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Master Thesis: Industrial Dynamics & Strategy

Optimizing a country's hosting strategy concerning non-mega sports events

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Abstract

Until now, little has been written about bidding strategies and the hosting behavior of countries concerning sports events. Moreover, the academic literature on non-mega events in general is scarce in contrast with their frequency and popularity. The goal of this research is to examine whether country-specific characteristics have an effect on the hosting behavior of countries concerning non-mega sports events. I find a positive, significant relation between the size of a country and its financial wealth in relation to the number of non-mega events held. In addition, I find contrasting results for the effect of the presence of a mega city in a country for summer and winter events. By reading this paper countries can gain insights that will allow them to employ a more targeted, long-term hosting strategy.

1. Introduction

In 2016 alone 65 non-mega sports events were organized globally. These events took place on all 5 continents, in 33 different countries, with 57 different host cities. This indicates that hosting sports events is a relevant topic around the globe. According to Emery (2002) cities are increasingly applying a strategy of hosting high profile sports events to contribute to city- and country-wide growth. However, there is a limited supply of high-end sports events. Since only one country can be appointed, more countries are bound to unsuccessfully bid for sports events, causing this strategy to fail. As the negative financial implications of a bidding procedure, whether successful or unsuccessful, are substantial, it would be beneficial for countries to know which country-specific characteristics contribute to a successful bid. This enables them to employ a more targeted hosting strategy.

The terms “hallmark”, “mega”, “special” and “major” events are used interchangeably in the sports event literature, while they do not all refer to the same types of events (Emery, 2002). It is therefore important to clearly define the type of events discussed, mainly to identify the difference between mega and non-mega events. I follow the definitions of Gratton et al. (2000) in combination with the addition of Wilson (2006). Together these authors define 5 types of sports events, given in Table 1.

Table 1: Typology of events

Type	Definition	Examples
A	Irregular, one-off, major international events generating significant economic activity and media interest	• Olympic Games • Football World Cup • European Football Championships
B	Major spectator events, generating significant economic activity, media interest and part of an annual domestic cycle of sports events	• FA Cup Final • Six Nations Rugby Union Internationals • Wimbledon
C	Irregular, one-off, major international spectator/competitor events generating limited economic activity	World and European Championships in all sports unless previously stated
D	Major competitor events generating limited economic activity and part of an annual domestic cycle of sports events	National Championships in most sports
E	Minor competitor/spectator events, generating very limited economic activity, no media interest and part of an annual domestic cycle of sports events	Local and Regional sports events in most sports

The relevant types for this research are Type A and Type C events, which both concern major international events with an irregular, one-off character. The distinction between these two types of events is their expected media attention and economic consequences. The characteristic ‘irregular’ is defined from the point of view of the hosting country. Therefore a regular, annually reoccurring event can still be irregular if each edition is hosted by a different country. Both Type B and D events are part

of an annual domestic cycle and will be held in the same country each year. Type E events are not included in this research because they are regional and local events which generate very limited economic activity.

Maennig & Vierhaus (2017) attempted to identify the key success factors for countries to win Olympic bids. These factors include the presence of a metropolitan population with more than 2.5 million inhabitants, an existing stadium infrastructure and experience in hosting world championships. The latter characteristic suggests that countries bidding for mega events such as the Olympics, are the same as the countries hosting non-mega events. However, in 2016, only 7 Type A events took place while 64 Type C events were organized. Due to the lower number of Type A events and their larger scale, there are differences in the bidding process compared to Type C events. I expect this leads to different types of countries bidding on the two types of events.

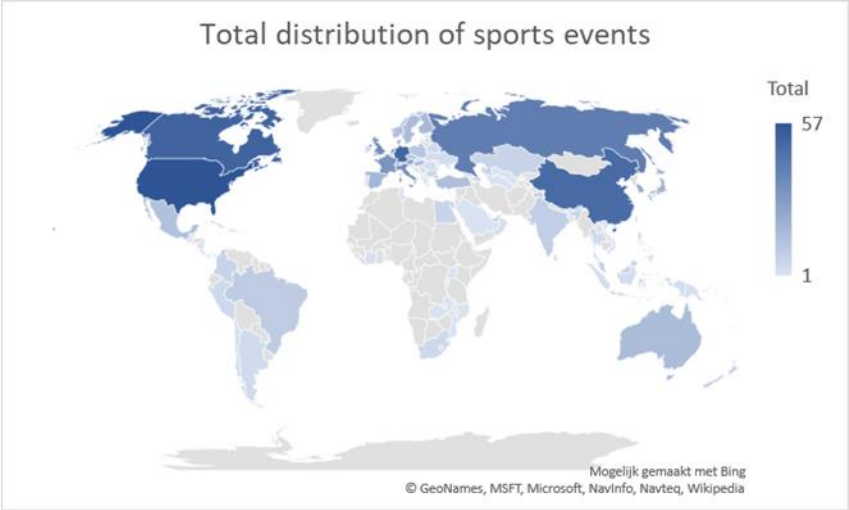


Figure 1 Total distribution of sports events

As is evident from figure 1, Europe dominates the organization of sports events. The sub-continents 'North America' and 'Eastern Asia' have also hosted a great amount of sports events during the period. All other (sub-)continents lack far behind with a particularly small contribution of the complete African continent. However, when segmenting between Type A & C events, as done in figure 2, a slightly adjusted image appears.

'Eastern Asia' is currently the dominant player concerning Type A events. Moreover, subcontinents 'Southern Africa' and 'Australia and New Zealand' have organized a Type A event while having little hosting experience concerning Type C events in the analyzed period. The difference in the global

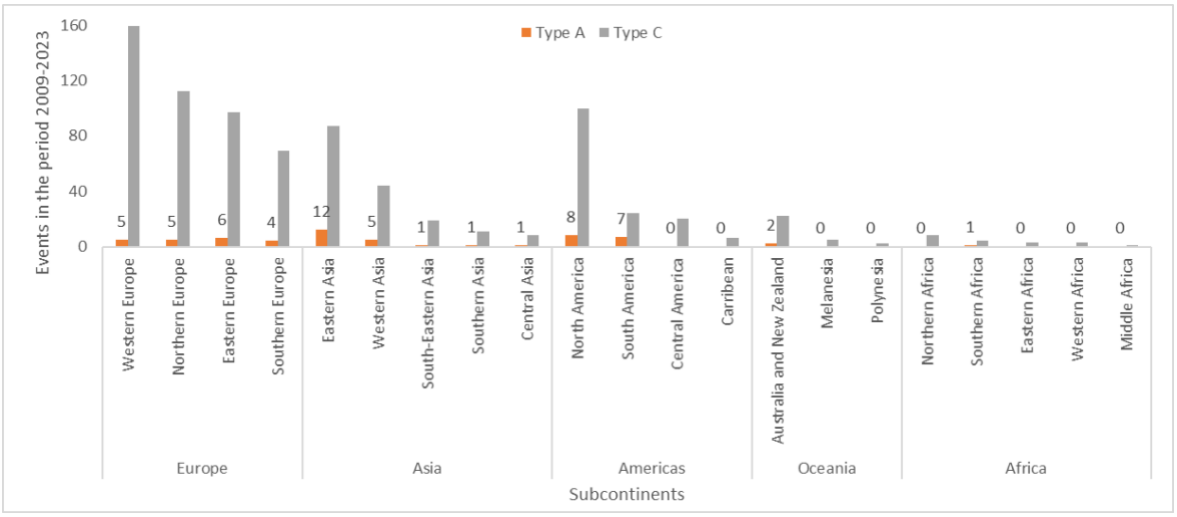


Figure 2 Segmentation per subcontinent between Type A and Type C events

distribution of the two types of events possibly indicates that countries do not follow the same hosting strategies. For example, South America hosted 31 events of which 7, thus 23%, were Type A events. This could indicate a focus on Type A events in the hosting strategy of the subcontinent, in particular by Brazil which is the main driver of these events. In contrast, in Western Europe only 5 Type A events were organized during the analyzed period, while 159 Type C events took place (approximately 3%). These strategy choices are possibly due to differences in country-specific characteristics.

Until now, the academic literature in the area of sports events consists of ex-post economic or social impact studies in relation to one or an event. However, little has been written about the bidding processes preceding these sports events and the hosting behavior of countries. Moreover, previous literature has consisted of case studies of one or a few sports events (Fourie & Santana-Gallego, 2011, Peeters et al., 2014, Maennig & Vierhaus, 2017, Knott et al., 2017, Tomlinson et al., 2011, Wilson, 2006), with a high frequency of Type A events being studied. The large gap in the literature concerning the hosting behavior of countries, in combination with the absence of studies on multiple Type C events, has led to the following central research question of this paper:

"To what extent do country-specific characteristics determine the hosting behavior of countries concerning non-mega sports events?"

Besides Type C events, the dataset used for this paper also includes Type A events. All events took place or are scheduled to take place between 2009 and 2023. I define mega events as "Type A" events and non-mega events as "Type C" events. I use these terms interchangeably throughout the paper. All Type C events in the dataset concern world championships. Type A events can either be world or continental championships, such as the European Championships football.

The remainder of this paper consists of four sections. Firstly, in the theoretical framework (section 2) I will describe the two current major trends in the hosting behavior of countries and the benefits associated with hosting sports events. In section three I will first analyze the key factors of Type C events using the dataset before discussing the methodology of the paper. Following, I will describe the results in section four and the main limitations and suggestions for further research in section five. Finally, in section six I will answer the research question.

2. Theoretical framework

2.1 Trends in hosting behavior of countries

Currently there are two major trends concerning the hosting behavior of countries. First, until recently only countries from the traditionally rich, industrialized world hosted mega events. However, since the 90's an increasing amount of developing countries have started bidding to host sports events (Peeters et al., 2014). Especially the BRIC countries and the Middle East are now better able to take a more strategic view of their options. These countries were previously bidding on a narrow range of (smaller) events due to their then economic disadvantage. In contrast, in connection with both the global financial crash and subsequent sovereign debt crises in the Eurozone, European countries have become more critical about the added value of hosting sports events (The Bid Book, 2013). This trend is interesting because mega events have different effects on countries in differing stages of socioeconomic development (Swart, 2005)

Second, an increasing number of countries are focusing on hosting Type C events instead of Type A events. According to Needham (2012) countries could gradually develop their sports event tourism through hosting a number of smaller sized events. This way they establish a trend and are not forced to for example construct multiple new sport facilities at the same time.

There is limited literature available about the cost-related risks of organizing a non-mega event. From the decreased scale of the event, I conclude that these risks are smaller than for mega events. As a consequence, non-mega events could be a smarter alternative for smaller countries which might not have the capacity or financial funds to take on a mega event. Moreover, in line with this reasoning, recent destination management literature has shown that countries could benefit from considering smaller, home-grown events, rather than continuing to focus on mega events (Knott et al., 2017).

2.2 Cost-benefit analysis as analysis tool

Both trends indicate that the motives of countries to bid on sports events are mainly based on the economic consequences of hosting. Beforehand, policy makers and cities will often demand economic impact studies of sports events when they consider to bid on large-scale events (Barajas et al., 2016).

However, ex-post studies often illustrate the economic impact of a sports event is substantially less than was forecasted (Walters, 2011). Késenne (2005) makes a strong argument against these economic impact studies and for cost-benefit analysis (CBA). Impact studies solely measure the flow of foreign money into the country, the sign of this flow always being positive. To achieve these flows investments are necessary. However, the costs of these investments are not accounted for in impact studies. Governments should thus opt for CBA when determining whether to subsidize sports events.

The main difficulty when using CBA is that while the costs of sports events are measurable in financial terms, not all benefits are. In the case of Type B events an economic multiplier is generally used to estimate these benefits (Gratton et al., 2000). However, due to the irregular, one-off character of Type C events, estimating the accurate multiplier becomes difficult. The magnitude of this multiplier strongly depends on specific location characteristics (GSI Report 2017). For example, the projected attendance of an event can have a high margin of error due to the level of interest in an event differing per host country (Gratton et al., 2000). The lack of experience nations have hosting a specific event is often only partly compensated with the use of fly-in fly-out international experts (Weber et al, 2012).

Overall, the academic literature agrees the economic benefits for a country from hosting a sports event are negligible at best (Kavetsos & Szymanski, 2010). However, while being aware of this, countries continue to bid to host events. This implies countries expect other, non-economic benefits from hosting a sports event. I will focus on three factors argued by Baade & Matheson (2016) as benefits of the Olympics: improved infrastructure, increased tourism and intangible benefits.

2.2.1 Infrastructure

In reference to sports events, there are two main types of infrastructure: public infrastructure (examples: public transport, roads and airports) and sports-related infrastructure (example: stadiums). Regarding sports-related infrastructure, countries are increasingly using temporary facilities and facilities that can be downscaled or converted when hosting an event (Hartman & Zandberg, 2015). This is in contrast with before, when the majority of event venues were newly constructed (Stewart & Reyner, 2016). These new stadia were often used by cities to communicate images as machismo, modernity and progress (Smith, 2005). They were believed to have the capacity to become imageable elements of the urban environment.

Sports federations also play a role in the construction of these "white elephants"[1]. FIFA (football association) for example requires the host nation to have a stadium with a capacity of 80,000 people for the final match of a tournament (Alm et al., 2016). While governments often pick up a large part of

[1] Extravagant stadiums being built which in the long-term are no longer used but do have high operational costs

the bill, other public and private enterprises are the ones benefiting from the event. This creates a free-riding effect leading to cost-overruns on the construction of these venues. The optimal expenditure of the government is much lower than the one proposed by free-riding organizations wanting to build an extravagant venue for marketing purposes.

According to Alm et al. (2016) the construction of a new stadium (or major renovation of an established stadium) should only be carried out in a place where a team that attracts large, regular crowds already exists. Meeting these terms becomes increasingly difficult in the case of multi-sports events. For these events countries are forced to build specialized sports infrastructure for sports which are not practiced intensively in the country. These venues will have little use beyond the Games (Baade & Matheson, 2016).

In relation to public infrastructure a popular critique about mega events is that the investments are financed with public money (Peeters et al., 2014). However, it is questionable whether the benefits from improved infrastructure should be attributed directly to a sports event. When new infrastructure is built in the period preceding a sports event, there are two situations possible. First, the infrastructure improvements were necessary anyhow. Second, the infrastructure improvements are specifically necessary for hosting the sports event but do not provide any benefit for the local population afterwards. In both cases there is no justification for arguing the infrastructure expansion should be viewed as a benefit directly related to hosting a sports event (Rose & Spiegel, 2008).

2.2.2 Tourism

Attracting (additional) tourism to certain regions is one of the main reasons for countries to host international sports events (Swart, 2005, Gratton et al., 2000). I distinguish between two types of tourism benefits: short-term and long-term benefits.

Long-term tourism benefits entail an increase in tourists visiting the host country after the event has taken place. Within destination marketing, sports events are increasingly regarded as communication instrument (Hallmann & Breuer, 2011). If used effectively, local authorities obtain opportunities to market their city and/or country (Walters, 2011). Fourie & Santana-Gallego (2011) find that mega sports events increase tourism by roughly 8% in the same year. However, they find large disparities between different types of events and the events included in the sample were all held in countries with already high tourism ratings. The effectiveness of a marketing strategy generally increases when there are synergy effects between the event and hosting destination (Hallmann & Breuer, 2011, Kaplanidou et al., 2013).

Short-term tourism entails the spectators travelling to the host country from abroad specifically for the event. The spectators present at an event were previously the main driver of income for many

Type A, B and C events (Wilson, 2006). However, due to improved broadcasting technology the home viewing experience of fans has improved significantly (Walters, 2011). For example, key proceedings of tournaments are often scheduled for European or US primetime TV (Weber et al., 2012). These technological developments are pushing sports organizations to rethink how to draw audience to the stadium (Deloitte report 2017).

Jones (2008) shows the importance of not treating these spectators as a homogeneous group. He identifies three types: locals, casual attendees whose primary purpose of travel is unrelated to the sporting event, and fans who travel specifically to watch the event. Concerning event-specific travelers, Wilson (2006) finds that commercially staying visitors are of high importance because their average level of expenditure is higher in comparison to non-commercial visitors. Moreover, according to Peeters et al. (2014) a key ingredient to the success of a mega event is attracting a large number of rich, foreign tourists.

Considering the effect of this additional short-term tourism on existing tourism streams, Fourie & Santana-Gallego (2011) propose the level of crowding out depends on the season in which the event is hosted. In the case of the FIFA World Cup 2010, the tournament was hosted outside of South Africa's main tourist season, which reduced the scope for these crowding-out effects (Peeters et al., 2014).

2.2.3 Intangible benefits

As discussed in the paragraphs above, the benefits of hosting sports events in relation to infrastructure and tourism are very uncertain and it is questionable whether they are directly related to hosting a sports event. However, besides these tangible benefits there are also intangible benefits to be considered.

The first intangible benefit according to Kaplanidou et al. (2013) are the social benefits gained from an event. Examples of these benefits for the community are knowledge development through volunteering and socialization opportunities with other people who share similar interests. These benefits are important because sports event consumers value them and they can positively influence future behavior of citizens. As described by Tomlinson et al. (2011) the abstract implications of participating and jointly engaging in a remarkable moment in time are significant. In addition Kavetsos & Szymanski (2010) show the populations of a countries hosting a mega event report to have a higher levels of life satisfaction. They show that this "feel good factor", in relation to the hosting of football events, is large and significant.

Secondly, according to Smith (2005) an increasing number of post-industrial cities are using sports to reimage their city. Moreover, developing countries are using sports events increasingly for brand-related opportunities (Tomlinson et al, 2011). Important to note in this case is that the effect of a sports

event on the image of a city/country does not need to be positive, a negative or even negligible effect is also possible (Smith, 2005, Hallmann & Breuer, 2011).

According to Knott et al. (2017) the opportunities for reimaging differ depending on the state or stage of development of the nation's brand. For instance, for countries which have previously suffered from a poor image, leveraging a mega event to alter the host nation's image has shown to be easier (Grix, 2012). However, concerning which type of countries enter into bidding processes, a selection bias seems to exist. In relation to Olympic bidders these countries seem to all be exclusively drawn from a set of countries with bright future prospects and sound economies (Baade & Matheson, 2016). A main disadvantage of using sports event for brand-related opportunities is the attraction of autonomous actors reporting this sports event. For this reason it is difficult for countries to control the entire message communicated. However, if the nation is in an overall positive state, the probability of a positive message is surely increased (Smith, 2005).

2.3 Hypotheses

I divide the central research question in five hypotheses which all relate to a specific country characteristic.

2.3.1 Country Size

The first hypothesis relates to the size of a country, both geographically and in terms of the number of inhabitants. I expect a positive relation between the geographical space a country covers and the number of Type C events hosted. When a country is larger, it may possess a larger diversity of existing sports infrastructure. This enables the country to organize a more diverse range of sports events. In addition, when multiple host cities within one country are required for a tournament, a larger country is more likely possesses multiple larger cities for this role. Moreover, I expect that it is easier for a large country to organize multiple events within the same year by spreading them across different cities. A smaller country may only be able to organize one event annually because a lack of hotel capacity, transport infrastructure and operational capabilities.

I also expect a positive relation between population size and the number of Type C events hosted by a country. If the population in a country is larger, this implies a larger potential spectator pool for an event. Being well-visited adds to the commercial value of events which is an important factor for sport federations. Moreover, a larger workforce being present in a country can prove to be beneficial during the organization of an event. In contrast, according to Weber & Knight (2012) rich economies with relatively small populations are in the perfect position to host events. They benefit strongly from these events due to the attraction of outside consumption as domestic demand is limited. However, due to

the limited number of these types of countries globally, I hypothesize an overall positive relation between country size and non-mega events.

H1: A larger country will ceteris paribus host more non-mega sports events.

2.3.2 Presence of a mega city

As mentioned before, many countries use sports events to improve the nation's image. In 2017 the United Nations published a list of 31 mega cities with more than 10 million inhabitants. The majority of these cities are very well-known. I therefore expect these cities to be less motivated to organize an event purely for promotion purposes. However, during the analyzed period, Moscow (14), Paris and London (both 10) organized a large number of non-mega events. This seems to be mainly due to practical reasons. A mega city is more likely to possess existent, diverse sports infrastructure and have previous experience hosting large events. Moreover, a mega city will be operationally capable of providing sufficient hotel capacity solely due to its larger size.

This relation may be particularly interesting when segmenting between the different types of sports events. I expect that the presence of a mega city is less relevant for a winter sports event as the presence of a mega city in an alpine area is rare. Moreover, in the case of commercial events, it may be beneficial for rights holders to organize these events in mega cities, as the potential spectator pool and possible commercial opportunities will increase significantly.

H2: The presence of a mega city in a country increases the probability the country will ceteris paribus organize more non-mega sports events.

2.3.3 Wealth

I expect a positive relationship between the financial health of a country and the number of non-mega sports events hosted. Self-selection is assumed to take place in the bidding process for sports events. To successfully host an event a country needs sufficient financial funds. If they do not possess these funds they will not enter the race. The motives of Rome to no longer bid for the 2024 Olympics were for example financially driven (NOS, 2016). I do not expect that the smaller economic consequences of Type C events will change the sign of this relation. However, the required GDP-level to host a Type C event will most likely be lower than for a Type A event.

Due to the smaller scale of Type C events, wealthier countries might opt to organize mega events instead of non-mega events for increased exposure. If so, the top layer of wealthy countries will to a lesser extent be hosting Type C events than countries in the layers below. However, I expect this negative effect to be relatively small. Before bidding on a Type A event countries test themselves by organizing Type C events. Moreover, countries will be better able to host an increasing number of Type C events due to their new sports infrastructure after hosting a Type A event (The Bid Book, 2013).

H3: A wealthier country will ceteris paribus host more non-mega sports events.

2.3.4 Quality of life

Intuitively I would expect that when a country suffers from issues such as a low education level of its inhabitants, a non-sufficient health care system and lacking infrastructure the priorities of this country's government will lay elsewhere than organizing a non-mega sports event. Countries for which these issues are less pressing would then be more present in the hosting arena, having the 'luxury' position of being able to focus on issues as sports participation. However, there have been cases in the past in which an Olympic bid was regarded as a matter of 'misplaced priorities' (Hiller, 2000). Governments could for instance use sports events to distract the population from the social problems in the country. The relationship between quality of life and the number of Type C events hosted thus seems to be ambiguous.

However, I expect brand-related opportunities to also play a role for this relationship. During an event a host country is generally under a telescope in the media. Many autonomous actors will be reporting about the event around the world. The story they tell does not necessarily need to be positive for the image of the country (Hallmann & Breuer, 2011). According to Smith (2005), the state a country is in can have a large influence on the message spread by these actors. Countries in which the quality of life is lower will therefore want to avoid receiving additional media attention. I thus hypothesize that if the quality of life in a country is higher, the country will be more likely to host non-mega events.

H4: A country in which the quality of life is higher will ceteris paribus host more non-mega sports events

2.3.5 Tourism in a country

As discussed in section 2.3., the effect of a sports event on the number of tourists visiting a country depends on multiple factors. In the long-term the synergy between the brands of the host nation and the event is one of the main criteria. As brand promotion opportunities show to be one of the main benefits from hosting a sports event, I expect that countries which already have high tourism streams will focus less on organizing sports events. This to both prevent a 'crowding-out' effect and because governments will most likely not find the investment necessary.

H5: Countries which enjoy a higher tourism rate are less likely to host non-mega sports events

3. Data & Methodology

3.1 Characteristics Type C events

Type C events are defined as: "Irregular, one-off, major international spectator/competitor events generating limited economic activity (ex. World Badminton Championships)" (Gratton et al., 2000).

According to Wilson (2006), it might be reasonable to assume that Type C and D events, when considered as a group of events in a specific city, could generate significant levels of additional expenditure. However, currently the literature on small-scale events is sparse (Barajas et al., 2016). To give a better description of this type of sports event, I discuss the main observations from the dataset. Of all Type C events included, I collected data concerning the number of athletes participating, the number of nations represented, the capacity of the final stadium and the average length of the events organized. These factors together provide a better indication of the scale and impact of Type C events.

3.1.1 Total number of events per sport

The Type C events included in the dataset are spread out over 61 sports. Each sport generally has its own sports federation. In figure 4 the sports with more than 10 events organized in the period 2009 – 2016 are displayed. Most striking is the large number of cycling events taking place during the period. These consist of mountain bike, BMX, road, track, indoor and cyclo-cross events. All these disciplines fall under the Union Cycliste Internationale (UCI). Events are generally the main revenue source for sports federations. For this reason federations tend to opt for safe host choices (The Bid Book, 2013). In the case of the UCI, 35 of the 51 events were organized in Europe. Moreover, of the 37 Triathlon events taking place, again the majority (24) were held in Europe. Both sports have their origin in Europe which can possibly partly explain this skewed distribution.

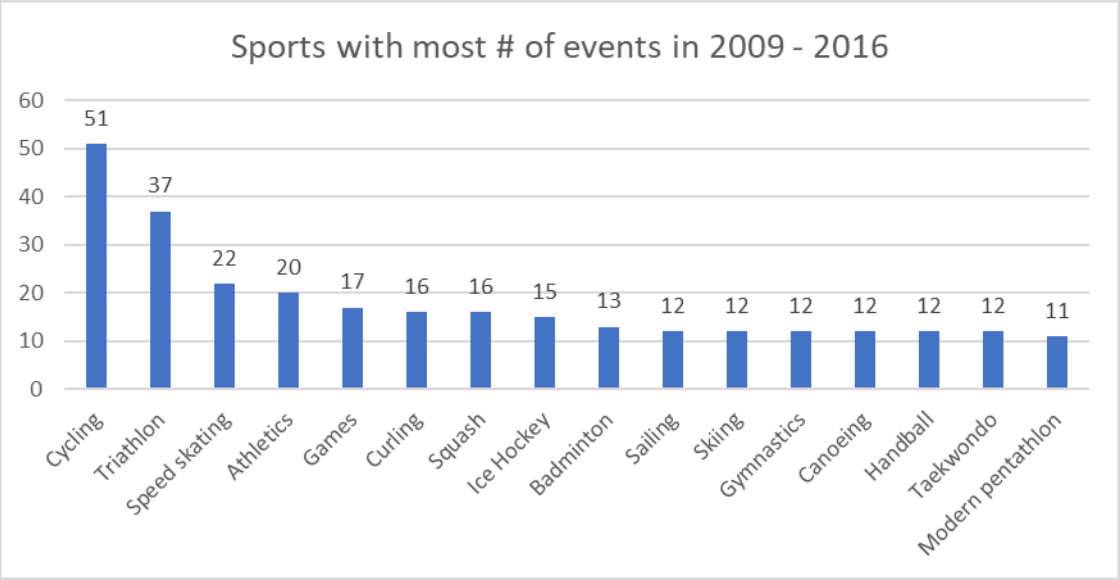


Figure 3 Sports with highest number of events organized during the period analyzed

The global distribution of speed skating events is relatively concentrated. Only 9 different host nations have divided the 22 events taking place. Moreover, China is the only newcomer on the list of announced future host countries. I expect the availability of specialized venues plays a large role for this sport. In June 2018 the International Skating Union (ISU) voted to combine its world championships

for the three main speed skating disciplines (allround, sprint & individual distances) from 2020 onwards (ISU website, 2018). This will lead to a large decline in the number of annual hosting opportunities.

3.1.2 Number of athletes and nations participating per event

Intuitively, events with more participating nations will attract more media coverage. However, the addition of an athlete from a larger country to an event will lead to a relatively stronger increase in viewers. For example, if an athlete from the United States participates in an event an additional 326 million people might potentially watch a tournament, while in case of the Netherlands the maximum additional market consists of 17 million inhabitants. In figure 4 the average number of athletes participating in an event is plotted against the average number of unique nationalities of these athletes.

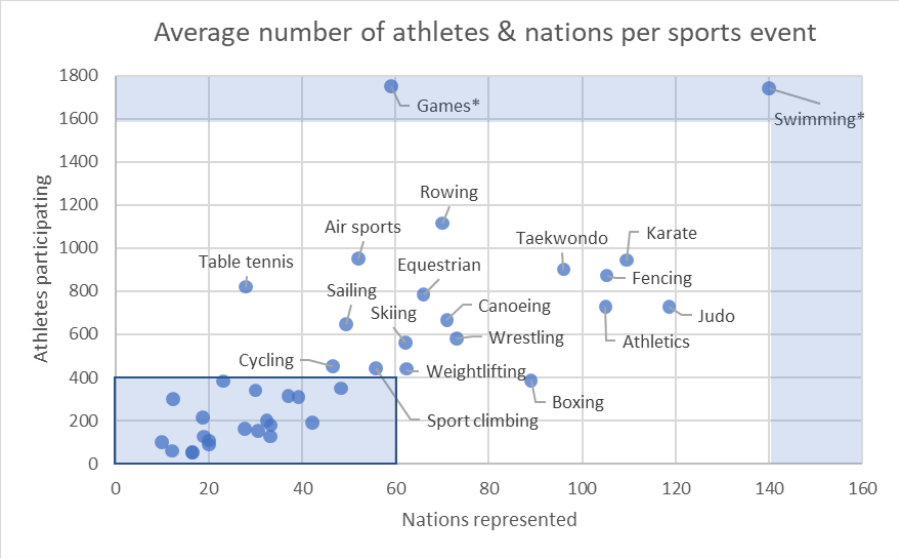


Figure 4 Average number of athletes & nations per sports event
*Description of sports in the blue square and marked with an * can be found in the appendix*

A Type C event will on average[2] attract 428 athletes (range 52-1115) from 48 nations (range 10-119). The median values concern 341 athletes and 33 nations participating in events. Besides expected media coverage, these statistics are also relevant for short-term event income. The number of athletes competing directly influences the required number of hotel nights and additional food expenditures. A multiplier can generally be used to estimate the support staff surrounding an athlete as this will be comparable among athletes and relatable to previous events.

The two outliers in the dataset are continental games and swimming events. The high number of participants competing in continental games (on average 4395) in relation to the number of nations

[2] The two outliers, Games & Swimming, are not included in these averages

participating is largely due the multi-sport nature of these events. The high amount of nations participating in swimming events indicates the sport is globally widely practiced at a professional level.

3.1.3 Attendance at Type C events

As can be observed in figure 5, the attendance numbers of the world championships ice hockey differ greatly per edition. This diversity in the number of spectators per edition is not specific to ice hockey and is observed for other non-mega events as well.

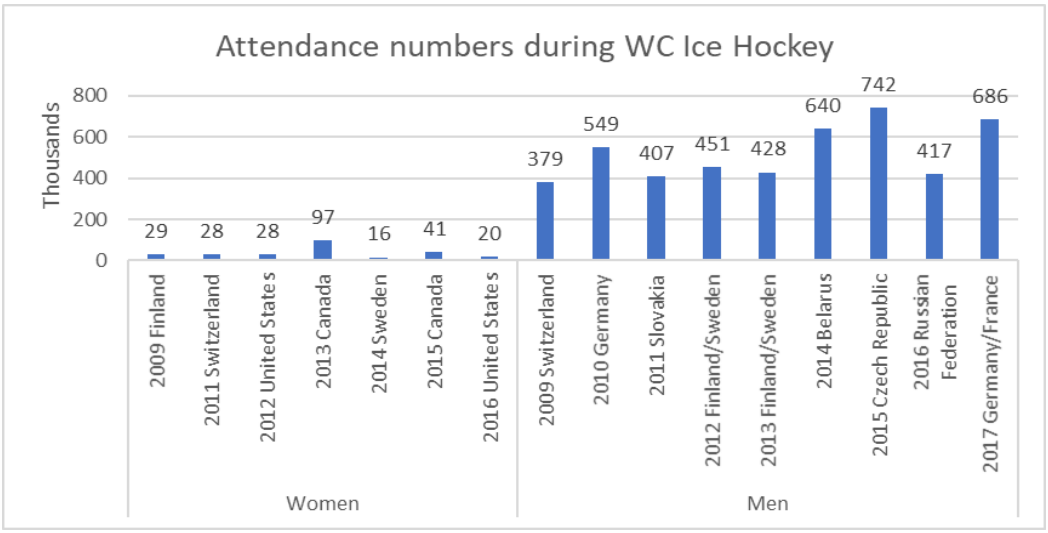


Figure 5 Attendance numbers during previous editions WC Ice Hockey

Five main factors determine attendance numbers. First, the capacity of the available venue provides a certain maximum (Mohan, 2010). Secondly, the location of this venue can be of influence. A venue located in a relatively urbanized area receives more visitors due to better accessibility (Hall et al., 2010). Third, the ease with which a (foreign) spectator can travel to an event will largely determine whether he or she decides to attend (Mohan, 2010). The fourth factor affecting attendance is the embeddedness of a sport in a country. If a sport is well-known and more locals have an emotional connection with it, the domestic demand for visiting the event will be higher (Hall et al., 2010). Lastly, whether an event is held in an Olympic year can play a role. The Olympics can function as indirect promoter of a world championship in the same year. However, the timing of the event is critical. If the world championships are the qualifying event for the Olympics this will heighten the stakes thus increasing the excitement around the non-mega event. However, if the event takes place after the Olympics, it could be the case athletes have adjusted their training schedule to be at their peak during the Olympics. They will consequently put less emphasis on or do not attend the world championships. When less well-known athletes participate in an event the media and spectator interest decreases.

In the case of the world championships ice hockey the attendance numbers are provided by the IIHF, however this is an exception to the rule. Especially for outdoor events it is generally difficult to measure

attendance. This is even more so the case for Type C events due to their smaller economic relevance. To estimate attendance at Type C events I make use of an indicator, namely the capacity of the venue in which the final match of a sports event was held. I make the assumption that event hosts will use their largest venue for the final match. Largest drawback of this indicator is that utilization percentages of venues can differ strongly depending on the attractiveness of the event and the price per ticket charged.

As shown in figure 6, the venues in which the final match of sports events are held differ greatly in capacity. Only a limited number of sports have events taking place at venues with capacities of more than 20,000 people. There may be an upward bias of the average venue capacity (17,164) since not for all sports data concerning venue capacities was available.

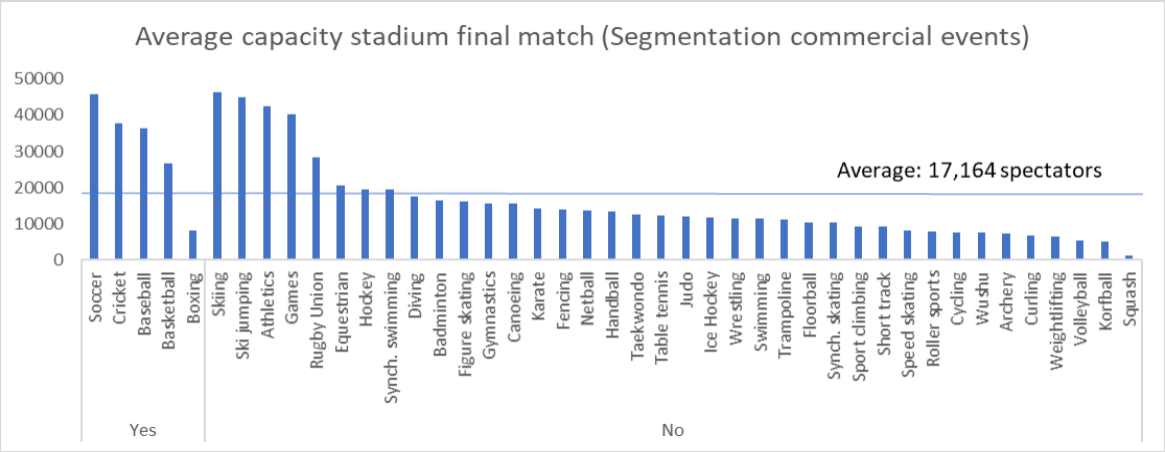


Figure 6 Average capacity stadium final match per sport

The average duration of a sports event is 9 days (range 2-31). This factor is not taken into account when solely using the venue of the final match as an indicator of attendance numbers for a sports event. Moreover, the capacities of the different playing venues of a tournament can also differ greatly. Taking both these factors into account will most probably lead to an even larger diversity in the attendance numbers per sport.

3.1.4 Segmentation Type C events

I will make two distinctions among Type C events. First of all, I can make a very intuitive segmentation between summer and winter events. I used the programs of the Summer and Winter Olympics to distinguish whether a sports event should be seen as a “Summer” or “Winter” event. For the remaining sports I chose the most similar Olympic discipline or a sport which has similar requirements in terms of venue to make the distinction.

As shown in figure 7, approximately 60 summer events take place each year compared to 15 winter events, a ratio of 4:1. The percentages in the figure indicate the variation in hosts countries for the

sports events held in this year[3]. I observe that the diversity of hosts is on average greater for winter events than summer events.

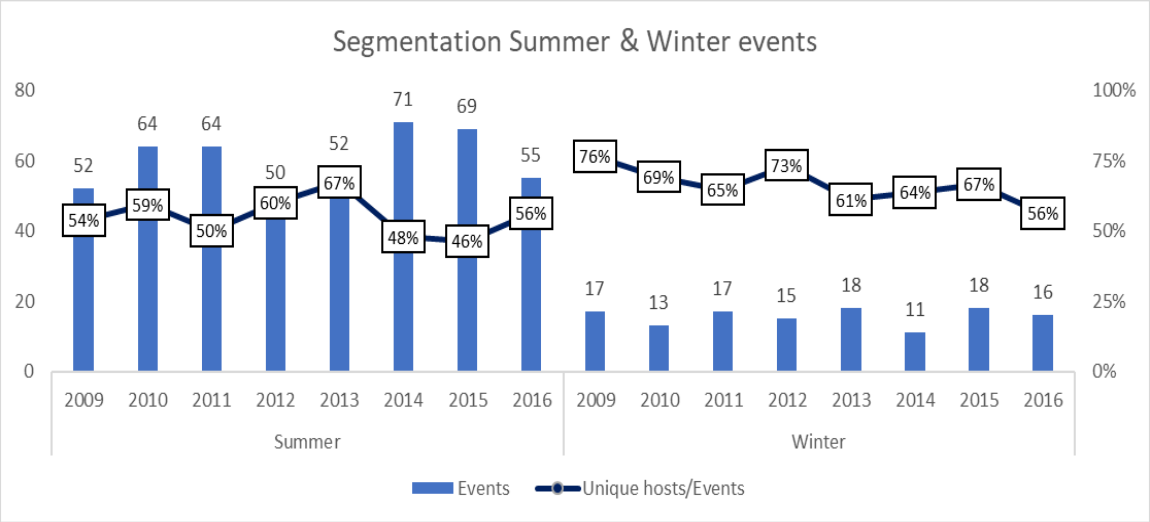


Figure 7 Number of events & percentage of unique hosts of summer/winter events

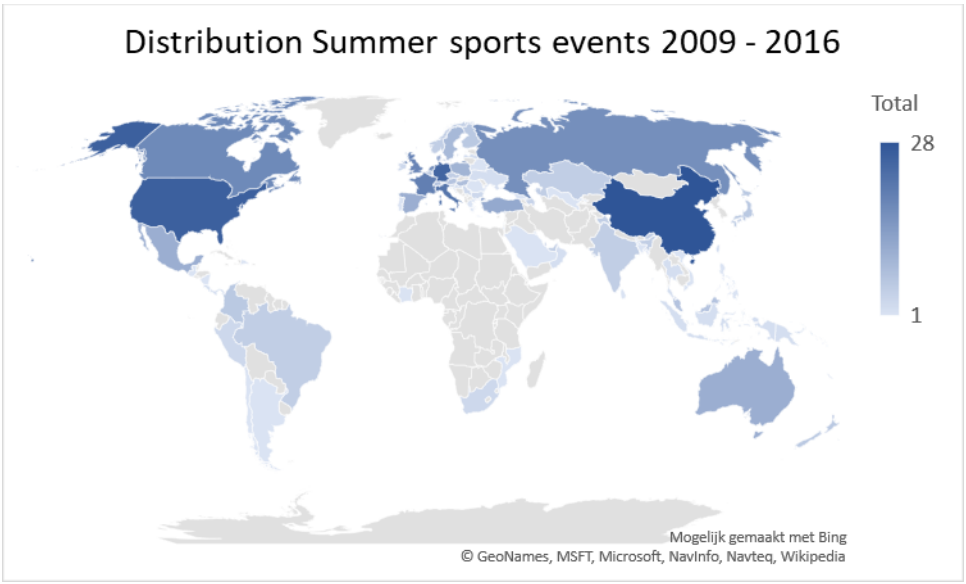
Figure 8 on the following page shows a heat map of where summer and winter events have been hosted during the period 2009 – 2016. I observe a focus of winter events in North America, Europe and Eastern Asia. No events have been hosted outside these regions. In the case of summer events the global spread is much wider.

For the countries hosting a large amount of events the segmentation does not show to make a large difference. For both summer and winter events the United States, China and Germany are the dominant players in the hosting arena. Moreover, France, Italy and the United Kingdom fill in place four to six in both cases. However, there are 31 countries in the dataset which have hosted only 1 summer event during the analyzed period while Belarus is the only country hosting only 1 winter event. Thus, the hosts of winter events more often host multiple events.

In comparison to summer events, winter events are relatively more dependent on climate, requiring an alpine landscape and cold temperatures (Hofmann, 2012). Due to these requirements, I expect these events are less often held in mega cities. Moreover, for winter events, the concept of 'variety seeking' is increasingly relevant. According to Kaiser et al. (2013) winter sports tourists do not want to travel to the same destination annually. They want to have new experiences, discovering new ski slopes for example. This implies that even highly satisfied consumers may not return. A positive tourism boost from hosting a winter sports event may therefore be short-term. It could be more

[3] The number of unique hosts of either a summer or winter event is divided by the total number of summer/winter events held in this year. Thus for example in 2009, 52 summer events were hosted by 28 countries. If the percentage is 100% each event was held in a different country.

beneficial to gain a spot on the calendar of the global series of these disciplines instead, leading to repeated annual exposure.



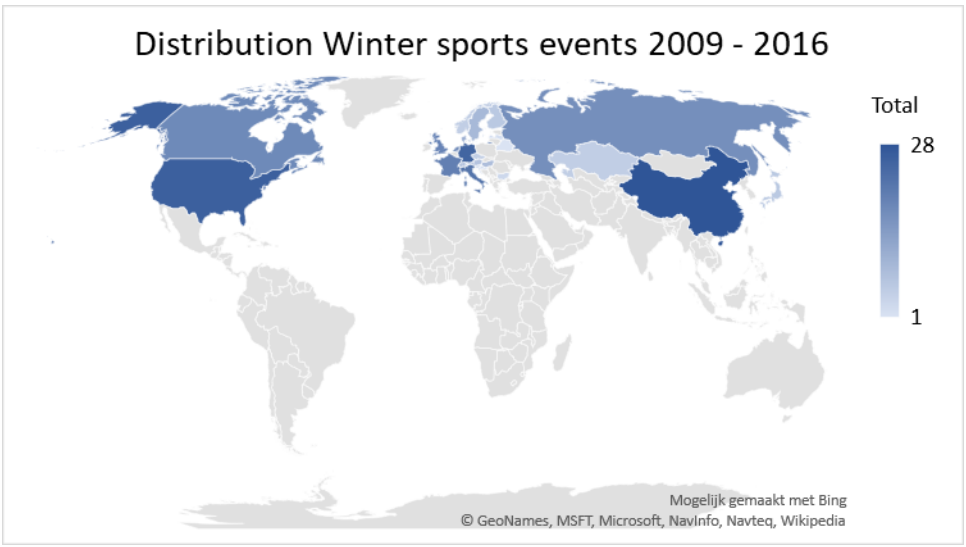


Figure 8 Distribution sports events segmented between Summer and Winter

The second segmentation I make is between commercial and non-commercial sports. I introduce a dummy in the data set which takes value 1 if at least one athlete of the sport appeared in Forbes list of top 100 best paid athletes of 2017. Together basketball and baseball represent more than half of this list with respectively 32 and 22 players named. Furthermore, American football (15), Soccer (9), Tennis (6), Auto Racing & Golf (both 5), Boxing (3) and Track, Cricket and Mixed Martial Arts (all 1) are on the list. Figure 9 shows a heat map of where commercial events have taken place during the analyzed period.

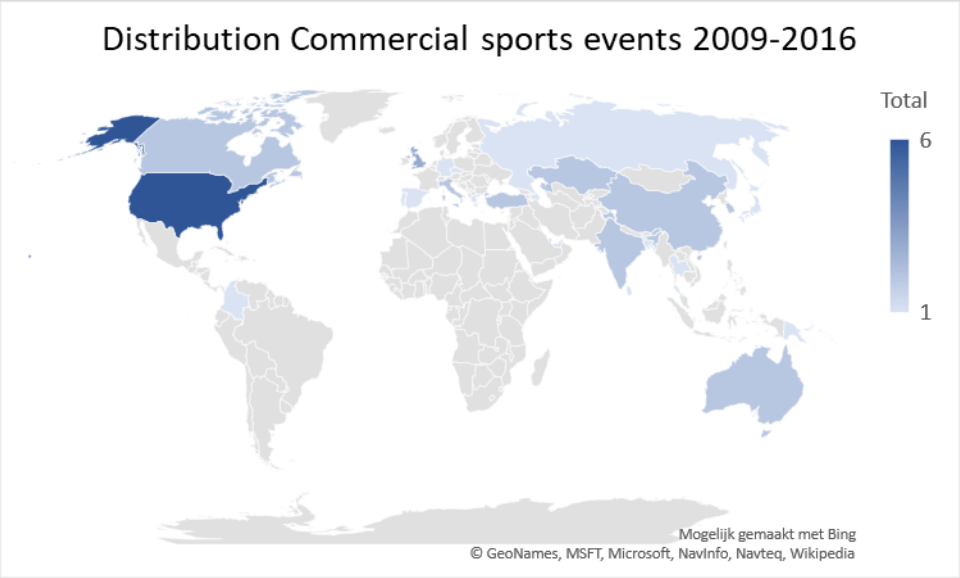


Figure 9 Distribution Commercial sports events 2009 - 2016

It can be observed that the commercial events are often held in larger, generally well-known destinations as the United States and the United Kingdom. However, at the other end of the spectrum, smaller countries like Barbados, The Bahamas, Solomon Islands, French Polynesia and Sri Lanka have also hosted commercial events.

3.2 Methodology

In the dataset variance is mainly observed between and not within the country-specific variables. For example, the within variation concerning the population or size of a country in square meters is not expected to differ greatly in a period of seven years. Thus when using a within estimator this leads to a loss of relevant variation. For this reason I use a between estimation model.

The between estimation model uses the time-averages of variables, in this case per country, and then runs a cross-sectional regression. Disadvantage of this model choice is that the coefficients of any individual-invariant regressors, such as time dummies, cannot be identified. Moreover, a between estimator will be biased when α_i is correlated with x_i.

Due to the panel data form of the dataset the majority of the observations of the dependent variable have value zero as a large part of the countries have never hosted an event. By taking the averages per country a partial correction can be made for the high skewness of the data.

Moreover, I take into consideration that there is a difference between the year a sports federation awards an event and the year it takes place. The board of this federation cannot know what for example the GDP per capita of the host country will be in 5 years. The announcement periods of events differ per federation and sometimes also per event awarded. Therefore I cannot simply corrected for

this with a lagged variable. By taking the average of a country-specific variable over seven years, I partially avoided this problem.

The formula I use for the between estimation regression is shown below. I will describe the specific variables and how they are measured in section 3.3. The first five coefficients relate to the main variables of interest. The bar above these variables indicates they concern averages per country during the analyzed period. The remaining coefficients relate to control variables.

$$\begin{aligned} Type\ C = \beta_0 + \beta_1 \times \overline{log(Populatıon)} + \beta_2 \times \overline{Number\ of\ mega\ cıtıes} \\ + \beta_3 \times \overline{\log(GDP\ per\ capıta)} + \beta_4 \times \overline{Lıfe\ expectancy} \\ + \beta_5 \times \overline{\log(Tourısm\ arrıvals)} + \beta_6 \times \overline{Type\ A} + \beta_7 \times continent(id) \\ + \beta_8 \times Summer\ events\ possible + \beta_9 \times Winter\ events\ possible + u_{it} \end{aligned}$$

3.3 Data description

3.3.1 Data gathering

As mentioned in section 1, the dataset used in this paper solely includes Type A & C events. The panel dataset consists of 869 sports events taking place in the period 2009 – 2023. For future events (2018 – 2023) data availability depends on whether the sports federations have appointed these events. I derived the selection of sports events from the Global Sports Nations and Cities Index. This index is published annually by Sportcal as part of their GSI Project. Through this project Sportcal aims to: "help stakeholders capture information about their events, analyze the data and benchmark against other events, nations and cities." I used the events included in the annual GSI reports of 2015 – 2017 as a starting point. Following, I manually collected data concerning prior and future editions of these events using the websites of the relevant sport federations as source.

Concerning the division of countries into (sub-)continents, I used the geographic regions as defined by the Statistics Division of the United Nations. This division defines 199 countries, all have been included in the panel data set. 93 of these countries hosted either at least one Type A or Type C event during the analyzed period. In 14 cases multiple countries jointly hosted events (leading to a total number of 213 observations). I do not include these events in the regressions to avoid double counting.

I retrieved the country-specific variables from the World Bank database. These variables were available for the period 2009 – 2016. There is a large dip in the number of hosts known after 2019 as sports federations have not yet appointed them. Due to this skewed distribution, the majority of the dataset (~ 70% of the events) remains in use when limiting the regression analysis to the period 2009 – 2016. The events taking place from 2017 onwards were only used in section 3. For a number of countries the

relevant country-specific variables were not available. Depending on which variables are included in regressions a range of 156 – 177 countries is available.

3.3.2 Variables of interest

Table 2 shows the descriptive statistics of the variables included in the regressions. Concerning the annual total events held per year in a country the maximum is 8 (Italy (2011), Canada (2015) & the United States (2016)), this is also the case for the number of Type C events held annually in a country. For Type A events this maximum is much smaller (2). Furthermore the maximum number of summer (7), winter (4) and commercial (3) events in a country are observed.

Table 2: Descriptive statistics

VARIABLES	(1) N	(2) Mean	(3) Sd	(4) Min	(5) max
Year	3,195	2,016	4.321	2,009	2,023
group(Country)	3,195	107	61.50	1	213
group(Continent)	3,195	3.174	1.865	1	7
group(Subcontinent)	3,195	14.05	7.089	1	24
Total	3,195	0.271	0.859	0	8
Type C	3,195	0.253	0.815	0	8
Type A	3,195	0.0185	0.154	0	2
# Summer events	3,195	0.214	0.693	0	7
# Winter events	3,195	0.0576	0.299	0	4
# Commercial events	3,195	0.0257	0.164	0	3
Total_population	1,427	3.879e+07	1.428e+08	10,025	1.379e+09
Surface_area	1,430	728,760	1.989e+06	2	1.710e+07
l_Surface	1,430	11.31	2.805	0.693	16.65
Population density	1,425	328.9	1,585	1.706	19,250
l_Population	1,427	15.58	2.219	9.213	21.04
Num_mega_city	1,440	0.172	0.674	0	6
GDP_per_capita	1,387	14,847	22,776	204.9	179,308
l_GDP_per_capita	1,387	8.608	1.501	5.323	12.10
Life_expectancy	1,369	70.93	8.414	46.86	85.42
Secondary_school_enrollment	951	83.41	28.48	9.073	163.9
Tourism_arrivals	1,292	6.207e+06	1.250e+07	1,100	8.445e+07
l_Tourism_arrivals	1,292	14.08	2.029	7.003	18.25
Arrivals_per_capita	1,287	0.930	2.600	0.000784	36.63
Summer events possible	2,610	0.931	0.253	0	1
Winter events possible	2,610	0.109	0.312	0	1

Concerning the first hypothesis the two variables of interest included in the regression are the log of surface area 'l_Surface' and the log of total population 'l_Population'. These variables respectively measure the geographical surface of a country and the total number of inhabitants. I included both been as a log because the coefficients produced are otherwise of a very small magnitude. Concerning surface area (expressed in square kilometers), a large dispersion can be observed. The smallest country Monaco has a surface area of 2 km^2 while the Russian Federation covers 17,098,250 km^2. In terms of population China shows to be the largest in 2016 with 1,378,665,000 inhabitants, Nauru only had 10,025 in 2010.

For the second hypothesis the variable 'Number of mega cities' indicates the number of mega cities present in a country. In the vast majority of the countries no mega cities are present. China (6), India (5), Brazil, Japan and the United States (all 2) are the only countries with more than 1 mega city. For a country to benefit from its mega city an event does not necessarily need take place in the city itself. The event can for instance take place in a smaller village in the countryside. However, the spectators travelling to the event can still benefit from the transportation structure in the mega city and the inhabitants of the city form a large potential spectator pool.

As indicator of the financial health of a country 'GDP per capita' is included in the regressions. The variable is expressed in current US dollar. Similar to population and surface area this variable is also included as a log.

For the fourth hypothesis I use two indicators: 'Life expectancy' and 'Secondary school enrollment'. Concerning 'Life_expectancy', a higher life expectancy points to a wealthier country with better medical care and a higher general quality of life. Moreover, in this specific case it could also be an indicator of the importance of sports in the daily lives of the inhabitants of a country. According to research, people which have a more active lifestyle will live longer (Panagiotakos et al., 2010). A higher sports participation rate moreover could have a positive influence on the spectator interest for non-mega sports events due to the sport being increasingly embedded in the daily life of the population.

'Secondary_school_enrollment' is included as an indicator of the level of education in a country. It measures the percentage of children going to secondary school in a country relative to the number of children that could age-wise be in secondary education. This is why this variable can also be higher than 100%, indicating children are possibly being held back due to lacking competences. If the inhabitants of a country are better educated they are expected to be more qualified and capable of planning and organizing a non-mega sports event.

Lastly, for the fifth hypothesis tourism in a country is measured in two ways. First of all the variable 'Tourism_arrivals' (included as a log) expresses the annual number of tourism arrivals in a country. To

correct for the importance of the tourism sector for a country I include an additional variable 'Arrivals_per_capita'. The variable serves the purpose of adding robustness to my findings by correcting for the differing effect of 1 million additional tourists per year for a small and a large country.

3.3.3 Control variables

I will add a number of control variables into each regression. First, the variable 'Type A' will be included, defining the amount of Type A events held in a country per year. As described before in section 2.3.3., countries use Type C events to organize Type A events and vice versa. I therefore expect there to be a positive relationship between this variable and the dependent variable.

Secondly, I add a continent dummy into the regression. This variable defines whether a country is part of Africa, the Americas, Asia, Europe or Oceania. If it turns out one continent is chosen over the others more often this indicates a preference of sports federations. This could for example be the case for Europe in which 30 of the 32 sport federations have their headquarters (The Bid Book, 2013). The two federations not located in Europe are the Taekwando federation (WTF) which is settled in Korea and the Badminton federation (BWF) in Malaysia.

Lastly, two control variables are added to control for whether summer or winter events are possible in a country. The relevance of these variables can be justified by for example the movement of the FIFA World Cup 2022 from the summer to the winter due to high temperatures in Qatar (The Mirror, 2018). This has large implications for domestic football leagues and has faced large opposition. Such a movement is a large exception, generally non-mega events are held in het same month each year due to otherwise conflicting with other global series events. The variables 'Summer events possible' and 'Winter events possible' concern dummies taking value 1 when this type of event is possible in a country. The mean of summer events is much larger indicating that in a higher percentage of the countries (~ 93%) summer events are possible.

I constructed these temperature control variables in the following way. I took five editions of the different types of Olympics (Normal, Youth, Special & Paralympics) between 2009 and 2015 as a sample for both summer and winter events. In the case of the summer events I reported the temperature in August, for winter events the temperature in February. These are the months in which the normal summer and winter Olympics generally take place. For summer events this resulted in a range of temperatures between 15,4 and 28 degrees Celsius, for winter events between -1,1 and - 23,9 degrees Celsius. Following, for each country I recorded the minimum and maximum temperature during a particular year. If the annual maximum temperature was above the threshold of 15,4 degrees in a year a value of 1 was noted for this country, otherwise it received a 0. Accordingly, if the minimum temperature of a country in a year was under the threshold of -1,1 degrees in a year a value of 1 was

noted for this country, otherwise it received a 0. If during the entire period (2009 – 2015) a country recorded the value 1 annually, I defined it to be suited to host either a summer or winter event. In total 215 out of 231 countries in the world are suitable to host summer events, however only 23 out of 231 are suitable for winter events, severely decreasing the hosting options. A disadvantage of the database I used to collect the temperatures, the World Bank, is that it uses a slightly different division of countries leading to a total amount 231 countries instead of 199. I corrected for this by only adding the data points with matching country definitions.

4. Results & Discussion

I display the results in two regression tables per hypothesis. The first table shows how the relevant variable(s) affect Type C events. In the second table I again test the relevant variable(s) however now the dependent variable 'TypeC' is replaced by 'TypeA', 'Winter events', 'Summer events' and 'Commercial events' (in the case of Type A I also leave out the control variable 'TypeA' and replace it by 'TypeC'.

4.1 Results Hypothesis 1

I display the results for hypothesis 1 in tables 3 & 4. The two indicators, population (columns 1 to 3) and geographical surface (columns 4 to 6) are entered separately into the regression. I choose to further use population as control variable for country size in the regressions relating to the other hypotheses.

For both indicators a significantly, positive coefficient is found, thus confirming the hypothesis. The coefficient relating to population remains of relatively consistent magnitude when adding control variables to the regression. The coefficient of population is relatively more significant than geographical space, implying a stronger relation with the number of non-mega events hosted by a country.

When segmenting between the different types of events in results table 4 the positive relation between population and Type C events shows to be true for winter, summer and commercial events. No significant result is found for Type A events. This is possibly due to the hosting efforts of for example Qatar and Singapore in line with the theory proposed by Weber & Knight (2012).

I conclude that both the number of inhabitants of a country and the geographical size have a significantly, positive effect on the number of non-mega events hosted. The effect is more significant for population.

Table 3: Results Hypothesis 1

VARIABLES	(1) Type C	(2) Type C	(3) Type C	(4) Type C	(5) Type C	(6) Type C
L Population	**0.149*** **	**0.113*** **	**0.131*** **			
	(0.0261)	**(0.0231)**	**(0.0417)**			
L Surface				**0.0949*** **	**0.0619*** **	**0.0449* **
				(0.0213)	**(0.0175)**	**(0.0267)**
Number of mega cities			0.0304			0.0889
			(0.0780)			(0.0768)
L GDP per capita			0.178***			0.114*
			(0.0641)			(0.0608)
Life expectancy			0.000982			0.000364
			(0.0120)			(0.0127)
L Tourism arrivals			0.0352			0.106**
			(0.0493)			(0.0429)
Type A		5.703***	4.538***		6.343***	4.747***
		(0.646)	(0.742)		(0.636)	(0.755)
Summer events possible		-0.0730	0.104		-0.0146	0.0640
		(0.191)	(0.201)		(0.197)	(0.207)
Winter events possible		0.225	0.310**		0.105	0.212
		(0.154)	(0.155)		(0.159)	(0.160)
Constant	-1.934***	-1.729***	-4.004***	-0.687***	-0.736**	-2.829***
	(0.411)	(0.420)	(0.840)	(0.248)	(0.310)	(0.731)
Observations	1,427	1,387	1,188	1,430	1,392	1,188
R-squared	0.155	0.616	0.669	0.101	0.591	0.653
Number of country_id	179	174	156	179	174	156
Continent FE	NO	YES	YES	NO	YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4: Results Hypothesis 1 Segmentation

VARIABLES	(1) Type A	(2) Type A	(3) # Winter events	(4) # Winter events	(5) # Summer events	(6) # Summer events	(7) # Commercial events	(8) # Commercial events
L Population		**-0.000138**		**0.0336***		**0.0978*****		**0.0153*****
		(0.00433)		**(0.0184)**		**(0.0306)**		**(0.00487)**
L Surface	**0.000124**		**0.0120**		**0.0329***		**0.00601***	
	(0.00264)		**(0.0116)**		**(0.0196)**		**(0.00311)**	
Num mega city	0.0325***	0.0326***	-0.0655*	-0.0803**	0.154***	0.111*	0.00812	0.00151
	(0.00706)	(0.00734)	(0.0334)	(0.0344)	(0.0564)	(0.0572)	(0.00895)	(0.00911)
L GDP per capita	0.00318	0.00301	0.0207	0.0368	0.0929**	0.141***	0.0144**	0.0215***
	(0.00602)	(0.00660)	(0.0264)	(0.0283)	(0.0447)	(0.0470)	(0.00708)	(0.00749)
Life expectancy	-0.000525	-0.000550	0.000543	0.000627	-0.000179	0.000355	0.000664	0.000621
	(0.00124)	(0.00120)	(0.00550)	(0.00528)	(0.00929)	(0.00878)	(0.00147)	(0.00140)
L Tourism arrivals	0.00261	0.00284	0.0148	-0.00290	0.0916***	0.0381	-0.000363	-0.00788
	(0.00429)	(0.00495)	(0.0187)	(0.0218)	(0.0315)	(0.0362)	(0.00500)	(0.00576)
Type C	0.0456***	0.0457***						
	(0.00726)	(0.00747)						
Type A			1.865***	1.813***	3.882***	3.726***	0.701***	0.678***
			(0.328)	(0.328)	(0.555)	(0.544)	(0.0880)	(0.0867)
Summer events possible	-0.0433**	-0.0436**	-0.111	-0.101	0.175	0.205	0.0655***	0.0689***
	(0.0200)	(0.0198)	(0.0900)	(0.0887)	(0.152)	(0.147)	(0.0241)	(0.0235)
Winter events possible	0.0227	0.0227	0.189***	0.215***	0.0227	0.0954	0.0116	0.0238
	(0.0157)	(0.0157)	(0.0696)	(0.0685)	(0.118)	(0.114)	(0.0186)	(0.0181)
Constant	0.0172	0.0210	-0.413	-0.706*	-2.416***	-3.298***	-0.277***	-0.404***
	(0.0753)	(0.0907)	(0.318)	(0.371)	(0.537)	(0.616)	(0.0852)	(0.0981)
Observations	1,188	1,188	1,188	1,188	1,188	1,188	1,188	1,188
R-squared	0.596	0.596	0.487	0.494	0.703	0.718	0.581	0.598
Number of country_id	156	156	156	156	156	156	156	156
Continent FE	YES	YES	YES	YES	YES	YES	YES	YES

Standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1)

4.2 Results Hypothesis 2

The second hypothesis concerns the effect of the presence of a mega city in a country. I display the results for this hypothesis in tables 5 & 6. For this hypothesis only one main relevant variable is included. In table 5 I observe a positive relationship between the presence of mega cities in a country and the occurrence of non-mega events. However, the coefficient of this variable is only significant when no control variables are added. This implies a weak relationship between the number of mega cities present in a country and the hosting opportunities of this nation.

Segmenting between the different Type C events is important for this hypothesis. For winter events I find a negative coefficient, while for summer events the coefficient is positive. These coefficients confirm my expectation that sport federations appointing winter non-mega sports events do not view the presence of a mega city as a benefit. These mega cities are generally not present in the required alpine landscape. In contrast, the venues of summer sports events are more likely to be located in a mega city. Hence, the presence of a such a city in a country is advantageous for a potential host country. Lastly, I find a positive coefficient for Type A events. This in line with my expectation that mega cities are more likely to have the existent sports infrastructure, financial means and hotel capacity necessary for hosting a mega event.

In summary, concerning the relation between mega cities and Type C events in general, I find weak significant results. However, for Type C summer events the hypothesis can be confirmed. In contrast, for winter events this relation shows to be opposite. Moreover, for Type A events a positive relation is found indicating having a mega city present in a country is an advantage when bidding for a mega event.

Table 5: Results Hypothesis 2

VARIABLES	(1) Type C	(2) Type C	(3) Type C
Number of mega cities	**0.492*** **	**0.124**	**0.0304**
	(0.0852)	**(0.0785)**	**(0.0780)**
L Population			0.131***
			(0.0417)
L GDP per capita			0.178***
			(0.0641)
Life expectancy			0.000982
			(0.0120)
L Tourism arrivals			0.0352
			(0.0493)
Type A		6.393***	4.538***
		(0.739)	(0.742)
Summer events possible		-0.107	0.104
		(0.205)	(0.201)
Winter events possible		0.153	0.310**
		(0.163)	(0.155)
Constant	0.300***	0.109	-4.004***
	(0.0593)	(0.221)	(0.840)
Observations	1,440	1,392	1,188
R-squared	0.158	0.567	0.669
Number of country_id	180	174	156
Continent FE	NO	YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Results Hypothesis 2 Segmentation

VARIABLES	(1) Type A	(2) # Winter events	(3) # Summer events	(4) # Commercial events
Num mega city	**0.0326*** **	**-0.0803** **	**0.111***	**0.00151**
	(0.00734)	**(0.0344)**	**(0.0572)**	**(0.00911)**
L Population	-0.000138	0.0336*	0.0978***	0.0153***
	(0.00433)	(0.0184)	(0.0306)	(0.00487)
L GDP per capita	0.00301	0.0368	0.141***	0.0215***
	(0.00660)	(0.0283)	(0.0470)	(0.00749)
Life expectancy	-0.000550	0.000627	0.000355	0.000621
	(0.00120)	(0.00528)	(0.00878)	(0.00140)
L Tourism arrivals	0.00284	-0.00290	0.0381	-0.00788
	(0.00495)	(0.0218)	(0.0362)	(0.00576)
Type C	0.0457***			
	(0.00747)			
Type A		1.813***	3.726***	0.678***
		(0.328)	(0.544)	(0.0867)
Summer events possible	-0.0436**	-0.101	0.205	0.0689***
	(0.0198)	(0.0887)	(0.147)	(0.0235)
Winter events possible	0.0227	0.215***	0.0954	0.0238
	(0.0157)	(0.0685)	(0.114)	(0.0181)
Constant	0.0210	-0.706*	-3.298***	-0.404***
	(0.0907)	(0.371)	(0.616)	(0.0981)
Observations	1,188	1,188	1,188	1,188
R-squared	0.596	0.494	0.718	0.598
Number of country_id	156	156	156	156
Continent FE	YES	YES	YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.3 Results Hypothesis 3

The third hypothesis relates to the financial wealth of a country and its effect on the number of non-mega events hosted. I display the results of this hypothesis in tables 7 & 8. For the variable of interest, 'GDP per capita', I find a significantly, positive coefficient. This finding is in line with the reasoning that sports federations tend to make 'safe' host choices, increasing the hosting opportunities of wealthier countries with higher financial funds.

For both summer and commercial events a significantly, positive coefficient is observed. In contrast, the financial wealth of a country does not show to have a significant effect on the hosting opportunities of a country concerning mega events and winter non-mega events.

Table 7: Results Hypothesis 3

VARIABLES	(1) Type C	(2) Type C	(3) Type C
L GDP per capita	**0.251*** **	**0.112*** **	**0.178*** **
	(0.0376)	**(0.0411)**	**(0.0641)**
L Population			0.131***
			(0.0417)
Number of mega cities			0.0304
			(0.0780)
Life expectancy			0.000982
			(0.0120)
L Tourism arrivals			0.0352
			(0.0493)
Type A		6.720***	4.538***
		(0.629)	(0.742)
Summer events possible		0.0643	0.104
		(0.206)	(0.201)
Winter events possible		0.192	0.310**
		(0.163)	(0.155)
Constant	-1.768***	-0.871**	-4.004***
	(0.328)	(0.405)	(0.840)
Observations	1,387	1,348	1,188
R-squared	0.203	0.579	0.669
Number of country_id	177	172	156
Continent FE	NO	YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 8: Results Hypothesis 3 Segmentation

VARIABLES	(1) Type A	(2) # Winter events	(3) # Summer events	(4) # Commercial events
L GDP per capita	**0.00301**	**0.0368**	**0.141*** **	**0.0215*** **
	(0.00660)	**(0.0283)**	**(0.0470)**	**(0.00749)**
L Population	-0.000138	0.0336*	0.0978***	0.0153***
	(0.00433)	(0.0184)	(0.0306)	(0.00487)
Num mega city	0.0326***	-0.0803**	0.111*	0.00151
	(0.00734)	(0.0344)	(0.0572)	(0.00911)
Life expectancy	-0.000550	0.000627	0.000355	0.000621
	(0.00120)	(0.00528)	(0.00878)	(0.00140)
L Tourism arrivals	0.00284	-0.00290	0.0381	-0.00788
	(0.00495)	(0.0218)	(0.0362)	(0.00576)
Type C	0.0457***			
	(0.00747)			
Type A		1.813***	3.726***	0.678***
		(0.328)	(0.544)	(0.0867)
Summer events possible	-0.0436**	-0.101	0.205	0.0689***
	(0.0198)	(0.0887)	(0.147)	(0.0235)
Winter events possible	0.0227	0.215***	0.0954	0.0238
	(0.0157)	(0.0685)	(0.114)	(0.0181)
Constant	0.0210	-0.706*	-3.298***	-0.404***
	(0.0907)	(0.371)	(0.616)	(0.0981)
Observations	1,188	1,188	1,188	1,188
R-squared	0.596	0.494	0.718	0.598
Number of country_id	156	156	156	156
Continent FE	YES	YES	YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.4 Results Hypothesis 4

Concerning the relation between the quality of life in a country and the number of non-mega events hosted, I display the results in tables 9 & 10. For life expectancy I find a small, positive relation. However, this relation loses significance in column 3 when adding all variables of interest. For education level I find a weakly significant result, however the magnitude of the coefficient is negligible.

When segmenting between the different types of events I only find a significant coefficient for education level in relation to winter events. This coefficient is again of negligible magnitude. In summary, I only observe a very weak positive relation between the quality of life in a country and the number of non-mega events hosted.

Table 9: Results Hypothesis 4

VARIABLES	(1) Type C	(2) Type C	(3) Type C	(4) Type C	(5) Type C	(6) Type C
Life expectancy	**0.0411*** (0.00709)**	**0.0209** (0.00881)**	**0.000982 (0.0120)**			
School enrollment				**0.0115*** (0.00228)**	**0.00184 (0.00289)**	**-0.00685* (0.00360)**
L Population			0.131***			0.104**
			(0.0417)			(0.0460)
Num mega city			0.0304			0.111
			(0.0780)			(0.0803)
L GDP per capita			0.178***			0.247***
			(0.0641)			(0.0720)
L Tourism arrivals			0.0352			0.0696
			(0.0493)			(0.0547)
Type A		6.810***	4.538***		5.497***	3.117***
		(0.633)	(0.742)		(0.650)	(0.691)
Summer events possible		0.0467	0.104		-0.0860	0.0621
		(0.207)	(0.201)		(0.230)	(0.217)
Winter events possible		0.183	0.310**		0.160	0.368**
		(0.165)	(0.155)		(0.185)	(0.169)
Constant	-2.517***	-1.323**	-4.004***	-0.512**	-0.00136	-4.064***
	(0.507)	(0.615)	(0.840)	(0.198)	(0.297)	(0.758)
Observations	1,369	1,329	1,188	951	926	869
R-squared	0.165	0.577	0.669	0.142	0.498	0.631
Number of country_id	172	167	156	156	152	146
Continent FE	NO	YES	YES	NO	YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 10: Results Hypothesis 4 Segmentation

VARIABLES	(1) Type A	(2) Type A	(3) # Winter events	(4) # Winter events	(5) # Summer events	(6) # Summer events	(7) # Commercial events	(8) # Commercial events
Life expectancy	**-0.000550**		**0.000627**		**0.000355**		**0.000621**	
	(0.00120)		**(0.00528)**		**(0.00878)**		**(0.00140)**	
Secondary enrollment		**0.000503**		**-0.00427*** **		**-0.00259**		**4.76e-05**
		(0.000424)		**(0.00158)**		**(0.00263)**		**(0.000397)**
L Population	-0.000138	0.00509	0.0336*	0.0246	0.0978***	0.0794**	0.0153***	0.0134***
	(0.00433)	(0.00546)	(0.0184)	(0.0202)	(0.0306)	(0.0337)	(0.00487)	(0.00508)
Num mega city	0.0326***	0.0254***	-0.0803**	-0.0424	0.111*	0.153**	0.00151	-0.00419
	(0.00734)	(0.00919)	(0.0344)	(0.0353)	(0.0572)	(0.0588)	(0.00911)	(0.00886)
L GDP per capita	0.00301	0.00135	0.0368	0.0867***	0.141***	0.160***	0.0215***	0.0198**
	(0.00660)	(0.00878)	(0.0283)	(0.0317)	(0.0470)	(0.0528)	(0.00749)	(0.00795)
L Tourism arrivals	0.00284	0.000856	-0.00290	0.0136	0.0381	0.0560	-0.00788	-0.00697
	(0.00495)	(0.00643)	(0.0218)	(0.0240)	(0.0362)	(0.0400)	(0.00576)	(0.00604)
Type C	0.0457***	0.0426***						
	(0.00747)	(0.00944)						
Type A			1.813***	1.203***	3.726***	2.914***	0.678***	0.691***
			(0.328)	(0.304)	(0.544)	(0.506)	(0.0867)	(0.0763)
Summer events possible	-0.0436**	-0.0467*	-0.101	-0.106	0.205	0.168	0.0689***	0.0533**
	(0.0198)	(0.0251)	(0.0887)	(0.0956)	(0.147)	(0.159)	(0.0235)	(0.0240)
Winter events possible	0.0227	0.0281	0.215***	0.262***	0.0954	0.106	0.0238	-0.00878
	(0.0157)	(0.0199)	(0.0685)	(0.0743)	(0.114)	(0.124)	(0.0181)	(0.0187)
Constant	0.0210	-0.0798	-0.706*	-0.878***	-3.298***	-3.186***	-0.404***	-0.321***
	(0.0907)	(0.0975)	(0.371)	(0.334)	(0.616)	(0.556)	(0.0981)	(0.0838)
Observations	1,188	869	1,188	869	1,188	869	1,188	869
R-squared	0.596	0.501	0.494	0.467	0.718	0.686	0.598	0.604
Number of country_id	156	146	156	146	156	146	156	146
Continent FE	YES	YES	YES	YES	YES	YES	YES	YES

Standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1)

4.5 Results Hypothesis 5

The final hypothesis relates to tourism and its effect on the number of Type C events hosted. I display the results in tables 11 & 12. Considering total annual tourism arrivals in a country I observe a positive coefficient. However, when adding all variables of interest in column 3, the coefficient loses its significance. For the variable 'Arrivals per capita', no significant effect is found. Together these results indicate a weak but positive relation between the number of tourism arrivals in a country and the number of non-mega events held. The importance of the tourism sector for a country does not show to be of significant importance. Segmenting between the different types of events does not change the conclusions I drew above. These results are in contrast with the hypothesis that countries with higher tourism streams will host less non-mega events.

Table 11: Results Hypothesis 5

VARIABLES	(1) Type C	(2) Type C	(3) Type C	(4) Type C	(5) Type C	(6) Type C
L Tourism arrivals	**0.247*** **	**0.160*** **	**0.0352**			
	(0.0271)	**(0.0280)**	**(0.0493)**			
Arrivals per capita				**-0.0153**	**-0.0294**	**-0.0340**
				(0.0266)	**(0.0191)**	**(0.0509)**
L Population			0.131***			0.143***
			(0.0417)			(0.0316)
Num mega city			0.0304			0.0302
			(0.0780)			(0.0780)
L GDP per capita			0.178***			0.206***
			(0.0641)			(0.0598)
Life expectancy			0.000982			0.00373
			(0.0120)			(0.0115)
Type A		5.453***	4.538***		6.971***	4.596***
		(0.650)	(0.742)		(0.644)	(0.739)
Summer events possible		-0.0503	0.104		-0.0390	0.145
		(0.191)	(0.201)		(0.209)	(0.198)
Winter events possible		0.258*	0.310**		0.142	0.302*
		(0.155)	(0.155)		(0.169)	(0.156)
Constant	-3.059***	-2.032***	-4.004***	0.423***	0.0507	-4.146***
	(0.384)	(0.422)	(0.840)	(0.0711)	(0.228)	(0.791)
Observations	1,292	1,271	1,188	1,287	1,266	1,188
R-squared	0.336	0.634	0.669	0.002	0.564	0.669
Number of country_id	167	164	156	167	164	156
Continent FE	NO	YES	YES	NO	YES	YES

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 12: Results Hypothesis 5 Segmentation

VARIABLES	(1) Type A	(2) Type A	(3) # Winter events	(4) # Winter events	(5) # Summer events	(6) # Summer events	(7) # Commercial events	(8) # Commercial events
L Tourism arrivals		**0.00284**		**-0.00290**		**0.0381**		**-0.00788**
		(0.00495)		**(0.0218)**		**(0.0362)**		**(0.00576)**
Arrivals per capita	**0.00304**		**-5.00e-05**		**-0.0340**		**-0.00490**	
	(0.00510)		**(0.0225)**		**(0.0374)**		**(0.00597)**	
L Population	0.00252	-0.000138	0.0317**	0.0336*	0.112***	0.0978***	0.00882**	0.0153***
	(0.00339)	(0.00433)	(0.0140)	(0.0184)	(0.0232)	(0.0306)	(0.00371)	(0.00487)
Num mega city	0.0315***	0.0326***	-0.0798**	-0.0803**	0.110*	0.111*	0.00385	0.00151
	(0.00738)	(0.00734)	(0.0345)	(0.0344)	(0.0573)	(0.0572)	(0.00915)	(0.00911)
L GDP per capita	0.00361	0.00301	0.0352	0.0368	0.171***	0.141***	0.0185***	0.0215***
	(0.00624)	(0.00660)	(0.0264)	(0.0283)	(0.0439)	(0.0470)	(0.00702)	(0.00749)
Life expectancy	-0.000382	-0.000550	0.000426	0.000627	0.00331	0.000355	0.000119	0.000621
	(0.00115)	(0.00120)	(0.00507)	(0.00528)	(0.00842)	(0.00878)	(0.00135)	(0.00140)
Type C	0.0463***	0.0457***						
	(0.00745)	(0.00747)						
Type A			1.809***	1.813***	3.787***	3.726***	0.670***	0.678***
			(0.327)	(0.328)	(0.543)	(0.544)	(0.0868)	(0.0867)
Summer events possible	-0.0425**	-0.0436**	-0.103	-0.101	0.248*	0.205	0.0644***	0.0689***
	(0.0196)	(0.0198)	(0.0874)	(0.0887)	(0.145)	(0.147)	(0.0232)	(0.0235)
Winter events possible	0.0238	0.0227	0.214***	0.215***	0.0877	0.0954	0.0216	0.0238
	(0.0157)	(0.0157)	(0.0689)	(0.0685)	(0.115)	(0.114)	(0.0183)	(0.0181)
Constant	-0.000888	0.0210	-0.688*	-0.706*	-3.457***	-3.298***	-0.345***	-0.404***
	(0.0867)	(0.0907)	(0.350)	(0.371)	(0.581)	(0.616)	(0.0928)	(0.0981)
Observations	1,188	1,188	1,188	1,188	1,188	1,188	1,188	1,188
R-squared	0.596	0.596	0.494	0.494	0.717	0.718	0.595	0.598
Number of country_id	156	156	156	156	156	156	156	156
Continent FE	YES	YES	YES	YES	YES	YES	YES	YES

Standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1)

4.6 Overall results & Discussion

In table 13 I display the total regressions including all relevant variables for all (segmented) types of sports events. Besides the conclusions I drew before regarding the stated hypotheses an important factor to comment on is the large, positive relationship between Type C and Type A events. If a country has organized a Type A event, it will be significantly more likely to organize Type C events. However, the effect of hosting a Type C event on Type A events is, although significant, of a relatively small magnitude. This is consistent with the observation of Wilson (2006) that Type C events, when seen as a cluster, can have a significant economic impact. A country should thus host multiple Type C events to become a serious competitor for Type A events.

Overall three main conclusions can be drawn from this research. First of all, the population size of a country has a significantly, positive effect on the number of non-mega events hosted. This holds to be true for winter, summer and commercial events. In contrast, for Type A events I find no significant relation.

Secondly, the effect of a mega city/cities being present in a country shows a contrast between winter and summer events. For summer events I observe a positive relationship while for winter events the opposite is true. This is most probably due to the required alpine landscape for winter events and the relatively small number of countries in which the temperatures are sufficiently low to organize such events (confirmed by the high significance of the control variable 'winter events possible' in column 3). Moreover, for Type A events the presence of a mega city/cities in a country also positively effects the hosting opportunities of a country. These cities provide a country with significant hotel capacity and existing infrastructure necessary to host a mega event.

Lastly, I observe a significantly, positive relation between the financial health of a country and the number of non-mega events hosted. This is particularly true for summer and commercial events. This is in line with the theory of the self-selection bias and sports federations opting for 'safe' host choices with sufficient financial funds.

Table 13: Overall Results

VARIABLES	(1) Type C	(2) Type A	(3) # Winter events	(4) # Summer events	(5) # Commercial events
L Population	**0.131*** **	-0.000138	**0.0336* **	**0.0978*** **	**0.0153*** **
	(0.0417)	(0.00433)	**(0.0184)**	**(0.0306)**	**(0.00487)**
Num mega city	0.0304	**0.0326*** **	**-0.0803** **	**0.111* **	0.00151
	(0.0780)	**(0.00734)**	**(0.0344)**	**(0.0572)**	(0.00911)
L GDP per capita	**0.178*** **	0.00301	0.0368	0.141***	0.0215***
	(0.0641)	(0.00660)	(0.0283)	(0.0470)	(0.00749)
Life expectancy	0.000982	-0.000550	0.000627	0.000355	0.000621
	(0.0120)	(0.00120)	(0.00528)	(0.00878)	(0.00140)
L Tourism arrivals	0.0352	0.00284	-0.00290	0.0381	-0.00788
	(0.0493)	(0.00495)	(0.0218)	(0.0362)	(0.00576)
Type C		**0.0457*** **			
		(0.00747)			
Type A	**4.538*** **		**1.813*** **	**3.726*** **	**0.678*** **
	(0.742)		**(0.328)**	**(0.544)**	**(0.0867)**
Summer events possible	0.104	-0.0436**	-0.101	0.205	0.0689***
	(0.201)	(0.0198)	(0.0887)	(0.147)	(0.0235)
Winter events possible	0.310**	0.0227	0.215***	0.0954	0.0238
	(0.155)	(0.0157)	(0.0685)	(0.114)	(0.0181)
Constant	-4.004***	0.0210	-0.706*	-3.298***	-0.404***
	(0.840)	(0.0907)	(0.371)	(0.616)	(0.0981)
Observations	1,188	1,188	1,188	1,188	1,188
R-squared	0.669	0.596	0.494	0.718	0.598
Number of country_id	156	156	156	156	156
Continent FE	YES	YES	YES	YES	YES

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

5. Limitations & Further research

The main limitation of this research is that I only examine the hosting behavior of countries, not the bidding behavior. It could be the case that a country is increasingly bidding to host sports events, but losing the majority of these bids. This effect will not be accounted for in this research but could be of interest.

A second limitation of this research is that due to the large amount of different types of sports included in the dataset I needed to be make generalizations. Not all sports federations make use of the same bidding procedure, some for example working with a continental rotation. When performing a regression on the total dataset these exceptions cannot be taken into account. Moreover, correcting for this effect is difficult as federations often change their bidding procedures per edition and there are a large number of different federations included in the dataset.

For further research, I propose a case study on smaller groups of non-mega events. As mentioned before academic literature on Type C events is scarce, in contrast with the number of events hosted annually and the popularity of these events in the media. Segmentations within the categories of summer and winter events can be made by for example distinguishing between indoor and outdoor events. By focusing solely on one of these groups by means of a case study there is more room to focus on sport-specific characteristics.

6. Conclusion

The goal of this research is to identify whether certain country-specific characteristics effect the hosting behavior of countries concerning non-mega events. I conclude that this indeed is the case for a number of factors. The size of a country and its financial wealth show to have a positive effect on the number of non-mega events hosted. Moreover, the presence of mega cities in a country has a positive effect on the number of summer events hosted, while negatively effecting the probability of hosting winter events. For the hypothesized relationships between the quality of life in a country and tourism with the hosting of non-mega events I find weak to no evidence.

Besides country-specific characteristics, a strong relation is observed between the number of Type A and Type C events hosted in a country. From the literature on mega events this relation shows to work in two ways. First countries prove themselves to the world by hosting non-mega events before hosting a mega event. Secondly, it becomes easier for a country to organize Type C events after hosting a Type A event due to their (new) sports infrastructure and gained hosting experience.

For countries this research can be of benefit as it confirms that larger (in terms of inhabitants), financially wealthier countries are more likely to host non-mega events. Moreover, the collected dataset provides a more in-depth description of Type C events. On average these events consist of 428 athletes from 48 nations participating. The capacity of a venue for a final match is on average around 17,000 seats. There is a the large variation between the various non-mega events concerning these characteristics. In general, it can be concluded that to optimize the intangible benefits of a non-mega event, the event should be incorporated in the long-term promotion strategy of a country and combined with other events. Moreover, the presence of existing sports infrastructure is often advantageous.

7. References

Alm, J., Solberg, H.A., Storm, R.K., & Jakobsen, T.G. (2016). Hosting major sports events: the challenge of taming white elephants, *Leisure Studies*, 35(5), pp. 564-582

Barajas, A., Coates, D., & Sanchez-Fernandez, P. (2016). Beyond retrospective assessment sport event economic impact studies as a management tool for informing event organization, *European Research on Management and Business Economics*, 22(3), pp. 124-130.

Deloitte's sports industry starting lineup: Trends expected to disrupt and dominate 2018, Report published in 2017.

Emery, P.R. (2002). Bidding to host a major sports event: The local organizing committee perspective, *International Journal of Public Sector Management*, 15(4), pp. 316-335.

Fourie, J., & Santana-Gallego, M. (2011). The impact of mega-sports events on tourist arrivals, *Tourism Management*, 32(6), pp. 1364-1370.

Gratton, C., Dobson, N., & Shibli, S., (2000). The economic importance of major sports events: a case-study of six events, *Managing Leisure*, 5(1), pp. 17-28.

Global Sports Impact Reports 2015, 2016 & 2017, published by Sportcal: Sports Market Intelligence.

Hall, J., O' Mahony, B., & Vieceli, J. (2010). An empirical model of attendance factors at major sporting events, *International Journal of Hospitality Management*, 29(2), pp. 328-334.

Hallmann, K., & Breuer, C. (2011). Images of rural destinations hosting small-scale sports events, *International Journal of Event and Festival Management*, 2(3), pp. 218-244.

Hartman, S. & Zandberg, T. (2015). The future of mega sports events: Examining the 'Dutch Approach' to legacy planning, Journal of Tourism Futures, 1(2), pp. 108-116.

Hiller, H.H. (2000). Mega-events, Urban Boosterism and Growth Strategies: An Analysis of the Objectives and Legitimations of the Cape Town 2004 Olympic Bid, *International Journal of Urban and Regional Research*, 24(2), pp. 449-458.

Hofmann, A.R. (2012). 'Bringing the Alps to the City': Early Indoor Winter Sports Events in the Modern City of the Twentieth Century, *The International Journal of the History of Sport*, 29(14), pp. 2050-2066.

Jones, I. (2008). Sport Fans and Spectators as Sport Tourists, *Journal of Sport & Tourism*, 13(3), pp. 161-164.

Kaiser, S., Alfs, C., Beech, J. & Kaspar, R. (2013). Challenges of tourism development in winter sports destinations and for post-event tourism marketing: the cases of the Ramsau Nordic Ski World Championships 1999 and the St Anton Alpine Ski World Championships 2001, *Journal of Sport & Tourism*, 18(1), pp. 33-48.

Kaplanidou, K., Kerwin, S., & Karadakis, K. (2013). Understanding sports event success: exploring perceptions of sports event consumers and event providers, *Journal of Sport & Tourism*, 18(3), pp. 137-159.

Késenne, S. (2005). Do We Need an Economic Impact Study or a Cost-Benefit Analysis of a Sports Event?, *European Sport Management Quarterly*, 5(2), pp. 133-142.

Knott, B., Fyall, A., & Jones, I. (2017). Sport mega-event and nation branding: Unique characteristics of the 2010 FIFA World Cup, South Africa, *International Journal of Contemporary Hospitality Management*, 29(3), pp. 900-923.

Maennig, W., & Vierhaus, C. (2017). Winning the Olympic host city election: key success factors, *Applied Economics*, 49(31), pp. 3086-3099.

Mohan, L.J. (2010). Effect of Destination Image on Attendance at Team Sporting Events, *Tourism and Hospitality Research*, 10(3), pp. 157-170.

Murtagh, J. (2018). The Mirror, What will Qatar winter World Cup mean for the Premier League, transfer window and players, July 13th 2018, https://www.mirror.co.uk/sport/football/news/what-qatar-winter-world-cup-6514982.

Needham, N. (2012). Sports are big business in Charlotte. Study: Sports industry has $2.1 billion economic impact on region, http://www.wbtv.com/story/17037074/study-sports-industry-has-21-billion-ec.

NOS (Nederlandse Omroep Stichting), (2016). Burgemeester Rome zet streep door organisatie spelen, September 21st 2016, https://nos.nl/artikel/2133654-burgemeester-rome-zet-streep-door-organisatie-spelen-2024.html.

Panagiotakos, D.B., Chrysohoou, C., Siasos, G., Zisimos, K., Skoumas, J., Pitsavos, C., & Stefanadis, C. (2010). Sociodemographic and Lifestyle Statistics of Oldest Old People (>80 Years) Living in Ikaria Island: The Ikaria Study, *Cardiology Research and Practice*, vol. 2011, pp. 1-7.

Peeters, T., Matheson, V., & Szymanski, S. (2014). Tourism and the 2010 World Cup: Lessons for Developing Countries, *Journal of African Economies*, pp. 1-31.

Rose, A.K., & Spiegel, M.M. (2008). The Olympic Effect, *The Economic Journal*, pp. 652-677.

SportBusiness Group, (2013). The Bid Book: Matching Sports Events and Hosts, published April 2013.

Smith, A. (2005). Reimaging the city: The value of Sport Initiatives, *Annals of Tourism Research*, 32(1), pp. 217-236

Stewart, A. & Rayner, S. (2016). Planning mega-event legacies: uncomfortable knowledge for host cities, Planning Perspectives, 31(2), 157-179.

Swart, K. (2005). Strategic planning – implications for the bidding of sports events in South Africa, *Journal of Sport Tourism*, 10(1), pp. 37-46.

Tomlinson, R., Bass, O., & Bassett, T. (2011). Before and after the vuvuzela: identity, image and mega-events in South Africa, China and Brazil, *South African Geographical Journal*, 93(1), 38-48.

United Nations: Data Booklet The World's Cities in 2016.

United Nations: Statistics Division: https://unstats.un.org/unsd/methodology/m49/.

Walters, G. (2011). Bidding for international sports events: how government supports and undermines national governing bodies of sport, *Sport in Society*, 14(2), pp. 208-222.

Wilson, R., (2006). The economic impact of local sports events: significant, limited or otherwise? A case study of four swimming events, *Managing Leisure,* 11(1), pp. 57-70.

8. Appendix

Description missing variables figure 4 in section 3.1.2

To improve the readability of the graph I adjusted the datapoints of the sports Games & Swimming

- Number of athletes participating on average in events of the sport 'Games': 4395
- Number of nations participating on average in event of the sport 'Swimming': 176

For the following sports the label was not included to also improve the readability of the graph: (** exclusively a team sport, limited nations allowed to participate at end tournament):

Sports	# countries participating	# athletes participating
Archery	48	350
Figure skating	42	189
Bowling	39	311
Biathlon	37	315
Badminton	33	178
Short track speed skating	33	127
Basketball**	32	201
Diving	31	153
Modern pentathlon	30	341
Wakeboard	28	163
Handball**	23	384
Triathlon	20	88
Synchronized swimming	20	107
Luge	19	126
Hockey**	19	216
Ski jumping	17	52
Speed skating	16	53
Ice Hockey**	12	300
Curling**	12	61
Shooting	10	100