



# SUCCESSFUL ELITE SPORT POLICIES

AN INTERNATIONAL COMPARISON OF THE SPORTS  
POLICY FACTORS LEADING TO INTERNATIONAL SPORTING  
SUCCESS (SPLISS 2.0) IN 15 NATIONS

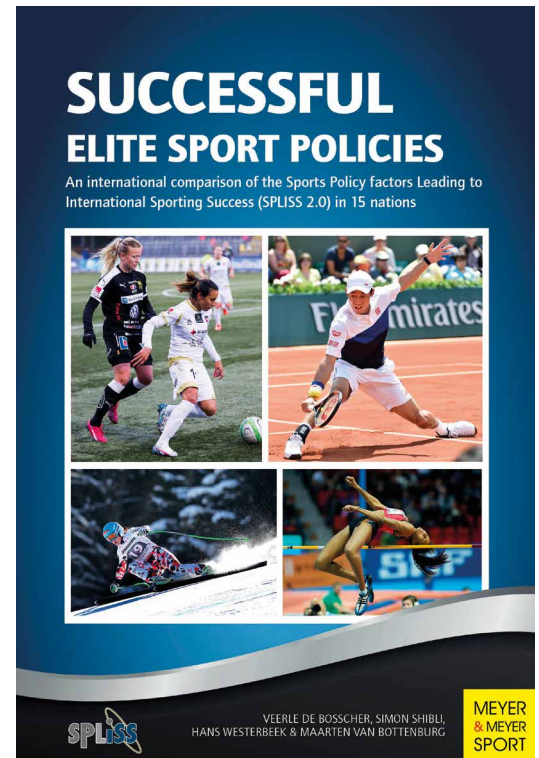
Veerle De Bosscher, Simon Shibli, Hans Westerbeek and Maarten van Bottenburg



# REPORT DIGEST

Why do some countries win more medals than others? How much do countries invest in elite sport? How can policy makers influence the success of their athletes? What makes an elite sport policy effective and efficient? How should success be measured? How do nations prioritize their elite sport investments? These are the key questions about high performance sport policy that are answered in the book "Successful elite sport policies: an international comparison in 15 nations (SPLISS 2.0)"<sup>1</sup>.

The SPLISS 2.0 project deals with the strategic policy planning process that underpins the development of successful national elite sport development systems. Drawing on various international competitiveness studies, it examines how nations develop and implement policies that are based on the critical success factors that may lead to competitive advantage in world sport. The book presents the results of the large-scale international SPLISS-project. In this project the research team identified, compared and contrasted elite sport policies and strategies in place for the Olympic Games and other events in 15 distinct nations. This extensive research project is a collaboration of 53 researchers and 33 policy partners worldwide, and involves over 3000 high performance athletes, 1300 coaches and more than 240 Performance directors. An overview of the results is provided in this report.



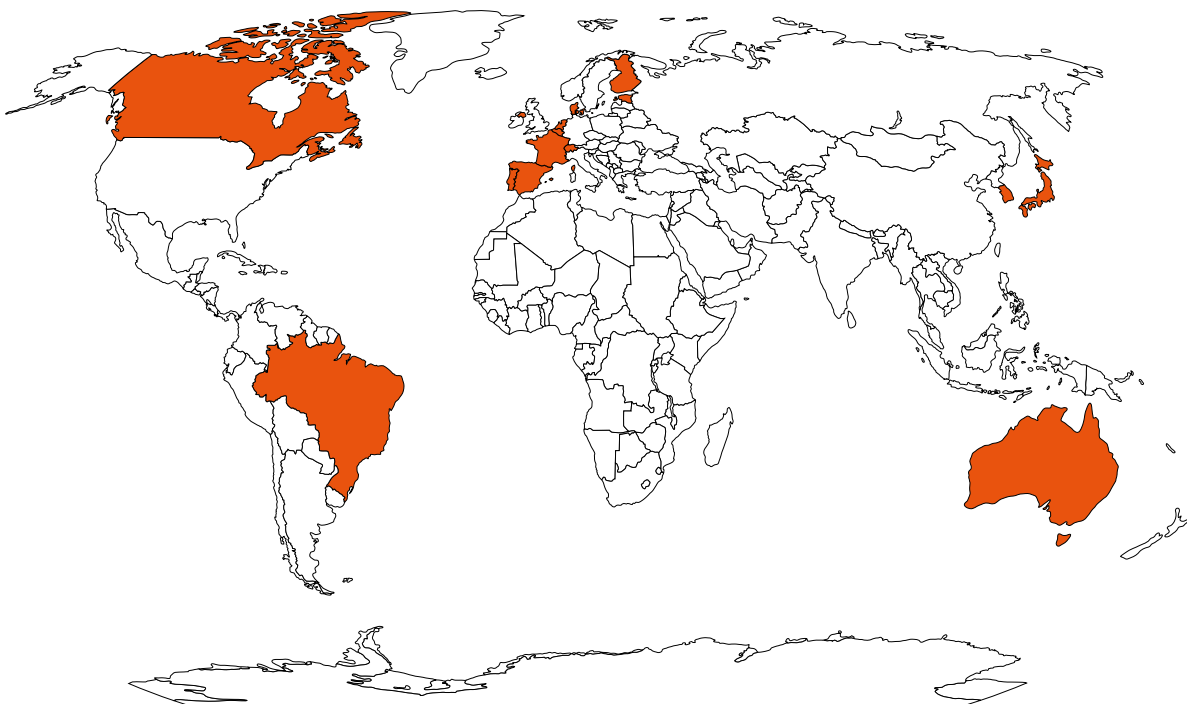
## Countries involved worldwide

**America:** Canada | Brazil

**Europe:** Belgium (Flanders & Wallonia) | Denmark | Estonia | Finland | France | The Netherlands | Northern Ireland (UK) | Portugal | Spain | Switzerland

**Asia:** South Korea | Japan

**Oceania:** Australia



<sup>1</sup> SPLISS (Sports Policy factors Leading to International Sporting Success) is an international network of research cooperation on elite sport policies that was established since 2002. The first SPLISS 1.0 project (2008) compared elite sport policies in six nations (Belgium, Canada, Italy, Netherlands, Norway and the United Kingdom), published in a joint book "a global sporting arms race. A summary is freely available from the website: [www.SPLISS.net/publications](http://www.SPLISS.net/publications).



# 1. AIM

The objective of the SPLISS 2.0 project is to better understand which (and how) sport policies lead to international sporting success and to obtain a better insight into the effectiveness and efficiency of elite sport policies of nations at an overall sports level. The sub-objectives of this research project are threefold:

1. From a practitioner's view we aim to use our newfound theoretical and methodological knowledge to inform policy makers about the keys to effective elite sport policies and international policy developments in an increasingly competitive environment.

2. From a scientific view, we want to improve and refine the theoretical model – following from SPLISS 1.0 - that helps explaining how sport policy factors lead to international sporting success, and to further enhance and validate the methodological approach allowing for better and valid international comparisons.

3. Ultimately we aim to develop an instrument that can be used by policy makers and academics alike to evaluate the effectiveness of elite sport policies.



# 2. FRAMEWORK

## NINE PILLARS FOR AN EFFECTIVE AND EFFICIENT ELITE SPORT POLICY

The factors influencing success can be classified at three levels: macro-, meso-, and micro-level. Macro-level factors influence the (dynamic) social and cultural environments in which people live including economy, demography, geography and climate, urbanisation, politics, and national culture. Meso-level factors influence the policy environment of nations. At the micro-level are factors that influence the success of individual athletes, ranging from the influence of inherited genes to the social influence of parents, friends and coaches<sup>1</sup>. Research showed that over 50% of international success of countries can be explained by three variables: population, wealth (GDP/cap) and (former) communism. As nations have become strategic in the way that they produce elite athletes, “they rely less on these uncontrollable variables and more on variables which are widely regarded as being components of an elite sports development system<sup>2</sup>”. Nations therefore focus on those factors that are developable. These factors are reflected in the SPLISS model to determine the effectiveness and efficiency of elite sport policies<sup>3</sup> (FIGURE 1).

This model used a multidimensional approach to evaluate effectiveness at the level of ‘Inputs’, ‘throughputs’ and ‘outputs’. Inputs are reflected in Pillar 1, as the financial support for sport and elite sport. Countries that invest more in (elite) sport can create more opportunities for athletes to develop their talent. Throughputs are the policy actions that script and deliver the processes (“what” is invested and “how” it is used) that may lead to increasing success in international sport competitions. They refer to the efficiency of sport policies, that is, the optimum way the inputs can be managed to produce the required outputs. All of the Pillars 2-9 are indicators of the throughput stage.

The nine pillars are underpinned by 96 Critical Success Factors (CSFs) and measured by 750 sub-factors.

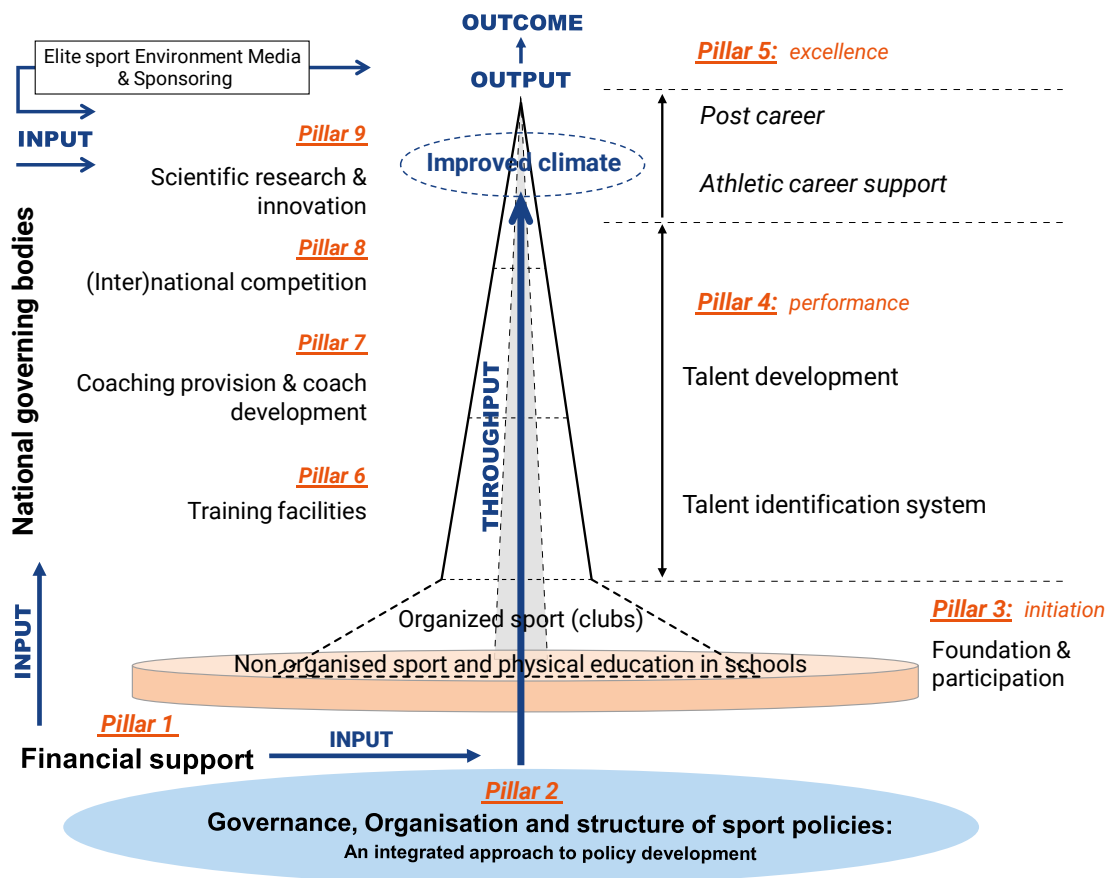


Figure 1: the SPLISS model: Theoretical model of 9 pillars of sports policy factors influencing international success (adapted from De Bosscher et al., 2006)

<sup>2</sup> De Bosscher et al., 2015, p37

<sup>3</sup> De Bosscher, V., De Knop, P., van Bottenburg, M., Shibli, S. (2006). A conceptual framework for analysing Sports Policy Factors Leading to international sporting success. European Sport Management Quarterly, 6 (2), 185-215. ISSN 1618-4742

# 3. METHODOLOGY

SPLISS 2.0 used a mixed methods research protocol, to collect and analyse a comprehensive amount of data on the nine pillars and Critical Success Factors. Research data were collected by a local researcher from each country in two ways. First an inventory was used to collect objective policy data on the nine pillars (212 questions). Second, a survey aimed at

evaluating the elite sports climate (in nine pillars) from the perspective top level athletes<sup>4</sup>, top coaches and high performance directors worldwide. A total of 3142 athletes competing in 37 different sports, 1376 top coaches and 241 high performance directors completed the surveys. A full breakdown on the number of responses achieved in each nation is shown in Table 1.

Country	Elite Athletes	Elite Coaches	High Performance Directors
AUS	208 (27%)	152 (35.2%)	9 (30.0%)
BRA	431 (14%)	57 (51.8%)	10 (35.2%)
CAN	157 (15%)	12 (NA)	8 (24.2%)
DEN	231 (36%)	66 (46.2%)	25 (46.3%)
ESP	166 (42%)	25 (62.5%)	13 (43.3%)
EST	82 (NA)	187 (NA)	-
FIN	78 (46%)	71 (56.3%)	17 (48.6%)
FLA	168 (57%)	137 (82.0%)	19 (79.2%)
N-IRL	61 (41%)	16 (69.6%)	-
JPN	135 (71%)	64 (86.5%)	14 (73.7%)
KOR	370 (NA)	62 (NA)	32 (NA)
NED	153 (20%)	81 (33.6%)	20 (33.3%)
POR	107 (21%)	32 (64.0%)	24 (85.7%)
SUI	715 (62%)	378 (55.8%)	40 (69.0%)
WAL	80 (45%)	36 (60.0%)	10 (62.5%)
<b>Total</b>	<b>3142</b>	<b>1376</b>	<b>241</b>

Table 1: Number of respondents by nation (response rates in brackets)

<sup>4</sup> An elite athlete was regarded as an (able bodied) athlete who, whether as an individual, or as part of a team, is ranked in the world top 16 for his or her discipline, or in the top 12 of any equivalent Continental ranking system OR an athlete who receives direct or indirect funding and/or other services via a support programme funded and/or organised on a national (or regional) basis for the purpose of achieving success. An elite coach trains elite athletes (as defined) or talented youths in a national/regional trainings centre. The high performance director is the head of the elite sport department of a National Governing Body (or National Sport Organisation/federation).

# 4. OUTPUT

## INTERNATIONAL SUCCESS OF THE SPLISS 2.0 NATIONS

There are a variety of methods that can be used to measure performance in elite sport and these are largely but not exclusively medal-based measures such as: medals' table ranking; number of gold medals won; total number of medals won; a points score based on applying weights to the nature of medals won (e.g. gold = 3, silver = 2, bronze = 1); market share

whereby points won are converted into a percentage score of the points awarded; and top eight rankings (which is a proxy for producing athletes and teams that reach finals). All of the measures we have examined are in fact very strong proxies for each other (Table 2).

	Gold medals	Total medals	Medal Points	Medal Market Share %	Top 8 Places	Top 8 Points	Top 8 Market Share %
Gold Medals							
Total Medals	0.98						
Medal Points	0.99	1.00					
Medals Market Share %	0.99	1.00	1.00				
Top 8 Places	0.94	0.98	0.98	0.98			
Top 8 Points	0.97	1.00	0.99	0.99	1.00		
Top 8 Market Share %	0.97	1.00	0.99	0.99	1.00	1.00	

Table 2: Correlation table of the relationship between performance measures in summer sports



After comparison, the SPLISS study used market share, whereby points won are converted into a percentage score of the points awarded, as the most robust measure of controllable

performance. Table 3 gives an overview of the full Olympic cycle 2009-2012 for both summer and winter sports in the SPLISS 2.0 nations.

Country	SUMMER SPORTS		WINTER SPORTS	
	Total medals	Market share	Total medals	Market share
France	148	4.29%	47	4.38%
Australia	132	4.08%	10	1.21%
Japan	138	3.91%	21	1.96%
South-Korea	84	2.39%	59	6.59%
Netherlands	64	1.78%	46	4.83%
Spain	62	1.69%	-	-
Canada	61	1.53%	117	12.27%
Brazil	50	1.44%	-	-
Denmark	27	0.73%	1	0.05%
Switzerland	18	0.56%	30	3.22%
Belgium*		0.27%		
• Flanders	11	0.18%	1	0.15%
• Wallonia		0.09%		
Finland	10	0.26%	31	2.52%
Estonia	6	0.15%	1	0.15%
Portugal	5	0.15%	-	-
Northern Ireland*		0.15%	-	-
<b>Totals</b>	<b>816</b>	<b>23.23%</b>	<b>364</b>	<b>37.32%</b>

Table 3: SPLISS 2.0 nations' medal performance in Summer and Winter sports (in a four years period at Olympic Games and world championships)

\* As the responsibility for sport is delegated to the independent regions, Flanders and Wallonia's elite sport policy are treated as two distinct nations; Great Britain did not take part in SPLISS 2.0; Northern Ireland did take part and was therefore seen as a 'nation in its own right' within the project. Some sports are supported at UK-level, others are supported at the home nation level of Northern Ireland.

In addition, as policy evolves and the strategic planning can only determine future success, Figure 2 (summer sports) and

Figure 3 (winter sports) also show the medals of the SPLISS nations in Rio 2016 and Sochi 2014.

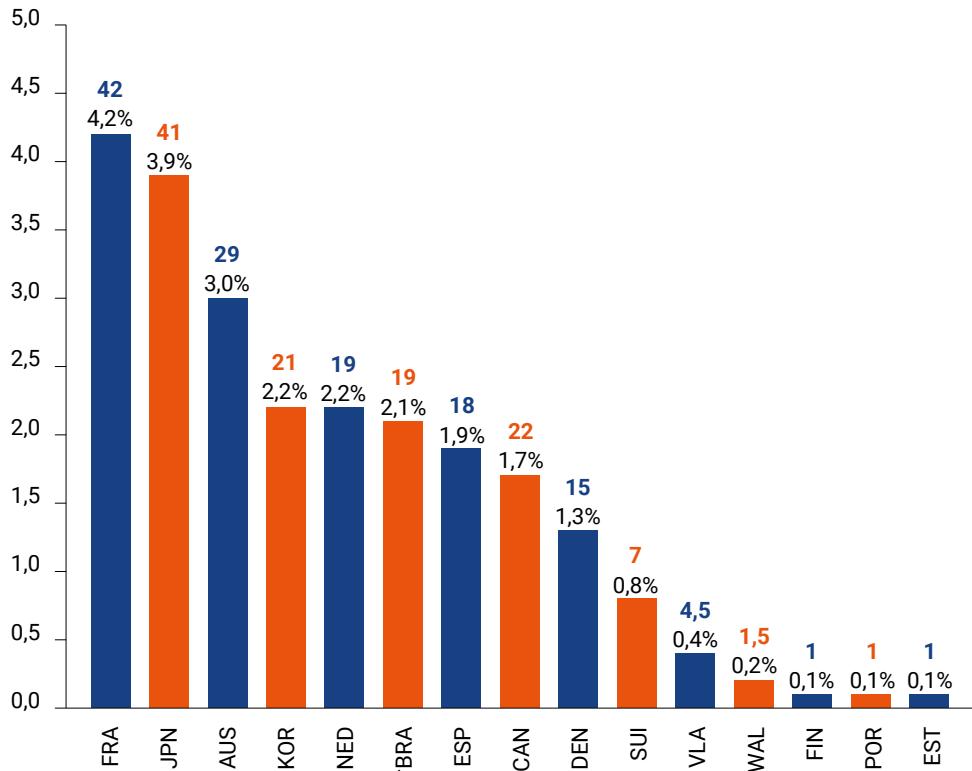


Figure 2: Summer sport Medals won by SPLISS 2.0 nations at Rio 2016

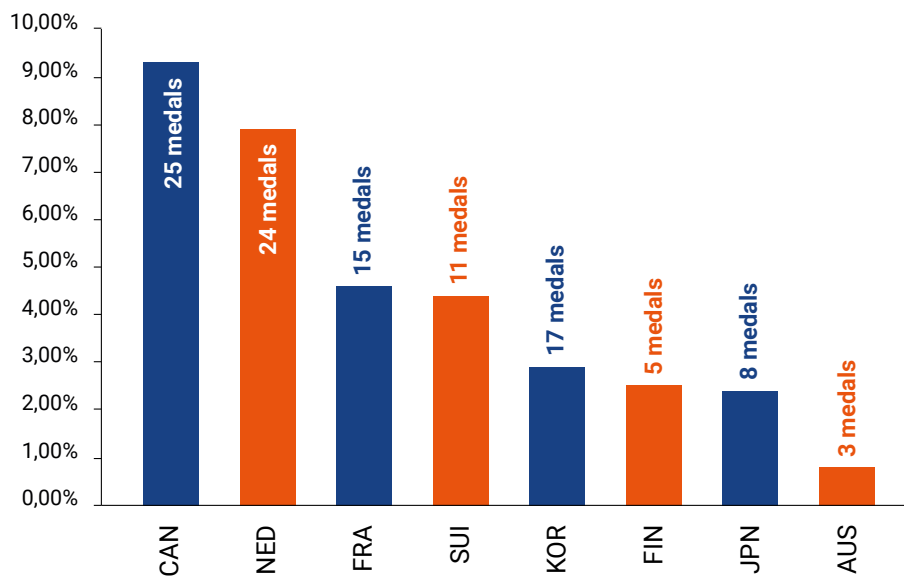


Figure 3: Winter sport market share and medals won by SPLISS 2.0 nations at Sochi 2014





# 5. PILLAR RESULTS

## POLICY EVALUATION IN 15 NATIONS

Figure 1 presents the Pillar scores for all of the nations. The countries are ranked according to success in summer sports, measured as the market share of medals during Olympic Games and World Championships over a four year time period. We need to take note of the fact that some countries focus heavily on winter sports, notably Canada, Switzerland and Finland. It is a one page summary of nine Pillars (with 96 critical success factors and 750 sub-factors), with more than 3000 pages of inventory data and survey results of 3142 elite athletes, 1376 elite coaches and 241 performance directors who completed the elite sport climate survey.

As a general overview of Figure 4, it can be seen that higher performing countries in summer sports, also tend to have higher scores on the nine Pillars. There are some exceptions such as Brazil, scoring low on most Pillars (except Pillars 1 and 8); and across all countries, low scores on Pillar 3 (sports participation) and Pillar 4 (Talent); and, in the case of France a low score on Pillar 2 (governance, organization and structure).

At the bottom half of Figure 1, less successful countries still display yellow or green traffic lights in Pillar 4 (talent ID and development) Pillar 5 (athletic career and post career support) and 6 (training facilities). The absence of the discrimination in the scores on Pillars 5 and 6, lends weight to the fact that elite sport systems have become increasingly homogeneous and, on a short-term basis, these Pillars are possible drivers of an effective system.

For winter sports, the relationship between success and the nine Pillars is less pronounced. This may be attributable to winter sports being more specialised than summer sports, based on their natural landscape and climate conditions and that fewer nations prioritise winter sports. In the case of talent identification and development the results showed that smaller countries perform better and with regard to sport participation we indicated that comparing the sport participation level in different nations is highly problematic for methodological reasons.

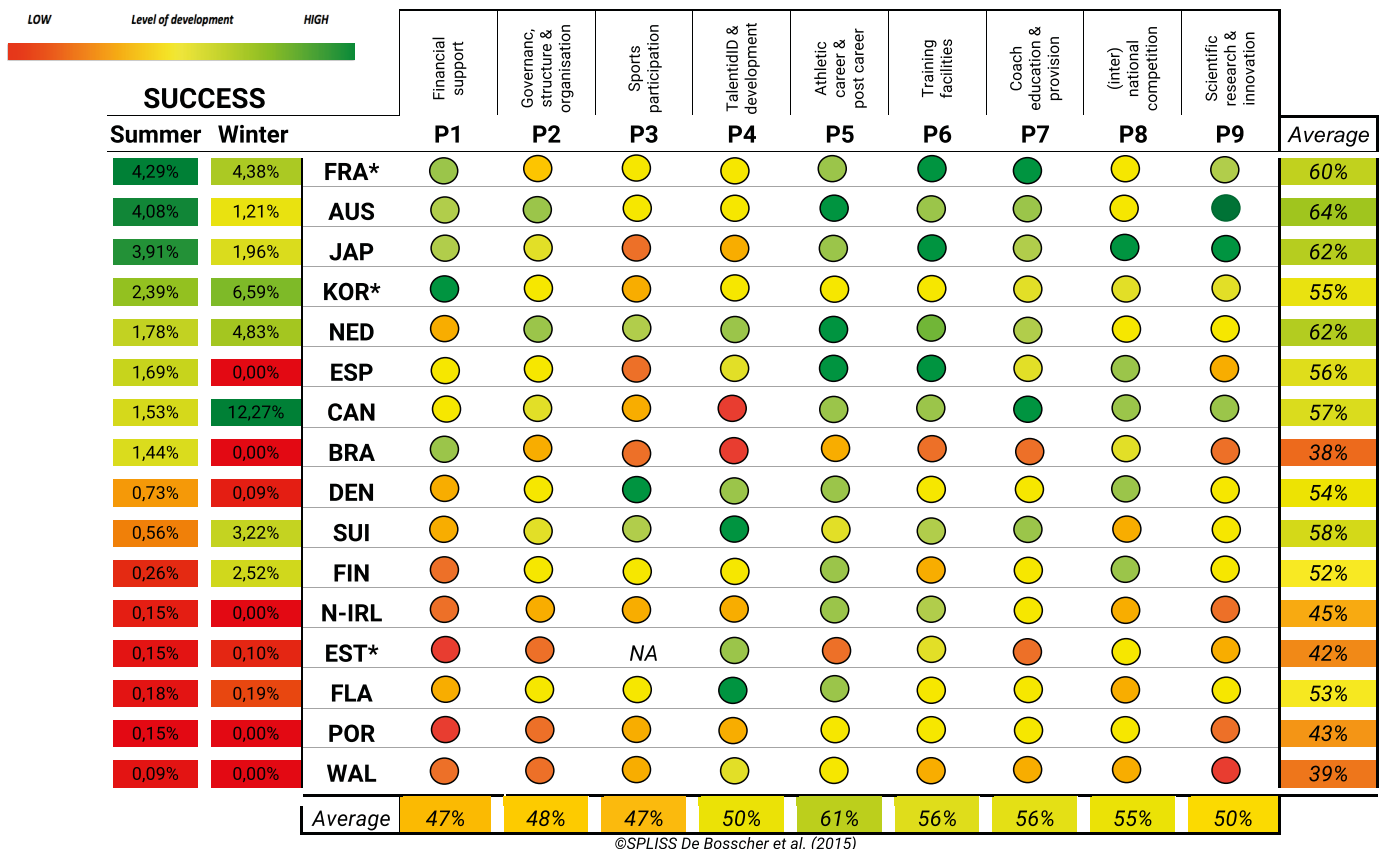


Figure 4: Traffic light scores on the nine SPLISS elite sport policy Pillars ©

# 6. PILLAR PERFORMANCE PER NATION

Using radar graphs to visualise nations' performance, we plot the nations' scores against the sample average and against the maximum scores on each Pillar. This approach enables us to quickly derive the relative strengths and weaknesses of each nation and also to make an assessment of the most obvious areas for improvement.

## Successful nations in summer sports

Figure 5 shows the Pillar score of the three most successful nations in summer sports.

Australia has progressed its success rate over more than twenty years since the establishment of the AIS in 1981. To that end the Australian system has become a benchmark for many other nations. Australia is a mature well developed system and achieved the highest combined Pillar score of all countries. Its greatest strengths are in Pillar 9 (research and innovation) and Pillar 5 (athletic career support). Australia scores above the average on seven of the nine Pillars, and is below average on Pillar 4 (talent) and Pillar 8 (national and international competition).

Japan is a nation that can be seen as a late developer in adopting best practices from, among others, Australia. Since the National Training Centre was established in 2008, Japan has gained a competitive strength in Pillar 6 (facilities). Japan's scores exceed all countries on Pillars 6 (training facilities) and 8 (national and international competition). Only on Pillars 3 (participation) and 4 (talent) are Japan's scores below average.

France has quite a different configuration of factors compared with Australia and Japan. It has some of the highest scores on Pillar 7 (coaches), Pillar 1 (financial support) and Pillar 6 (training facilities) and on Pillar 2 (organization) they score surprisingly low. Findings for France need to be considered in light of two possible explanations. First operationally there is tension between the French Olympic Committee and the State which may lead to a sub-optimal organisational framework. Second, methodologically the missing elite sport climate survey data may also have an impact in this regard.

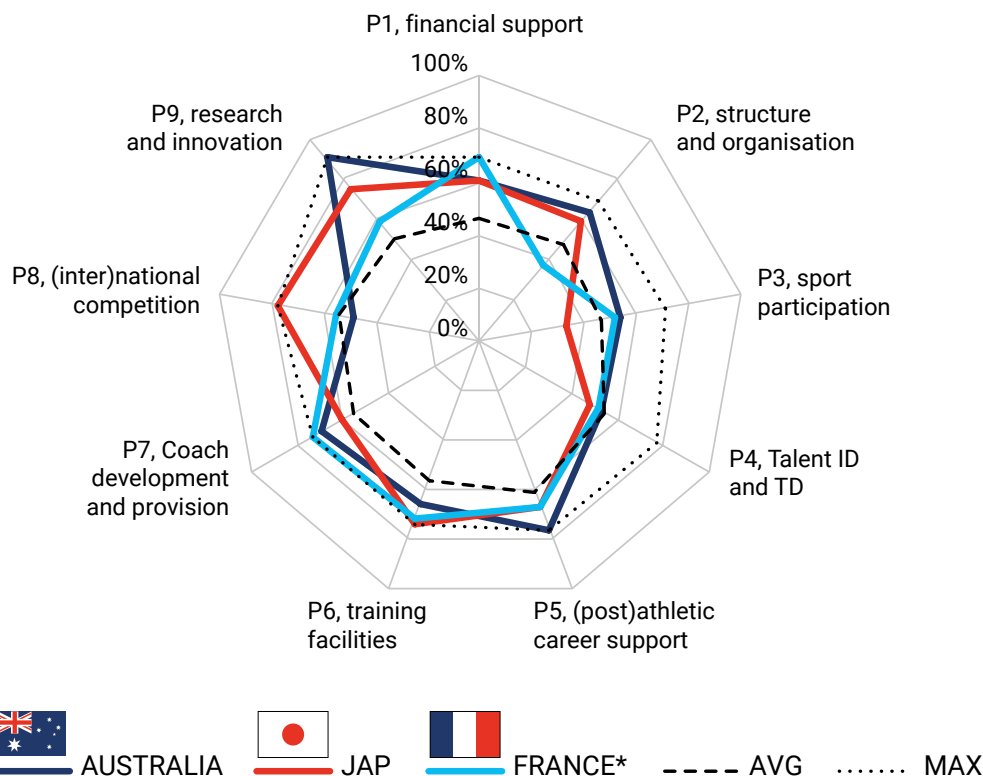


Figure 5: Radar graph of Australia, France\* and Japan compared to the average and maximum scores of 15 nations  
 \* note of caution: incomplete dataset in France (no elite sport climate survey)

## Successful nations in winter sports

Similar to summer sports above, we examine first the top three performing countries: Canada, the Netherlands and South-Korea. shows the strengths of Canada on the left hand side in Pillars 7 (coaches), 8 ((inter)national competition) and 9 (research innovation).By contrast, the Netherlands' strengths are on the right hand side of the graph (in Pillars 2, 3, 4, 6), showing the importance of its organizational model. This key strength not only enhances sport participation and talent development (mainly in speed skating) but also proves to be effective and efficient in filtering this broad participation base into subsequent elite sporting success (at least in this sport).

Korea has the highest financial support for elite sport of all SPLISS 2.0 nations, yet it scores only around the average on most Pillars. Digging deeper into South Korea's investment in elite sport one may conclude that an important objective is international exposure, through the organization of international events (53% of elite sport expenditures). Furthermore the results in Pillar 5 showed that Korea also had the highest average funding for athletes and the highest number of athletes in the higher income categories. Funding is clearly an important tool for South Korea to facilitate its elite sport ambitions.

Figure 6 shows the strengths of Canada on the left hand side in Pillars 7 (coaches), 8 ((inter)national competition) and 9 (research innovation).By contrast, the Netherlands' strengths are

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Overall we can conclude that even successful countries do things differently and as such they can continue to learn from each other. There is no 'one size fits all' approach that is applicable to all nations.

This realization also offers considerable scope to carve out strategies that focus on Pillars where countries feel that they may have a comparative advantage that enables them to outperform their rivals.

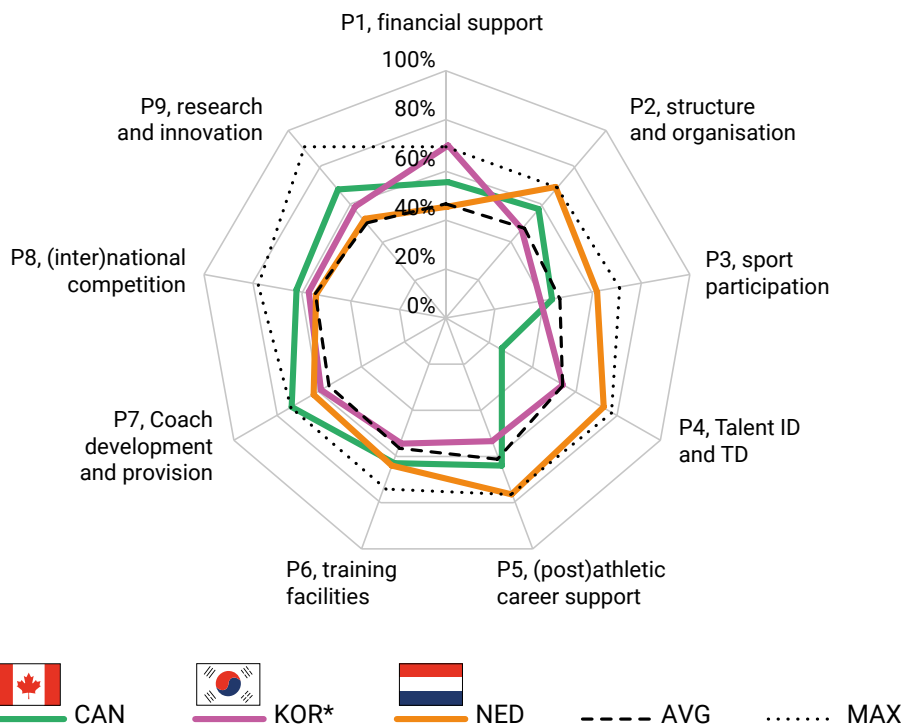


Figure 6: Radar graph of Canada, Korea\*, and the Netherlands compared to the average and maximum scores of 15 nations  
 \*Note of caution: no inventory data for Pillars 4,7 and 8 for Korea



## Small nations

Switzerland and Denmark can be identified as small nations (with a population < 10 million) that had continuously average success rates in summer sports or winter sports. The countries won respectively 7/7 and 10/15 medals in London and Rio, and Switzerland was ranked 7th in Sochi (11 medals).

As can be seen from Figure 7, both nations also show different strengths in different Pillars, but the general pattern is developed quite similar as in the Netherlands, with higher scores on Pillars 2 (structure), Pillar 3 (participation) and Pillar 4 (talent).

In addition, Switzerland has well developed coaches (Pillar 7) and good facilities (Pillar 6), whereas in Denmark, scores are higher on (inter)national competition (Pillar 8) and (post)athletic career support (Pillar 5). It can be argued that these smaller nations can differentiate themselves from bigger nations in their ability to utilize the potential of their athletes to create elite sport achievements and to coordinate elite sport, with relatively high autonomy given to the sports.

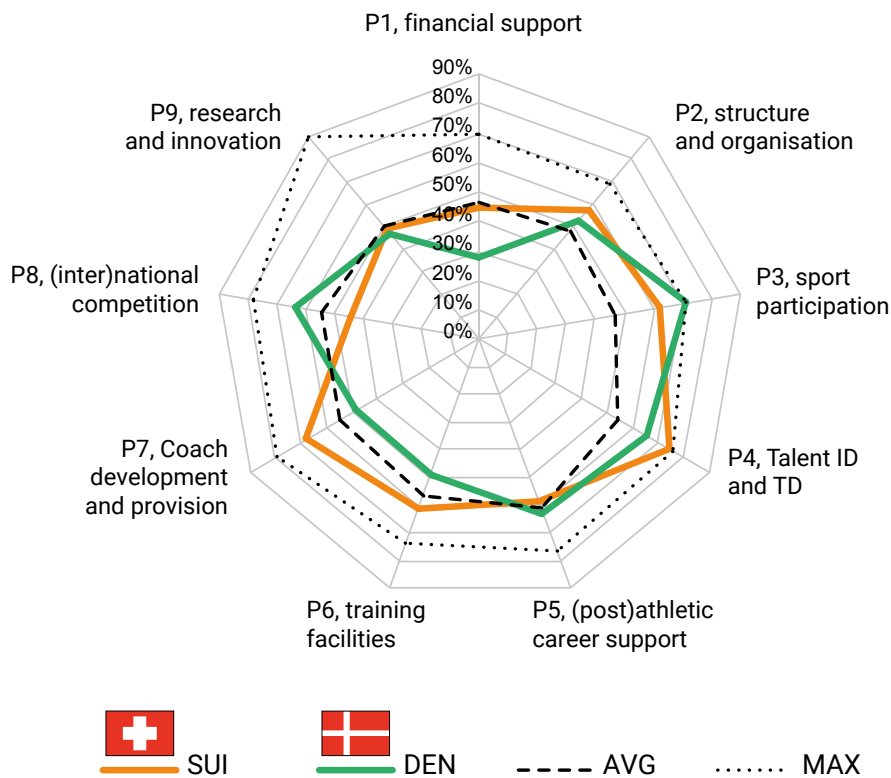


Figure 7: Radar graph of Denmark, Finland and Switzerland compared to the average and maximum scores of 15 nations

# 7. HOSTS OF THE OLYMPIC GAMES

## BRAZIL (2016) AND JAPAN (2020)

It is a well-documented that countries hosting the Olympic Games have a home advantage and tend to win more medals. Nations like Australia (Sydney 2000), Greece (Athens 2004), China (Beijing 2008) and the United Kingdom (London 2012) all performed better during their home Games and in the edition before. They also received more investment and benefited from a more strategic national approach to elite sport development. Japan and Brazil were the only countries in the sample that increased their market share of success following increased investments made over the period 2001 to 2012 (see Figure 8). Brazil won 19 medals in Rio 2016 in 12 different sports. Japan as the pre-host- won 11 medals however only in 11 different sports.

Looking at the nine Pillars for Brazil, and how elite athletes, coaches and performance directors have evaluated them, there is a strong belief that with an increasing national strategic approach to elite sport policy development, Brazil may improve its future medal tally. National government, lotteries and the Olympic Committee collectively invested around 150 million euros on a yearly basis in elite sport; furthermore, it is estimated that another 65 million euros (a year) by the state companies was invested and funding even increased after London. Brazil is a typical example showing that it takes time to turn investments in elite sport into success. Money alone cannot guarantee success; the crucial question is how the money is spent.

The main weakness in Brazil, covering all Pillars, is that there is no clear overall plan, leadership and coordination to be successful in elite sport in the short time. The only Pillar where Brazil scores around the average of the other 15 nations (except from Pillar 1) is Pillar 8 (access to international competition). There is significant funding available in Brazil (Pillar 1) but the allocation of funding remains quite undirected. The magnitude of the gaps between the scores for Brazil and the sample average are the greatest in Pillars 7 (coaches), 4 (talent) and 6 (facilities). Sport participation is a long-term development that also scores low.

Japan performs far better than Brazil on all of the nine Pillars, except for sports participation (Pillar 3), where both countries perform below average. The total elite sport budget (208 million euros) is the second highest after South Korea. It has a relative strength in research and innovation, training facilities (the national training centre in Tokyo and the 22 sport-specific training centres), and (international) competition. Japan has a long high performance history and is probably well set up to work towards a very successful home Olympic Games.

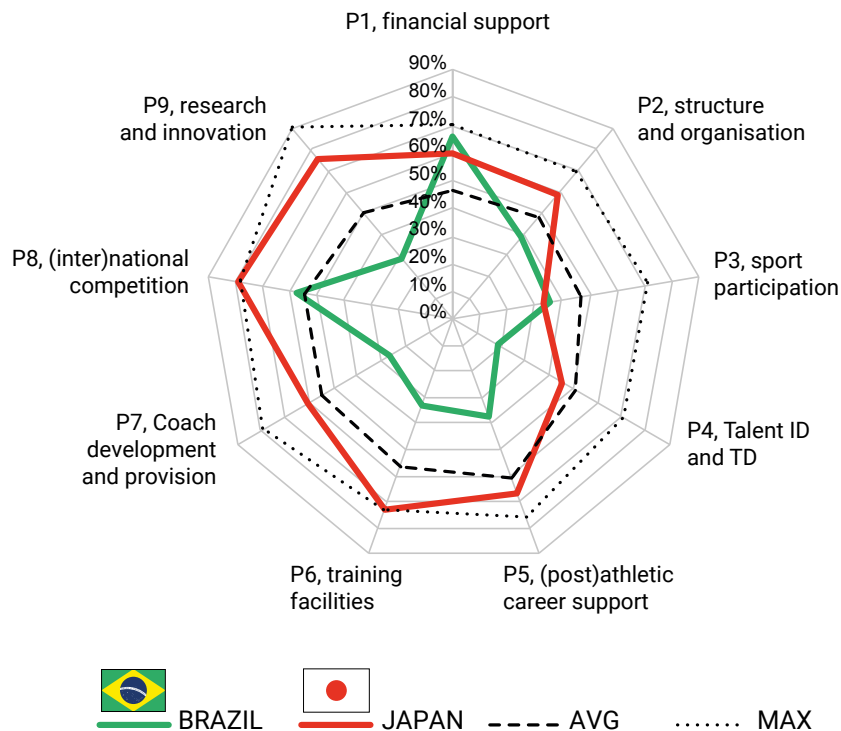


Figure 8: radar graph scores for Brazil against the sample averages





# 8. SUMMARY SPLISS KEY FINDINGS

## 1. NO BLUEPRINT FOR SUCCESS

Whilst the SPLISS project has identified that there is a strong positive relationship between the Pillar scores and success, it is also clear from the figures that how Pillar scores were compiled varies greatly between nations. Similar summary scores may be the result of (the combination of) quite different sub-factor scores.

**Benchlearn: search for best principles (instead of best practices) that work best in a given context**

There is therefore no generic blueprint that can be simply lifted from one context and placed in another that will guarantee success. There are no sets of Pillars, Critical Success Factors or recognised best practices that can be copied and pasted between different contexts. The reality is that there are a set of broad principles around a common framework that can be adapted to local circumstances in a culturally appropriate manner. Consequently, the most appropriate role for governments is one of enabling rather than delivering. High performance sport is a highly specialised and dynamic environment that does not lend itself well to standard (blueprinted) bureaucracy that can be replicated across national governmental systems, or across different sports.

Accordingly, the key challenge for nations remains to find the right blend of system ingredients and processes that work best in their own context and culture, encouraging them to “benchlearn”, from rivals rather than merely benchmarking against them.

## 2. More MONEY IN equals more MEDALS OUT

One of the key discussion about elite sport competition is to what extent medals can be “bought”. The results in Figure 9 illustrate that there is a strong positive relationship between the absolute amount of elite sport funding invested by nations and their success. The countries that invest most in elite sport (Korea, Japan, France, Australia and Canada, all with government/lottery funding over 100 million euros a year) are also the most successful nations in summer/winter sports. Nation by nation diagnostics shows that Australia, France, Japan and the Netherlands can be identified as the most efficient nations in summer sports given their investment in elite sport because they are located above the line of best fit.

**Funding determines success ... but does not guarantee it!**

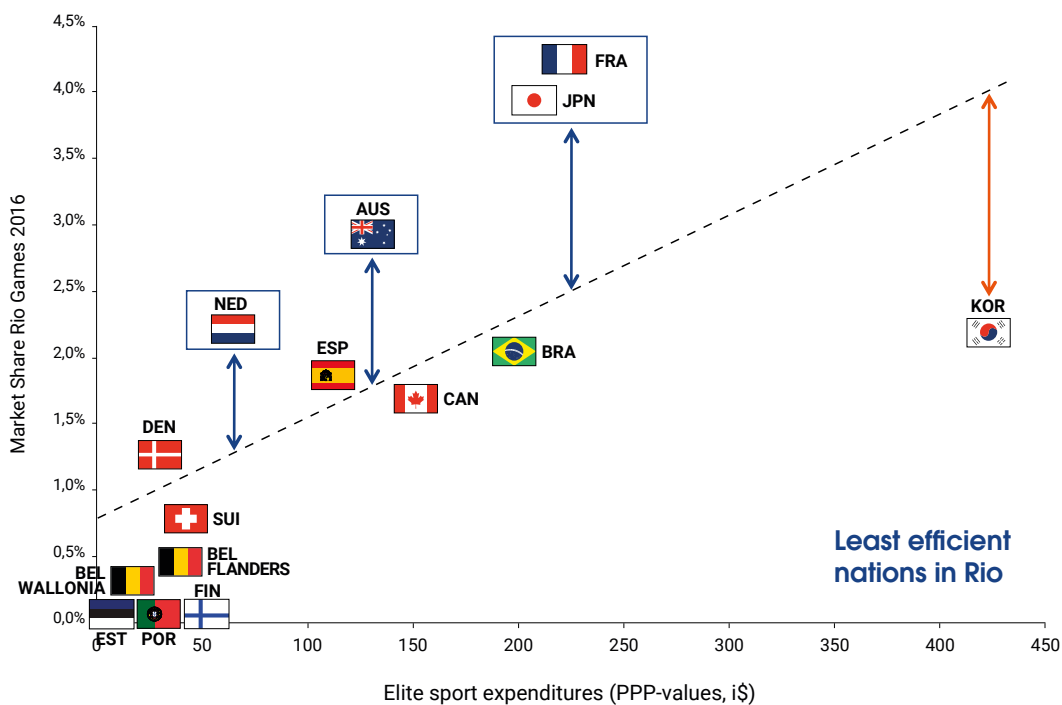


Figure 9: Elite sport expenditures and the success (market share) of the SPLISS nations in summer sports in Rio 2016



### 3. FUNDING DOES NOT GUARANTEE SUCCESS

Whilst 'money in equals medals out' it does not follow that 'MORE money in equals MORE medals out'. As a matter of fact in the case of most nations, more money was required to invest in the system, just to maintain a consistent level of success. In reality the nature of the global sporting arms race is such that there are diminishing returns to scale in terms of additional resources and the extra output achieved from them.

As shown in Figure 10 the return on investment over time has decreased for many nations – or in other words medals have become even more expensive. As a consequence, the rules of the game are dictated by what rival nations are doing and not on what an individual nation is doing now compared with what it did in the past (De Bosscher et al., 2008).

Nations suffering from diminishing returns on investment were Australia, France, Finland and Belgium whose expenditures increased over a ten year period (between 2001 and 2011) but market share decreased (in relative terms), both in summer and winter sports. Countries such as Japan, and Brazil are investing heavily and they are becoming more successful (in summer sports), taking market share from the established nations.

After identifying the absolute amount of financial resources that are invested, it is also important to consider the efficiency of nations, or the relative performance of nations. Efficient nations achieve 'more' success with 'less' investment. Ultimately, efficient nations need to be analysed in further detail to identify in which Pillars they invest most, and how integration between Pillars is achieved.

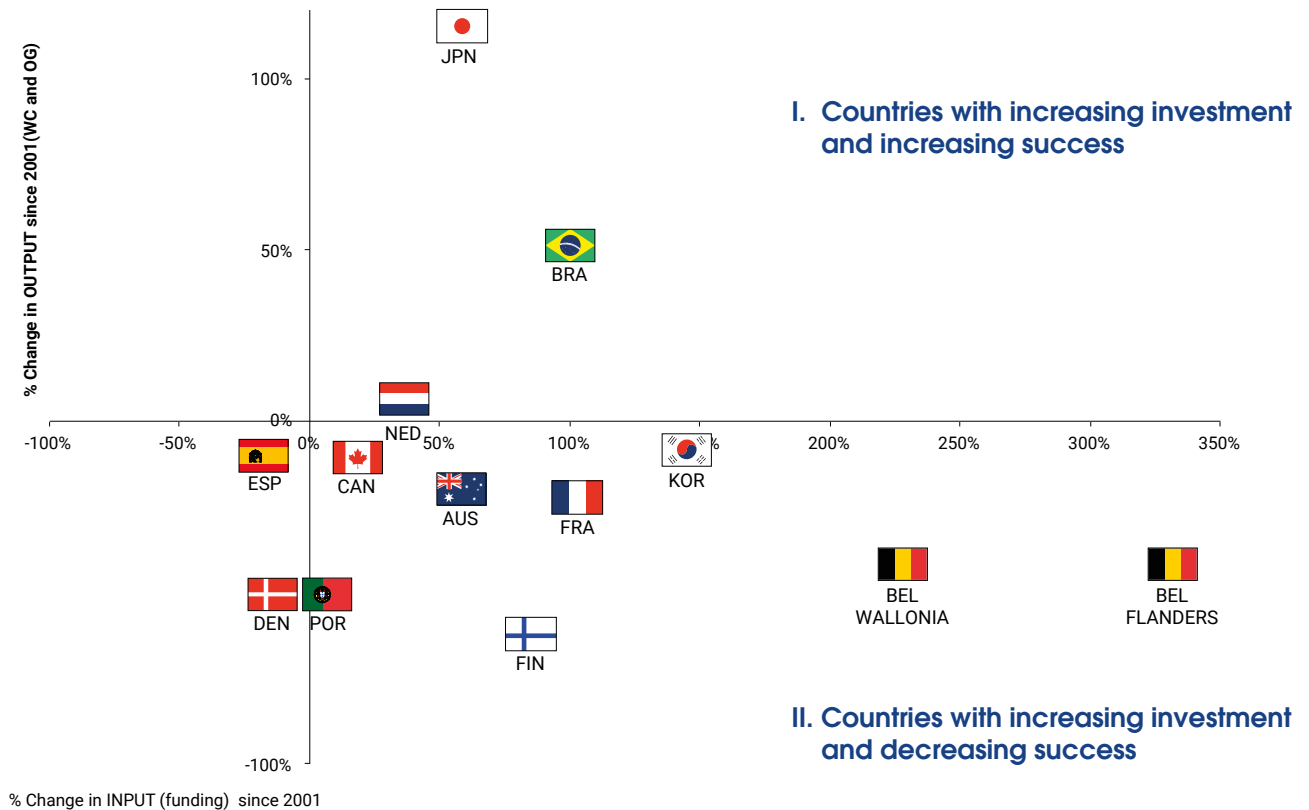


Figure 10: Relative increase/decrease of financial support (government & lotteries) (inputs) and success (market shares) since 2001 – Summer sports

#### 4. MORE EFFICIENTLY ORGANIZED COUNTRIES PERFORM BETTER

The countries that win more medals given the resources at their disposal can be described as 'efficient' countries (e.g. Australia, France, the Netherlands and Japan for summer sports in Figure 8). Interestingly these countries (apart from France) also have the best scores on Pillar 2: the organisation, structure and governance of elite sport.

**Efficient nations do more with less money; they have an integrated approach to policy development**

It can be argued that these countries have the most integrated approach to elite sport development. What these countries have in common is a strong national coordination of activities, with a clear decision making structure, strong involvement of athletes and coaches in the policy making process, full-time management staff in the national sport association (NSA), a high level of service oriented policy towards their National Governing Bodies/federations/national Sport organisations) but with accountability principles, long-term policy planning and political recognition. The countries that generally have the best average ratings on all Pillars, are Australia, Japan, the Netherlands, and Canada (which is efficient in winter sports).



#### 5. SPORTS PARTICIPATION AND TALENT DEVELOPMENT: the non-significant Pillars?

It might come as a surprise to many that our research design delivers no evidence of a direct link between policy actions that are intended to drive sports participation or talent development and the level of success in elite sport that countries achieve (Figure 4). There is a considerable time period between the podium and participation and a high dropout rate between those identified as talented and those who reach the top. In regard to talent identification and –development (Pillar 4), smaller nations in particular (in terms of population or area) have better scores on this Pillar.

While it seems obvious that nations need a talent pool in order to have the chance to be successful in elite sport, there is no strong argument that countries need a broad participation base in sport in order to excel in elite sport. However, our data show that nations that the most successful nations, do not spend the most on grassroots sport. The reality is that in most nations, elite sport development is a separate system, with independent system drivers, compared with grassroots sport. Analyzing the relationship by linking sports participation to success is therefore not the right way to discover if and how this relationship works. It still holds true that countries first need sport participants before they can create elite athletes. Each elite athlete was once just a beginner in his or her sport and dependent on teachers and coaches at schools and clubs to develop their talent.

**Sport participation and talent development are not priorities for short-term success, but may deliver long-term competitive advantages**

It seems that Pillars 3 and 4 are not priority Pillars for short-term (quick fix) success in sport, but in the longer term may provide a foundation for temporary competitive advantage by delivering more talented athletes for selection into elite sport. We argue that participation indirectly influences success (in the long-term) because of it positively delivering a continuous supply of young talents. As smaller (less populated) nations have higher scores on Pillars 3 and 4, it seems that higher populated countries have relied more on the vast size of their participation and talent pool. If larger countries are starting to invest more in these Pillars, it may well deliver scope for performance improvement at the expense of smaller nations.

## 6. OTHER PILLAR KEYPOINTS

- We did not find a significant correlation between athletic career and post career support (Pillar 5) and sporting success, which we attribute to nations taking a broadly similar approach to this Pillar which is creating an environment that enables athletes to train and compete as full time professional athletes. The most important elements of this pillar appear to be providing athletes with the money and time to train and compete as if they were full time professional athletes. The more enlightened nations see an elite sport career holistically as concerned with the

**PILLAR 5 (athletic career support) is well developed in all nations.**

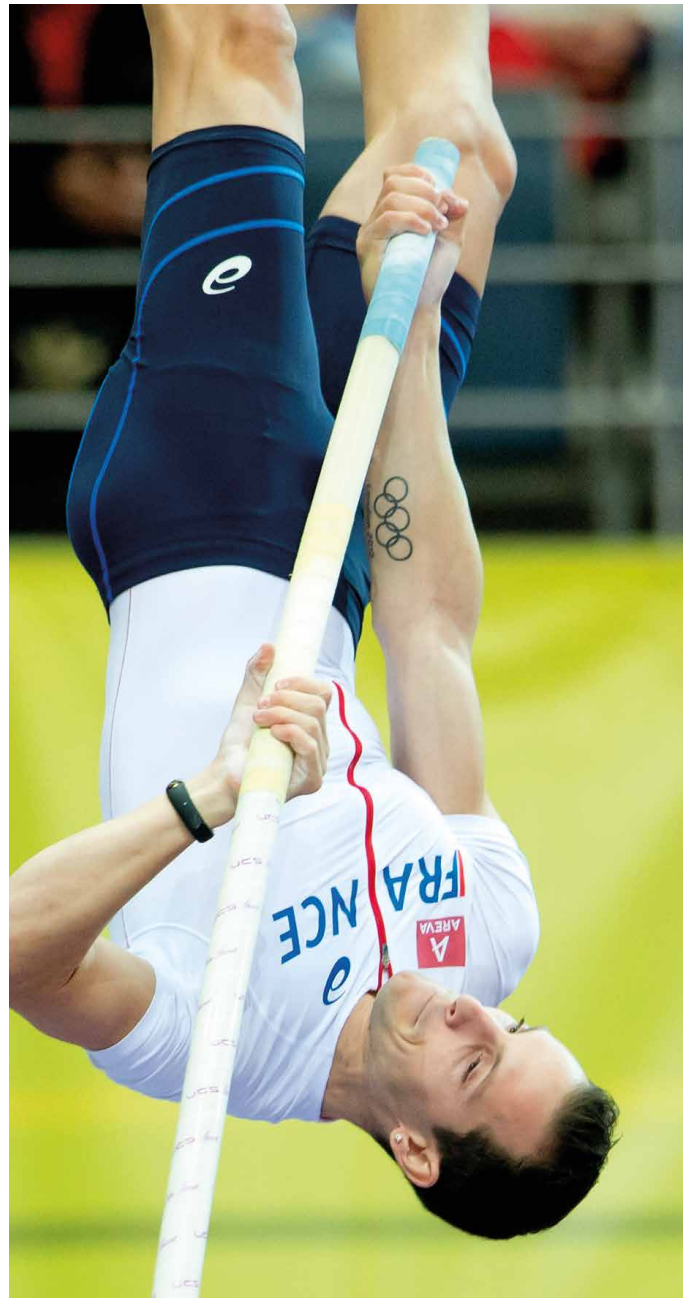
**Facilities (P6), top level coaching (P7) and access to international competition (P8) are drivers of an effective elite sport system.**

development and wellbeing of athletes from the identification of their talent, the conversion of talent into elite level performance and the ultimate withdrawal from competitive sport. By putting in measures at the various transition points to prevent athletes from dropping out and to minimise the perceived risks of a sporting career, nations can maximise the amount of talent that achieves its full potential.

- There is a significant relationship between facilities, top level coaching and access to international competition (Pillars 6, 7 and 8) and success. These are drivers of an effective elite sport system. Our basic argument in regard to the direct impact that these factors have on sporting success, is that all three literally 'touch' the athlete and his/her performance. Poor facilities, poor coaching and limited access to international competition are all likely to have an immediate impact on athletic performance.
- Scientific research and innovation (Pillar 9) is positively linked to success. High scores on this Pillar are indica-

**Superior scientific support (Pillar 9) in elite sport development typifies nations that want to be leaders, not followers.**

tive of nations taking a mid- to longer term view towards achieving or sustaining elite sport success. Superior scientific support in elite sport development typifies nations that want to be leaders, not followers. Sport science is about staying ahead of other competitors, coming up with new methods, approaches and equipment that allow national athletes to achieve a competitive advantage over international competitors. If science allows the elite sport system to continuously offer short term advantage to athletes, the sport science support itself becomes a source of sustainable competitive advantage.







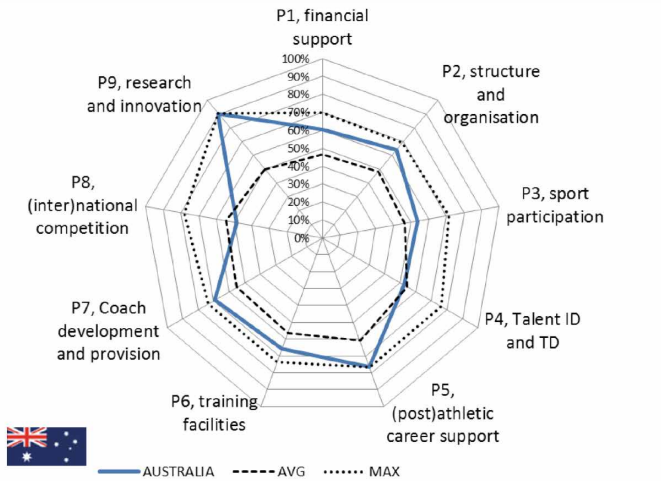


# APPENDIX

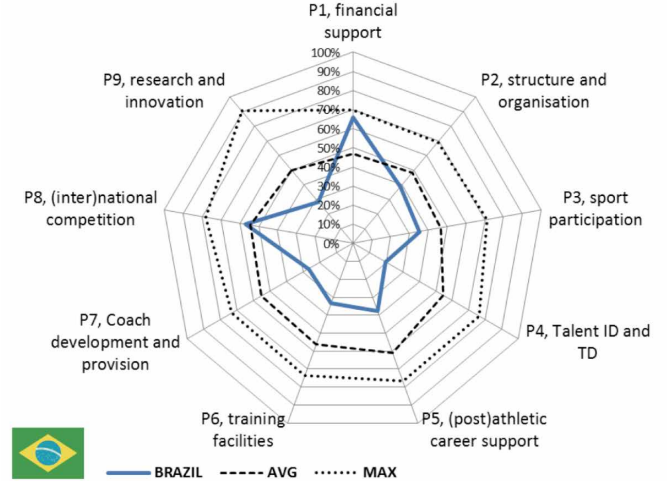
## PILLAR PERFORMANCE PER NATION

Radar graphs for the SPLISS 2.0 nations compared to the sample average and maximum scores on nine pillars.

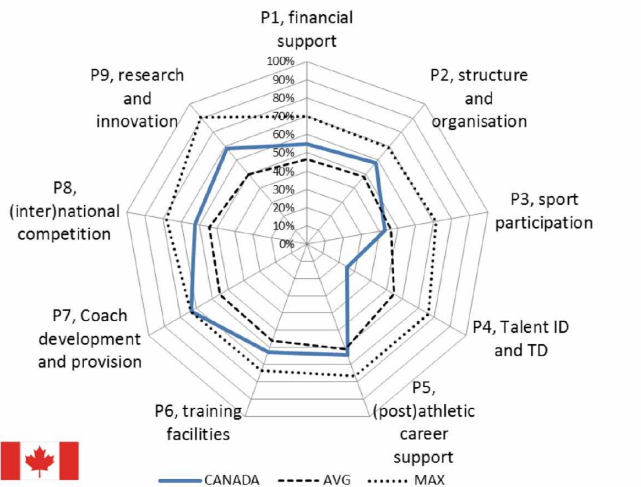
### AUSTRALIA



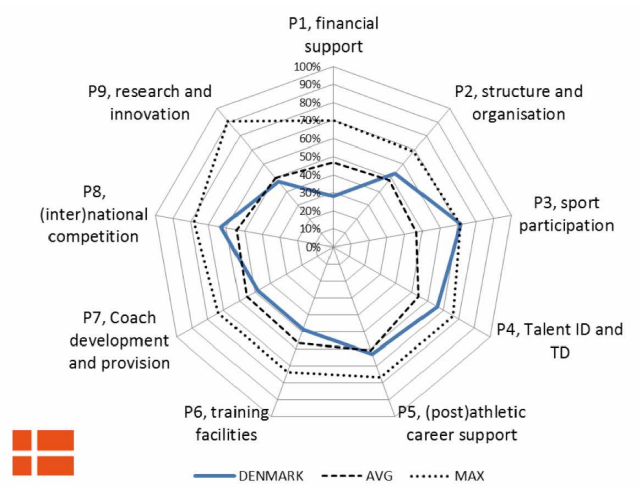
### BRAZIL



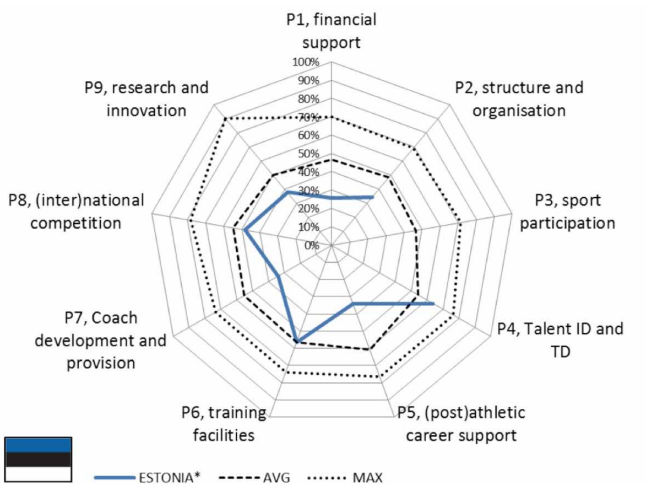
### CANADA



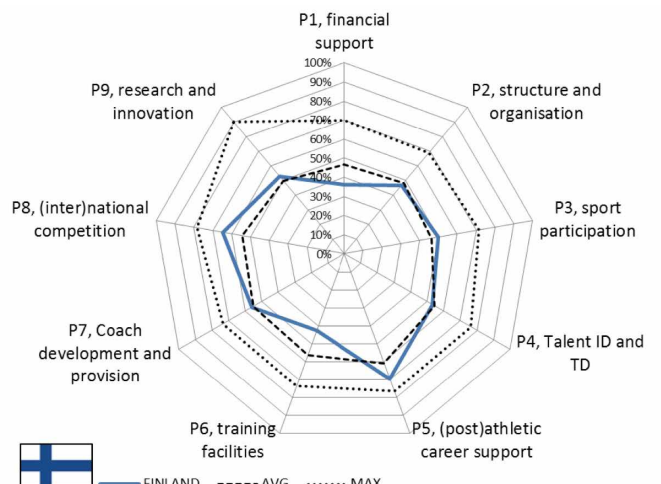
### DENMARK



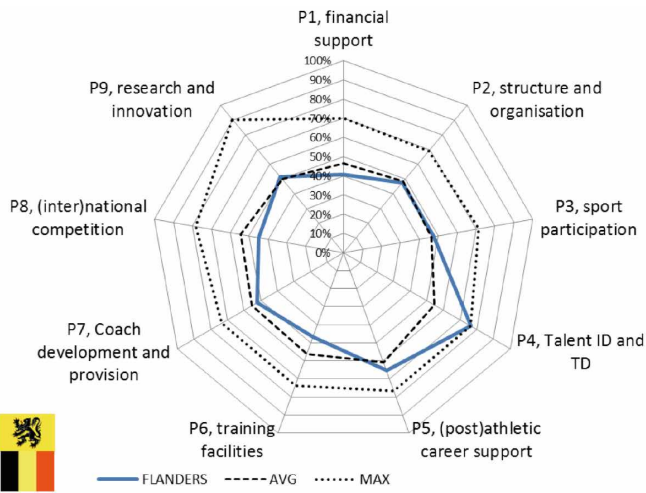
### ESTONIA\*



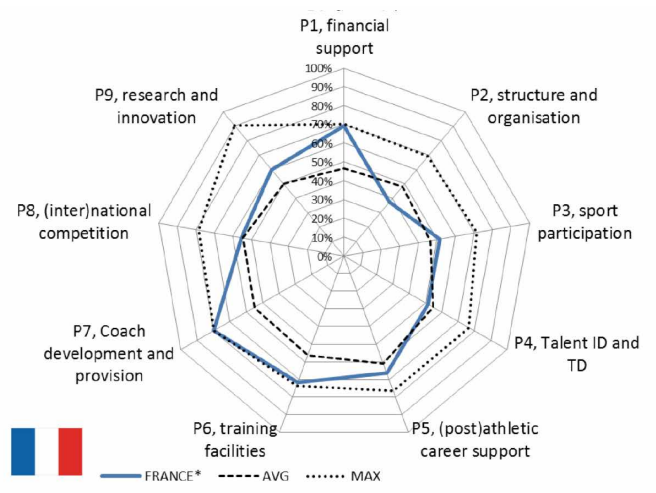
### FINLAND



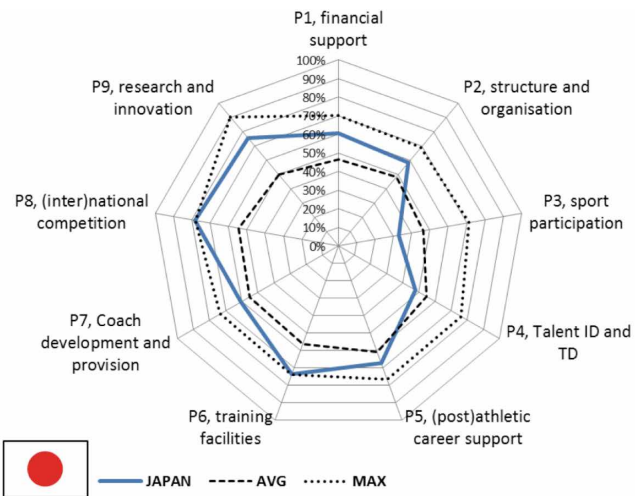
### FLANDERS



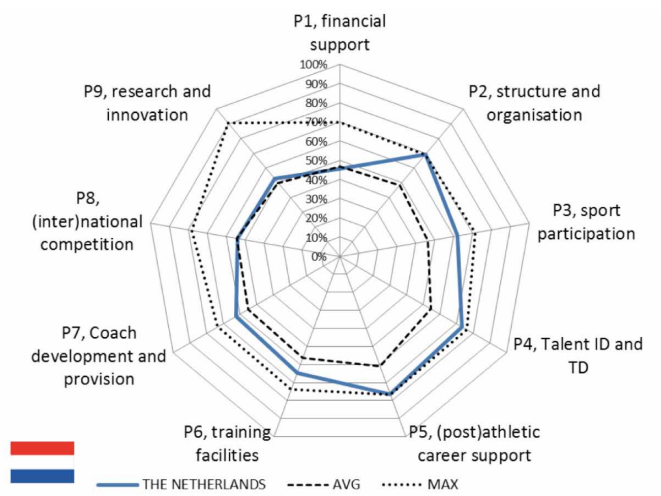
### FRANCE\*



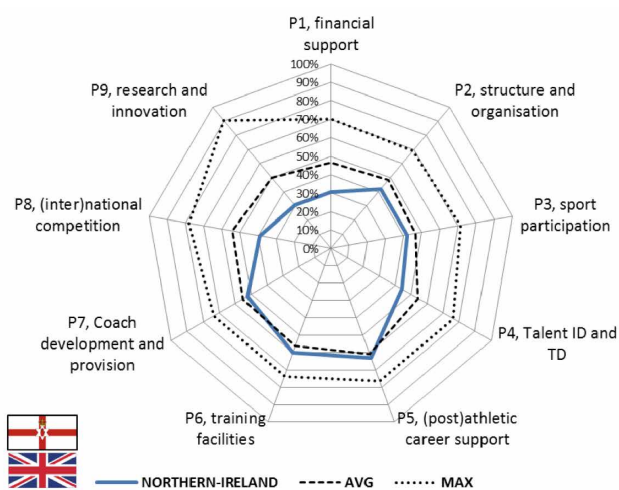
### JAPAN



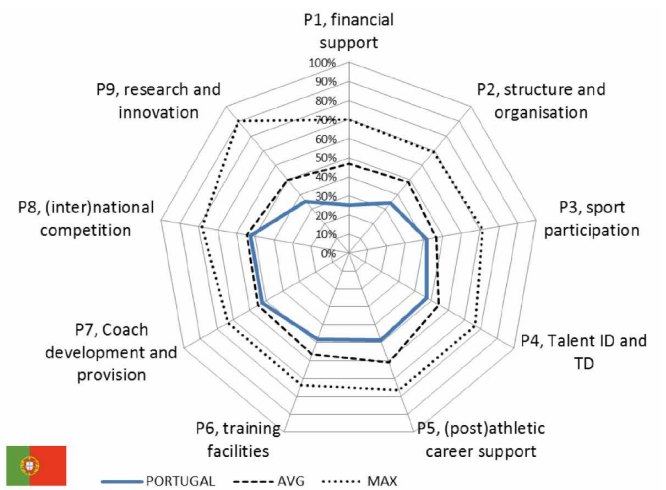
### THE NETHERLANDS



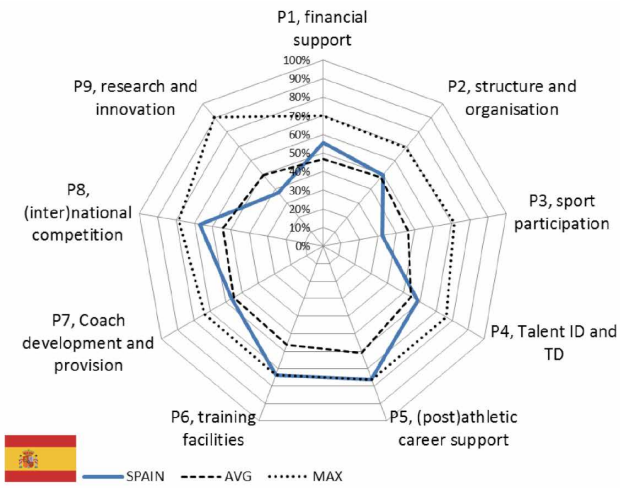
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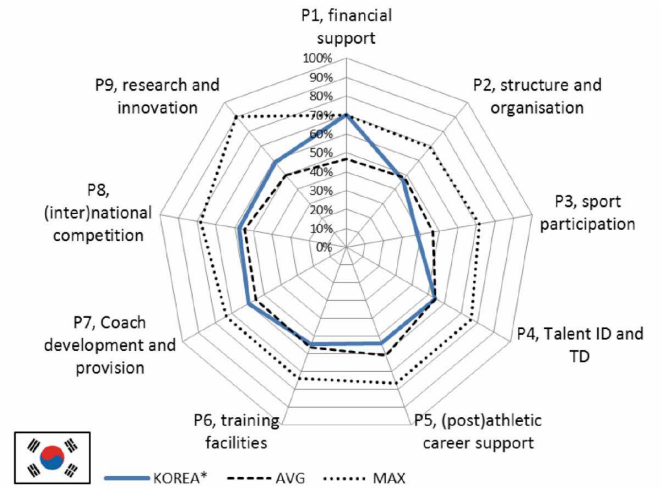
### PORTUGAL



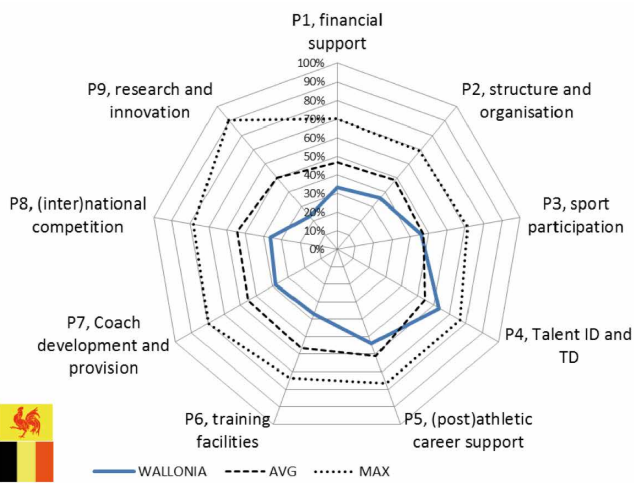
### SPAIN



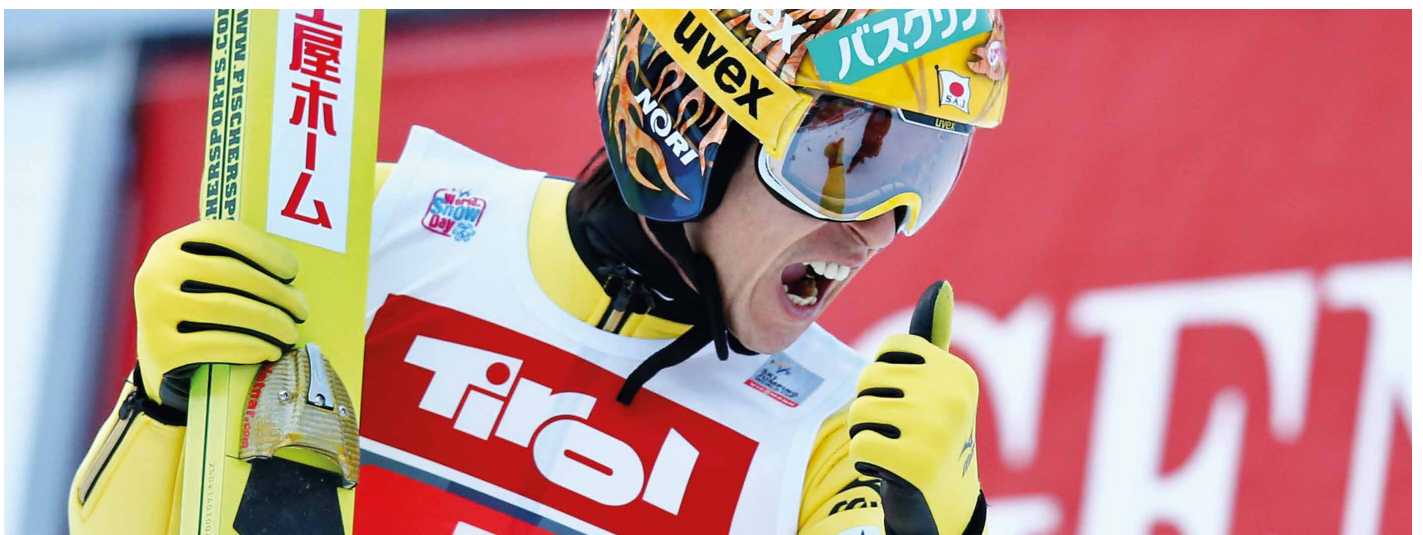
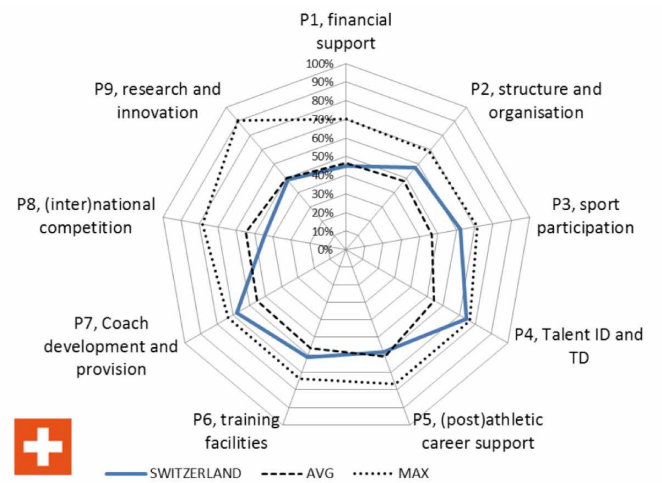
### SOUTH-KOREA\*



### WALLONIA



### SWITZERLAND







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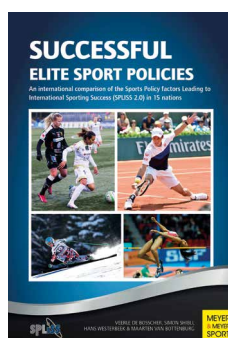


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- Estonia, National Audit Office of Estonia
- France, Institut National du Sport et de l'Éducation Physique-INSEP
- Finland, KIHU - Research institute for Olympic Sports
- Japan, Waseda University
- United Kingdom, Sport Northern Ireland
- Portugal, Beira Interior University
- Spain, National Institute of Physical Education of Catalonia, INEFC
- South-Korea, Korea Institute of Sport Science
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Reference to this document : © De Bosscher, V., Shibli, S., Westerbeek, H. & van Bottenburg, M. (2015). Successful elite sport policies. An international comparison of the Sports Policy factors Leading to International Sporting Success (SPLISS 2.0) in 15 nations. Aachen: Meyer & Meyer.  
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400 pages, in colour | 222 photos & illustrations  
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