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Convergence and Divergence of Elite Sport Policies: Is There a One-Size-Fits-All Model to Develop International Sporting Success?

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ABSTRACT

This study is based on a detailed international comparison of the elite sport policies of 15 nations as part of the SPLISS (Sports Policy Factors Leading to International Sporting Success) study. It aims to provide deeper insights into the phenomena of convergence and divergence of elite sport policies. The research uses a mixed methods approach based on document reviews, interviews with high performance directors and surveys of 3142 athletes, 1376 coaches and 246 performance directors. There appears to be no generic blueprint for achieving international sporting success. Nations that perform well in international competition show varying patterns of relative strengths and weaknesses across nine pillars, 96 critical success factors, and 750 sub-factors. While the basic raw ingredients of the recipe might be common in broad terms, the combinations in which they are mixed are diverse. Much of this diversity appears to be driven by social, cultural and political factors.

精英体育政策的融合与分歧：
是否存在一种能促进国际体育的成功并适用于所有模式的方法？

本研究是基于对15个国家精英体育政策的比较之下进行的。本文试图对“是否能采取一个同一的方法来实现精英体育政策？”这个问题进行回答。这是一个重要的课题，因为以往的文献对于精英体育政策的是应融合或分歧这一原则存在着分歧。本研究综合运用对事前研究的查阅，以及对体育较为发达国家的政策制定者，运动员，教练以及绩效主管的采访等研究方法进行。研究是以超过3000页数据以及4759名的系统调查对象的调查结果为基础开展的。这里似乎没有办法勾勒出能够实现国际体育成功这一目标的蓝图。在国际竞技中表现优异的国家通过九个方面显示出不同的相对优势以及劣势，包括96个成功关键原因以及750个子原因。虽然各构成因素在广义上都较为常见，但它们由混合之后而呈现的组合是多样的。大部分这种多样性似乎是由社会，文化和政治因素所驱动。虽然国家间的体育竞争在积极展开，但是各国都在用不同的方式提高它们自己的影响力。精英体育政策的研究仍是决定未来研究精英体育成功的沃土。

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成功; 要素; SPLISS

1. Introduction

There is a growing body of literature within political science and international studies investigating why different countries develop similar policies over time (Dolowitz & Marsh, 2000). There are numerous studies that emphasize a striking degree of policy convergence, i.e. the development of similar or even identical policies across countries over time (Knill, 2005). Similar developments are also notable in elite sport policy. Increasing global competition for sporting success is encouraging nations to adopt strategic elite sport policies. The net result of this is a seemingly homogenous elite sports development system which is ostensibly based around a near uniform model of elite sports development with subtle local variations (e.g. Bergsgard, Houlihan, Mangset, Nødland, & Rommetvedt, 2007; De Bosscher, Bingham, Shibli, Van Bottenburg, & De Knop, 2008; Houlihan & Green, 2008; Oakley & Green, 2001). Often countries classified as borrowers draw lessons while countries classified as lenders act as models for other political systems (Dolowitz & Marsh, 2000). Australia and Canada were among the early adopters of strategic elite sport policy approaches and they built their systems partly modeled on the high-performance structures of former communist nations. As a consequence, Australia and its Australian Institute of Sport have been powerful examples for many other nations to emulate. As a result, the current elite sport literature reports that elite sport development is characterized by increasing institutionalization, government involvement and homogenization (Green & Houlihan, 2005; Houlihan, 2009; Oakley & Green, 2001).

The fact that elite sport is part of a broader system that is embedded in a nation's culture and prevailing value system also prompts a debate about the ambiguity of "one-size-fits-all approaches" to elite sport policy. Several authors have drawn attention to the danger of isolating elite sport models from the historical context and social and cultural system in which they operate and various research paradigms deliver multiple (causal) models that may explain the production of elite sporting success (Andersen & Ronglan, 2012; Houlihan, 2013).

Houlihan (2009) states that "possibly one crucial indicator of convergence of sport systems is the extent to which a broad range of countries with different political, socio-economic and cultural profiles adopt similar policy goalsif it is accepted that there is convergence in policy goals, then the next area for investigation is in relation to the policy instruments that have been selected to achieve that goal and, crucially, whether the choice of policy instruments is constrained by the nature of the policy objective" (p. 64). The authors indicate that the repertoire of policy instruments is so limited that there is little scope for variation in policy selection, even though they may conflict with deeper cultural values. To date, there is little empirical evidence of the variations that exist within national elite sport policies.

The aim of this paper is to provide deeper insights into the phenomena of convergence and divergence of elite sport policies. This paper will not explain why convergence occurs, rather its focus lays in identifying if it occurs and to what degree. Drawing on data collected from an international study in 15 countries as part of a large-scale SPLISS 2.0 study (Sports Policy factors Leading to International Sporting Success), this paper highlights the extent to which successful nations in elite sport have developed elite sport policies in similar or diverse ways.

2. Theoretical framework

The notion of a “global sporting arms race” (De Bosscher et al., 2008; Green & Oakley, 2001) is based on a growing awareness by nations that sporting success can be produced by investing strategically in elite sport, whereby nations are searching for effective solutions to gain a competitive advantage in elite sport. In response to this situation, an increasing number of studies have been conducted that identify common features of successful national elite sport systems. Such studies can be divided into two complementary categories. On the one hand, there are studies that aim to determine and analyze the key success determinants of elite sport policies at the national policy level (e.g. De Bosscher, De Knop, Van Bottenburg, & Shibli, 2006; De Bosscher, De Knop, van Bottenburg, Shibli, & Bingham, 2009; Digel, Burk, & Fahrner, 2006; Oakley & Green, 2001). On the other hand, there are studies aiming to understand elite sport more broadly from a political or historical perspective (Andersen & Ronglan, 2012; Bergsgard et al., 2007; Green & Houlihan, 2005; Houlihan & Green, 2008). In addition, a plethora of organizational studies have started to develop at a sport-specific level focus (e.g. Böhlke & Robinson, 2009; Brouwers, Sotiriadou, & De Bosscher, 2014; Robinson & Minikin, 2012; Sotiriadou, Gowthorp, & De Bosscher, 2014; Truyens, De Bosscher, Heyndels, & Westerbeek, 2013), because “success of countries tends to be concentrated in sports or specific events, in other words, countries typically specialize” (Truyens et al., 2013, p. 1). What can be concluded from these studies is that there exists considerable overlap in what has been identified as common ingredients of successful elite athlete development, whether it is at a sport-specific or overall national level.

One of the most comprehensive projects of policy-level factors that influence international sporting success that empirically tested a model in six nations is the Sport Policy Factors that Lead to International Sporting Success (SPLISS) model (De Bosscher et al., 2006, 2009). This model is the result of work by a consortium group of international researchers established in 2002. The SPLISS model (see [Figure 1](#)) clusters all factors within sport policy that can contribute to success (outputs) in nine pillars and specifies 96 critical success factors (CSFs) that contribute to improving the elite sport success of a nation. Specifically, financial support (pillar 1) and an integrated approach to policy development through organization, structure and governance (pillar 2) are necessary conditions for the development of athletic careers. Pillars 3, 4 and 5 represent the sequences of the athlete development stages including foundation and participation (pillar 3), talent identification and development systems (pillar 4) and athletic and post-career support (pillar 5). Investment in four remaining pillars (i.e. pillar 6, training facilities; pillar 7, the provision for and development of coaches; pillar 8, national and international competition structure and pillar 9, scientific research and innovation) is essential for the development of elite athletes.

The model was developed using the results of a content analysis of a comprehensive body of literature on the former Soviet Union and East Germany and on the organizational context of countries in elite sport, supplemented by studies at the micro-level, which attempted to understand the determinants of success for individual athletes rather than nations. In addition to this literature, and in order to increase the face and content validity of the theory development, two explorative studies also contributed to the development of the nine pillars and CSFs: one with international tennis coaches from 22

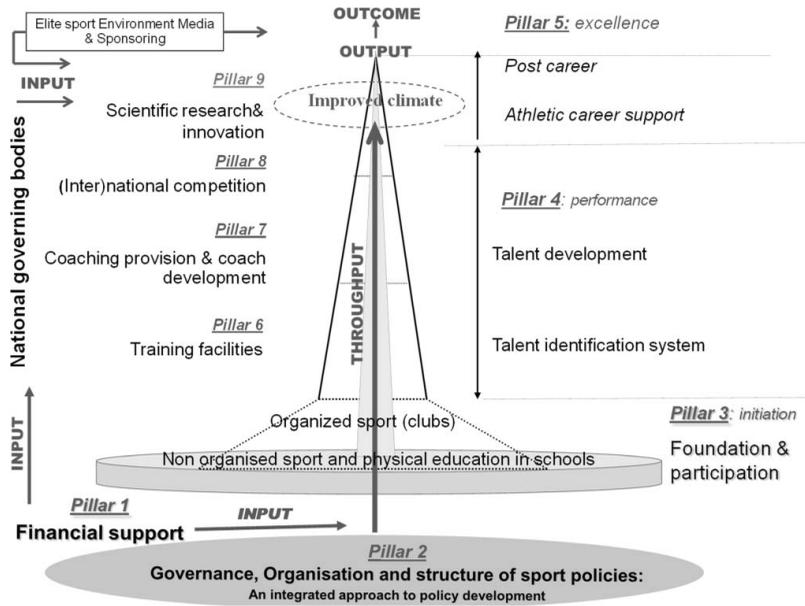


Figure 1. The SPLISS model: theoretical model of nine pillars of sports policy factors influencing international success (reprinted with permission from Taylor & Francis Ltd., <http://www.informaworld.com>, and slightly adapted from De Bosscher et al., 2006).

nations to determine key success drivers from an expert perspective in a specific sport; and one with 114 Flemish (i.e. the northern, Dutch speaking part of Belgium) elite athletes, 99 coaches, and 26 performance directors to determine key success drivers from a consumer perspective. Both surveys used simple open-ended questions to identify the external factors that make the most significant contribution to the international sporting success of athletes. Two independent researchers employed inductive procedures to cluster relevant raw data from this extensive body of literature and interviews into first-order and second-order themes until interpretable and meaningful key categories were identified (Gliner & Morgan, 2000). Subsequently, to increase validity and interpretive consistency (Tashakkori & Teddlie, 2003), the list of different items and (sub) themes was presented to an international consortium group of seven researchers from the United Kingdom, the Netherlands and Belgium with expertise in elite sport policy research. These were asked independently to cluster the items into categories. Where different interpretations emerged, the items were regrouped and discussed until consensus was achieved. We refer to De Bosscher et al. (2006, 2009) for more details about this process. The authors concluded that the model provides only a tentative theoretical assumption on sport policy factors that lead to international success and: “its function is not deterministic, rather it aims to identify pivotal issues and to generate crucial questions in a benchmark study of elite sport systems ... the model can be considered to be reasonably face and content valid. It is impossible to conduct a model that is totally construct valid because of the many extraneous factors that influence success and because it is impossible to create one single model for explaining international success” (De Bosscher et al., 2006, p. 209).

The model was tested empirically in an international comparative pilot study with six nations in order to understand how the pillars are activated in different nations and how the different CSFs can be operationalized in methodological terms (De Bosscher et al., 2008). The nations included Belgium (treated separately as two regions, Flanders and Wallonia), Canada, Italy, the Netherlands, Norway, and the United Kingdom. Furthermore, the model has also been applied to sport-specific levels, for example, in athletics (Truyens et al., 2013), tennis (Brouwers et al., 2014), judo (Mazzei, Böhme, & De Bosscher, 2016), canoe (Sotiriadou et al., 2014) and some unpublished master theses in swimming, equestrian, and commercial speed skating teams. In addition, it is being applied to other levels, such as the city level (van Rossum, 2012) and regional levels in Brazil (Böhme, Bastos, Mazzei, Rocco, & Amaral, 2015) and also to paralympic sport (Pankowiak, Brocket, De Bosscher, & Westerbeek, 2015).

3. Methods

This paper is based on the large-scale SPLISS 2.0 project, involving 15 nations aiming to gain more evidence on the relationship between which configuration of policies leads to which levels of success. It also further explores various research paradigms regarding the delivery of multiple (causal) models that may explain the production of elite sporting success. The authors took this project beyond SPLISS 1.0 aiming to develop deeper insights into the policy–success relationship through collecting more information about various pillars and their CSFs, developing a more comprehensive scoring methodology and collecting more detailed qualitative data on each pillar and its evolution over the past three Olympic cycles. The project focuses on national-level elite sports policies that are government-funded, principally Olympic sports, and to a lesser extent, commercialized sports. The SPLISS model and its CSFs may be less applicable to countries where elite sport policy is (also) the remit of NGOs or private organizations.

When SPLISS 2.0 was announced, nations with an interest in the project were invited to participate subject to the condition that they would be able to collect the comprehensive data set and follow the research protocol. Eventually, 15 nations participated, namely Australia, Flanders and Wallonia (Belgium), Brazil, Canada, Denmark, Estonia, France, Finland, Japan, South Korea, the Netherlands, Northern Ireland, Portugal, Spain and Switzerland.¹ This paper will further focus on the most successful nations in the sample in summer and winter sports. An overview of the population and wealth of these countries (expressed as GDP per capita), as these factors explain over 50% of international sporting success (De Bosscher, 2007), is shown in [Appendix 1](#).

3.1. Research design

As displayed in [Figure 2](#), a concurrent triangulation design was used to collect qualitative and quantitative data at the same time. The purpose of this design is to “obtain different but complementary data on the same topic to best understand the research problem” (Creswell & Plano Clark, 2007, p. 62). Qualitative data served to obtain a broader understanding of elite sport systems of the sample nations, the nine pillars and their CSFs and their evolution over the past 12 years (three Olympic cycles). In addition, one of the key points of the SPLISS methodology is that the

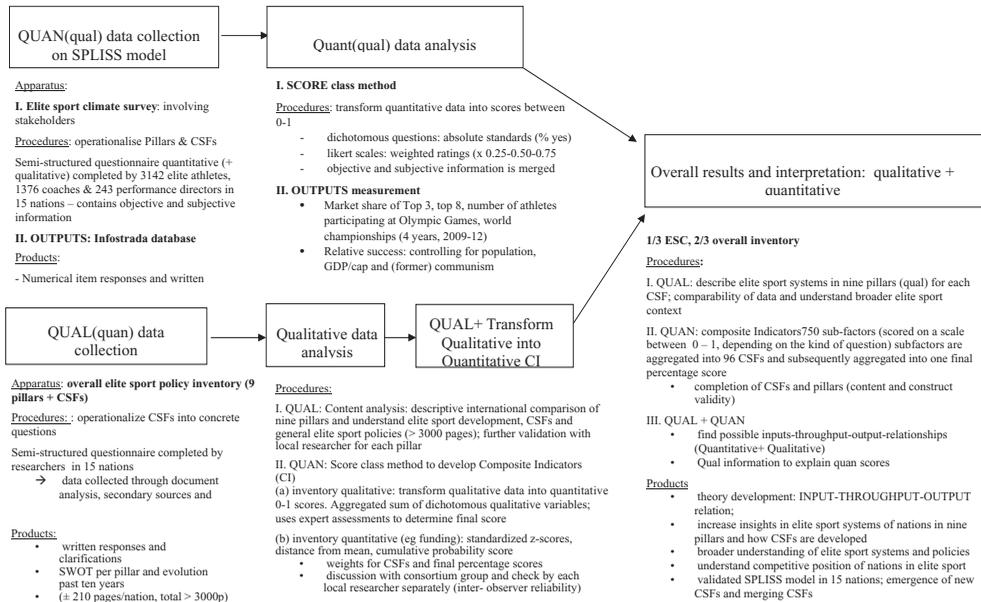


Figure 2. Research design: visual diagram of the procedures of SPLISS 2.0 in 15 nations.

nine pillars and 96 CSFs are operationalized through a mix of qualitative and quantitative data that are subsequently transformed into a scoring system (composite indicator, CI). This is done for several reasons: (1) to summarize complex, multi-dimensional realities on elite sport policies into easily understood formats and to enable the comparison of complex dimensions effectively; (2) to facilitate pattern recognition in order to improve insight into a possible relationship between elite sport policies and success; (3) to increase criterion validity of the SPLISS model; (4) to evaluate a theoretical construct of the SPLISS model and its CSFs in a transparent way without dropping the underlying information base; and (5) to improve insight into a possible relationship between sport policies and success (De Bosscher, Shibli, Westerbeek, & van Bottenburg, 2015; Nardo et al., 2008). The procedures will be explained further in the next sections.

3.2. Protocol

SPLISS research partners in the participating countries were the drivers of this project. They collected the data locally using pre-defined research instruments. A total of 58 researchers and 33 policy-makers collaborated in this project, with one coordinator per nation. Comparability of data and the reliability of the comparison were major concerns. Researchers received a research protocol that provided guidance on the process of data collection, aimed at standardizing data-gathering procedures. All documents were provided through a joint web platform. Several international meetings were organized to fine-tune the data collection and to identify possible gaps in the research methodology. The raw data collection in each nation took approximately one year.

3.3. Data collection

The pillars and the 96 CSFs were operationalized through two types of research instruments as a means to collect complementary data, as shown in [Figure 2](#) and [Appendix 2](#).

The first instrument included the overall elite sport policy inventory, which was a comprehensive research instrument in its own right; and which was used to collect mainly qualitative data on all pillars and CSFs as well as general information about sport systems and their historical growth. Open-ended interpretative questions primarily sought to obtain insights into the quality of CSFs and in the functioning of more complex processes (i.e. about elite sport and study systems). To ensure a degree of comparability among the various indicators, closed (mainly dichotomous) questions were added to evaluate the availability of resources and specify key characteristics of CSFs. In addition, quantitative data were collected, such as (elite) sport expenditures overall and by sport, and the number of professional coaches or sport participants in each nation. The inventory was completed by the researchers in each country through interviews with policy agencies and analysis of existing secondary sources, such as policy documents. The data collected through this inventory resulted in over 3000 pages with 212 open-ended and closed questions covering all the nine pillars (see [Appendix 2](#)).

The second research instrument was the elite sport climate survey, completed by a total of 3142 athletes, 1376 coaches and 243 performance directors (of national governing bodies) from the 15 nations, containing questions on different CSFs within each pillar. It served two purposes: (1) to gather (mainly quantitative) information on indicators or “facts” that cannot easily be measured (using dichotomous questions) (De Pelsmacker & Van Kenhove, 1999); and (2) to measure success indicators as they are perceived by their primary users (using a five-point Likert scale), referring to the services marketing literature and the effectiveness literature which states that the primary stakeholders in sport organizations should be involved (Chelladurai, 2001; Shilbury & Moore, 2006). Pillars 1 (financial support) and 3 (sport participation) had no survey questions included. [Appendix 2](#) provides an overview of response rates by nation.

3.4. Limitations

The fact that the project was highly dependent on the cooperation of sports authorities and Olympic Committees, which had not necessarily endorsed the research in all countries, made it challenging to access all three respondent groupings in some countries. As such, Estonia and Northern Ireland did not complete the Performance Directors Survey and France was unable to participate in the surveys due to final approvals arriving after the data collection deadlines. In some countries, it was hard to collect all information for all pillars. Estonia only completed the pillar 1 inventory and South Korea did not complete pillars 3 (participation), 4 (talent), 7 (coaches) and 8 (international competition). Obviously, a critical eye is required in the comparison and therefore these countries were not included in the sample used in this paper.

3.5. Data analysis

Within the inventory (completed by the researcher), overall, the analysis was to a large extent qualitative and partly quantitative. As a starting point, qualitative data were

analyzed inductively and deductively to describe and compare the CSFs in the nine pillars in each nation and to understand the broader context in which elite sport policy operates.

In addition, composite indicators (CI) were created, echoing methodologies from economics such as competitiveness and strategic management (Nardo et al., 2008). CIs are synthetic indices of individual indicators and are increasingly being used to rank countries in various performance and policy areas (Freudenberg, 2003). They are particularly useful for comparing and objectifying large amounts of international data on elite sport policies in the 15 nations into easily understood formats and for identifying possible success factors in elite sport policies. In this study, a total of 750 sub-factors within the 96 CSFs were allocated a score between 0 and 1. Depending on the source (elite sport climate survey or sport policy inventory) and type of question (open-ended, dichotomous or assessment), the standards for this scale differed.

The most complex ratings were derived from the overall sport policy inventory, to transform qualitative information on the elite sport systems into a score. These questions were assessed in terms of availability of the criterion in a stronger or weaker form, to indicate the level of development. For quantitative data from the overall sport policy inventory (e.g. elite sport expenditures), data were standardized. “Z-scores” were created for all quantitative data sets, allowing fair comparisons between different types of data. Each data point was given a score based on its distance from the mean average of the entire data set, where the scale is the standard deviation of the data set. Subsequently, the Z-score was turned into a “cumulative probability score” to arrive at the final totals (between 0 and 1) for each CSF. For each CSF, the standards and ratings were discussed within the consortium group until consensus was reached.

In the elite sport climate survey, quantitative data were available mainly based on two types of questions: dichotomous questions (yes/no) and ratings on a five-point Likert scale (ordinal). For the dichotomous questions, absolute standards were used to calculate the scores (the percentage of “yes” answers divided by 100). For the 1–5 Likert scale (perceived) questions, ratings were calculated by multiplying the response values respectively by 1 (highly developed), 0.75 (sufficiently developed), 0.5 (reasonably developed), 0.25 (insufficiently developed) and 0 (not developed). This resulted in a score between 0 and 1.

For financial data, both in the inventory and the surveys, values were adapted for purchasing power parity (PPP, expressed in international dollars (i\$)). PPP is a concept used in economics to determine the relative value of currencies to be equivalent to each currency’s purchasing power. It asks how much money would be needed to purchase the same goods and services in two countries, and uses the result to calculate an implicit foreign exchange rate. Using the PPP rate, an amount of money thus has the same purchasing power in different countries (Summers & Heston, 1991).

The sub-factor scores were totalled for each CSF and then aggregated into a total percentage score for each pillar. The total score was allocated a conditional formatting, ranging from a low level of development (dark gray) to a high level of development (light gray). This is a helpful tool, primarily to facilitate interpretation and comparison and to identify any specific characteristics in the overall results for CSFs (Nardo et al., 2008).

Finally, some criteria were weighted to reflect the consortium’s view of their relative importance. These weightings were needed primarily because not each CSF was measured by the same number of questions, and as such, to take into consideration an additional expert point of view to “lock in” the impact of each CSF on the overall score.

4. Results

For the purpose of this paper, the Section 4 will identify to what extent a generic model of elite sport policies can be identified among successful nations in elite sport policies, by focusing on the quantitative analysis obtained through the CIs. To define success, as a starting point, the next section briefly shows the success of the sample nations in summer and winter sports over a four-year period. Next, we will look at the overall scores of the five most successful sample nations in summer sports and winter sports, followed by a more in-depth overview of one pillar.

4.1. Outputs

There is a variety of methods that can be used to measure performance in elite sport and these are largely but not exclusively medal-based measures (i.e. medals' table ranking, number of gold medals won, total number of medals won, a points score based on applying weights to the color of medals won (e.g. gold = 3, silver = 2, bronze = 1), market share whereby points won (3-2-1) are converted into a percentage score of the total points awarded; and top eight rankings (which is a proxy for producing athletes and teams that reach finals). When these methods are compared, it appears that the correlation between all of them is high (all above 0.97) and they are in fact very strong proxies for each other (De Bosscher et al., 2015). Thus, for the purpose of this paper, market share has been adopted as the measure of performance to capture the relationship with policy. Market share as suggested by Shibli and Bingham (2007) is the most robust measure of controllable performance that is relevant to policy-makers because it is a standardized measure of performance and helps to control for changes in the scale of an event over time. Table 1 shows the total number of medals won and market share during World Championships and Olympic Games over a four-year time period (2009–2012), of the 15 nations that participated in SPLISS 2.0. The rationale for using this timeframe is that, increasingly, nations fund their elite sport development systems for an Olympic cycle of four years which in turn makes it relevant to capture all of the outputs associated with a funding cycle.

The table shows that France, Australia and Japan are the most successful nations in summer sports and Canada, South Korea and the Netherlands in winter sports. Within a

Table 1. SPLISS 2.0 nations' performance in summer and winter sports 2009–2012.

Country	Summer sports			Winter sports		
	Total medals	Points (3-2-1)	M/S %	Total medals	Points (3-2-1)	M/S %
France	148	284	4.29	47	87	4.38
Australia	132	270	4.08	10	24	1.21
Japan	138	259	3.91	21	39	1.96
South Korea	84	158	2.39	59	131	6.59
The Netherlands	64	118	1.78	46	96	4.83
Spain	62	112	1.69	–	–	–
Canada	61	101	1.53	117	244	12.27
Brazil	50	95	1.44	–	–	–
Denmark	27	48	0.73	1	1	0.05
Switzerland	18	37	0.56	30	64	3.22
Belgium	11	18	0.27	1	3	0.15
Finland	10	17	0.26	31	50	2.52
Estonia	6	10	0.15	1	3	0.15
Portugal	5	10	0.15	–	–	–
Totals	816	1537	23.23	364	742	37.32

sample of relatively small nations (with populations smaller than 20 million inhabitants, see Appendix 1, i.e. the Netherlands, Denmark, Switzerland, Finland, Belgium, Portugal, Estonia), the Netherlands can be identified as successful in both summer and winter sports, whereas Switzerland is successful in winter sports only. The evaluation of elite sport policies in the next section will focus on five successful summer and winter sports only. We deliberately excluded France and South Korea from the analysis, due to their incomplete datasets.

4.2. Pillar scores

Table 2 displays the CI scores for the five nations on the nine pillars. As a reminder, the CIs represent the aggregated scores within each pillar (96 CSFs, 750 sub-factors) of data collected through the inventories by the researchers; and from the elite sport climate surveys completed by the athletes, coaches and performance directors.

These successful nations generally do well in most pillars, albeit, with some exceptions. For example, Canada and Japan have a score below average on talent identification and development; Japan’s scores are low and below the average on sport participation; Australia, the Netherlands and Switzerland have low scores on access/exposure to national and international competitions; and Switzerland also performs relatively poorly on scientific research and innovation. Compared to other countries, expenditure on elite sport (as the main measure of pillar 1) is less in Switzerland (€56 million euros annually from government, lotteries and nationally coordinated sponsorship) and the Netherlands (€55 million euros), the two smallest and relatively successful nations in this cluster.

The diversity found between nations is further illustrated in Figures 3 (summer sport nations) and 4 (winter sport nations). Using radar graphs to visualize nations’ performance, we plot the nations’ scores against the sample average and against the maximum scores on each pillar. This enables us to identify the relative strengths and weaknesses of each nation quickly. The figures exemplify that among the three successful summer sports nations, 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). It achieved the highest combined pillar score of all countries. Australia’s greatest strengths are in

Table 2. Total CI scores of successful countries on the nine elite sport policy pillars.

	AUS	JAP	NED	CAN	SUI	Average	MAX
P1 - Financial support	60%	61%	45%	55%	45%	47%	70% (KOR)
P2 - Governance, structure & organisation	64%	58%	69%	58%	58%	48%	69% (NED)
P3 - Sports participation	54%	33%	62%	43%	62%	47%	71% (DEN)
P4 - TalentID & development	49%	45%	68%	23%	70%	51%	71% (FLA)
P5 - Athletic career & post career	76%	67%	77%	65%	58%	61%	77% (NED)
P6 - Training facilities	66%	74%	65%	63%	61%	56%	74% (JAP)
P7 - Coach education & provision	69%	61%	62%	73%	68%	56%	73% (FRA/CAN)
P8 - (inter) national competition	48%	78%	54%	62%	44%	55%	78% (JAP)
P9 - Scientific research & innovation	90%	75%	53%	68%	49%	50%	90% (AUS)
Average	64%	61%	62%	57%	57%		



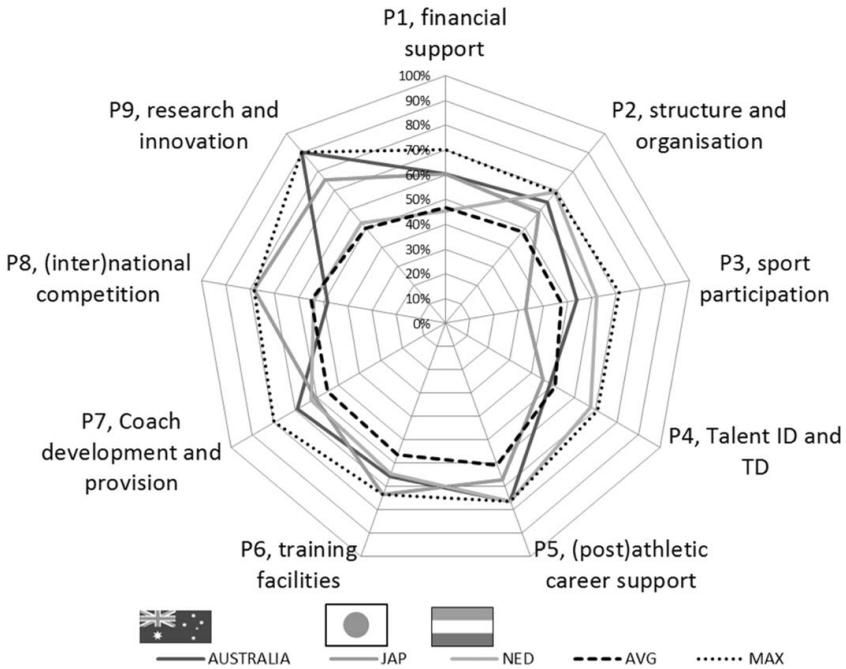


Figure 3. Radar graph of Australia, Japan and the Netherlands compared to the average and maximum scores of 15 nations.

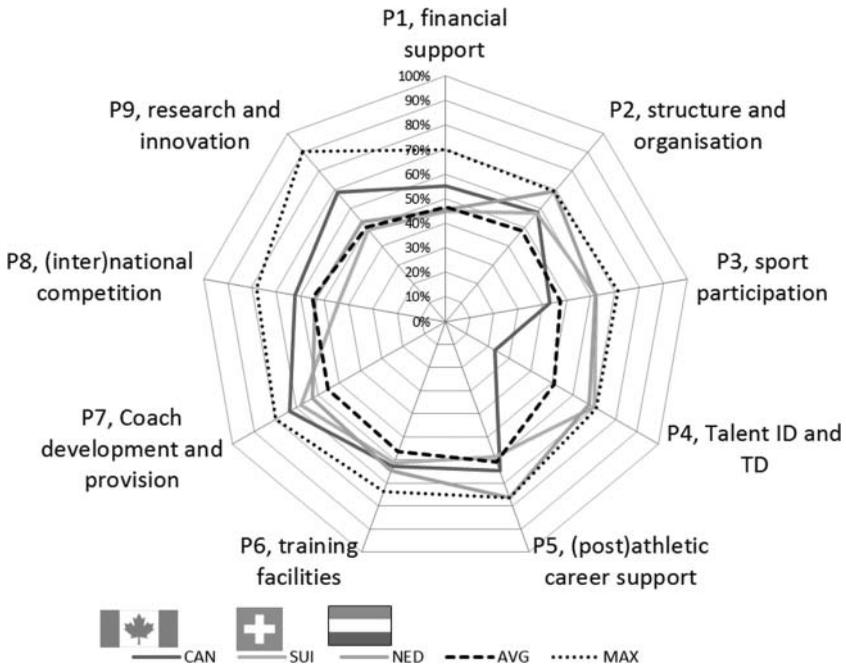


Figure 4. Radar graph of Canada, Switzerland and the Netherlands compared to the average and maximum scores of 15 nations.

pillar 9 (research and innovation) and pillar 5 (athletic career support). The country has a mature well-developed system where CI scores appear to be innovation-driven in the pursuit of sustained success.

It is interesting to compare the Netherlands with Australia as their population and economic productivity is similar. Australia has a longer tradition of facilitating elite success and to this day the Netherlands invests more modestly in elite sport from national collective sources. Both have different relative strengths with the Netherlands scoring high on pillars 2, 3 and 4 (organization, participation and talent). Australia performs relatively better in Summer Olympic sports but the Netherlands is more successful in Winter Olympic sports, notably speed skating in which it has developed a very strong competitive advantage. As such, both countries represent different pathways to success, as a product of several decades of elite sport policies and sport for all policies. Globally, the Netherlands finds itself at the right side of the graph (in pillars 2, 3, 4, 5), showing the importance of its organizational model that not only enhances sport participation and talent development (mainly in speed skating) but also proves to be effective and efficient in turning this broad base of participation into subsequent elite sporting success.

Almost diametrically opposed to the Netherlands' scores in Figures 3 (summer sports) and 4 (winter sports) are Japan and Canada. 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 (access/exposure to national and international competition). Canada shows its strengths in pillars 7 (coaches), 8 ((inter)national competition) and 9 (research innovation). Its high score on pillar 8 is supported by Green and Houlihan (2005) who note "the enthusiasm of Canadian cities to host major international sports events and the willingness of the federal government to provide some support for facility development which may be traced back to the motive of enhancing national identity through a high international profile" (p. 168). Canada also has a developing academic sport science culture that increasingly makes direct contributions to elite sport.

For Switzerland, the general pattern is developing in a similar vein to the Netherlands, with higher scores on pillar 3 (participation), pillar 4 (talent) and pillar 7 (coaches). 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.

In conclusion, at the pillar level – the overall CIs show evidence that although successful nations perform above the average in most pillars, they also show strengths and weaknesses in different sets of pillars. To find out whether similar variation also occurs within one pillar, the next section will explore one pillar in more detail at the CSF level.

4.3. Pillar 2: governance, organization and structure of elite sport policies

Pillar 2 is the most comprehensive pillar, with 18 CSFs that are investigated, including 119 sub-factors. Pillar 2 is a complex pillar where effective organization of elite sport systems is hard to link directly to success. However, without a complex and well-integrated elite sport system, success is unlikely. As a general view, the five best performing countries (summer/winter sports) also have the highest scores of all 15 nations on this pillar. It can

Table 3. Total score on different critical success factors within pillar 2 (governance, organization and structure of elite sport policies).

Countries		AUS	CAN	JPN	NED	SUI
CSF2.1*	There is national coordination of activities and financial inputs (horizontal) and a clear decision-making structure	0.63	0.63	0.38	0.88	0.63
CSF2.2	There is national coordination of activities and financial inputs at the regional level (vertical)	0.67	0.33	0.17	0.83	0.00
CSF2.3	Elite sport is recognized as a valuable component of a politician's portfolio of responsibilities	0.82	0.71	0.73	0.90	0.38
CSF2.4	Long-term policy plans are developed (at least on a 4–8-year period) specifically for elite sport and are communicated in public, regularly evaluated and supported with financial resourcing	0.92	0.83	1.00	0.64	0.47
CSF 2.5	NGBs are subsidized for (at least) a four-year cycle	0.00	0.00	0.00	1.00	1.00
CSF 2.6	Long-term policy plans are required for governing bodies in order to receive funding	0.83	0.81	1.00	0.81	1.00
<i>CSF 2.6(b)</i>	<i>Long-term policy plans are required for governing bodies in order to receive funding</i>	<i>0.44</i>	<i>0.50</i>	<i>0.29</i>	<i>0.50</i>	<i>0.41</i>
CSF2.7	Policy of the NSA is regularly evaluated with athletes, coaches, performance directors who are formally invited to be involved in the evaluation process PRIOR and AFTER policy takes place	1.00	0.88	0.88	0.94	1.00
<i>CSF2.7 (b)*</i>	<i>Policy of the NSA is regularly evaluated with athletes, coaches, performance directors who are formally invited to be involved in the evaluation process PRIOR and AFTER policy takes place</i>	<i>0.45</i>	<i>0.47</i>	<i>0.48</i>	<i>0.47</i>	<i>0.38</i>
CSF 2.8	Athletes and coaches are represented within National governing bodies	0.00	1.00	0.00	0.00	0.00
<i>CSF 2.8 (b)</i>	<i>Athletes and coaches are represented within National governing bodies</i>	<i>0.71</i>	<i>0.57</i>	<i>0.53</i>	<i>0.58</i>	<i>0.44</i>
CSF 2.9*	Athletes and coaches are represented in the decision-making process of the NSA	0.40	0.50	0.40	0.67	1.00
<i>CSF 2.9(b)</i>	<i>Athletes and coaches are regularly consulted (by NSA) about their specific needs</i>	<i>0.35</i>	<i>0.50</i>	<i>0.39</i>	<i>0.48</i>	<i>0.49</i>
CSF 2.10	The government/NSA has implemented a series of programs and organizational requirements on the NGBs/clubs/sports regarding the development of elite sport	1.00	0.97	0.63	0.90	1.00
CSF 2.11*	There is a formal objective and transparent measurement instrument to evaluate the NGB funding criteria, undertaken by an independent organization	0.67	1.00	0.67	1.00	1.00
CSF 2.12**	Full-time management staff in the NSA is responsible for the specific purpose of the development and support of elite coaches, elite athletes and other areas such as sport science, marketing and communication	0.75	0.55	0.71	0.71	0.53
CSF 2.13	NGBs receive information and support services (other than financial) on different aspects of elite sport development	0.86	0.60	0.64	0.94	0.94
<i>CSF 2.13(b)</i>	<i>NGBs receive information and support services (other than financial) on different aspects of elite sport development</i>	<i>0.69</i>	<i>0.58</i>	<i>0.79</i>	<i>0.41</i>	<i>0.68</i>
CSF 2.14	The board of NGBs is composed of professionals who make decisions on elite sport	0.67	0.50	0.40	0.60	0.60
<i>CSF 2.14(b)</i>	<i>The board of NGBs is composed of professionals who make decisions on elite sport</i>	<i>0.59</i>	<i>0.31</i>	<i>0.68</i>	<i>0.54</i>	<i>0.44</i>
CSF 2.15	There is a board within the NSA that is composed of professionals who make decisions on elite sport, with relatively small management committees so that quick decisions can be made	1.00	0.00	0.67	0.67	0.67
CSF 2.16	Athletes and coaches are well informed about national policies, support services and other aspects	0.61	0.75	0.69	0.46	0.65
CSF 2.17	There is a structured cooperation and communication strategy with sponsors/commercial partners	0.00	0.00	0.75	1.00	0.00
CSF 2.18	Resources are targeted at relatively few sports through identifying those that have a real chance of success at world level (see pillar 1)	0.88	0.70	0.83	0.50	0.26

*Spearman's rank correlations with success in either summer or winter sports < 0.5; ** < 0.01; italic: CSFs derived from elite sport climate surveys.

therefore be argued that a strategic and coordinated approach to sport system management is likely to impact positively on sporting success. Pillar 2 was selected deliberately to reflect on scores against the different CSFs as presented in Table 3. CSFs derived from the surveys were kept separate and are described as “CSF $x(b)$ ” in Table 3.

In line with the variation in results per pillar, this pattern can also be detected across the constituent CSFs. To provide a few examples, there are CSFs on which all five nations score relatively well (e.g. 2.6, 2.7, 2.10, 2.11, 2.13), and others where all scores are weaker (e.g. 2.6b, 2.7b, 2.9b). Second, within most CSFs, all five nations have different scores. For instance, while national coordination is seen as an important characteristic of elite sport policy development (De Bosscher et al., 2008; Houlihan & Green, 2008), expenditures and activities for elite sport are less nationally coordinated in Japan (CSF 2.1 and 2.2). Only in Switzerland is elite sport less well recognized as a valuable component of a politician's portfolio of responsibilities (CSF 2.3); the country does score higher, however, for representation of athletes and coaches with the National Sport Association (CSF 2.9). Or, while NGBs are subsidized for (at least) a four-year cycle in the Netherlands and Switzerland, it was a deliberate choice not to do so in the other countries (CSF 2.5). Third, an interesting point of note concerns the conflicting scores that countries sometimes have on data collected by the inventories (through analysis of policy documents and interviews with policy-makers) and the surveys (with athletes, coaches and performance directors). For example, while policies are regularly evaluated (with athletes, coaches and performance directors) prior and post-implementation according to policy-makers, those stakeholders themselves feel they are not regularly consulted, as appears from the scores on 2.7(b) (from the surveys) that are much lower than the scores on CSF 2.7 (from the inventory).

Based on the analysis of one (complex) pillar, it is hard to describe typical (standard) characteristics of elite sport policy development, as the mix (configuration) of CSFs is composed differently in every nation.

5. Discussion

While elite sport policies are constructed around nine pillars in all nations, this paper has illustrated the divergence of elite sport policy development in the sample's five most successful nations in both winter and summer sports. By using CIs, the results have shown that while these nations have high scores on most pillars, countries have particular strengths (and weaknesses) in different sets of pillars, and they combine CSFs within those pillars in their own unique ways. A contingency approach – the design of a model which fits best with the unique situation that a country finds itself in – may well be the best solution for individual nations developing or advancing their elite performance systems. There appears to be no generic blueprint – no sets of pillars, CSFs or recognized best practices that can be copied and pasted between different contexts. This finding is in line with the work of Andersen and Ronglan (2012) which illustrated how different sports had similar ambitions but different pathways for achieving them. This view was exemplified by Swedish golf and tennis, Norwegian handball, Finnish ice hockey and Danish track cycling. The authors state that certain Nordic countries are examples of culturally specific adaptations of basic principles that have evolved in a context-sensitive manner. These findings are also consistent with the notion of “glocalizations” (Robertson, 2002) which reflects a homogenized (global) response to generic (macro) factors impacting on success but with heterogeneous applications (local adaptations) when it comes to the unique national situation and competitive environment. Conversely, similar policy actions may have different outcomes across nations. This also means that initial policy decisions can determine a future policy choice, which is referred to as “path dependency” by Houlihan and Green

(2008). This concept, originally introduced by Kay (2005, cited in Houlihan and Green (2008)) states that “the trajectory of change up to a certain point constrains the trajectory after that point” (p. 553).

The process of policy transfer and benchmarking, and as an outcome of that the improvement of the (elite sporting) system, is constrained by the historical, cultural and political context of nations. Change is not always possible, because of the deeply rooted past policy formation. Accordingly, the key challenges for nations remain to “benchlearn,” instead of benchmark against other competitors; and to seek broad principles of efficient and effective elite sport policies rather than looking for the simplistic transfer of the so-called best practice. The ultimate aim remains to find the right blend of system ingredients and processes that will fit the context of history, economy, politics and culture of a nation. Accordingly, in terms of the theoretical contribution of this paper, the SPLISS model and its CSFs provide a comprehensive framework for policy analysis that allows identifying divergence of elite sport policies with broadly similar policy goals, which is useful for policy-makers and researchers. But it cannot describe nor explain the full complexity and richness of sport policy development and implementation, as sport operates in an open system influenced by the social, cultural and economic conditions of the community (Brouwers et al., 2014; Chelladurai, 2009). Furthermore, SPLISS offers a functionalistic approach to elite sport policies, consisting of CSFs at the levels of inputs (financial resources, as measured in pillar 1), throughputs (processes, as evaluated in pillars 2–9), and outputs (success) that are predominantly driven by national governments and national sporting organizations and does not take into account other stakeholders and resources, such as from private organizations. The open systems view, considering the interdependencies of different organizations and stakeholders, the interaction of different CSFs, and various mechanisms of policy development, would add a valuable interpretative framework to the SPLISS model. However, the problem is one of complexity and requires further qualitative, descriptive analysis, acknowledging that the methods that are used in SPLISS are time-consuming and this, in combination with the fact that the use of surveys in an international context is expensive and makes comparative mixed research methods studies very labor-intensive, broader contextual analysis requires a separate research design. Therefore, the SPLISS project is complementary to approaches such as the evaluative research used by Bergsgard et al. (2007), Andersen and Ronglan (2012) and Houlihan and Green (2008), both in terms of scope and methodology.

An important point of note, according to Dolowitz and Marsh (2000), is that policy transfer is not an all-or-nothing process. The authors see four different gradations of transfer: copying, which involves direct and complete transfer; emulation, which involves transfer of the ideas behind the policy or program; combinations, which involve mixtures of several different policies; and inspiration, where policy in another jurisdiction may inspire a policy change, but where the final outcome does not actually draw upon the original. In the SPLISS sample, Japan is a good example of a nation that might be described as a relatively late adopter using a mixture of policy programs, benefiting from the learning curve of other “early adopters” such as Australia. Japan developed a “fast track” path to elite sport development by investing in more expensive pillars, such as in facilities (pillar 6), competition (pillar 8) and scientific research and innovation (pillar 9), but not in the long-term sustainable pathways of sport participation (pillar 3) and talent development (pillar 4). Australia, whose policy development has frequently been imitated

by other nations, has lost market position over the past decades, despite still being a successful nation. It can be argued that over time, when the rate of adoption is getting closer to saturation (Knill, 2005), sustainable success can be developed by further developing Australia's strength in research and innovation (pillar 9). Pillar 9 is more likely to deliver a long-term source of competitive advantage rather than contributing to immediate medal-winning results. It requires time and experience to develop a comprehensive national research center that carries out research as well as coordinating research activity in elite sport nationally. This continuous policy-changing process also illustrates how competition is profoundly dynamic in character (Porter, 1990) and accordingly sustaining advantage demands continual change and innovation for these nations which logically implies continued revision of the SPLISS model and the CSFs to evaluate each pillar.

6. Conclusion: convergence or divergence?

Both the first (1.0) and second (2.0) SPLISS studies set out to deliver a better insight into the foundations of elite sport policies, and indeed, if there are standard components to elite sport policy configurations that are required to achieve success in elite sport. Primarily based on the results from the second SPLISS study, it can be argued that there is little evidence to support the notion that a preferred configuration of pillars (and/or CSFs within those pillars) exists that are more likely to lead to elite sport success. To that end, it can be concluded that converging elite sport policies (where aspiring countries “copy and paste” policy from successful nations) are unlikely to lead to duplicating the success of the “model” (or lender) country. Clearly, there are a number of pillars that are important in all countries, but the weight of their importance differs between countries given their unique constellation of social, economic and cultural characteristics. The exciting news, in that regard, is that diverging elite sport policies seem to be becoming the norm for competitiveness in global sport. Critical analysis of the history of (sport) and its elite development in a country is equally important to understanding the building blocks (pillars) of elite sport policy, and what it takes to link these pillars in an integrated set of policies, procedures and strategies.

Note

1. Flanders is the northern, Dutch-speaking part of Belgium (6.3 million inhabitants), and Wallonia is the southern, French- and German-speaking part (4.0 million inhabitants). In Belgium, the Flemish community (Flanders) and the French/German-speaking community (Wallonia) have separate sport policies at each level, from local to national (including three separate ministers of sport). Apart from the Olympic Committee (BOIC), whose main task is to select athletes for the Olympic Games, there is no national (federal) policy or structure for sport, nor are there expenditures on sport at federal level. Therefore, Flanders and Wallonia are seen in this research as if it is two distinct nations. It was an established fact that policy analysis for Belgium as a nation could not be determined by summing both regions. For Northern Ireland, UK Sport is the coordinating authority for elite sport, where DCAL (government department for culture, media and sport) in Northern Ireland sets the policy direction and Sport NI puts this into practice. Some sports are supported at UK level, while others are supported at the home nation level of Northern Ireland.

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No potential conflict of interest was reported by the authors.

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Appendix 1. Overview of SPLISS 2.0 nations clustered according to population and GDP per capita.

Nations with a population	Population	GDP/cap (PPP)
<15 million		
Portugal	10,813,834	\$22,900
Belgium	10,449,361	
Flanders	6,367,963	\$37,800
Wallonia (incl. Brussels)	4,081,398	
Switzerland	8,061,516	\$54,800
Denmark	5,569,077	\$37,800
Finland	5,268,799	\$35,900
Northern Ireland (UK)	1,810,863	\$36,700
Estonia	1,257,921	\$22,400
15–40 million		
Canada	34,834,841	\$43,100
Australia	22,507,617	\$43,000
The Netherlands	16,877,351	\$43,300
>40 million		
Brazil	202,656,788	\$12,100
Japan	127,103,388	\$37,100
France	66,259,012	\$35,700
South Korea	49,039,986	\$33,200
Spain	47,737,941	\$30,100
Total SPLISS sample	620,697,656	

Appendix 2. Data collection response overview by nation.

	P1	P2	P3	P4	P5	P6	P7	P8	P9	Total			
CSFs (n)	8	18	10	12	7	9	16	7	9	96			
Sub-factors (n)	9	119	31	169	122	84	100	51	65	750			
Country	Inventory										Surveys (n; response)		
	Number of pages after completion										Atl	Coa	PD
Australia	32	58	20	31	23	18	32	13	20	247	208 (27%)	152 (35.2%)	9 (30.0%)
Belgium-FLA	42	63	18	31	18	15	32	12	16	194	168 (57%)	137 (82.0%)	19 (79.2%)
Belgium-WAL	28	43	16	25	15	13	29	10	15	229	80 (45%)	36 (60.0%)	10 (62.5%)
Brazil	27	45	19	28	23	16	40	11	20	349	431 (14%)	57 (51.8%)	10 (35.2%)
Canada	42	79	30	35	29	30	52	19	33	257	157 (15%)	12 (NA)	8 (24.2%)
Denmark	40	58	25	35	19	19	29	16	16	32	231 (36%)	66 (46.2%)	25 (46.3%)
Estonia	32	–	–	–	–	–	–	–	–	245	82 (NA)	187 (NA)	–
Finland	38	60	20	32	23	19	23	12	18	215	78 (46%)	71 (56.3%)	17 (48.6%)
France	31	47	15	31	17	25	26	7	16	–	–	–	–
Japan	33	48	17	26	18	14	37	25	19	202	135 (71%)	64 (86.5%)	14 (73.7%)
The Netherlands	22	42	17	24	22	23	27	9	16	215	153 (20%)	81 (33.6%)	20 (33.3%)
North. Ireland	30	43	18	32	18	17	35	10	12	198	61 (41%)	16 (69.6%)	–
Portugal	27	41	15	26	23	12	28	11	15	30	107 (21%)	32 (64.0%)	24 (85.7%)
South Korea	30	46	16	–	21	13	–	–	–	126	370 (NA)	62 (NA)	32 (NA)
Spain	34	54	10	15	20	28	35	28	16	263	166 (42%)	25 (62.5%)	13 (43.3%)
Switzerland	50	49	28	26	20	21	28	21	20	247	715 (62%)	378 (55.8%)	40 (69.0%)
Total	538	776	284	397	309	283	453	204	252	3286	3142	1376	241