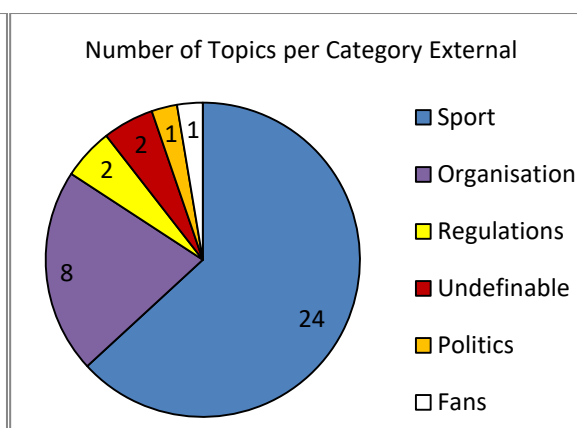


Figure 25: Number of Topics per Category External SO.

The organisation category is the most dominant in the internal data followed closely by the sustainability and sport category. For the internal data it can be stated that the sustainability category is quite dominant when it comes to the number of topics and even has more topics than the sport category. The smallest category in the internal data is the sponsoring category including one topic about the commercial aspects and sponsors of the event. Externally the sport category is the most present with 24 topics out of the 38. This category is followed by the biggest category of the internal data which is the organisation category which has internal and external almost the same number of topics. To complete the external data there are two topics related to regulations, one related to politics, and two are undefinable.

To indicate how the topics are related to each other in terms of corpus coverage the topics are visualised into percentages of the corpus. In this way it can better be understood how dominant a category and thus its topics are and contrary how important a category is for the total corpus.



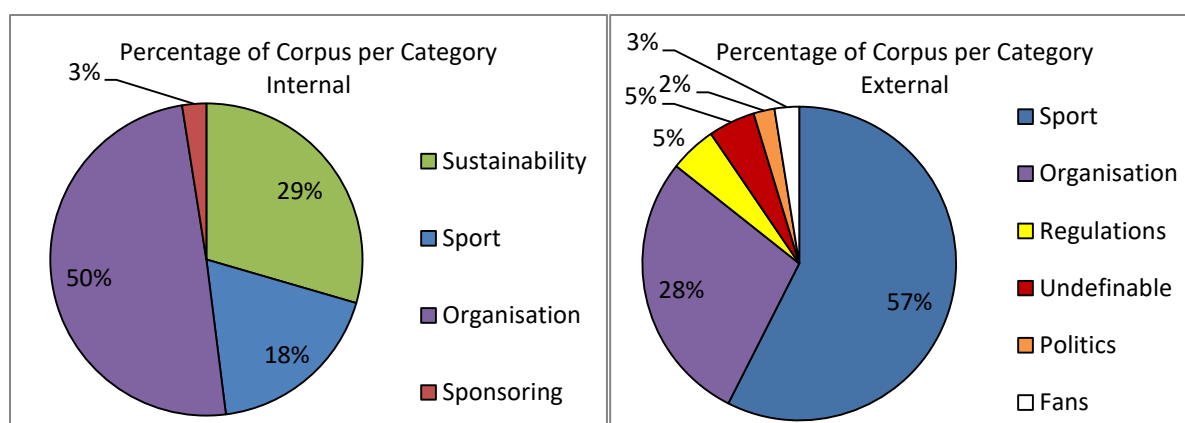


Figure 26: Percentage of Corpus per Category Internal SO.

Figure 27: Percentage of Corpus per Category External SO.

When it comes to the internal data corpus, the number of topics and the percentage of corpus coverage of these topics is almost identical. The share of the organisation and sustainability category are slightly larger whether the sport category is slightly smaller. This means that the organisation category is the most dominant category in the internal data corpus followed by the sustainability category. The sustainability topics have a large impact on the whole corpus with an inclusion in 29% of all documents.

The same accounts for the external data corpus as for the internal data corpus, which means that there are only slight differences between the share of the number of topics and the percentage these categories cover of the whole data corpus. In the external data corpus the sport category is the most dominant one with covering 57% of the corpus. Second largest is the organisation category followed, with distance, by the regulations, fans, and politics categories which both are covering five or less percent of the corpus.

There are some interesting findings when it comes to the shares of all categories. First of all, the organisation of the Summer Olympics considers the aspects about the organisation and sustainability as more important than sport aspects regarding their identity. This differs from the majority of sport events which consider the sport related topics as most important. Besides that, there is a mismatch between the importance of these sport topics for the internal data and the external data. This suggests that the news and media organisations consider that these topics are most important and interesting for their viewers, which is common when it comes to publications about sport events. Lastly, sustainability is considered even more important than the sport topics by the organisation of the Summer Olympics. This makes it even more surprising that news and media organisations neglect these sustainability aspects.

Since there is insight in the importance and percentage every category covers of the corpus a better understanding of how the sustainability topics are related to other topics. This is done by a co-occurrence analysis which could indicate possible relations between topics due to their simultaneous occurrence.



## Tour de France

competition  
commission  
hearing degradation  
means established  
procedural confirmation  
comment finding matter accordance  
right provided tribunal prohibited disciplinary  
following samples  
part substance  
timeways use  
person cde  
cases report  
expert establish  
laboratory  
respect informed  
request  
advice  
violation shall can follows athlete  
filed joint presence advr evidence or  
assessment boer suspension provisional  
activity provides possible  
endogenous microbial  
therefore  
documentation

Figure 30: Topic 7.

The first two topics (figures 29 and 30) are both related to the anti-doping programmes of the organisation. Aspects like the conviction of athletes and the process to get to this conviction come forward. This can be seen because of the words like committee, control, and



[illegible]

Figure 32: Topic 16.

The third topic (figure 31) is related to the code of ethics of the Tour de France. Aspects like commission and procedure are related to maintaining these codes. On the other side possible aspects that are covered in this code like integrity, sexual, disciplinary, rules, and manipulation are mentioned. Last but not least aspects that refer to preventing unethical behaviour are mentioned with words as address, violation, and evidence, among others. The fourth (figure 32) and last topic is related to the economic impact the event has locally. Aspects like visitors, spending, major, impacts, boost, and activity are related to the actions that take place when the event is occurring in a particular location. This topic is focussing on the economic dimension of sustainability by returning economic benefits when going to various locations. It is not surprising that three out of four topics are related to the social dimension, considering the trends in the last decades in the Tour de France. Doping is a recurring topic with a lot of cyclists and teams convicted. Especially because of this negative aspect, the organisation increased efforts to ban doping from its competition, resulting in significant less doping cases in the last years (Business Insider, 2018). Alongside, the environmental impacts of the Tour de France are probably small compared to other events such as the Summer Olympics or FIFA World Cup. Even though, the organisation is trying to reduce their environmental footprint by driving hybrid cars, and reducing plastic use and pollution by litter, this cannot be identified as an important topic from the data.

With the insight on what these sustainability topics are about a closer look on the non-sustainability topics can be made. By categorising these topics an overview is created of the internal and external corpus and the number of topics per category. The following categories are used to divide the internal and external topics: Sustainability; Sport; Organisation; Fans; Sponsoring; Broadcasting; and Undefinable.

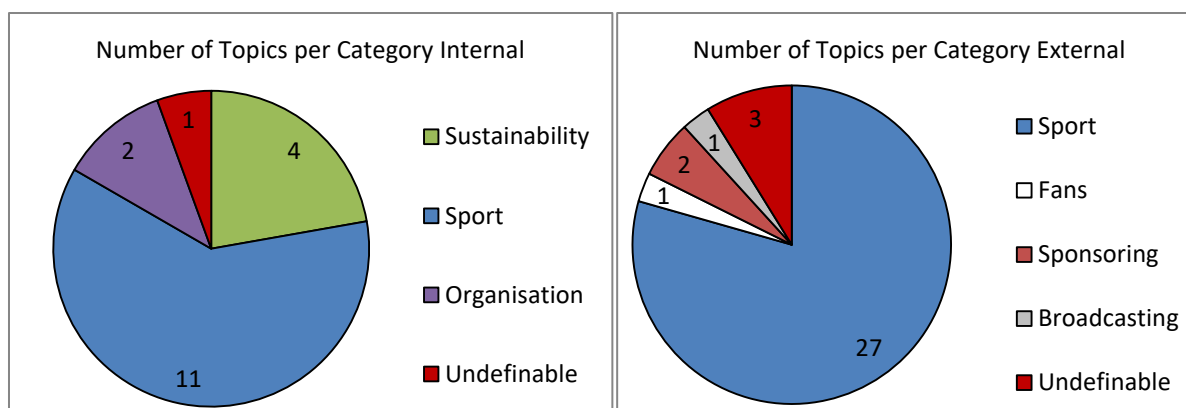


Figure 33: Number of Topics per Category Internal TDF.

Figure 34: Number of Topics per Category External TDF.

In both the internal and external data corpus the most dominant category is the sport category. The second largest category in the internal data corpus is the sustainability category followed by the organisation category. It can be concluded that the internal corpus only consists of three categories, which is low compared to other events, and most topics are sport related. In the external data corpus the share that is not covered by the sport category is filled by the sponsoring, broadcasting, undefinable, organisation, and fans category. What can be stated is that for the external documents the focus is mainly on sports and when not, the focus is on commercial dimensions of the sport event.

To indicate if the importance and dominance, based on the number of topics in a category, of these categories is legitimate the percentage these cover of the corpus is visualised. This is done for the internal data corpus as well as for the external data corpus.

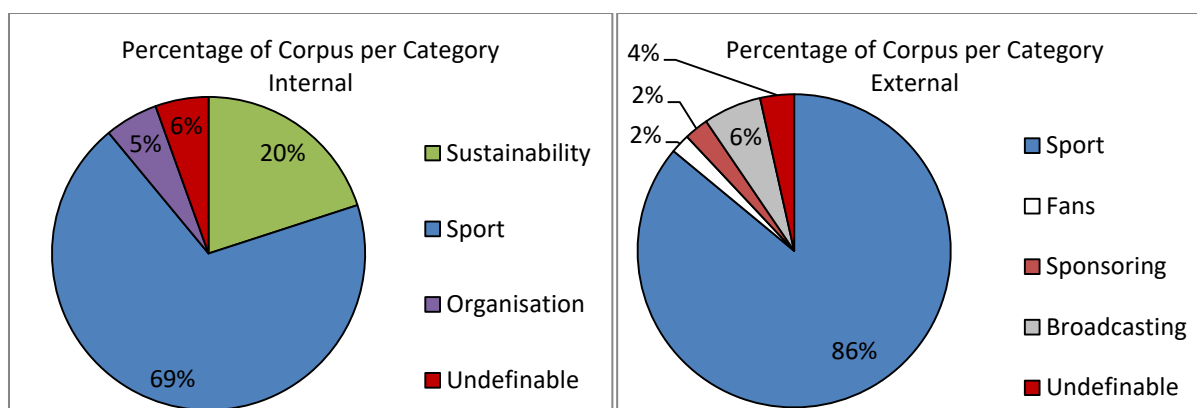


Figure 35: Percentage of Corpus per Category Internal TDF.

Figure 36: Percentage of Corpus per Category External TDF.

What can be seen is that the sport category has taken a slightly bigger share, internal and external, when it comes to corpus coverage than when it comes to the number of topics in the category. This makes the sport category an even more dominant category for the reputation of the Tour de France. Another category that has a larger share is the broadcasting category with only one topic but occurring in six percent of the corpus, it is a relative strong topic. All other categories, internal as well as external, have lost a part of their share or stayed almost the same. The category that lost little relative to other internal categories is the sustainability category. The sustainability topics occur in one fifth of the corpus which makes them relatively dominant, besides the sport category, in the internal documents. So, the organisation of the event considers sustainability as an important topic in

their identity, whether media and news organisations do not even publish or in very limited numbers about these topics. Even though there is a match between the importance of sport topics between the internal and external corpus, there are mismatches when it comes to sustainability and commercial related topics (e.g. broadcasting and sponsorship), with the latter only included in the image. This mismatch can be seen as an interesting finding. While the organisation of the Tour de France focusses, to some extent, on sustainability, news and media organisations are interested and publishing about commercial aspects to a larger extent than the organising event itself.

To indicate possible relations between sustainability topics and other non-sustainability topics the co-occurrence of other topics is analysed. Topics that occur more often in articles that are dominated by sustainability topics are more likely to have a connection.

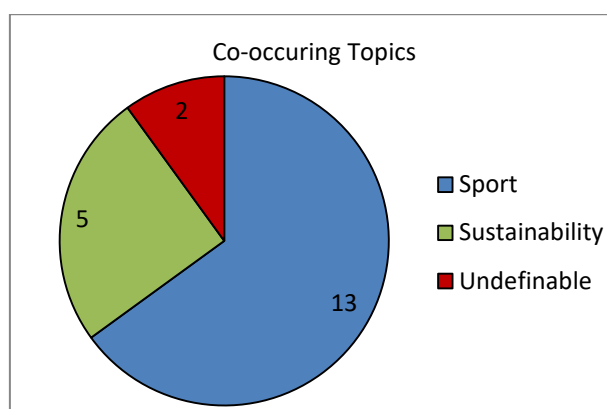


Figure 37: Co-occurrences Sustainability Topics TDF.

In the articles that are dominated by the sustainability topics are specific documents on sustainability or sustainability in combination with sport. The most co-occurrences in these documents come from the sport topics. This can have multiple reasons. Firstly, two of four topics are related to doping, so are strongly related to the sport itself. Because of this and the fact that the sport category is very dominant relative to other categories in the coverage of the corpus, it is not remarkable that these two categories occurred a lot together. Alongside, topics from the sustainability category itself occur often in documents that are dominated by other sustainability topics. This is not surprising since topics in the same category are more likely to occur with each other. Because of this it can be stated that sustainability topics have a strong relation with other sustainability topics. What is noticeable is the absence of organisation topics in the articles, since this category could have a possible relation with the code of ethics topic or the economic related topic. Especially because the economic related sustainability topic has some organisational elements in it, it would be likely to occur with organisation topics.

### Wimbledon

Out of the 56 determined topics of Wimbledon only one can be categorised as a sustainability related topic. This topic is part of the sixteen internal topics which means that none of the 40 external topics can be identified as a sustainability related topic. A visualisation of the most frequently used terms of this topic is shown below (figure 38) to analyse what this topic is about.



Figure 38: Topic 4.

The only sustainability related topic is related to the Wimbledon Foundation. This is a charity that is focussing on the social dimension of sustainability. Terms like support, community, donated, programme, and fund are closely related to the foundation itself. The target segments of this foundation can be identified due to words like youth, family, primary, and school. Besides, the goals can also be identified because of words like health, training, learning, coaching, mental, and wellbeing. This sport event has the least number of sustainability related topics and only focuses on the social dimension. Even though Wimbledon probably does not have major environmental impact such as other events, like the FIFA World Cup or Summer Olympics, it also does not publish (much) about sustainability practices related to the environmental and economic dimension. Besides that, it is remarkable that they only publish about social aspects outside of the event and neglect these aspects during the event, especially because for almost all other cases it is found that they do take this in consideration (mostly through their code of ethics).

To get a better understanding about how this sustainability topic relates to others and what other topics there are categories has been made. This is done based on analysing every specific topic. The categories that occurred in the internal and external data of Wimbledon are: Sustainability; Sport; Broadcasting; Organisation; Fans; Sponsoring; and Undefinable.

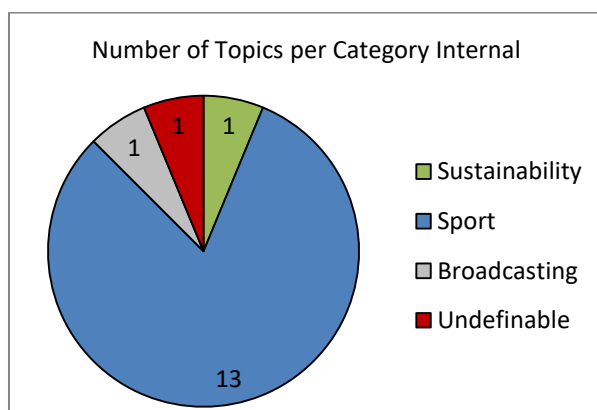


Figure 39: Number of Topics per Category Internal W.

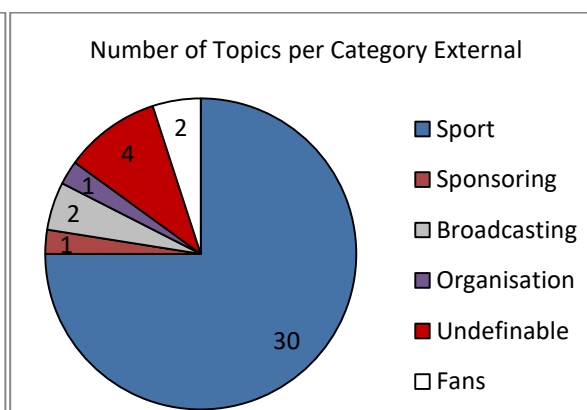


Figure 40: Number of Topics per Category External W.

The sport category is in both, internal as well as external, data corpus most dominant with a coverage of 75 percent of all topics or even more. Wimbledon is the event in which sport topics are most dominant, especially when compared to the other three events. For the internal corpus the other share is covered by one sustainability related topic, one broadcasting related topic, and one undefinable topic. This shows that for the internal data corpus the sustainability category has very little impact, especially in comparison to the sport

category. Externally the remaining topics are included in the broadcasting, sponsoring, organisation, and fans category. Which indicates that besides the sport topics the commercial aspects are important when it comes to documents published about Wimbledon.

To get a better understanding of the importance of these categories the percentage they cover of the whole corpus is plotted below. In this way it can be shown in how many of the documents a category occurs.

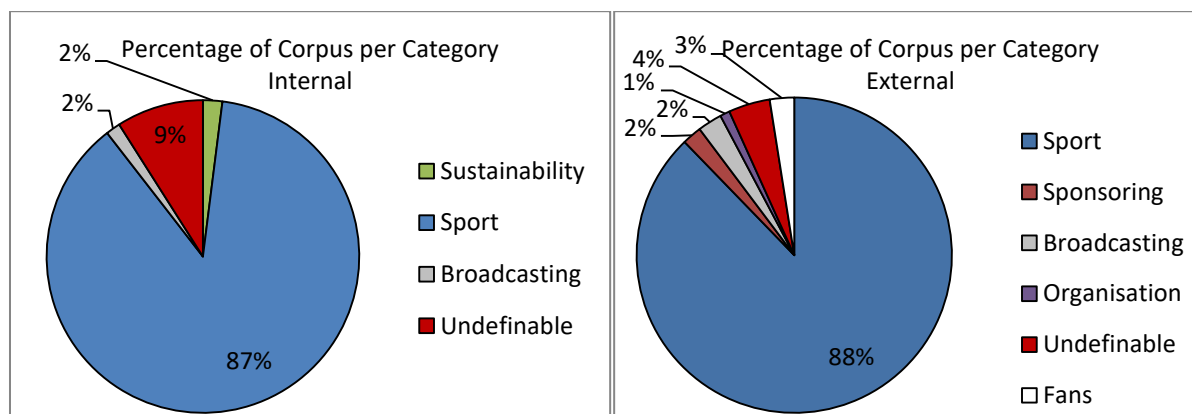


Figure 41: Percentage of Corpus per Category Internal W.

Figure 42: Percentage of Corpus per Category External W.

Just like in the number of topics the sport category is the most dominant one when it comes to corpus coverage. With 87 percent internally and 88 percent externally it can be stated that this category is the most important category for the reputation of Wimbledon. This is strengthened because internally and externally these topics are almost even dominant. What is noticeable is that the sustainability topic only occurs in two percent of all internal documents which makes its coverage almost negligible. When compared to the other events Wimbledon reports the least about sustainability topics. Considering the reputation of Wimbledon it can be stated that sustainability does not influence this. For the external data corpus the remaining categories have all lost coverage to the sport category which further strengthens the importance of the sport category. Alongside the sport category the remainder of the external corpus is filled by commercial topics, which is the same as for the Tour de France. This identifies the importance of these topics for the yearly events.

To identify possible relationships between the sustainability topic and other topics the co-occurrence of topics in the documents that are dominated by this sustainability topic are analysed.

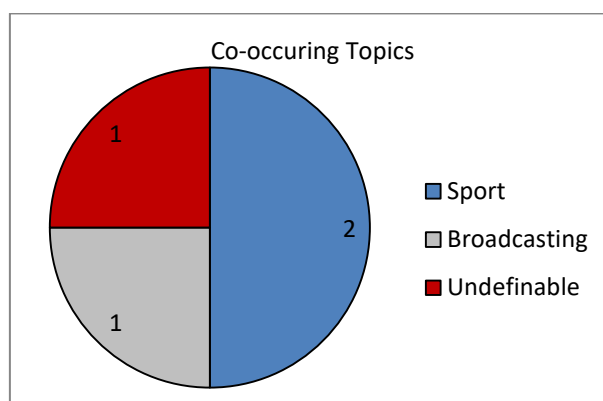


Figure 43: Co-occurrences Sustainability Topics W.

The sustainability related topic has four co-occurrences in total. Two of them are with topics from the sport category, the other two are from the broadcasting topic and the undefinable topic. Especially because of the dominance of the sport industry and the low number of co-occurrences, due to only one sustainability topic, it is hard to identify the bigger picture. What can be stated is that sport topics and broadcasting are discussed in the document(s) about the Wimbledon Foundation. The sport topics are not surprising since the foundation uses sport to achieve their objectives, but the co-occurrence with a broadcasting topic is more surprising and probably not indicative of any pattern.

### Comparison

In this section a comparison between the four events is made. This includes a comparison between the four different sport events, but also a comparison between yearly events and events organised once in four year. Furthermore, it reflects on the different dimensions of sustainability and the relations between different topics.

When it comes to sustainability topics it could be expected that the two events that occur once every four year are most influenced. Due to their environmental impacts of for instance building facilities and traveling of athletes and supporters. First, the sustainability topics are represented in the internal data of the Summer Olympics, this is to a much lesser extent represented in the data of the FIFA World Cup. However, the FIFA World Cup does publish more about aspects regarding the environmental dimension, were the Summer Olympics neglect these type of topics. This might be especially an interesting finding considering the major impact of both events and the environmental objectives they had during and after the event. The yearly events probably have less environmental impact, and mostly report on the social dimension of sustainability. This is especially the case for the Tour de France, which is probably because of publications regarding the use of doping and anti-doping programs. The other yearly event, Wimbledon, does only publish about its foundation and neglect aspects during the event itself. Compared to the other events, Wimbledon, keeps behind when it comes to sustainability reporting. Even though they have less environmental impact than the other events, they can contribute (more) on the other dimensions.

The sport category is the most important topic for almost all events. For the yearly events this importance is even bigger than for the events that occur once every four year. For the Summer Olympics this category is less important than it is for the others. The focus of this event is more on the organisation, which can be explained due to the time between occurrence and the difference in location. Because of this, more information is given about organisational topics such as, among others, committees and facilities. What is remarkable is that the other event that occurs once every four years, FIFA World Cup, does not have this focus and considers sport topics as more important. Last aspect that differs between the events, is that the topics regarding regulations are only occurring in the data of the events that occur once every four year. This can also be related to their occurrence and because of difference in location. There are possible changes in these four years and besides have to do with possible geographic variations in regulations on which has to be informed. Whether the yearly events only have to inform their audience on possible changes of one year and are bonded to one geographic location.

How the three dimensions of sustainability, namely social, economic, and environmental, are covered in the corpus is visualised below.



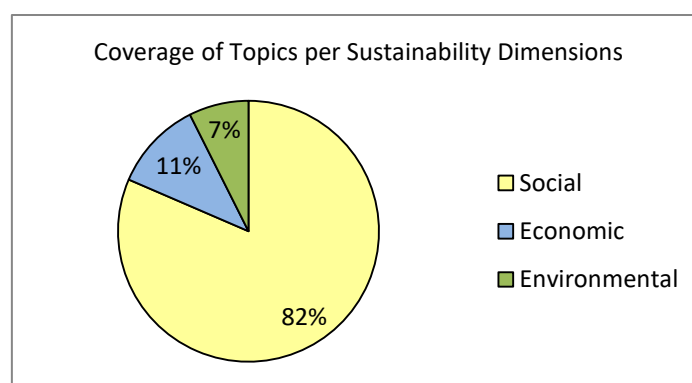


Figure 44: Coverage of Topics per Sustainability Dimension.

The social dimension is with ten topics the dimension with the most number of topics, and is even five times bigger than the other two dimensions. The environmental and economic dimension both include two topics. When it comes to the coverage these topics have it can be stated that the social dimension, identical to the number of topics, is dominant with 82 percent. The economic and environmental dimensions cover 11 and 7 percent of the corpuses. When it comes to the different events, only the FIFA World Cup includes topics related to the environmental dimension. This is an interesting finding since the FIFA World Cup and Summer Olympics both have to build or renovate facilities for sports or to house athletes and supporters. Even though these enormous environmental impacts, only one of the two publishes about these impacts. On the other hand, the Tour de France and Wimbledon both have environmental impact, that is probably a lot smaller than for the other two events, and in line with this no topics can be defined out of the internal data regarding the environmental dimension. Out of this, it can be concluded that the environmental dimension is underexposed/ When it comes to the economic dimension, this is represented by one topic in both the Summer Olympics and the Tour de France. Both are events that take place at different locations or continuously go from place to place. Because of this, it could stimulate the regional economies and create promotion, among others. What is surprising, is the fact that the FIFA World Cup is not publishing anything about the economic dimension since it also takes place at different locations. Lastly, the most dominant dimension is the social dimension with topics in the data of every event. This can be because of the central role humans have in sport and this dimension. Besides that, sport is mostly associated with health, mental well-being, and uniting people, among others, which are closely related to this dimension. Even though the relation between sport and the social dimension is explainable, the dominance is still outstanding. As already stated, sport events in general tend to publish the most about the social dimension, which is for the selected cases in this study not different.

After the different dimensions of sustainability, possible relationships between topics are indicated. To indicate these possible relationships between sustainability topics and other topics the co-occurrences of all events are combined and shown below.

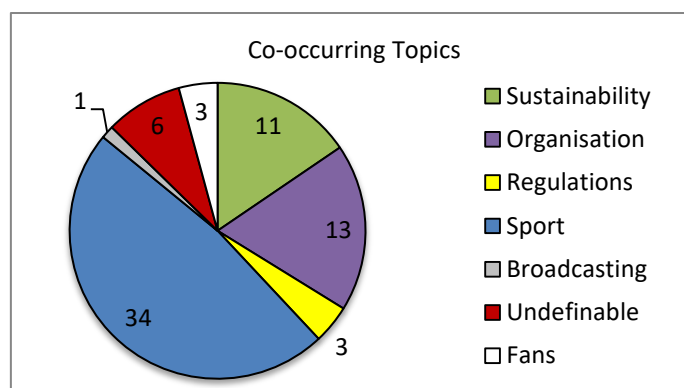


Figure 45: Co-occurrences Sustainability Topics.

Considering all these co-occurrences it can be stated that the sustainability topics are related to seven other types of topics. Out of these topics the sport category is the most dominant of them. This can be related to the focus on the social dimension of the events, that includes aspects such as doping which are strongly related to the sport related topics. Other sides, these topics are very dominant in their occurrence which could lead to more co-occurrences. Besides, the organisation, fans, and regulations categories can be more related to the economic and environmental dimensions. Due to the limited number of topics that are related to these dimensions, the number of co-occurrences is also limited. Last but not least, the sustainability topics are occurring with other sustainability topics, which is logical since topics out of the same category tend to occur together.

## Conclusion

This study has focused on the influence of sustainability on the concept of reputation. To identify this influence the sport industry and in particular sport events are chosen as cases. In order to describe the influence of sustainability on sport events the following research question has been answered:

*How does the importance of sustainability topics in building a reputation differ across sport events and how do these topics relate to other essential topics?*

To answer this research question the concept of reputation is separated in identity, representing the internal environment, and image, which represents the external environment of the sport events. Internal and external data is collected which represents the image and identity of the organisations. By the use of content analysis and in particular topic modelling this data is analysed, resulting in a diverse collection of results and findings. Based on these results and findings, several conclusions can be drawn.

First of all, out of the external data that originate from news and media organisations, no sustainability topics are determined. This reveals an interesting finding, namely that sustainability is not or in very limited numbers represented in these documents. Because of this, it can be stated that sustainability is not considered in the evaluation of sport organisations and thus in the image of these events. This image is dominated by the sport and, in a much lesser extent, the organisation category.

Secondly, in the internal data, that originates from the sport organisations, fourteen different sustainability topics are determined. The number of topics differs per event from one (Wimbledon) to a maximum of six (Summer Olympics). Considering the three sustainability dimensions, it can be stated that the main focus of the selected sport events is on the social dimension. Nine of the fourteen topics are strongly related to this dimension. The economic and environmental dimension both include two topics which makes the importance of these dimensions limited. This finding reflects the current trend in the sport industry that tends to focus on the social dimension.

Between the events significant differences are found in the importance of sustainability on the identity, number of topics, and dimension on which is focussed. The FIFA World Cup consists of three sustainability topics with the main focus on the environmental dimensions, but also includes one topic related to the social dimension. Even though, the organisation does not see sustainability as an important topic when it comes to their identity. The other event with an occurrence once in four year, the Summer Olympics, considers sustainability as more important. This can be stated because the documents consists of six topics and due to the number of documents these topics cover. Contrary to the FIFA World Cup, the Summer Olympics are mainly focussing on the social dimension and to a lesser extent the economic dimension. When it comes to the yearly events, the Tour de France considers sustainability as an important topic for their identity and includes mainly the social dimension alongside the economic dimension in its four sustainability topics. Wimbledon, other sides, focus specifically on the social dimension and only has one sustainability topic. It can be stated that the organisation of this event in very small extents examines sustainability in their identity. Concluding, it can be stated that the importance of sustainability on the identity and thus reputation differs across the sport events. Where this importance is almost neglectable for the FIFA World Cup and Wimbledon, it is important for and included in more than one fifth

of all documents of the Summer Olympics and the Tour de France. Besides, almost all events consider the social dimension as most important except for the FIFA World Cup.

Thirdly, the sustainability topics of the sport events are related to seven different categories. Because of the dominance of some categories in the data corpuses it is hard to identify how strong the relation is between these different categories and sustainability topics. But three out of these seven categories are most dominant in occurrences and thus it can be stated that sustainability topics are related to sport, organisation, and other sustainability topics. Even though there are some slight differences between the events when it comes to this relatedness, overall the relatedness between sustainability topics and the other three categories can be found in all the events. These three categories are also considered by the organisation as most important regarding their identity. In this identity the sport topics are most important, followed by the organisation topics, and to an even lesser extent the sustainability topics.

Finally, the reputation of sport events is built out of their identity and image. Considering these, it can be stated that the reputation is mainly built out of three categories. These categories are, in order of importance; sport, organisation, and sustainability. The sustainability related topics have their share when it comes to building and influencing the reputation of sport events but cannot compete with sport and organisation related topics.

Coming back to the words of Nelson Mandela that started this study, sport and thus also sport events have the power to change the world on various aspects and dimensions. Due to this, sport events can contribute to making society and the whole world more sustainable. Contrary, more social pressure, from for instance the media, is needed to advance the sustainability movement within sport events. This could force sport events to take a leadership role in this transition by publishing and taking action on all dimensions of sustainability. In this way sport events can generate more awareness which possibly let hundred thousand or even multiple million people come to action. This creates more impact than all sport events together could have on all dimensions of sustainability and catalyses the transition to more sustainable circumstances. Resulting in the common goal of the world becoming a better place for this and future generations.

## Discussion

First of all, it should be noted that this study started off with slightly different intentions and was mostly able to include the original steps described in the research proposal. The in-depth qualitative analysis that was planned after the quantitative analysis has been excluded from this study. This is done because the analysis turned out to be too extensive. Even though this part of the analysis was excluded this did not influence the answering of the research question.

This study contributes to the existing body of literature on the sport industry and in particular sport events. The importance of sustainability within the context of sport industries is already recognised and multiple aspects have been studied. Over the last decades, prior research has focused on evaluating and addressing one or multiple dimensions of corporate sustainability and the impact or contributions to these dimensions per event and comparisons between events. What never has been studied is the influence of sustainability on the reputation of sport events. This study investigated how the reputation of sport events is built, which topics are important in this, and how these are related towards each other. This fills in the identified research gap and contributes to the understanding of the importance of sustainability on sport events and the sport industry in general. Besides, this study contributes to the specific literature on sustainability drivers. Where prior research has focused on identifying different drivers for sustainability and their importance, this study specifies on the most important sustainability driver, namely reputation. By the investigation of internal and external processes and evaluation of external stakeholders a deeper understanding of this driver for sustainability is given. Besides, the literature on corporate sustainability is dense and consists of research on, among others, the definition, approaches, measurements, key issues, and reporting. Although, this study contributes to this literature by identifying the current state of corporate sustainability in the sport industry and in particular sport events and the influence of reputation on the implementation of this concept.

Aside from filling in the identified research gap and contributing to different bodies of literature, this study can be used by organisations of sport events to identify how their identity and image and thus their reputation is built. In this way they have better insights on what topics are more important than others, for themselves and externals. Because of this, the organisations can direct and influence their reputation more specifically into a certain direction when deemed necessary. This can help organisations of sport events and organisations in the sport industry to contribute in more impactful and specific ways to the transition to more sustainable circumstances. On the other side, policy makers can use the results of this study. For instance the identification of the focus on the social dimension and the contribution, to some or lesser extent, to sustainability of sport events can be used. These results can lead to actions by policy makers, when they think it is necessary, to force sport events to focus more on/or other dimensions to accelerate the transition to sustainability. The focus can be, for instance, on regulations to do more on the economic and environmental dimension, because the social dimension is already taken into consideration by the organisations itself. Because of the applicability of this study, to the organisations and policy makers, this can help society with the transition to a (more) sustainable world.

This study had to do with some limitations. First of all, there were limitations of the data collection system Nexis Uni. Due to this, the data could not be sampled on a random base and only a limited number of documents could be sampled. As already mentioned the sample size should not have influence on the representativeness of the data. Whereas the

randomness of this data could have been better, but out of the possible order methods within Nexis Uni the most random has been selected. Although it was not random sampling, but since the researcher did not have any influence on the order this method can be seen as sufficient. Furthermore, due to a limited number of documents related to the Tour de France, documents from the newswires & press releases are used to come to the determined sampling size. The origin of this category is debatable since it can include documents of/or information published by the sport organisations itself. The number of documents from this category were limited and the fact that organisations, such as sport organisations, are not included as sources in Nexis Uni. Because of this, the information that is published but originates from sport organisations, which makes this category valid enough for this study.

Additional, there is a limitation regarding the external data. Due to the number of publications on the sport itself, such as results and match reports, the sustainability aspects are hardly or not found. This states that the news and media organisations are not focused on these aspects, but contrary the aspects on which is limited reported cannot be analysed and interpreted. Further research could focus specifically on these sustainability aspects by only selecting these out of all the published documents by news and media organisations. In this way it can be identified how and about which sustainability aspects and dimensions are published by the media.

Furthermore, the image of sport events is influenced by all external stakeholders. Although news and media organisations are considered as most influential, there are other stakeholders who also influence this image and are possibly more sustainability focused. For instance NGOs tend to be more sustainability oriented and critical. The exclusion of this type of stakeholders can be seen as a limitation even though the most influential stakeholder is investigated. Other specific external stakeholders or all external stakeholders of sport events could be investigated in further research. More insights on their influence and focus can be given.

Another limitation can be related to the use of topic modelling. By analysing the data of the sport events with this method, it can be identified about what is published. What is not included in this study, is the sentiment behind the publications about sustainability aspects. Thereby it can be identified about what is published but not if this was negative or positive. A sentiment analysis on the documents, which include sustainability topics, can be done in further research to identify the nature of these publications. Additional, a longitudinal analysis can be done to identify if the sustainability aspects or dimensions on which is published and its sentiment differs over time. This will contribute to a better understanding of the concepts, especially because this study only focuses on events of a certain year.

Alongside, there are two limitations concerning the identification of topics. First of all, the expertise and interpretation of the researcher is used to identify what these are about. Other researchers could have interpreted these topics differently. Secondly, there is little known about benchmarks for the identification of topics in documents. Benchmarks like how much a topic needs to cover of a document to be called a topic are not investigated. Due to this the interpretation of the researcher and methods like trial-and-error are used which could possibly influence the results. Even though this did not seem to have major impacts on the results, this could be input for further research. This further research could focus on a verification method for topics and identifying benchmarks when it comes to the coverage of



topics in documents, this will eliminate interpretation of the researcher and make research including topic modelling more reliable.

Considering other aspects for further research, this study can be the base on which can be built. For instance, an in-depth analysis of relations between different topics can be made since this is kept simplistic in this study. Besides that, a qualitative analysis can be made of the documents that are related to the sustainability topics to find out, in depth, what these are about. Lastly, further research can focus on the concept of reputation and the influence of sustainability in other industries.

## Appendix 1: Tables of LDATuning

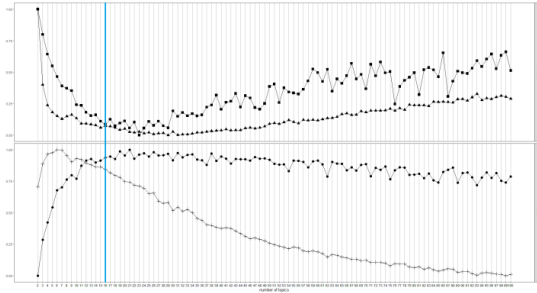


Figure 46: Plot of Optimal Number of Topics  $W$  Internal Data.

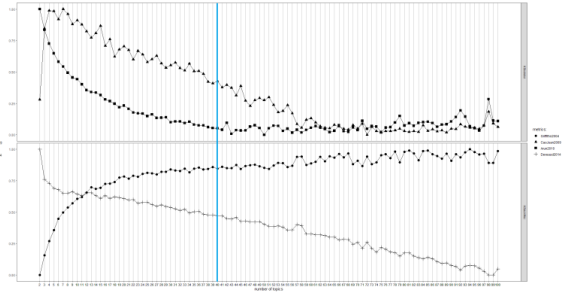


Figure 47: Plot of Optimal Number of Topics  $W$  External Data.

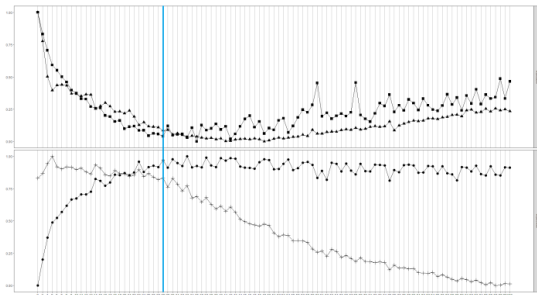


Figure 48: Plot of Optimal Number FWC Internal Data.

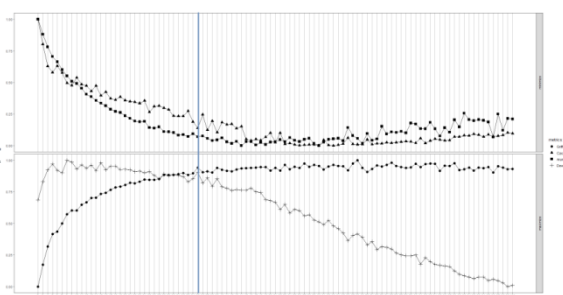


Figure 49: Plot of Optimal Number FWC External Data.

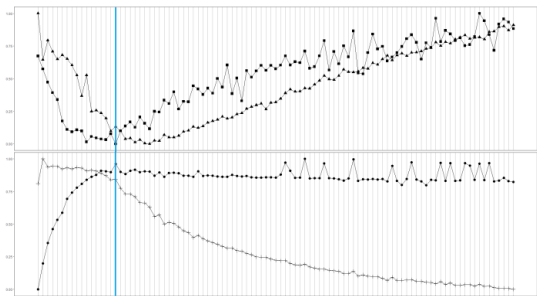


Figure 50: Plot of Optimal Number TDF Internal Data.

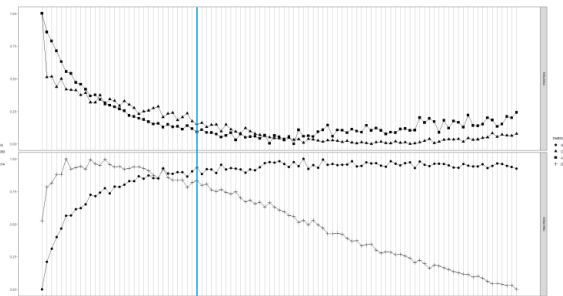


Figure 51: Plot of Optimal Number TDF External Data.

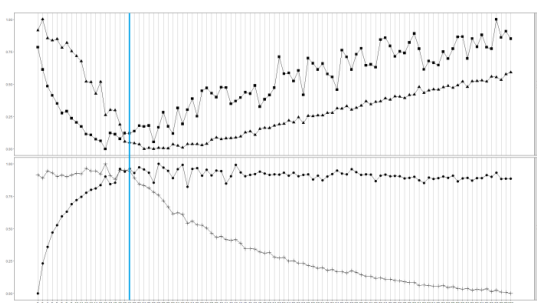


Figure 52: Plot of Optimal Number SO Internal Data.

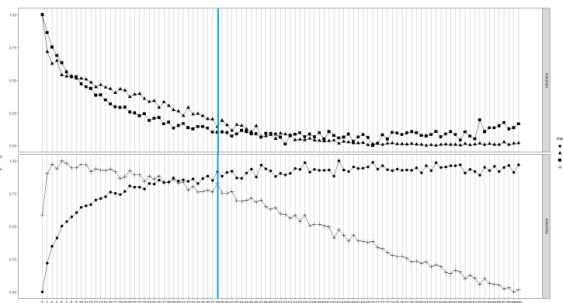


Figure 53: Plot of Optimal Number SO External Data.



## References

- Aldrich, H. E., & Fiol, C. M. (1994). Fools Rush in? The Institutional Context of Industry Creation. *The Academy of Management Review*, 19(4), 645. <https://doi.org/10.2307/258740>
- Alghamdi, R., & Alfalqi, K. (2015). A Survey of Topic Modeling in Text Mining. *International Journal of Advanced Computer Science and Applications*, 6(1). <https://doi.org/10.14569/ijacsa.2015.060121>
- Altaweel, M., Bone, C., & Abrams, J. (2019). Documents as data: A content analysis and topic modeling approach for analyzing responses to ecological disturbances. *Ecological Informatics*, 51, 82–95. <https://doi.org/10.1016/j.ecoinf.2019.02.014>
- Americas Quarterly. (2012, November 14). Infrastructure: Brazil, the World Cup and Olympics. Retrieved from <https://www.americasquarterly.org/fulltextarticle/infrastructure-brazil-the-world-cup-and-olympics/>
- Appropedia. (2021). Glossary of sustainability terms - Appropedia: The sustainability wiki. Retrieved June 24, 2021, from [https://www.appropedia.org/Glossary\\_of\\_sustainability\\_terms](https://www.appropedia.org/Glossary_of_sustainability_terms)
- Arun, R., Suresh, V., Veni Madhavan, C. E., & Narasimha Murthy, M. N. (2010). On Finding the Natural Number of Topics with Latent Dirichlet Allocation: Some Observations. *Advances in Knowledge Discovery and Data Mining*, 391–402. [https://doi.org/10.1007/978-3-642-13657-3\\_43](https://doi.org/10.1007/978-3-642-13657-3_43)
- Baldassarre, B., Keskin, D., Diehl, J. C., Bocken, N., & Calabretta, G. (2020). Implementing sustainable design theory in business practice: A call to action. *Journal of Cleaner Production*, 273, 123113. <https://doi.org/10.1016/j.jclepro.2020.123113>
- Baker, A. (2020, October 27). The Most Watched Sporting Events in The World. Retrieved from <https://www.roadtrips.com/blog/the-most-watched-sporting-events-in-the-world/>
- Balmer, J. M. T. (1998). Corporate Identity and the Advent of Corporate Marketing. *Journal of Marketing Management*, 14(8), 963–996. <https://doi.org/10.1362/026725798784867536>
- Bansal, P., & Roth, K. (2000). Why Companies Go Green: A Model of Ecological Responsiveness. *Academy of Management Journal*, 43(4), 717–736. <https://doi.org/10.5465/1556363>
- Bargh, J. A. (1999). The cognitive monster: The case against the controllability of automatic stereotype effects. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 361–382). The Guilford Press.
- Barnett, M. L., Jermier, J. M., & Lafferty, B. A. (2006). Corporate Reputation: The Definitional Landscape. *Corporate Reputation Review*, 9(1), 26–38. <https://doi.org/10.1057/palgrave.crr.1550012>
- Battista, J. (2020, June 12). NFL commits \$250M over 10-year period to combat systemic racism. Retrieved June 28, 2021, from <https://www.nfl.com/news/nfl-commits-250m-over-10-year-period-to-combat-systemic-racism>
- Bauer, H. H., Sauer, N. E., & Schmitt, P. (2005). Customer-based brand equity in the team sport industry. *European Journal of Marketing*, 39(5/6), 496–513. <https://doi.org/10.1108/03090560510590683>
- Baumgartner, R. J. (2013). Managing Corporate Sustainability and CSR: A Conceptual Framework Combining Values, Strategies and Instruments Contributing to Sustainable Development. *Corporate Social Responsibility and Environmental Management*, 21(5), 258–271. <https://doi.org/10.1002/csr.1336>
- Baumgartner, R. J., & Ebner, D. (2010). Corporate sustainability strategies: sustainability profiles and maturity levels. *Sustainable Development*, 18(2), 76–89. <https://doi.org/10.1002/sd.447>
- BBC News. (2014, July 14). Small Data: Are there four billion Tour de France viewers? Retrieved from <https://www.bbc.com/news/blogs-magazine-monitor-28264183>
- BBC News. (2015, June 6). Have 1,200 World Cup workers really died in Qatar? Retrieved June 30, 2021, from <https://www.bbc.com/news/magazine-33019838>
- BBC News. (2020, January 16). Rio Olympic Park: Judge orders closure of site over safety concerns. Retrieved June 28, 2021, from <https://www.bbc.com/news/world-latin-america-51133312>



- Blei, D. M. (2012). Probabilistic topic models. *Communications of the ACM*, 55(4), 77–84. <https://doi.org/10.1145/2133806.2133826>
- Blei, D. M., Ng, A. Y., & Jordan, M. I. (2003). Latent Dirichlet Allocation. *The Journal of Machine Learning Research*, 3, 993–1022. Retrieved from <https://www.jmlr.org/papers/volume3/blei03a/blei03a.pdf>
- Boykoff, J., & Mascarenhas, G. (2016). Rio 2016: Urban policies and environmental impacts. *IdeAs*, (7). <https://doi.org/10.4000/ideas.1398>
- Brown, B. J., Hanson, M. E., Liverman, D. M., & Merideth, R. W. (1987). Global sustainability: Toward definition. *Environmental Management*, 11(6), 713–719. <https://doi.org/10.1007/bf01867238>
- Bryman, A. (2016). *Social Research Methods* (5th ed.). New York, United States: Oxford University Press.
- Business Insider. (2018, July 11). Doping? Die smet heeft de Tour de France zo langzamerhand afgeworpen. Retrieved June 29, 2021, from <https://www.businessinsider.nl/doping-die-smet-heeft-de-tour-de-france-zo-langzamerhand-afgeworpen/>
- Burgan, B., & Mules, T. (1992). Economic impact of sporting events. *Annals of Tourism Research*, 19(4), 700–710. [https://doi.org/10.1016/0160-7383\(92\)90062-t](https://doi.org/10.1016/0160-7383(92)90062-t)
- Cao, J., Xia, T., Li, J., Zhang, Y., & Tang, S. (2009). A density-based method for adaptive LDA model selection. *Neurocomputing*, 72(7–9), 1775–1781. <https://doi.org/10.1016/j.neucom.2008.06.011>
- Caradonna, J. L. (2019). *Routledge Handbook of the History of Sustainability (Routledge International Handbooks)* (1st ed.). Abingdon, United Kingdom: Routledge.
- Chalip, L. (2006). Towards Social Leverage of Sport Events. *Journal of Sport & Tourism*, 11(2), 109–127. <https://doi.org/10.1080/14775080601155126>
- Chase, C. (2018, June 13). Rankings! The World Cup, Super Bowl and the 11 biggest sporting events in the world. Retrieved from <https://touchdownwire.usatoday.com/gallery/world-cup-super-bowl-biggest-sports-events-world-globe-greatest/>
- Chun, R. (2005). Corporate reputation: Meaning and measurement. *International Journal of Management Reviews*, 7(2), 91–109. <https://doi.org/10.1111/j.1468-2370.2005.00109.x>
- Collins, A., & Flynn, A. (2008). Measuring the Environmental Sustainability of a Major Sporting Event: A Case Study of the FA Cup Final. *Tourism Economics*, 14(4), 751–768. <https://doi.org/10.5367/000000008786440120>
- Collins J. & J. I. Porras. *Built to Last: Successful Habits of Visionary Companies*. (2004). New York, US: Harper Business.
- Crittenden, V. L., Crittenden, W. F., Ferrell, L. K., Ferrell, O. C., & Pinney, C. C. (2010). Market-oriented sustainability: a conceptual framework and propositions. *Journal of the Academy of Marketing Science*, 39(1), 71–85. <https://doi.org/10.1007/s11747-010-0217-2>
- Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A., & Sheikh, A. (2011). The case study approach. *BMC Medical Research Methodology*, 11(1), 1–9. <https://doi.org/10.1186/1471-2288-11-100>
- Cutting Edge. (2020, August 12). Why a good corporate reputation is vital to your organization, especially during COVID-19. Retrieved from <https://cuttingedgepr.com/good-corporate-reputation-important-organization-especially-during-covid-19/>
- Deephouse, D. L., & Carter, S. M. (2005). An Examination of Differences Between Organizational Legitimacy and Organizational Reputation\*. *Journal of Management Studies*, 42(2), 329–360. <https://doi.org/10.1111/j.1467-6486.2005.00499.x>
- DeSimone, L. D., & Popoff, F. (2000). *Eco-Efficiency: The Business Link to Sustainable Development* (Revised ed.). Cambridge, US: The MIT Press.
- Deveaud, R., SanJuan, E., & Bellot, P. (2014). Accurate and effective latent concept modeling for ad hoc information retrieval. *Document Numérique*, 17(1), 61–84. <https://doi.org/10.3166/dn.17.1.61-84>



Diario AS. (2021, May 8). Five key sustainability features connected with Qatar 2022. Retrieved June 30, 2021, from [https://en.as.com/en/2021/05/08/football/1620475183\\_008707.html](https://en.as.com/en/2021/05/08/football/1620475183_008707.html)

DISD. (2018, August 29). Social Development for Sustainable Development. Retrieved from <https://www.un.org/development/desa/dspd/2030agenda-sdgs.html#:~:text=They%20are%20integrated%20and%20indivisible,the%20new%20Agenda%20is%20realized.>

Dolles, H., & Söderman, S. (2010). Addressing ecology and sustainability in mega-sporting events: The 2006 football World Cup in Germany. *Journal of Management & Organization*, 16(4), 587–600. <https://doi.org/10.5172/jmo.2010.16.4.587>

Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability. *Business Strategy and the Environment*, 11(2), 130–141. <https://doi.org/10.1002/bse.323>

Eberle, D., Berens, G., & Li, T. (2013). The Impact of Interactive Corporate Social Responsibility Communication on Corporate Reputation. *Journal of Business Ethics*, 118(4), 731–746. <https://doi.org/10.1007/s10551-013-1957-y>

Einwiller, S. A., Carroll, C. E., & Korn, K. (2010). Under What Conditions Do the News Media Influence Corporate Reputation? The Roles of Media Dependency and Need for Orientation. *Corporate Reputation Review*, 12(4), 299–315. <https://doi.org/10.1057/crr.2009.28>

Ekanayake, A. (2015). Validity and Reliability in Case Study Research in Accounting: A Review and Experience. ., 1–27. Retrieved from [https://www.researchgate.net/publication/320755143\\_VValidity\\_and\\_Reliability\\_in\\_Case\\_Study\\_Research\\_in\\_Accounting\\_A\\_Review\\_and\\_Experience](https://www.researchgate.net/publication/320755143_VValidity_and_Reliability_in_Case_Study_Research_in_Accounting_A_Review_and_Experience)

Elkington, J. (2004). *Enter the Triple Bottom Line*. Retrieved from <https://www.johnelkington.com/archive/TBL-elkington-chapter.pdf>

Epstein, M. J., & Roy, M.-J. (2001). Sustainability in Action: Identifying and Measuring the Key Performance Drivers. *Long Range Planning*, 34(5), 585–604. [https://doi.org/10.1016/s0024-6301\(01\)00084-x](https://doi.org/10.1016/s0024-6301(01)00084-x)

Engert, S., Rauter, R., & Baumgartner, R. J. (2016). Exploring the integration of corporate sustainability into strategic management: a literature review. *Journal of Cleaner Production*, 112, 2833–2850. <https://doi.org/10.1016/j.jclepro.2015.08.031>

FIFA. (2020, March 15). FIFA. Retrieved June 29, 2021, from <https://www.fifa.com/tournaments/mens/worldcup/2018russia/news/russia-2018-stadiums-ready-to-welcome-fans-2922569>

FIFA. (2021, March 15). FIFA. Retrieved June 28, 2021, from <https://www.fifa.com/tournaments/mens/worldcup/qatar2022/news/fifa-world-cup-2022tm-first-sustainability-progress-report-published>

Fiol, C. M., & Romanelli, E. (2012). Before Identity: The Emergence of New Organizational Forms. *Organization Science*, 23(3), 597–611. <https://doi.org/10.1287/orsc.1110.0666>

Fischer, E., & Reuber, R. (2007). The Good, the Bad, and the Unfamiliar: The Challenges of Reputation Formation Facing New Firms. *Entrepreneurship Theory and Practice*, 31(1), 53–75. <https://doi.org/10.1111/j.1540-6520.2007.00163.x>

Fiske, S. T., & Neuberg, S. L. (1990). A Continuum of Impression Formation, from Category-Based to Individuating Processes: Influences of Information and Motivation on Attention and Interpretation. *Advances in Experimental Social Psychology*, 1–74. [https://doi.org/10.1016/s0065-2601\(08\)60317-2](https://doi.org/10.1016/s0065-2601(08)60317-2)

Fleetwood, D. (2020, May 18). Probability sampling: Definition, types, examples, steps and advantages. Retrieved from <https://www.questionpro.com/blog/probability-sampling/#:~:text=Definition%3A%20Probability%20sampling%20is%20defined,selected%20using%20a%20random%20selection.>



Flemming, F., Lünich, M., Marcinkowski, F., & Starke, C. (2016). Coping with dilemma: How German sport media users respond to sport mega events in autocratic countries. *International Review for the Sociology of Sport*, 52(8), 1008–1024. <https://doi.org/10.1177/1012690216638545>

Formula 1. (2020, June 22). Formula 1 launches #WeRaceAsOne initiative to help fight challenges of COVID-19 and global inequality | Formula 1®. Retrieved June 28, 2021, from <https://www.formula1.com/en/latest/article.formula-1-launches-we-race-as-one-initiative.3s2AhNDAPNDzrCoQDc1RY8.html>

Galbreath, J. (2009). Building corporate social responsibility into strategy. *European Business Review*, 21(2), 109–127. <https://doi.org/10.1108/09555340910940123>

Gehman, J. (2012). *Gehman, J. (2012). CATEGORICAL CLEANING : DIVESTITURES AS A STRATEGIC RESPONSE TO SUSTAINABILITY CONCERNS.* Retrieved from [https://etda.libraries.psu.edu/files/final\\_submissions/7058](https://etda.libraries.psu.edu/files/final_submissions/7058)

Gerring, J. (2009). Case Selection for Case-Study Analysis: Qualitative and Quantitative Techniques. Oxford Handbooks Online, 1–48. <https://doi.org/10.1093/oxfordhb/9780199286546.003.0028>

Getz, D. (1990). *Festivals, Special Events, and Tourism*. New York, United States: Van Nostrand Reinhold.

Gibson, D., Gonzales, J. L., & Gastanon, J. (2006). The Importance of Reputation and the Role of Public Relations. *Public Relations Quarterly*, 51(3), 15–18. Retrieved from <https://search.proquest.com/openview/2af1442b70f3d70c4974fe4152de34e8/1?pq-origsite=gscholar&cbl=49209>

Gimenez, C., Sierra, V., & Rodon, J. (2012). Sustainable operations: Their impact on the triple bottom line. *International Journal of Production Economics*, 140(1), 149–159. <https://doi.org/10.1016/j.ijpe.2012.01.035>

Goal.com. (2021, April 27). Sustainability at the forefront as Qatar plots a carbon-neutral 2022 World Cup. Retrieved June 30, 2021, from <https://www.goal.com/en/news/sustainability-at-the-forefront-qatar-world-cup-2022-carbon/b9kyx2qzgbas1wfbzeyn58g5u>

Going Green. (2021). Going Green - Words To Use. Retrieved June 24, 2021, from <https://www.words-to-use.com/words/going-green/>

Gotsi, M., & Wilson, A. M. (2001). Corporate reputation: seeking a definition. *Corporate Communications: An International Journal*, 6(1), 24–30. <https://doi.org/10.1108/13563280110381189>

Gray, E. R., & Balmer, J. M. T. (1998). Managing Corporate Image and Corporate Reputation. *Long Range Planning*, 31(5), 695–702. [https://doi.org/10.1016/s0024-6301\(98\)00074-0](https://doi.org/10.1016/s0024-6301(98)00074-0)

Gregan-Paxton, J., & John, D. R. (1997). Consumer Learning by Analogy: A Model of Internal Knowledge Transfer. *Journal of Consumer Research*, 24(3), 266–284. <https://doi.org/10.1086/209509>

Griffiths, T. L., & Steyvers, M. (2004). Finding scientific topics. *Proceedings of the National Academy of Sciences*, 101(Supplement 1), 5228–5235. <https://doi.org/10.1073/pnas.0307752101>

Hahn, R. (2012). ISO 26000 and the Standardization of Strategic Management Processes for Sustainability and Corporate Social Responsibility. *Business Strategy and the Environment*, 22(7), 442–455. <https://doi.org/10.1002/bse.1751>

Hannan, M. T., & Freeman, J. (1977). The Population Ecology of Organizations. *American Journal of Sociology*, 82(5), 929–964. <https://doi.org/10.1086/226424>

Howard-Grenville, J. A. (2006). Inside the “Black Box.” *Organization & Environment*, 19(1), 46–73. <https://doi.org/10.1177/1086026605285739>

Hu, Y., Boyd-Graber, J., Satinoff, B., & Smith, A. (2013). Interactive topic modeling. *Machine Learning*, 95(3), 423–469. <https://doi.org/10.1007/s10994-013-5413-0>

Israel, G. D. (1992). Determining Sample Size. University of Florida Cooperative Extension Service, 1–5. Retrieved from <https://www.psychosphere.com/Determining%20sample%20size%20by%20Glen%20Israel.pdf>





- Jelodar, H., Wang, Y., Yuan, C., Feng, X., Jiang, X., Li, Y., & Zhao, L. (2018). Latent Dirichlet allocation (LDA) and topic modeling: models, applications, a survey. *Multimedia Tools and Applications*, 78(11), 15169–15211. <https://doi.org/10.1007/s11042-018-6894-4>
- Kähkönen, A.-K. (2014). Conducting a Case Study in Supply Management. *Operations and Supply Chain Management: An International Journal*, 31–41. <https://doi.org/10.31387/oscm090054>
- Kearney. (2014). The Sports Market. Retrieved from <https://www.nl.kearney.com/communications-media-technology/article?/a/the-sports-market#:~:text=The%20global%20sports%20industry%20is,to%20media%20rights%20and%20sponsorships>.
- Kim, H. J., Gursoy, D., & Lee, S.-B. (2006). The impact of the 2002 World Cup on South Korea: comparisons of pre- and post-games. *Tourism Management*, 27(1), 86–96. <https://doi.org/10.1016/j.tourman.2004.07.010>
- King, B. G., & Whetten, D. A. (2008). Rethinking the Relationship Between Reputation and Legitimacy: A Social Actor Conceptualization. *Corporate Reputation Review*, 11(3), 192–207. <https://doi.org/10.1057/crr.2008.16>
- Knott, B., Swart, K., & Visser, S. (2015). The impact of sport mega-events on the quality of life for host city residents: Reflections on the 2010 FIFA World Cup. *African Journal of Hospitality, Tourism and Leisure*, 4, 1–17. Retrieved from [https://www.researchgate.net/publication/280932770\\_The\\_impact\\_of\\_sport\\_mega-events\\_on\\_the\\_quality\\_of\\_life\\_for\\_host\\_city\\_residents\\_Reflections\\_on\\_the\\_2010\\_FIFA\\_World\\_Cup?enrichId=rgreq-fb5907d5e88da543982e39c665ef36cf-XXX&enrichSource=Y292ZXJQYWdlOzI4MDkzMjc3MDtBUzoyNjE5MjQ5MTA3OTI3MDRAMTQzOTQ1OTE3MzQwOA%3D%3D&el=1\\_x\\_2&esc=publicationCoverPdf](https://www.researchgate.net/publication/280932770_The_impact_of_sport_mega-events_on_the_quality_of_life_for_host_city_residents_Reflections_on_the_2010_FIFA_World_Cup?enrichId=rgreq-fb5907d5e88da543982e39c665ef36cf-XXX&enrichSource=Y292ZXJQYWdlOzI4MDkzMjc3MDtBUzoyNjE5MjQ5MTA3OTI3MDRAMTQzOTQ1OTE3MzQwOA%3D%3D&el=1_x_2&esc=publicationCoverPdf)
- Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, 30(3), 607–610. <https://doi.org/10.1177/001316447003000308>
- Kurpierz, J. R., & Smith, K. (2020). The greenwashing triangle: adapting tools from fraud to improve CSR reporting. *Sustainability Accounting, Management and Policy Journal*, 11(6), 1075–1093. <https://doi.org/10.1108/sampj-10-2018-0272>
- Le Tour de France. (2020). Riding into the future. Retrieved June 28, 2021, from <https://www.letour.fr/en/the-race/riding-info-the-future>
- LexisNexis. (2020). NexisUni®: research database voor het onderwijs. Retrieved from <https://www.lexisnexis.nl/research/nexis-uni>
- Linnenluecke, M. K., & Griffiths, A. (2010). Corporate sustainability and organizational culture. *Journal of World Business*, 45(4), 357–366. <https://doi.org/10.1016/j.jwb.2009.08.006>
- Lozano, R. (2012). Are Companies Planning their Organisational Changes for Corporate Sustainability? An Analysis of Three Case Studies on Resistance to Change and their Strategies to Overcome it. *Corporate Social Responsibility and Environmental Management*, 20(5), 275–295. <https://doi.org/10.1002/csr.1290>
- Lozano, R. (2013). A Holistic Perspective on Corporate Sustainability Drivers. *Corporate Social Responsibility and Environmental Management*, 22(1), 32–44. <https://doi.org/10.1002/csr.1325>
- Lozano, R., & von Haartman, R. (2017). Reinforcing the Holistic Perspective of Sustainability: Analysis of the Importance of Sustainability Drivers in Organizations. *Corporate Social Responsibility and Environmental Management*, 25(4), 508–522. <https://doi.org/10.1002/csr.1475>
- MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods*, 4(1), 84–99. <https://doi.org/10.1037/1082-989x.4.1.84>
- Maennig, W., & Zimbalist, A. (2012). International Handbook on the Economics of Mega Sporting Events. ., 1–640. <https://doi.org/10.4337/9780857930279>
- Mallen, C., Stevens, J., Adams, L., & McRoberts, S. (2010). The Assessment of the Environmental Performance of an International Multi-Sport Event. *European Sport Management Quarterly*, 10(1), 97–122. <https://doi.org/10.1080/16184740903460488>



Marques, P., Bernardo, M., Presas, P., & Simon, A. (2019). Corporate social responsibility in a local subsidiary: internal and external stakeholders' power. *EuroMed Journal of Business*, 15(3), 377–393. <https://doi.org/10.1108/emjb-01-2019-0013>

McCullough, B. P., & Kellison, T. B. (2016). Go Green for the Home Team: Sense of Place and Environmental Sustainability in Sport. *Journal of Sustainability Education*, 11, 1–15. Retrieved from [https://www.researchgate.net/publication/290670368\\_Go\\_Green\\_for\\_the\\_Home\\_Team\\_Sense\\_of\\_Place\\_and\\_Environmental\\_Sustainability\\_in\\_Sport?enrichId=rgreq-d74e54516d1711a25e693f659715ed6d-XXX&enrichSource=Y292ZXJQYWdlOzI5MDY3MDM2ODtBUozNDQ4MTE0MjE4ODAzMjFAMTQ1OTIyMDg1NzYwNA%3D%3D&el=1\\_x\\_2&\\_esc=publicationCoverPdf](https://www.researchgate.net/publication/290670368_Go_Green_for_the_Home_Team_Sense_of_Place_and_Environmental_Sustainability_in_Sport?enrichId=rgreq-d74e54516d1711a25e693f659715ed6d-XXX&enrichSource=Y292ZXJQYWdlOzI5MDY3MDM2ODtBUozNDQ4MTE0MjE4ODAzMjFAMTQ1OTIyMDg1NzYwNA%3D%3D&el=1_x_2&_esc=publicationCoverPdf)

McCullough, B. P., Orr, M., & Watanabe, N. M. (2020). Measuring Externalities: The Imperative Next Step to Sustainability Assessment in Sport. *Journal of Sport Management*, 34(5), 393–402. <https://doi.org/10.1123/jsm.2019-0254>

McCullough, B. P., Pfahl, M. E., & Nguyen, S. N. (2015). The green waves of environmental sustainability in sport. *Sport in Society*, 19(7), 1040–1065. <https://doi.org/10.1080/17430437.2015.1096251>

MINIWIZ. (2020, September 30). How Green are the 2022 World Cup Venues Set to Be? - MINIWIZ. Retrieved June 28, 2021, from <https://miniwiz.medium.com/how-green-are-the-2022-world-cup-venues-set-to-be-5b394a8a14d7>

Minning, L. (2020, February 27). The 10 Types of Stakeholders That You Meet in Business. Retrieved from <https://www.activecampaign.com/blog/types-of-stakeholders>

Mohr, J. W., & Bogdanov, P. (2013). Introduction—Topic models: What they are and why they matter. *Poetics*, 41(6), 545–569. <https://doi.org/10.1016/j.poetic.2013.10.001>

Montiel, I., & Delgado-Ceballos, J. (2014). Defining and Measuring Corporate Sustainability. *Organization & Environment*, 27(2), 113–139. <https://doi.org/10.1177/1086026614526413>

Montiel, I. (2008). Corporate Social Responsibility and Corporate Sustainability. *Organization & Environment*, 21(3), 245–269. <https://doi.org/10.1177/1086026608321329>

Moore, N. (2020, April 20). Select number of topics for LDA model. Retrieved June 16, 2021, from <https://cran.r-project.org/web/packages/ldatuning/vignettes/topics.html>

Morse, J. M. (2000). Determining Sample Size. *Qualitative Health Research*, 10(1), 3–5. <https://doi.org/10.1177/104973200129118183>

Morin, S. (2019). Faster, Higher, Stronger... Greener? How sports events are joining the sustainability challenge. Retrieved from <http://www.yunussportshub.com/faster-higher-stronger-greener/>

Pitts, B., Fielding, L. W., & Miller, L. K. (1994). Industry segmentation theory and the sport industry: Developing a sport industry segment model. *Kinesiology Faculty Publications*, 1–11. Retrieved from [https://scholarworks.gsu.edu/cgi/viewcontent.cgi?article=1023&context=kin\\_health\\_facpub](https://scholarworks.gsu.edu/cgi/viewcontent.cgi?article=1023&context=kin_health_facpub)

Pledge Sports. (2020, April 8). Top 10 Most Played Sports. Retrieved from <https://www.pledgesports.org/2017/06/top-10-most-played-sports/>

Preuss, H., & Alfs, C. (2011). Signaling through the 2008 Beijing Olympics—Using Mega Sport Events to Change the Perception and Image of the Host. *European Sport Management Quarterly*, 11(1), 55–71. <https://doi.org/10.1080/16184742.2010.537362>

Raj, R., & Musgrave, J. (2010). *Event Management and Sustainability* (First ed.). Wallingford, England: CABI.

Related Words - Find Words Related to Another Word. (2021). Retrieved June 24, 2021, from <https://relatedwords.org/relatedto/sustainability>

R-Project. (2020). R: What is R? Retrieved from <https://www.r-project.org/about.html>

Sheth, H., & Babiak, K. M. (2009). Beyond the Game: Perceptions and Practices of Corporate Social Responsibility in the Professional Sport Industry. *Journal of Business Ethics*, 91(3), 433–450. <https://doi.org/10.1007/s10551-009-0094-0>



- Siano, A., Vollero, A., Conte, F., & Amabile, S. (2017). "More than words": Expanding the taxonomy of greenwashing after the Volkswagen scandal. *Journal of Business Research*, 71, 27–37. <https://doi.org/10.1016/j.jbusres.2016.11.002>
- Sitnikov, C. S. (2013). Triple Bottom Line. *Encyclopedia of Corporate Social Responsibility*, 2558–2564. [https://doi.org/10.1007/978-3-642-28036-8\\_465](https://doi.org/10.1007/978-3-642-28036-8_465)
- Slaper, T. F., & Hall, T. J. (2011). The Triple Bottom Line: What Is It and How Does It Work? Retrieved from <http://www.ibrc.indiana.edu/ibr/2011/spring/article2.html>
- Smith, A., & Westerbeek, H. (2007). Sport as a Vehicle for Deploying Corporate Social Responsibility. *The Journal of Corporate Citizenship*, (25), 43–54. Retrieved June 23, 2021, from <http://www.jstor.org/stable/jcorpciti.25.43>
- Statista. (2020, November 27). Size of the global sports market 2018. Retrieved from <https://www.statista.com/statistics/1087391/global-sports-market-size/>
- Stiernstrand, J. O. (1995). The Nordic Model: A Theoretical Model for Economic Impact Analysis of Event Tourism. *Festival Management and Event Tourism*, 3(4), 165–174. <https://doi.org/10.3727/106527095792232514>
- Sustainability Knowledge Group. (2020, September 15). Sustainably at the heart of the FIFA World Cup 2022TM. Retrieved June 28, 2021, from <https://sustainabilityknowledgegroup.com/sustainably-at-the-heart-of-the-fifa-world-cup-2022/>
- Taghian, M. (2012). Corporate reputation and business performance. ., 1–9. Retrieved from [https://www.researchgate.net/publication/228419714\\_Corporate\\_reputation\\_and\\_business\\_performance](https://www.researchgate.net/publication/228419714_Corporate_reputation_and_business_performance)
- The Business Research Company. (2021). Global Sports Market Report Opportunities And Strategies. Retrieved June 23, 2021, from <https://www.thebusinessresearchcompany.com/report/sports-market>
- Total Sportek. (2020, December 15). 25 Worlds Most Popular Sports (Ranked by 13 factors). Retrieved from <https://www.totalsportek.com/popular-sports/>
- Trendafilova, S., Babiak, K., & Heinze, K. (2013). Corporate social responsibility and environmental sustainability: Why professional sport is greening the playing field. *Sport Management Review*, 16(3), 298–313. <https://doi.org/10.1016/j.smr.2012.12.006>
- Trendafilova, S., Graham, J., & Bemiller, J. (2017). Sustainability and the Olympics: The case of the 2016 Rio Summer Games. *Journal of Sustainability Education*, 1–22. Retrieved from <http://www.susted.com/wordpress/wp-content/uploads/2018/01/Trendafilova-Graham-Bemiller-JSE-Fall-2017-General-PDF.pdf>
- Trendafilova, S., McCullough, B., Pfahl, M., Nguyen, N., Casper, J., & Picariello, M. (2014). Environmental sustainability in sport: Current state and future trends. *Global Journal on Advances in Pure & Applied Sciences*, 3, 9–14. Retrieved from <http://archives.un-pub.eu/index.php/paas/article/view/3296/2937>
- University of the West Indies (UWI). (2020). *Value and benefits of the Sports industry*. Retrieved from <https://www.uwi.edu/uop/sites/uop/files/Value%20and%20benefits%20of%20the%20Sport%20Industry.pdf>
- Utrecht University. (2020). Nexis Uni. Retrieved from <https://www.uu.nl/en/university-library/help-in-searching/search-engines-explained/nexis-uni>
- Vogler, D., Schranz, M., & Eisenegger, M. (2016). Stakeholder group influence on media reputation in crisis periods. *Corporate Communications: An International Journal*, 21(3), 322–332. <https://doi.org/10.1108/ccij-01-2016-0003>
- Wallach, H. M. (2006). Topic modeling. *Proceedings of the 23rd International Conference on Machine Learning - ICML '06*. Published. <https://doi.org/10.1145/1143844.1143967>
- Wartick, S. L. (2002). Measuring Corporate Reputation. *Business & Society*, 41(4), 371–392. <https://doi.org/10.1177/0007650302238774>
- Weber Shandwick. (2020). THE STATE OF CORPORATE REPUTATION IN 2020: EVERYTHING MATTERS NOW. Retrieved from [https://www.webershandwick.com/wp-content/uploads/2020/01/The-State-of-Corporate-Reputation-in-2020\\_executive-summary\\_FINAL.pdf](https://www.webershandwick.com/wp-content/uploads/2020/01/The-State-of-Corporate-Reputation-in-2020_executive-summary_FINAL.pdf)

Wells, J. T. (2017). *Corporate Fraud Handbook: Prevention and Detection* (5th ed.). Hoboken, United States: Wiley.

Wilson, M. (2003). CORPORATE SUSTAINABILITY: WHAT IS IT AND WHERE DOES IT COME FROM? Retrieved from <https://iveybusinessjournal.com/publication/corporate-sustainability-what-is-it-and-where-does-it-come-from/>

World Athletics. (2019, May 31). Athletes and the environment: answering the sustainability call | FEATURE | World Athletics. Retrieved June 28, 2021, from <https://www.worldathletics.org/news/feature/athletes-environmental-sustainability-project>

World Commission on Environment and Development. (1987). *Report of the World Commission on Environment and Development: Our Common Future*. Retrieved from <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>