

2. Method

Selection

The study's initial phase included 65 stadiums in 20 countries – stadiums which have been constructed or have undergone significant renovations in order to host an international or continental sporting event. The sports events which initially formed the basis of the study's selection of venues were the Olympic Summer and Winter Games, the FIFA World Cup, UEFA Euro, Africa Cup of Nations, All-Africa Games, Asian Games, Pan-American Games and Commonwealth Games.

However, during the report's progress we included a few cities that had unsuccessfully bid to host the Olympic Games. So in light of this and other methodological adjustments, the study has been expanded to comprise 75 stadiums in 20 countries on six continents.

It would have been possible to include even more new and modern stadiums in the study if the focus had been broader. During recent years numerous new stadiums and venues have been built for concerts and other cultural events as well as sport. However, an inclusion of these many venues would have resulted in a burdensome number of stadiums for the analysis.

Another choice made was to only focus on the main stadium of the Olympic Summer and Winter Games, All-African Games, Asian Games, Pan-American Games and Commonwealth Games. This means that many smaller stadiums and sports venues built for these events have not been included in the study. The choice to include only the main stadiums can be justified by the fact that they are often the venues in which the host's largest single investment is made. These venues are often ascribed a symbolic or iconic value for the mega events and their legacies and receive most attention. Furthermore, these venues' capacities are comparable to those of the stadiums that stage the major football events.

For the FIFA World Cup, UEFA Euro and Africa Cup of Nations we have chosen to include all of the stadiums that have been built or have undergone major renovations for these events. This means that venues were not included in the study if they already existed and were suitable or almost suitable for the event before the host city/country was selected.

In the study we have chosen to focus in greater depth on a few stadiums per event, both stadiums that have done well and stadiums that not have done so well after hosting an international or continental sporting event. The reason why we have chosen these case studies is that we have good data available on certain stadiums and these stadiums have interesting backgrounds and sporting legacies.

As stated above, only events that have taken place on the pitch after the major event has taken place, e.g. football games and concerts, are included in the study. No accounts have been made of the business events or stadium tours that have subsequently taken place at each stadium. The main reason for this omission is that the venues were constructed with the primary purpose of holding major events like sporting events and cultural events. If they were intended to be a forum for business events, a pure conference centre would have been significantly cheaper to construct and maintain.

A few Olympic stadiums in particular have reduced their capacities after the event. We have chosen to use their final venue capacities in this study simply because it is our intention to provide a fair picture of the number of spectators in relation to the capacity of each venue. Otherwise, the report's figures and numbers would be misleading, because they would have judged the proportion of spectators attending events held after the major event against the venues' capacities during the major event. This is also the case when the price per seat is presented since only the final configuration is relevant for the long term use of the stadium.

Questionnaire

The study began with desk research in which all adequate information about the stadiums included in the study was collected from available sources – i.e. stadium websites and press reports. Following the initial desk research, a questionnaire (see Appendix 1) was created and subsequently sent out to each stadium owner/stadium operator in order to get answers to the questions for which we had no information, and also in order to verify the information we had found via the desk research. The focus of the questionnaire was on the number of tickets sold and the number of events taking place at each venue. The questionnaire was supplemented with basic facts and technical information about each venue.

Only 14 stadiums chose to respond to the questionnaire, giving a relatively low response rate of 18.6 per cent. There were cases, especially some venues in Africa, where it was impossible to find any contact details for either the owner or the operator of the stadium. Therefore, due to the low response rate and our intention to give the study a qualitative angle, we contacted sources who either had knowledge about a specific venue or area or spoke the language in the country where we wanted to obtain data.

The initial questionnaire was supplemented at this stage with qualitative questions (see Appendix 2) and sent out to our local sources. The information provided by our network of local sources in many of the countries gave us a greater opportunity to create an accurate picture of the venues and, to some degree, overcome the lack of figures and numbers on certain venues.

Methodological Problems

It has not been possible to obtain adequate information about all of the included stadiums, neither through primary nor secondary sources, which has resulted in a lack of information about certain venues mostly concerning the most significant variables in our study: numbers of tickets sold and numbers of events. Although it is generally difficult to obtain data on numbers of tickets sold or total attendance figures per season/year, this problem is even more pronounced for the African stadiums that have hosted either the Africa Cup of Nations or All-Africa Games. The lack of designated long-term management, sales or PR-infrastructure in several of the selected stadiums is striking taking into the account the significant investments made in stadium infrastructure to ensure long-term use after the initial mega event.

In some cases, when the owner or operator of a certain venue has not been able or willing to state the figures, it has been possible to find estimates through online sources of attendance numbers for most of the events which have taken place in the venues. However, finding these numbers has proven problematic when the owner or operator has not specified in their answers what kinds of events that have

taken place. This means that we are not able to present the total attendance numbers or a qualified estimate for all cases. It is, however, interesting in itself that there are certain venues built to host major sporting events where adequate information about the venues is not available in any form.

The main reason why adequate information has not been available in some cases is primarily the lack of answers from stadium owners and operators, but obtaining trustworthy information through desk research and local sources is also a challenge.

Another problem that arose during the study was a discrepancy between the number of tickets sold and the number of spectators per season/year. The study's questionnaire was based on the number of tickets sold, but during the study it became apparent that the numbers of total spectators were much easier for us and our sources to obtain. The figures presented in this study are therefore the attendance figures and not the number of tickets sold as originally intended.

The challenges in collecting reliable data from all stadiums meant that some uncertainties, especially regarding the utilisation of single stadiums, could not be avoided. Despite these shortcomings, we still believe that the general trends described in this report are valid. But the report should be seen as a first step in getting a more comprehensive picture of stadium investments, and further research must eventually fill out some of the gaps. It is also the reason why we invite others with interest in the field to contribute with more precise data, if possible.

Comparison of stadiums

A major part of this report is based on comparisons of the different venues. But how should we compare the different venues constructed for various events held at different times and in different countries?

To make these comparisons as consistent as possible and to create an accurate picture, we have chosen to include different variables to help us convey as complete a picture as possible on the state of the individual venue.

Capacity, price and the World Stadium Index

A relatively simple way to compare the stadiums is to look closely at what each venue has cost to build. Although construction prices give an important indication of which events have been the most and least expensive to host, it can be misleading to focus only on the respective venues' total construction costs.

Calculating the price per seat gives a more adequate picture of what the owners have got for their invested money in terms of capacity. But although these two price variables play a significant role in this report, they are rather superficial and do not provide an indication of how much the venues are used.

We have therefore chosen to complement these variables with an index that goes beyond price and instead focuses on the number of spectators visiting the stadiums each season/year in relation to each stadium's capacity – an index we have chosen to name the 'World Stadium Index'. The index is a result of the relationship between the number of spectators per season/year and the stadium's capacity. To further clarify the index we will give an example below with a fictional venue.

If we suppose that the fictional Victoria Stadium has a capacity of 55,000 spectators and the venue had 456,789 visitors in 2010, this would result in an index number of 8.3. The World Stadium Index represents how many occasions per season/year the venue theoretically is filled up. In Victoria Stadium's case, this would represent slightly more than eight times.

One must also take into account other variables that can measure whether a venue is successful or not. But even if the World Stadium Index does not completely show the success of a venue, it is a valuable indicator which demonstrates the sporting legacy and the operators' ability to fill the stadium in relation to its capacity in a simple way. The index is also a valuable and significant indicator that can be used to rank the venues.

Another method, which is not used in this report, would be to compare the stadium's capacity with the average attendance. If Victoria Stadium, with its capacity of 55,000, had six events with an average attendance of 53,123, it would result in an utilisation rate of 96 per cent. This indicates that it is possible to fill the stadium on certain occasions, but the disadvantage of this approach is that it does not take into account the total number of spectators or events per season/year. Despite the stadium's relatively high utilisation rate when events do take place, its low number of events per year means that its number of spectators per year is also relatively low.

GNI Index

To be able to compare venues which have been constructed at different times, for different prices and in different countries, and to further deepen the study's analysis, we have chosen to include the variable gross national income (GNI) per capita, purchasing power parity (PPP) from 2010 in the study.

The World Bank's definition of GNI per capita is:

"GNI per capita based on purchasing power parity (PPP). PPP GNI is gross national income (GNI) Converted to international dollars using purchasing power parity rates. An international U.S. dollars hock the Sami purchasing power over GNI as a U.S. dollar hock into the United States. NCI is the sum of value added by all resident Producers plus any product Taxes (less subsidies) not included in the valuation of output plus net receipts of primary Income (Compensation of Employees and Property Income) from abroad."¹²

The GNI per capita is implemented in order to obtain an index number that makes it possible to do a more precise comparison of the construction costs measured by price per seat between countries and venues. This is done by dividing the price per seat for each venue with the GNI per capita figure in the country in which the stadium is built.

A GNI Index also highlights which countries and cities have made the biggest and the smallest investments in relation to their population's purchasing power parity. Is it, for example, financially or

¹² <http://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD>

morally feasible if the price per seat is equal to the annual purchasing power parity per capita in a country?

Along with World Stadium Index, the GNI Index will serve as an indicator of the legacy of each stadium and event and indicate whether the money invested in the stadiums can be seen as a good or poor investment.

Once again we can use the fictive Victoria Stadium as an example: Victoria Stadium cost \$350 million to construct and has a capacity of 55,000 giving a price per seat of \$6,364. The stadium has been built in a country with a GNI per capita of \$15,250, which results in a GNI Index number of 0.40. Unlike the World Stadium Index, the GNI Index should be as low as possible. In this case, the index 0.40 represents about 50 per cent of a person's purchasing power parity per year in the country where Victoria Stadium has been built.

Currency

If not stated, all prices are in U.S. dollars (\$). When the price has only been available in the domestic currency, we have converted the price into U.S. dollar using the exchange rate between the domestic currency and the average U.S. dollar rate during the year the stadium was completed. Inflation is taken into account, and therefore, unless otherwise indicated, all prices are under the monetary value of 2010.