



## **Home Advantage**

# **The Performance Benefits of Hosting Major Sporting Events**

## **Introduction: why is home advantage important?**

UK Sport works in partnership with the home country Sports Councils and other agencies to lead sport in the UK to world class success. Its focus is on World Class Performance, supported by World Class Impact and World Class Standards.

Alongside its investment in athletes and sports, UK Sport is the lead agency responsible for co-ordinating the bidding for and staging of major international sporting events in the UK. Working in close partnership with the National Governing Bodies of Sport (NGBs) and the principal host cities and regions, UK Sport's World Class Events Programme (WCEP) uses lottery funding to deliver strategically important international events across the UK. Specialist technical support and advice is also provided and, since 1997, over 120 events of World and European status have benefited.

In an effort to help produce the best possible performance at the 2012 Games, UK Sport has re-aligned the principal focus of its major events strategy towards the delivery of elite performance benefits in Olympic and Paralympic sport. A major objective is to ensure that the WCEP is focused on delivering events that are of strategic importance in terms of their contribution to the development of the NGBs' performance pathways. The elite performance benefits of staging major events are often relatively explicit; for example providing additional or automatic athlete places for the UK as host nation, the hosting of a key qualification event for future World Championships or Olympic Games, or providing higher quality competition than that normally available to UK athletes.

The core elite performance benefit however to staging major events, is normally predicated on the concept of home advantage, and the implicit assumption that UK athletes will achieve better results than if they were to compete in the same event abroad. The home advantage concept is one that is intuitively understood and accepted, but little or no work exists (beyond the anecdotal) that evidences the correlation between elite sporting success and the hosting of World and European Championships – the type of events that UK Sport typically supports.

Through this project and its wider studies, UK Sport has sought to quantify and better understand the relationship between hosting events and elite performance outcomes. In so-doing, UK Sport is looking to explore synergies between two of its major investment programmes, and identify what mutual advantage, if any, can be accrued. For the first time UK Sport is able to look meaningfully at the relationship between hosting a major championship and the sporting performance outcomes for the host nation.

## Executive Summary

- Approximately 100 World and European Championships have been studied across 14 sports on the 2012 Olympic Programme. Almost 10,000 individual results have been recorded.
- Hosting World and European Championships has a significant impact on performance. On average, hosts achieve a 25% increase in their results in comparison to when they are not hosting.
- In 73% of the events studied, the host's performance was higher than their average performance at events that they were not hosting (excluding 'non-competitive hosts').
- Of the sports studied, boxing, volleyball, canoe slalom, swimming, judo and sailing all delivered average performance increases in excess of 25% for the host country.
- In an environment where winning margins are becoming increasingly small, the potential to achieve such a marked improvement in results suggests that the hosting of strategically important events could usefully be incorporated into a holistic approach to World Class Performance
- Further study is required to identify the most influential qualitative reasons that activate the home advantage effect, and assess how best these can be embedded into the UK's elite sporting system. However the basic causal link is evidenced and measured here for the first time in World and European Championships of Olympic sports.

## Background & Methodology

Research around the home advantage phenomenon has tended to focus on professional team sports in club-based competition. Some analysis of teams and athletes competing internationally has been carried out through studies of hosting multi-sport Games, such as the statistical research conducted by Balmer, Nevill and Williams (2001, 2003) that analysed medal success in Olympic and Paralympic 'home' Games. Whilst that research endorsed the significance of home advantage 'across the board', it also highlighted substantial differences across events, noting significant improvements in performance for athletes in boxing, volleyball and judo.

UK Sport commissioned Performance Matters to undertake a research project to examine the effect of home advantage in single-sport international championships. This project has been identified by UK Sport as the first strand in a wider study examining the ways in which the hosting of major international sports events can be used to produce elite performance benefits for the host nation.

14 of the 28 sports on the Olympic Programme were selected for study. The consultants collected the results data from the last five World Championships for all of these sports, in addition to data from the last five European Championships from three of these sports. This sample was selected by UK Sport to represent a wide range of different sport and championship types (as shown in Table 1).

**Table 1 - Major Championships Studied**

Athletics	World Championships
Athletics	European Championships
Basketball	World Championships (Men & Women)
Boxing	World Championships (Men)
Canoe Slalom	World Championships
Canoe Slalom	European Championships
Cycling (Track)	World Championships
Equestrian	World Championships
Gymnastics	World Championships
Judo	World Championships
Judo	European Championships
Modern Pentathlon	World Championships
Rowing	World Championships
Sailing (Finn)	World Championships
Sailing (Mistral)*	World Championships
Sailing (Tornado)	World Championships
Swimming	World Championships
Triathlon	World Championships
Volleyball	World Championships (Men & Women)

\*Currently a non-Olympic event

With some limited exceptions, a full and complete data set has been compiled of the top eight placings in all of the above sports (and any composite disciplines) for each the last five championships, with the names of individual athletes and their country of origin recorded. Performance has been analysed through the use of a points scoring system. In order to recognise the significance of medal-winning

performances, the following system has been used. This analysis provides a points rating for each country in each of the championships above.

Gold Medal - 10 points  
Silver Medal – 8 points  
Bronze Medal – 6 points  
4<sup>th</sup> Place – 5 points  
5<sup>th</sup> Place – 4 points  
6<sup>th</sup> Place – 3 points  
7<sup>th</sup> Place – 2 points  
8<sup>th</sup> Place – 1 point

This points rating has then been converted into what we have termed 'market-share' - ie the number of points gained by each nation as a percentage of the total number of points available at each event. This analytical method allows a ready comparison across championships where the total number of events or disciplines might vary from year to year. For example, this is the case in athletics where a number of new events for women have been introduced over time, thereby affecting the total number of 'points' that a country could attain. This analysis also permits a degree of meaningful comparison across different sports, where a multi-event sport such as athletics can be compared with a single event sport such as triathlon.

This form of scoring therefore allows an analysis of host country performance by comparing a country's market-share when hosting, with its market-share when not hosting.

## Do host countries achieve better results?

The study contains data from a total of 99 events including almost 10,000 individual results. After taking into account those championships that have been hosted by the same country more than once during the study period, there are 94 occasions where we are able to compare a host country's market-share of the available points, with that country's average market-share across events they were not hosting.

- On 65% of occasions (61/94), the host country's performance was higher than their average performance at events that they did not host.
- On 24% of occasions (23/94), the host country's performance was lower than their average performance at events they did not host.
- On 11% of occasions (10/94) the host country had never achieved a top 8 placing in any of the events studied in that sport, and therefore no increase or decrease could be recorded. An example is the 2001 World Gymnastics Championships staged in Belgium. In all World Gymnastics Championships studied (2001-2006), Belgium failed to record a top eight placing in any discipline in either gender. These instances have been classified as '*non-competitive hosts*', in that it is not possible to determine a positive or negative impact of hosting by assessing their hosting experience.

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| <ul style="list-style-type: none"><li>• When these same calculations are made excluding non-competitive hosts, then on 73% of occasions the host country's performance was higher than their average performance at events they did not host.</li></ul> |
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## To what degree can results improve for host countries?

In an effort to quantify the extent of the potential performance benefit from hosting major championships, the average market share achieved by host countries was compared with the average market share achieved by those countries in equivalent events they were not hosting. It is therefore possible to identify a home advantage 'conversion rate' that quantifies the performance improvement in host countries.

- Host countries in this study achieved an average 7.5% market share of the available performance points
- Host countries in this study achieved an average 6.0% market share of performance points in equivalent events they were not hosting
- This increase in market share represents an average improvement of 25% in a country's elite performance results when hosting major championships of the type covered in this study
- The above figures exclude the highest and lowest results across the various sports studied to try and present an average picture. When these results are included, the average improvement in host performance rises to 31%.

What might an average 25% performance increase actually look like in terms of medals and placings at a major event? At a Swimming World Championships a total of 1,560 points are available using this methodology. A 6.0% market-share represents a points tally of 94, whereas a 7.5% market-share represents a points tally of 117 – an increase of 23 points. To illustrate the performance impact of this change, a 23 point improvement could represent one of the following scenarios:

- Two additional gold medals (2x10 points)
- Seven increases from sixth place to bronze medal (7x3 points)
- 23 increases of one place, for example from fifth to fourth place (23x1)

In most cases it is likely that the improvement will be a mix of these scenarios, with athletes previously achieving 4-8 placings moving into medal positions, and athletes outside the 4-8 placings moving into this bracket. An assessment has also been carried out on data from medal placings only. This analysis still evidences the strong presence of home advantage, however not quite at the same frequency where the assessment is based on top eight with only 63% of hosts achieving a higher medal rating than at events where they did not host. These findings suggest that home advantage leads to performance improvements in both medal and 4-8 brackets, but with a slightly greater emphasis on improvement into the 4-8 bracket.

In a fiercely competitive elite environment where winning margins are determined by the smallest of percentage improvements, the potential to achieve such significant increases could potentially be extremely important.

## **Host performance in context**

The data can also be used to study the performance levels of a host country in subsequent events. This will be of particular interest to future research in determining how any increases in performance could be sustained. 'Best practice' examples will show progression of continued improvements in performance; the data gathered for this study reveals that results tend to revert to levels that are marginally higher than previously – in 54% of occasions the host performed better in the event following hosting than in the average of all events pre-hosting.

Legacy initiatives play a significant role at events supported by UK Sport's World Class Events Programme and future research, taking a long-term and holistic perspective would be extremely interesting in assessing the 'inspirational' power of major events on home soil on the high performance athletes of the future.



## Which sports are 'most receptive' to home advantage?

14 Olympic sports were selected for analysis as part of this study. These were chosen to represent a cross-section of different 'types' of Olympic sport including team sports, combat sports, subjectively-judged sports, sports comprising different disciplines, and environmentally-variable sports (for example sailing and canoe slalom) where the field of play in which competition takes place can vary significantly from venue to venue.

Of the 14 sports studied, 10 showed an average increase in performance for hosts, one (track cycling) showed no change, and three (basketball, modern pentathlon and triathlon) showed a decline. Of the three that represented a decline, the decreases in performance (3% to 6%) were relatively small in comparison to the range of positive increases achieved in other sports (11% - 462%). The full results are shown below in Table 2.

**Table 2 – The comparison of average nation performance when hosting compared with not hosting**

	Average performance (when not host)*	Average performance (when host)*	Percentage increase/decrease
Boxing	1.2	6.6	462
Volleyball	3.0	7.1	138
Canoe Slalom (Euro)	7.3	13.5	83
Swimming	5.3	7.9	50
Judo (Euro)	3.6	4.9	35
Rowing	3.9	5.0	27
Sailing	6.7	8.5	27
Canoe Slalom	10.6	13.2	25
Athletics	1.8	2.1	22
Gymnastics	3.2	3.9	22
Judo Worlds	5.9	7.1	20
Athletics (Euro)	4.5	5.1	14
Equestrian	10.6	11.9	11
Track Cycling	7.1	7.1	0
Basketball	7.6	7.4	-3
Modern Pen	5.5	5.3	-5
Triathlon	4.5	4.2	-6
<b>Averages</b>	<b>5.4</b>	<b>7.1</b>	<b>31</b>

\* Based on market share

One sport in particular demonstrated an exceptionally high home advantage conversion rate. Those countries staging the World Boxing Championships increased their market-share by an average of 462%.

It is difficult to identify any discernable pattern across the sports within the study using the distinction identified below:

**Team:** Volleyball, Basketball

**Combat:** Boxing, Judo

**Judged:** Gymnastics, Boxing, Judo

**Multi-disciplinary:** Swimming, Athletics, Triathlon, Modern Pentathlon

**Environmentally-variable:** Sailing, Equestrian, Canoe, Rowing, Triathlon

Perhaps the strongest correlation can be seen with those water-based sports where environmentally-variable conditions may provide the host country with an advantage due to familiarity with the 'field of play'. Canoe slalom, sailing and rowing all demonstrate average performance increases of 25% or more for the host country.

## **Conclusions**

The implications for UK Sport are significant, given its remit to deliver both World Class Performance and World Class Events. In an environment where winning margins are becoming increasingly small, the potential to achieve such a marked improvement in results suggests that the hosting of strategically important events could usefully be incorporated into a holistic approach to World Class Performance.

The performance increases detailed in this study have, for the most part, been achieved in countries that are not selecting and staging events for their sporting benefits. Most of these countries are hosting major events to achieve economic and tourism-based objectives. This suggests that a sport-focused approach to staging major events (such as the one UK Sport is committed to) would be well-positioned to exceed these average levels of performance increase.

Despite the majority of hosts achieving a strong upturn in results, there are occasions when major hosting nations experience poor results when hosting. This suggests that simply hosting an event does not on its own guarantee a performance benefit, and that there are other variables that influence results.

The next stage of research should seek to link the empirical data established here to those enabling factors that control the activation and maximisation of home advantage. A range of factors are often linked to home advantage – familiarity, travel time, time zones, home crowd, judging, etc. Where possible the relative importance of, and causal links behind, these factors needs to be understood in more detail.