The role of elite sport policies, pathways and inter-organisational relationships in developing elite tennis players

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I Abstract

Many countries globally support and continuously seek ways to achieve and sustain elite athlete success. Governments spend significant sums of public or government controlled funding in elite sport to improve or maintain success at the international level. However, elite athlete development is the result of a combination of elite sport policies, athlete development pathways and interactions between various stakeholders that are involved in the delivery of athlete development pathways. These factors make elite athlete development a complex, multi-layered and multi-faceted field of study that necessitates specific research efforts that focus on how these factors contribute to elite athlete development in specific sports.

This thesis examines these factors and progresses from a macro-level examination of broad international policies to a meso-level exploration of specific strategies for player development pathways. Then, it moves into a micro-level analysis of the inter-organisational relationships (IORs) between tennis clubs and a tennis federation. Three studies were used to undertake these examinations and shape the body of this thesis.

The first study examined tennis-specific and policy related factors that influence international tennis success. A convergent parallel mixed methods design including qualitative and quantitative data was used to collect and analyse the data (Creswell & Plano Clark, 2011). Specifically, 35 international tennis experts participated in an online questionnaire which combined (a) open questions on factors that influence elite tennis success of countries, and (b) Likert scale questions based on the Sport Policy factors that Lead to International Sporting Success (SPLISS) model (De Bosscher, De Knop, van Bottenburg, & Shibli, 2006). The second study examined the role of various stakeholders in supporting elite player development processes. Using the attraction, retention/transition and nurturing (ARTN) framework of sport development processes (Sotiriadou, Shilbury, & Quick, 2008), this study used an organisational perspective to explain how sport organisations and stakeholders within these organisations develop, deliver or support tennis player programs and strategies at different development stages. Data from 18 in-depth interviews with international tennis experts were thematically analysed to explore stakeholder involvement and how their interactions and strategies shape elite tennis pathways. The third study examined the ways that IORs between tennis clubs and a tennis federation facilitate elite athlete development. This study used
a conceptual framework based on IOR formation and management literature (e.g., Babiak, 2007; Parent & Harvey, 2008). Data were collected through document analysis and 14 semi-structured in-depth interviews with representatives from the tennis federation and tennis clubs in Flanders.

The results of the first study showed that the SPLISS model should to be adapted in order to reflect the tennis-specific context. The key ground for the adaptation of the SPLISS model relates to the emergence of two new contextual themes, culture and commercial environment (e.g., media, sponsors, and private academies). The findings confirm that the way elite sport policies are shaped and implemented vary in order to reflect sport-specific needs (Sotiriadou, Gowthorp, & De Bosscher, 2013; Truyens, De Bosscher, Heyndels, & Westerbeek, 2014). However, questions on how these policies result into actual strategies and player development pathways in tennis remained unanswered.

This further questioning led to the second study and the use of an organisational sport development framework, the attraction, retention/transition, nurturing (ARTN) framework (Sotiriadou et al., 2008), to examine the ways sport development stakeholders shape, implement or deliver development strategies, such as programs, competitions, and coaching at each sport development process. The results of study 2 showed that clubs, coaches and national tennis associations (NTAs) are involved with all the processes and stages of athlete development. However, their role, influence and involvement is specific to each development process. Importantly, the commercialised nature of tennis triggers the involvement of private sport organisations including private academies, clubs and third party organisations in the development and support of elite players. The study concluded that during the various sport development processes, stakeholders need to cooperate to obtain the best athlete development outcomes (Sotiriadou, 2009; Truyens et al., 2014).

Building on that knowledge, and in particular on the need for stakeholder collaboration that emerged from study 2, the third study used Flanders (the Dutch speaking part of Belgium) as a research context to examine how IORs between clubs and the tennis federation in Flanders facilitate tennis player development. The results of study 3 showed that the tennis federation and clubs engaged in IORs to achieve efficiency (i.e., more efficient elite player development) and reciprocity (i.e., work towards common goals of elite athlete development). IORs helped the federation to gain
legitimacy and asymmetry, and clubs to develop stability. Several joint player development programs lay at the basis of IOR management. Formal control mechanisms, such as objectives and strategies, the allocation of roles and responsibilities, and reporting and authority facilitated the management of IORs. In addition, informal control mechanisms, such as personal contacts, trust and communication, engagement and commitment further strengthen IOR management. Even though clubs and the federation cooperate to deliver joint player development programs, the results showed tensions in relation to the development of players over the age of 12. The study concluded that IORs are a useful way for clubs and the federation to combine their strengths and pool their resources for elite player development. However, further considerations are required in maintaining trust and long term collaboration.

The thesis concludes that the factors that facilitate the development of elite tennis players vary depending on the relative importance that a sport places on various policies, the context in which it operates (commercialised and professionalised), the ways various stakeholders are involved in elite player development, the resulting elite player pathways, and the dynamics of IORs between clubs and the tennis federation. Overall, elite sport policies in a commercialised sport, like tennis, appear to shift away from the typical government driven policy and funding model to include the emerging influence of the private sector including private tennis academies and clubs that have an input on elite player development which sits outside government policy direction.

The overall practical implications of this thesis address sport policy makers’, high performance directors’, coach education managers’ and coaches’ of NTAs and clubs/academies challenges in the management and delivery of sustainable practices in elite player development in tennis.

**Keywords:** Elite sport policy, Elite player development, Pathways, National tennis associations, Clubs, Inter-organisational relationships
II Acknowledgments

What a journey!

Five-years, half way across the world, and being so far away from my friends and family was without doubt the most challenging and enriching experience of my life. Although I tend to refer to this as my PhD, none of this would have been possible without the invaluable support and guidance of my supervisors, fellow PhD students, friends and family.

First and foremost, I would like to express my deepest gratitude to Dr. Popi Sotiriadou. It has been an honour to be her first PhD student. I am extremely appreciative for her support, patience, understanding and advice. Popi was not only a tremendous supervisor; she also served as a fantastic counsellor, an inspiring coach, as well as a genuine friend. I lost count on how many times I would be utterly discouraged, hopeless and demoralised. Popi relentlessly picked me up and helped me bounce back on my feet. The energy and enthusiasm she has for her research was contagious and motivational for me, and helped me during tough times in the PhD pursuit. I am particularly indebted to Professor Veerle De Bosscher from the Vrije Universiteit Brussel (Belgium) who contributed immensely to this PhD. She believed in me from the very beginning and is the person who initiated this journey. I am thankful for her patience, flexibility and genuine caring. I appreciate all her contributions, time and feedback to make my PhD experience productive and stimulating. I would also like to extend my profound gratitude to Professor Graham Cuskelly for his contribution and guidance in conceptualising this thesis.

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and detailed interviews. In particular, I would like to thank the coaches and staff of the Flemish tennis federation and tennis clubs for their openness, collaboration, and time.

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Based on the Latin motto *Mens sana in corpore sano* (a healthy mind in a healthy body), I would first like to acknowledge those that nourished my mind. To my counsellors in Belgium and Australia who patiently listened to me and offered rational perspective and helpful advice to overcome my challenges – your supportive professionalism was invaluable. For keeping my body healthy, the Get Low Fitness trainer and crew regularly re-energised me. Through great fun work-out routines in the beautiful outdoors they provided welcome relief from the PhD whilst keeping me focussed on the task at hand.

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Coming to Australia to undertake a PhD did not only allow me to develop academically. The best outcome of this PhD journey is finding my best friend, co-pilot and soul mate, who is now my husband. Philippe, thank you for your unconditional love and support. Thank you for being by my side when I was depressed and irritable, when we were together and separated by distance.
III Statement of Original Authorship

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Signature:

Jessie Brouwers

Date: 07 September, 2015
IV PhD Specific Publications

Published journal papers

PAPER 1

Accepted journal papers

PAPER 2

Journal papers currently under review

PAPER 3
Brouwers, J., Sotiriadou, P., De Bosscher, V., & Cuskelly, G. The role of inter-organizational relationships on elite athlete development: The case of tennis in Flanders. Submitted to an internationally recognised journal in the field of sport management.

Conference papers


Brouwers, J. (2010). The competitiveness of nations in elite sport disciplines: The case of tennis. Sport Management Association of Australia and New Zealand (SMAANZ) Postgraduate research conference (p.9), Brisbane, Australia.
Journal papers that are not related to the PhD


Book chapters that are not related to the PhD


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### IX List of Abbreviations

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<th>Description</th>
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<tbody>
<tr>
<td>ARTN</td>
<td>Attraction, Retention, Transition and Nurturing</td>
</tr>
<tr>
<td>ATP</td>
<td>Association of Tennis Professionals</td>
</tr>
<tr>
<td>CEM</td>
<td>Coach Education Manager</td>
</tr>
<tr>
<td>HPD</td>
<td>High Performance Director</td>
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<tr>
<td>IOR</td>
<td>Inter-Organisational Relationship</td>
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<tr>
<td>ITF</td>
<td>International Tennis Federation</td>
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<tr>
<td>LTAD</td>
<td>Long Term Athlete Development</td>
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<tr>
<td>NGB</td>
<td>National Governing Body</td>
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<tr>
<td>NSO</td>
<td>National Sporting Organisation</td>
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<td>NTA</td>
<td>National Tennis Association</td>
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<tr>
<td>SDP</td>
<td>Sport Development Processes</td>
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<td>SPLISS</td>
<td>Sport Policy factors Leading to International Sporting Success</td>
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<tr>
<td>TV</td>
<td>Tennis Vlaanderen</td>
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<td>WTA</td>
<td>Women’s Tennis Association</td>
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XAcknowledgement of Papers included in this Thesis

ALL PAPERS INCLUDED ARE CO-AUTHORED

Section 9.1 of the Griffith University Code for the Responsible Conduct of Research (“Criteria for Authorship”), in accordance with Section 5 of the Australian Code for the Responsible Conduct of Research, states:

To be named as an author, a researcher must have made a substantial scholarly contribution to the creative or scholarly work that constitutes the research output, and be able to take public responsibility for at least that part of the work they contributed. Attribution of authorship depends to some extent on the discipline and publisher policies, but in all cases, authorship must be based on substantial contributions in a combination of one or more of:

- conception and design of the research project
- analysis and interpretation of research data
- drafting or making significant parts of the creative or scholarly work or critically revising it so as to contribute significantly to the final output.

Section 9.3 of the Griffith University Code (“Responsibilities of Researchers”), in accordance with Section 5 of the Australian Code, states:

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- Accept or decline offers of authorship promptly in writing.
- Include in the list of authors only those who have accepted authorship.
- Appoint one author to be the executive author to record authorship and manage correspondence about the work with the publisher and other interested parties.
- Acknowledge all those who have contributed to the research, facilities or materials but who do not qualify as authors, such as research assistants, technical staff, and advisors on cultural or community knowledge. Obtain written consent to name individuals.

Included in this thesis are papers in Chapters 4, 5 and 6 which are co-authored with other researchers. My contribution to each co-authored paper is outlined at the front of
the relevant chapter. The bibliographic details (if published or accepted for publication)/status (if prepared or submitted for publication) for these papers including all authors, are:

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Chapter 1 Introduction

This chapter is an overview of this thesis. This thesis examines the various factors (including policies, pathways and inter-organisational relationships) that influence the development of elite tennis players. This examination takes place at three levels including (1) a macro-level study on elite sport policies in tennis, (2) a meso-level study on stakeholders and strategies that shape elite player pathways, and (3) a micro-level study on the IORs between tennis clubs and a federation. Section 1.1 presents the background to the research problem. Section 1.2 discusses the research problem and research questions of the thesis. Then, the three-phase sequential design that was used in this thesis is presented in section 1.3. Sections 1.4 and 1.5 outline the theoretical and practical contributions of this thesis and the last section (section 1.6) provides an overview of the thesis structure.

1.1 Background to the Thesis

Over the last 40 years nations and their governments have become more aware of the potential value of elite sporting success (Green & Houlihan, 2005). Governments see elite sport as a means to achieve a wide range of non-sporting objectives. For example, international sporting success is valued for generating national pride, inspiration and a national 'feel good' factor and for its capacity to deliver economic benefits through the hosting of major events (Green & Houlihan, 2005; Sotiriadou & Shilbury, 2009). Governments spend significant sums of public or government controlled money on elite sport in order to improve or maintain athlete success at the international level (Green & Houlihan, 2005). In fact, many countries have increased their spending on elite sport over the past 20 years (e.g., De Bosscher, Bingham, Shibli, van Bottenburg, & De Knop, 2008; Hogan & Norton, 2000; van Bottenburg, Elling, Hoekman, & Van den Dool, 2009).

As a consequence of the increased interest on elite sport success, the question of ‘what are the factors that determine elite sport success?’ has generated a lot of research inquiries (e.g., De Bosscher, De Knop, van Bottenburg, & Shibli, 2006; Green & Houlihan, 2005; Houlihan & Green, 2008; Oakley & Green, 2001). Efficient policy and investment decisions in elite sport can increase the chances of elite athlete success (De Bosscher et al., 2006). As a consequence, various researchers have examined and compared elite sport systems and policies of different countries (Bersgard, Houlihan,
Mansget, Nodland, & Rommetveldt, 2007; De Bosscher et al., 2006; De Bosscher, De Knop, van Bottenburg, Shibli, & Bingham, 2009b; Digel, Burk, & Fahrner, 2006; Green & Houlihan, 2005; Houlihan & Green, 2008). Such studies have advanced the field of sport policy and offer an understanding of the common approaches and key characteristics of elite sport policies in different countries (e.g., Andersen & Ronglan, 2012; De Bosscher et al., 2006; Digel et al., 2006; Green & Houlihan, 2005; Houlihan & Green, 2008; Oakley & Green, 2001). Also, these studies indicated that factors including financial support, resources, targeting of resources, planning for each sport, organisation, administration, mass participation, talent search, talent identification, talent development, athlete support, lifestyle support, elite sport facilities, coaching, competition, sport science, sport medicine, and scientific research are necessary within elite athlete development systems.

Many national sporting organisations (NSOs) are financially dependent on government funding (Berrett & Slack, 2001; Green & Houlihan, 2006; Winand, Rihoux, Robinson, & Zintz, 2013) and tied in to performance based deliverables (Sam, 2012; Sotiriadou, Quick, & Shilbury, 2006). These deliverables are quite often associated with athlete results at the Olympic Games or other international and world sporting competitions (e.g., De Bosscher, Shibli, Westerbeek, & van Bottenburg, 2015; Green & Houlihan, 2006; Green & Oakley, 2001). The need to continually deliver success has, over the years, encouraged NSOs to monitor and continuously improve their athlete development practices and elite pathways, and formulate athlete development plans and strategies (Sotiriadou, 2013). Most of these practices and pathways are represented in athlete development models or frameworks, such as the sport development pyramid (Eady, 1993), or the Long-Term Athlete Development (LTAD) framework (Balyi & Hamilton, 2004). Such frameworks highlight key features or development stages of athlete progress. However, they overlook “who is involved with sport development, in what ways are they involved, and with what outcomes” (Sotiriadou & Shilbury, 2013, p. 144). Moreover, they do not allow an examination of pathways from an organisational or management perspective which would explain how sport organisations develop or support different sport development stages (Sotiriadou & Shilbury, 2009). Given the complexity of elite athlete development pathways, generic athlete development frameworks cannot be used to reflect sport-specific pathways (Greyson, Kelly, Peyrebrune, & Furniss, 2010; Sotiriadou et al., 2008). Despite sport policy research on
the factors that influence the development of elite athletes, “little is known about how
sport systems should manage their elite services” (Böhlke & Robinson, 2009, p. 70) or
how stakeholders provide strategies and services to shape the pathways that develop
elite athletes. NSOs develop high performance plans or athlete development pathways
to assist in their strategic planning and the delivery of elite athlete development (e.g.,
Tennis Vlaanderen, 2009; Tennis Canada, 2013). These include strategies on, for
example, the competition structure, high performance pathways, training requirements,
financial support programs, and talent identification. In searching for a way to examine
athlete development from a managerial standpoint, the attraction, retention/transition
and nurturing (ARTN) framework (Sotiriadou et al., 2008) offers an organisational
perspective on ‘who is involved with sport development’, in ‘what ways’, at ‘which
developmental level’, and with ‘which outcomes’. The framework details three
different, yet interrelated, sport development processes including attraction, retention/transition and nurturing. Green (2005) contends also that sport development
efforts must address three key areas: athlete entrance, retention, and advancement.

Another layer of detail that further adds to the complexity surrounding athlete
development is the involvement of many sporting organisations, including national
government agencies for sport, Olympic committees, NSOs, regional sporting
organisations, sport clubs, and private sector organisations (e.g., Phillips & Newland,
2014; Sotiriadou, 2009). Within this network of organisations, NSOs are largely
responsible for the provision and implementation of elite athlete development programs
and pathways at a national level. However, in many sports, such as triathlon, football,
tennis, and golf for example, there are athletes who follow pathways outside the NSO
structure and choose to train in private for-profit companies, private academies or clubs
(Brouwers, Sotiriadou, & De Bosscher, 2015b; Liebenau, 2010; MacCurdy, 2008;
Newland & Kellett, 2012). Consequently, there exists a mix of nationally centralised
(through NSOs) and decentralised (through clubs and private academies) athlete
development pathways. Either way, NSOs and sport clubs interact in order to achieve
the goal of athlete development. Interestingly, despite the role of clubs and private
academies in elite player development, studies in elite sport have not examined the
details of such interactions. In this context, inter-organisational relationships (IORs)
represent a viable strategy for sport organisations to work jointly in planning and
implementing specific programs based on their similar goals and objectives (Alexander,
Thibault, & Frisby, 2008; Oliver, 1990). For instance, Babiak (2003, 2007, 2009) and Babiak and Thibault (2008, 2009) examined IORs between a Canadian Sport Centre and its partners including NSOs, Sport Canada, Canadian Olympic Committee, Coaching Association of Canada, private commercial organisations and other Canadian Sport Centres. These studies illustrated how the establishment of IORs between various partners served as a key strategy to share support and resources among organisations for elite athletes and coaches, particularly in times of reduced government funding for elite sport. Interestingly, and despite the role of clubs and private academies in elite player development (Brouwers et al., 2015b; Liebenau, 2010; MacCurdy, 2008), studies on elite athlete development have not examined the IORs between NSOs and clubs or other private organisations. Even though some studies note the importance of NSOs collaborating with clubs (e.g., Bayle & Robinson, 2007; Truyens, De Bosscher, Heyndels, & Westerbeek, 2014) they do not address the complexities of IORs and they do not investigate how this collaboration is formed or managed.

To summarise, elite athlete development is complex due to the multiple layers of input on elite athlete development including the government direction on elite sport through elite sport policies, the resulting elite athlete pathways, and the IORs between various sporting organisations to achieve elite athlete development. National elite sport policies offer a starting point where athlete development programs and strategies are filtered to other stakeholders (e.g., NSOs) for actioning. These programs and strategies shape the elite athlete development pathways that allow athletes to move from grassroots level to international level competitions. These pathways require interactions (i.e., IORs) between NSOs and the clubs to organise and implement strategies and programs for elite athlete development.

1.2 Research Problem and Research Questions

Developing elite athletes is complex, multi-faceted and multi-layered (Andersen, Houlihan, & Ronglan, 2015; De Bosscher, Sotiriadou, Brouwers, & Truyens, 2015). Andersen et al. (2015) noted that a multi-level approach to examining elite athlete development is required because “balancing the identification and analysis of constituent elements of the elite development system with an analysis of how the elements interact to form the system is a central requirement for an understanding of the development of successful elite athletes” (p. 10). This quotation not only emphasises the
different facets of elite athlete development, but it also highlights the interaction between the different elements in the elite sport system.

Elite sport policy studies (e.g., De Bosscher et al., 2015; Digel et al., 2006; Green & Houlihan, 2005; Houlihan & Green, 2008) form the vast majority of research on elite athlete development and success. In comparison to the extensive literature on elite sport policies, there is little research on the involvement of stakeholders in the delivery and implementation of elite athlete pathways (e.g., Green, 2005; Sotiriadou et al., 2008). An even less developed field of study in relation to elite athlete development is the area of the interactions between sport organisations involved in elite sport (e.g., Babiak, 2007, 2009; Babiak & Thibault, 2008, 2009). Moreover, there are no studies that have examined how sport clubs and NSOs cooperate to facilitate elite athlete development. Each of these fields of study offer great insights to elite athlete development. However, they are only a snapshot of factors that contribute to elite athlete development. Moreover, a common theme that emerged in all fields of study of elite athlete development is the need to move beyond generic frameworks and examine elite athlete development at a sport-specific level (e.g., De Bosscher, De Knop, & van Bottenburg, 2007; Larose & Haggerty, 1996; Sotiriadou & Shilbury, 2009). There has been no published research that has examined how all these theoretical fields of studying elite athlete development are intertwined at a sport-specific level and the ways they contribute to elite athlete development.

This thesis responds to the need for studying elite athlete development at sport-specific level to take into account the context within which a sport operates. The thesis examines three areas of elite athlete development including elite sport policy, elite athlete development pathways, and club-NSO IORs. Specifically, this thesis examines how these areas collectively add to elite athlete development. In doing so, the thesis offers a holistic approach that looks at the significance of all three areas on elite athlete development. Adopting this three-layered holistic approach in one specific sport is significant as it takes into account the context within which a sport operates and how that context shapes elite sport policies, pathways and club-NSO interactions. The overall research question (RQ) driving this thesis is:

*Which factors facilitate the development of elite tennis players?*
Specifically, this thesis aims to respond to this question at three levels. A macro-level study on elite sport policies in tennis, a meso-level study on stakeholders and player development strategies that shape elite player pathways in tennis, and a micro-level study on the inter-organisational relationships (IORs) between tennis clubs and a tennis federation. First, this thesis examines the policy factors that influence international tennis success (macro-level):

RQ 1: What policy factors influence international tennis success?

Second, this thesis examines the stakeholders and strategies that are involved with the development of elite player development pathways (meso-level):

RQ 2: What are the roles of sport development stakeholders in elite player development pathways?

Third, this thesis examines IORs between a tennis federation and tennis clubs Flanders, the Dutch speaking part of Belgium (micro-level):

RQ 3: How do IORs between the federation and clubs contribute to elite player development?

1.3 Research Design

A three-phase sequential design, including three studies, was used to address the research questions. Study 1 used a convergent parallel mixed methods design to collect and analyse the data (Creswell & Plano Clark, 2011). Specifically, qualitative and quantitative data were collected in parallel but analysed separately, and then mixed for the overall interpretation of the findings. Thirty-five international tennis experts participated in an online questionnaire which combined (a) open questions and (b) Likert scale questions, based on the Sport Policy factors that Lead to International Success (SPLISS) model (De Bosscher et al., 2006) to examine the policy and other factors that influence international tennis success.

Study 2 used qualitative methods to examine the roles of sport development stakeholders in elite player development pathways. Eighteen international tennis experts participated in semi-structured in-depth interviews to explore stakeholder involvement and how their interactions and strategies shape elite tennis pathways.
Study 3 examined the how IORs between a tennis federation and clubs facilitate elite player development in Flanders, the Dutch speaking part of Belgium. Semi-structured interviews with representatives from Tennis Vlaanderen and clubs were thematically analysed. Specifically, this study examined the determinants that lead to the formation of IORs between clubs and Tennis Vlaanderen, and the ways these IORs are managed.

1.4 Contribution to Theory

This thesis makes several contributions to theory in the field of elite athlete development. First, this thesis examined the relevance of the sport generic SPLISS model (De Bosscher et al., 2006; 2007, 2009b) in tennis. The model was used as a framework to explore elite sport policies that contribute to international tennis success. The findings suggested that at sport-specific level the importance of sport policy areas varied. For example, coaches’ provision and education, and (inter)national competition emerged as the two most important policy areas for tennis success, whereas post-career support appeared less important. In addition to sport policy areas, sport-specific contextual factors emerged as important for elite tennis success. Contextual factors included the culture and commercial environment (i.e., media, sponsors and the private sector). The theoretical contribution of study 1 resonates on the application of the generic SPLISS model into a tennis specific context. As a result, study 1 offered a more inclusive empirical framework on elite sport policy and other factors that influence international tennis success. Importantly, the thesis extended knowledge on the relative importance on each sport policy area and the influence of culture and the commercial environment in the case of tennis.

Second, study 2 builds further on the ARTN framework (Sotiriadou et al., 2008) and offers insights from an organisational perspective that explain how sport organisations develop or support the different elite athlete development stages. The ARTN framework has proven useful to examine specific development processes (e.g., focus on one ARTN process), specific strategies (e.g., facilities), and sport for specific populations (e.g., indigenous people and people with disabilities) (e.g., Darcy & Dowse, 2013; Liebenau, 2010; Sotiriadou, Wicker, & Hill, In Press; Sotiriadou, Wicker, & Quick, 2014; Thomson, Darcy, & Pearce, 2010). Study 2 extends the application of the ARTN framework on elite sport and in a sport-specific setting. The theoretical contribution of
this study rests in providing an understanding and empirical evidence on the role of stakeholders and their player support in shaping elite development pathways in tennis.

Third, this thesis contributes to IOR literature in the context of elite athlete development. Most elite sport policy studies focus on the formal policies (i.e., government directed policies and policies of NSOs), without taking into account the support from the private sector (De Bosscher et al., 2009b). This is particularly illustrated by the fact that in these studies the research subjects who participated in interviews or questionnaires are most often high performance directors or other members of NSOs. Study 3 used insights from elite coaches and performance directors of tennis clubs and the tennis federation in Flanders to examine how and why these organisations interact and collaborate to develop elite players. By examining IORs between a tennis federation and tennis clubs, this thesis goes beyond the examination of the formal policies and pathways. This thesis used IOR principles to take into account the environment (e.g., clubs, private academies) in which tennis federations operate (Chelladurai, 2009). This approach allowed for a more complete view of the factors that facilitate elite player development. This thesis advances the use and application of IOR theories into the context of elite athlete development.

1.5 Contribution to Practice

In light of sport-specific policy and other factors that emerged as important, sport policy makers, high performance directors, and other decision makers can take into account the relative importance of each of the policy areas for elite tennis success. For example, due to their high importance in tennis, competitions and coach education policies deserve to be prioritised in elite tennis development plans. Additionally, policy makers can take into account the commercial environment within which certain sports operate to frame elite sport policies accordingly. For instance, this thesis recommended that the private sector (e.g., clubs, private academies and third party organisations), other facets of commercialised sports (e.g., media and sponsors), and their impact on elite athlete development need to be considered when shaping policies and strategies for elite athlete development.

Similarly, based on the key findings from study 2, athlete development stakeholders (e.g., clubs, NTAs, coaches) need to reflect on their roles and influence across elite development pathways to facilitate smooth athlete transition. Given the
significant role of clubs in talent identification and talent development, there is a need to revisit the available support for clubs in order to assure their capacity to deliver optimal developmental pathways. Therefore, it is recommended that NTAs further invest in quality, well-resourced clubs and educated coaches to allow for talented players to train in their club for as long as possible.

Last, but not least, the findings from study 3 highlight how clubs and NTAs can cooperate to achieve their common goal of elite player development. Joint player development programs represent a useful strategy to improve the quality of elite player development. In these programs, club coaches remain responsible for the development of talented players, while the federation provides guidance, feedback and consultancy to the club coaches. Players can attend additional collective training sessions at the NTA training centre. This way, club-NTA IORs help to make the club coaches better, and provide support to talented players. Detailing clear divisions of roles and responsibilities within the joint programs, and a reporting schedule can be useful formal control mechanism in the management of IORs. Moreover, it is recommended that clubs and NTAs build up trust through clear communication about the development programs of the players. NTAs should be careful with ‘taking away’ players from clubs to train full-time at the NTA centre, especially when clubs have capacities to further coach these players themselves. It is recommended that NTAs implement a reward system to recognise the work clubs deliver and show their appreciation in the form of extra subsidies, equipment or quality labels. NTAs can allow talented players to develop within the clubs until an older age while providing external support to the coach (e.g., consultation sessions and advice) and the player (e.g., group training sessions and travel support).

1.6 Structure of the Thesis

This thesis is submitted in the format of a series of published and unpublished papers. Specifically, three papers (two published and one submitted) form the body of the thesis and present the results of three studies in Chapters 4, 5 and 6. The remaining chapters of this thesis introduce and link together the different papers. Figure 1 presents the outline of the chapters.

Chapter 2 provides an overview on relevant literature for this thesis. The chapter starts with a review of existing elite sport policy studies. Then, the chapter discusses
research on athlete development pathways. Last, the chapter provides an overview on studies that used IORs in the context of elite sport. The aim of chapter 2 is to synthesise the literature on elite sport development.

Chapter 3 outlines the research design and methods of the research. This chapter discusses how the three phase sequential design is used in this study. Moreover, this chapter discusses the research methods of each of the three studies in more detail.

Chapter 4 (Study 1) showcases the tennis specific policies and factors that influence international tennis success. This article was published in *Sport Management Review*. The article examined the elite sport policies and contextual factors that influence international sporting success in tennis. The article presents the results of an online questionnaire that was completed by 35 international tennis experts.

Chapter 5 (Study 2) examined elite pathways in tennis and builds further on the attraction, retention, transition and nurturing model (Sotiriadou et al., 2008). This article was published in the journal *European Sport Management Quarterly*. The article presents the results of semi-structured interviews with 18 international tennis experts.

Chapter 6 (Study 3) builds further on the results of study 1 and 2, and examines IORs between a tennis federation and clubs that facilitate the development of elite tennis players. This study examines the elite tennis system in the specific context of Flanders. This study explored the formation and management of inter-organisational relationships between Tennis Vlaanderen and clubs. This paper is submitted to an internationally recognised journal in the field of sport management.

Chapter 7 presents the final chapter of this thesis. This chapter addresses the research questions outlined in chapter 2. This chapter also links the outcomes of the different studies together. Then, the theoretical and practical contributions of this study are outlined. Last, this chapter concludes with suggestions for future research and an overall conclusion.
Figure 1 Outline of the thesis structure

**Chapter 1 Introduction**
- Background, research problem, research design, contribution

**Chapter 2 Literature review**
- Provides an overview of literature on elite sport policy, athlete development pathways, and inter-organisational relationships in elite sport

**Chapter 3 Research design and methodology**
- Describes the overall design of the study and overviews the methods of each study briefly

**Chapter 4 Study 1: Elite sport policy in tennis**

**Chapter 5 Study 2: Stakeholders and elite development pathways**

**Chapter 6 Study 3: Club-federation inter-organisational relationships**
- The role of inter-organizational relationships on elite athlete development: The case of tennis in Flanders. Submitted to an internationally recognised journal in the field of sport management.

**Chapter 7 Discussion**
- Discussion of the results, practical and theoretical contributions, limitations and conclusions
Chapter 2  Literature Review

2.1 Introduction

Chapter 1 provided an overview of this thesis and highlighted the complex, multi-faceted and multi-layered nature of elite athlete development (Andersen et al., 2015; De Bosscher et al., 2015). Elite athlete development is the result of a combination of elite sport policies, athlete development pathways and interactions between the various stakeholders that are involved in the delivery of athlete pathways. Accordingly, elite athlete development encompasses three interrelated components: (1) elite sport policies (macro-level); (2) athlete development pathways (meso-level); and (3) IORs between key actors of athlete development (micro-level). Elite sport policies (e.g., policies on coach development, talent identification and development) are set out by governments with the aim to achieve success at international competitions. In order to develop elite athletes, high performance directors of NSOs need to develop systems and processes that attract, retain and nurture athletes (Sotiriadou & De Bosscher, 2013). Clubs play a major role in the implementation of programs to attract, retain and nurture talented athletes (Brouwers, De Bosscher, & Sotiriadou, 2015a). Therefore, clubs and NSOs interact in order to develop elite athletes.

This chapter provides an overview of the relevant literature that informs this thesis. The chapter starts with a review of existing elite sport policy studies. Then, the chapter discusses research on athlete development pathways. Last, the chapter provides an overview on studies that used IORs in the context of elite sport. The aim of chapter 2 is to synthesise the literature that informed this thesis.

2.2 Elite Sport Policy

Elite sport policy as a field of study is entrenched within the sport policy domain, which in turn is an area within the broader domain of public policy. Public policy is “what governments do, why, and with what consequences” (Fenna, 2004, p. 2). In a more detailed definition, Fenna (2004) explained that public policy is:

the disposition and deliberate action of government on any and every matter over which it exercises authority including the stated and unstated; action and inaction; the choice of ends and the choice of means. Policies are often implemented by means of specific programs - formal arrangements for the delivery of government services. (p. 5)
Policy making is not only about what goals to achieve, but also about how to achieve them and the instruments to use (Fenna, 2004). Besides sports, other examples of public policy areas include welfare, education, military, tax and health (Chalip, Johnson, Stachura, 1996). Green (2004) argued that sport emerged as a sector of public policy interest in the 1960s. The current proliferation of journal articles and books about sport policy, and the establishment of the *International Journal of Sport Policy and Politics* in 2009 as a forum to disseminate research, demonstrate that sport has become an established area of public policy in recent years.

Since the early 1970s, a shift towards increasing government intervention has become more pronounced (Green, 2004). A gradual emergence of sport as a significant sector of public policy took place and sport as a policy concern became prominent within government priorities (King, 2009). Governments in countries including the UK, Canada and Australia recognised sport as a public policy concern as early as in the 1960s. By the mid-1990s sport was an established government feature (Houlihan, 2005). Chalip et al. (1996) noted varying degrees of government involvement in sport and discussed how sport systems of fifteen countries are different according to their historical context.

Over the past 40 years governments became more aware of the value of elite sporting success (Green & Houlihan, 2005). Governments see elite sport as a means to achieve a wide range of non-sporting objectives. For example, international sporting success is valued for generating national pride, inspiration and a national ‘feel good’ factor and for its capacity to deliver economic benefits through the hosting of major events (Green & Houlihan, 2005; Sotiriadou & Shilbury, 2009). Oakley and Green (2001) noted an increasing competition and intensifying power struggle between countries to win international medals and trophies in the 1990s and described this increased demand for sporting success as a ‘global sporting arms race’. De Bosscher et al. (2008) published a book titled ‘The Global Sporting Arms Race’ in which they provide evidence on this increased competition. The title of the book refers to “a battle for sporting supremacy with no absolute goal, only the relative goal of staying ahead of the competition” (p. 41). In order to increase international sporting success, countries invest in elite sport policies and implement a more strategic approach to elite athlete development (De Bosscher, De Knop, & van Bottenburg, 2009a). National elite sport
policies are targeted specifically to the development of elite athletes who can compete at international competitions (De Bosscher, van Bottenburg, Shibli, & De Knop, 2013).

There is a plethora of elite sport policy studies. In particular, over the past 20 years, various studies attempted to identify key policy factors that influence the elite sport performances of countries (e.g., Andersen & Ronglan, 2012; Bergsgard et al., 2007; Böhlke, 2007; Böhlke & Robinson, 2009; Digel et al., 2006; De Bosscher et al., 2006; 2007; 2015; Green & Houlihan, 2005; Houlihan & Green, 2008; Oakley & Green, 2001; Sotiriadou et al., 2013; Truyens et al., 2014). Table 1 presents a chronological overview of these studies, their focus, the sports examined, and countries included. While it is not the purpose of this chapter to discuss each of these studies in depth, Table 1 shows that these studies advance common key policy areas for sporting success (e.g., financial support, coaching, talent identification and development, scientific research, sport science and sport medicine support). Elite sport systems of developed nations are based around a single model of elite sport policy areas with variations in the way elite sport policies are implemented (e.g., De Bosscher, De Knop, & van Bottenburg, 2009a; Digel et al., 2006; Green & Houlihan, 2005; Houlihan & Green, 2008; Oakley & Green, 2001).
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<tr>
<td>Policy-level</td>
<td>Role of different agencies Administration Identification and monitoring athletes Sport services Competitive programs Facilities Targeting of resources Planning for each sport Funding Lifestyle support</td>
<td>Elite facilities Support for full time athletes Coaching Sport science and medicine support Competition opportunities</td>
<td>Resources Management Finances Talent search Reward and support for athletes Coaches Referees and judges Competition structure Sport facilities Fight against doping</td>
<td>Infrastructure for sport Role of the voluntary/not-for-profit sector Administrative structures Policy priorities (sport for all versus elite sport)</td>
<td>Talent identification and development</td>
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<td>Environmental level</td>
<td>n/a</td>
<td>n/a</td>
<td>Political system Economic situation Educational system Science and research system Mass media Sponsorship</td>
<td>Context Cultural background Historical development</td>
<td>Historical Political Organisational Context</td>
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<td>Sports</td>
<td>Overall</td>
<td>Overall and specific Swimming, athletics, yachting</td>
<td>Overall and specific Athletics, swimming, volleyball</td>
<td>Overall</td>
<td>Olympic sports</td>
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<td>Countries</td>
<td>UK, France, Spain, Canada, USA, Australia</td>
<td>Australia, Canada, UK</td>
<td>Australia, China, France, Germany, Italy, Russia, UK, USA</td>
<td>Germany, England, Canada, Norway</td>
<td>China, Japan, Singapore Germany, France, Poland, Norway, New Zealand, USA</td>
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<td>Policy-level</td>
<td>Athlete development pathways</td>
<td>Critical decisions</td>
<td>Coach</td>
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<td>Coaching structures and education programs</td>
<td>Controversies</td>
<td>Athlete: pathways, participation, identification, talent development</td>
<td>Governance and organisation</td>
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<td>Sport science support</td>
<td>Success stories</td>
<td>Organisation</td>
<td>Youth participation</td>
<td>Foundation</td>
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<td>Athlete lifestyle support</td>
<td>Policy issues</td>
<td>Competition</td>
<td>Talent identification and development</td>
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<td>Individual initiatives and competencies</td>
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<td>Coach provision &amp; development</td>
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<td>Competition</td>
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<td>Scientific research</td>
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<td>Environmental level</td>
<td>Socio-cultural context</td>
<td>Historical sport developments (elite vs. mass)</td>
<td>Culture</td>
<td>Environmental success factors</td>
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<td>Club competition infrastructure</td>
<td>Organisational and cultural conditions</td>
<td>Development and conditions for breakthrough</td>
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<td>Working atmosphere in sports environment</td>
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<td>Personality and knowledge of key agents</td>
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<td>Conscious interventions</td>
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<td>Sports</td>
<td>Specific Athletics, cross-country skiing</td>
<td>Overall and specific Handball, ice hockey, track cycling, tennis, golf</td>
<td>Specific Sprint Canoe</td>
<td>Specific Athletics</td>
<td>Overall</td>
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<td>Countries</td>
<td>Sweden (Athletics)</td>
<td>Nordic countries with similar systems (Norway, Finland, Denmark, Sweden)</td>
<td>Australia</td>
<td>24 countries</td>
<td>2009: Belgium, Canada, Italy, UK, Netherlands, Norway</td>
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<td></td>
<td>Norway (Cross country skiing)</td>
<td>(no comparative ambition)</td>
<td>(no comparative ambition)</td>
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<td>2015: Portugal, Belgium, Switzerland, Denmark, Finland, Northern Ireland, Estonia, Canada, Australia, Japan, Spain, Netherlands, Brazil, France, South Korea</td>
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Arguably, one of the most inclusive studies in terms of factors that influence international sporting success is the Sport Policy factors leading to International Sporting Success (SPLISS) study (De Bosscher et al., 2006, 2009, 2015). The SPLISS framework was based on (1) an extensive body of literature, published between 1984 and 2006, on elite sport success determinants at policy level [including, for example, Digel et al. (2006); Green & Houlihan (2005), Oakley & Green (2001)] and (2) two studies with athletes and coaches to understand the determinants of success for individual athletes (De Bosscher et al., 2006). The SPLISS framework was then empirically tested in six countries (De Bosscher et al., 2009b) and more recently, an updated version of the framework was used to examine the relationship between elite sport policies and international sporting success based on an international comparative study on elite sport policies of 15 countries (De Bosscher et al., 2015).

SPLISS identified nine pillars (or policy areas) that influence international sporting success, and specified 31 sub-dimensions and 126 critical success factors as key elements within pillars that are necessary to improve the elite sport success of a nation. Pillar 1 in the SPLISS model represents the financial support (or input) for elite sport. Pillars 2 to 9 are throughputs and support services that explain in what and how money is invested to achieve elite sporting success (output). Specifically, an integrated approach to policy development (pillar 2) is a necessary conditions for the development of sport and athletic careers within a given sport. Pillars 3, 4 and 5 represent the sequences of the athlete development stages including foundation and participation (pillar 3), talent identification and development (pillar 4) and athletic and post-career (pillar 5). Investment in four remaining pillars (i.e., pillar 6 training facilities, pillar 7 the provision and development of coaches, pillar 8 national and international competition structure and pillar 9 scientific research and sports medicine support) is essential for the development of elite athletes (De Bosscher et al., 2006).

The SPLISS is different from and complementary to the studies of Bergsgard et al. (2008), Digel et al. (2006), Green and Houlihan (2005) and Houlihan and Green (2008) in both, methodological and theoretical terms for two reasons (De Bosscher, Shibli, van Bottenburg, De Knop, & Truyens, 2010). First, the SPLISS study identifies possible relationships between inputs, throughputs and outputs in elite sport (De Bosscher et al., 2010; De Bosscher et al, 2015). Second, the SPLISS study used mixed research methods and a quantitative measurement system as a technique to compare the
management of elite sport policies in countries (De Bosscher et al., 2010). In conclusion, based on the aforementioned arguments, the SPLISS study is a comprehensive framework of elite sport policy factors that influence elite sporting success of a country.

Despite its holistic approach to analysing elite sport policy, SPLISS is a generic model at sports overall level. Similarly, other elite sport policy studies (e.g., Oakley & Green, 2001; Bergsgard et al., 2007; Houlihan & Green, 2008) are also sport generic as they focus on national elite sport policies. Therefore, these studies cannot offer insights on sport-specific policies that facilitate elite athlete development. In order to provide sport-specific insights, the SPLISS framework needs to take into account sport-specific characterises. These sport-specific adaptations are necessary as elite athlete development exists within individual sports and their context (SIRC, 2002; Sotiriadou & Shilbury, 2009). Key success determinants might be different for every sport or clusters of sports (De Bosscher et al., 2007; Larose & Haggerty, 1996).

The need for sport-specific studies led various authors to advance the field of sport policy by studying certain aspects of elite sport policy and key success factors of specific sports (Table 1). Sport-specific elite sport policy research includes studies on Swedish athletics and Norwegian cross country skiing (Böhlke, 2007; Böhlke & Robinson, 2009); Norwegian handball, Finnish ice hockey, Danish track cycling and Swedish tennis and golf (Andersen & Ronglan, 2012); athletics (Truyens et al., 2014); and sprint canoe in Australia (Sotiriadou et al., 2013). Even though each of these studies had a different scope, they all identified new areas or important factors for success that were not addressed in sport generic studies. For example, Sotiriadou et al. (2013) identified that the sport’s culture plays a key role in shaping policy, policy linkages and interrelationships. Truyens et al. (2014) examined the organisational resources (e.g., the existence of an organisation for the coordination and organisation of elite coach development) and first-order capabilities (e.g., a national coach qualification framework) that lead to a competitive advantage in athletics and classified these under the nine pillars of the SPLISS model. Also, an additional contextual category, called environmental success factors, emerged. These studies illustrate the value of sport-specific studies on advancing knowledge in the field of sport policy and offering practical implications to high performance directors and policy makers.
Whilst sport policy studies and their influence on practice is flourishing, the relevance and influence of contextual factors, such as the professionalisation and commercialisation of some sports, and the role of the cultural, historical, political and social context to elite success is less prominent. Various studies (e.g., Andersen & Ronglan, 2012; Bergsgard et al., 2007; Böhlke & Robinson, 2009; Digel et al., 2006; Houlihan & Green, 2008) showed that it is harder to analyse elite sport policy in isolation from contextual factors and these factors should be taken into account. The sport examined in this study, tennis, is a highly globalised, professionalised and commercialised sport. These characteristics render tennis as an inviting case given that previous empirical studies have not explored policy and contextual factors that influence international tennis success. This gap in knowledge advances the following research question:

*RQ 1: What policy (or other) factors influence international tennis success?*

Government agencies of sport (e.g., the Australian Sports Commission, UK Sport, Sport Canada) set out national elite sport policies through a national high performance plan or strategic plan for elite sport. These plans specify the national sports vision, the policy goals and objectives, and detail the funding for elite sport. Elite sport policies are then filtered down to NSOs, the organisations responsible for initiating strategies, programs and pathways to develop elite athletes (Sotiriadou & Shilbury, 2009). The next section explores the literature pertaining to athlete development pathways.

### 2.3 Athlete Development Pathways

The literature suggested that successful athlete development pathways require sports to attract, retain, transition and nurture athletes (Green, 2005; Shilbury, Sotiriadou, & Green, 2008; Sotiriadou et al, 2008). In order to develop elite athletes, many NSOs identify talented athletes at a young age, and recruit them to participate at development programs (Unierzyski, 2006; Vaeyens, Lenoir, Williams, & Philippaerts, 2008). The main role of talent development processes is to facilitate athlete transition from regional competitions to national and international competitions and from junior to senior level when athletes’ skills improve (Green, 2005). In order to facilitate these athlete transitions, NSOs implement policies on talent identification, talent development
programs, and competitions with the aim to guide the most talented athletes to the highest levels of sport (Sotiriadou & Shilbury, 2009).

Various researchers have attempted to outline athlete development frameworks and highlight various development stages (e.g., Balyi & Hamilton, 2004; Bloom, 1985; Côté & Fraser-Thomas, 2007; Wylleman & Lavallee, 2004). Even though Côté and Fraser-Thomas (2007), and Balyi (2001) make a distinction between early and late specialisation sports, most of these athlete development frameworks are sport generic. Table 2 provides an overview of the most influential elite athlete development frameworks. Bloom (1985) and Monsaas (1995) outlined three critical stages of athlete development. In the early years (initiation), athletes are introduced to the sport and participate in fun and playful activities. During the middle years (development) athletes become more committed to their sport with an increase in training quantity and level of specialisation. During the late years (perfection) athletes engage full-time in their sport. Côté (1999) built on Bloom’s model and discussed three stages of sport participation including sampling, specialisation and investment. In his Development Model of Sport Participation, Côté (1999) described the variations in levels of deliberate play (i.e., intrinsically motivating activities with the focus on enjoyment) and deliberate practice (i.e., effort requiring activities designed to improve performance) during the different stages (Ericsson, Krampe, & Tesch-Römer, 1993). In an extended version of this model, Côté and Fraser-Thomas (2007) distinguish training activities between early and late specialisation sports. As one of the best known models, the Long Term Athlete Development (LTAD) model includes four stages for early specialisation sports and six stages for late specialisation sports (Balyi, 2001).
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<td><strong>Early Years</strong></td>
<td><strong>Sampling years</strong> (age 6-12)</td>
<td><strong>Entry into sport</strong> (age 6)</td>
<td><strong>Early specialisation</strong></td>
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<td>Initiation</td>
<td>Involvement in several sports Intrinsical motivation Self-efficacy General physical and cognitive skills</td>
<td>Recreational participation through sampling</td>
<td>Each early specialisation sport should develop a sport-specific model</td>
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<td>Talent identification</td>
<td></td>
<td>Elite performance through early specialisation</td>
<td>Fun and participation</td>
</tr>
<tr>
<td><strong>Middle Years</strong></td>
<td><strong>Specialising years</strong> (age 12-15)</td>
<td><strong>Early Specialisation</strong> (age 6-18)</td>
<td><strong>Learning to train</strong> (age 9-12 - 8-11)</td>
</tr>
<tr>
<td>Development phase</td>
<td>Involvement in 1 sport† Balance of deliberate practice and play</td>
<td>Elite performance Deliberate practice ↑ Deliberate practice ↓ Involvement in several sports</td>
<td>Fundamental sport skills</td>
</tr>
<tr>
<td>Quantity of training ↑ Level of specialisation ↑</td>
<td>Recreational years (age 12-18) Deliberate play ↑ Deliberate practice ↓</td>
<td>Deliberate play and practice balanced Reduce involvement in several sports</td>
<td><strong>Training to train</strong> (age 12-16 - 11-15)</td>
</tr>
<tr>
<td><strong>Later Years</strong></td>
<td><strong>Investment years</strong> (after age of 16)</td>
<td><strong>Investment Years</strong> (age 15-18)</td>
<td><strong>Training to compete</strong></td>
</tr>
<tr>
<td>Perfection phase</td>
<td>Focus on 1 activity Sport specific deliberate practice</td>
<td>Activities that focus on fitness and health</td>
<td>Introduction mental preparation</td>
</tr>
<tr>
<td>Full-time engagement in the activity Living as a professional performer</td>
<td></td>
<td>Deliberate practice ↑ Deliberate practice ↓ Focus 1 sport</td>
<td><strong>Training to win</strong> (age 16-17)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sport &amp; individual specific physical conditioning Tactical preparation Specialisation Competitive conditions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Training to win</strong> (age 18 - +17)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Maintenance/ improvement of physical capacities High performance</td>
</tr>
<tr>
<td><strong>Maintenance</strong></td>
<td><strong>Recreational participation</strong> Physical health ↑ Enjoyment ↑</td>
<td><strong>Elite performance</strong> Physical health ↑ Enjoyment ↑</td>
<td><strong>Retirement</strong></td>
</tr>
<tr>
<td><strong>Mastery</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Performance</strong></td>
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</tr>
</tbody>
</table>

Table 2 Overview of athlete development models [adapted from Brouwers, De Bosscher and Sotiriadou (2012)]
The models outlined in Table 2 take an athletic perspective on athlete development, outlining how factors such as training load, deliberate practice, deliberate play, motor skill development, specialisation, and coach and parent involvement evolve during the different stages of athlete development (Sotiriadou & Shilbury, 2013). Therefore, these models provide useful information for coaches and parents on the content of athletes’ training sessions during the different development stages. However, these athlete development models lack an organisational or management perspective as they do not offer insights on how various sport organisations develop or support the different sport development stages (Sotiriadou & Shilbury, 2013). For example, none of the models discuss where (e.g., location such as local club or NSO training centre) athletes train, which support levels (e.g., financial, competitions, coaching) they receive from whom (e.g., clubs, NSOs, other organisations) and which coaches are involved (personal coaches, club coaches or NSO coaches) at each development stage. An organisational perspective on elite athlete development is important as policy makers, high performance directors and elite coaches are interested in insights on how sport organisations can structure the different development stages, and how processes and strategies can help attract, retain and nurture athletes (Sotiriadou & Shilbury, 2013).

One framework that approaches athlete development from an organisational perspective is the attraction, retention/transition and nurturing (ARTN) framework (Sotiriadou & Shilbury, 2013; Sotiriadou et al., 2008). Through its organisational perspective, the ARTN framework provides a useful addition to the athlete-centred studies on athlete development. The framework was the result of a four-year grounded theory study of annual reports and other policy documents of 35 NSOs in Australia and offers an organisational perspective on ‘who is involved with sport development’, in ‘what ways’, at ‘which developmental level’, and with ‘which outcomes’ (Sotiriadou et al., 2008). The ARTN framework details three different, yet interrelated sport development processes (Sotiriadou et al, 2008). These processes are the attraction, retention/transition and nurturing.

The attraction process aims to increase people’s awareness of sports programs and the benefits of sport participation encourage them to join a sport club and play sports. Often this process also aims to nurture large numbers of young participants that have the potential to become elite performers (Sotiriadou & Shilbury, 2013). Retention/transition is the process whereby “a range of policies, including development
programs and competitions/events, are implemented to identify talented junior athletes through to the highest levels of sport” (Sotiriadou & Shilbury, 2013, p. 146). Last, nurturing is defined as “the process whereby development programs and practices are tailored to the individual athlete, team or sport to achieve best performances on the national and international sporting stage” (Sotiriadou & Shilbury, 2013, p. 146). During the nurturing process stakeholders coordinate their efforts to tailor their strategies with the aim to achieve success at prestigious international events and competitions, and to sustain a culture of continued success at the highest level. The three processes of the ARTN framework are analogous to the ones identified by Green (2005) including athlete entrance (they ways in which athletes are first introduced to the sport), retention (the athlete’s choice to continue to participate) and advancement (move towards more advanced levels of training and competitions).

In order to facilitate these three processes, sport development stakeholders provide the necessary sport development strategies and programs (Sotiriadou et al., 2008). Sport development stakeholders can be divided in three groups including (1) governments (at federal, state and local levels) and their sports administrations (e.g., Australian Sports Commission), (2) sporting organisations (at national, state and local levels), and (3) other stakeholders including volunteers, paid staff, athletes and sponsors (Sotiriadou et al., 2008). Studies in the field of elite athlete development showed that stakeholders involved in elite sport may vary according to the context of the country. For example, most countries have a distinct national sports administration body and national Olympic committee. However, in countries including Switzerland, South Korea and the Netherlands, these two organisations are merged (De Bosscher et al., 2015). Another example, includes the existence of elite sport schools (ESS). Some countries including, for example, Germany, Belgium and the Netherlands have elite sport schools (ESS) that provide school education and optimal training conditions enabling athletes to focus on both, education and their athletic career (e.g., De Bosscher & De Croock, 2011; Emrich, Fröhlich, Klein, & Pitsch, 2009; De Bosscher et al., 2015).

Sotiriadou and Shilbury (2013) distinguished two types of sport development stakeholders depending on their roles. The first type of stakeholders is organisations or individuals that provide financial or operational support, and initiate and shape policies, programs or athlete development strategies. Examples of stakeholders within this type include government departments that are responsible for sport and elite sport policy
(e.g., Sport Canada, Sport England), national Olympic committees, and international sport federations. The second type of stakeholders helps implement policies, programs or athlete development strategies (Sotiriadou et al., 2008). This type includes individuals such as coaches, umpires, athletes and volunteers. Sotiriadou (2013) noted that the involvement of stakeholders varies depending on the development process that is examined. Moreover, the role of stakeholders varies according to specific tasks. For example, when NSOs outline their strategic plans they need to follow policies that are imposed by the national sports administrations. Therefore, the role of NSOs in this case is implementing sport policies. In another case, NSOs might provide mass participation programs to clubs, coaches, reflecting the initiation of strategies.

Strategies are “the means and courses of action taken by the sport development stakeholders for successful sport development” (Sotiriadou et al., 2008, p. 256). These strategies consist of player development programs, facilities, promotions, competitions and events (Sotiriadou et al., 2008). For example, player development programs include programs towards mass participation, talent identification programs and programs for elite athletes. Facilities include, for example, recreational, training, and match venues.

Sotiriadou et al. (2008) noted that the ARTN framework lends itself to be tested on a sport-by-sport basis to reveal insights in the way sporting organisations pursue athlete development and understand how to improve current pathways and practices. The framework has been applied to different sports including golf (Liebenau, 2010), cycling (Sotiriadou et al., 2014) and basketball (Sotiriadou et al., In Press). However, the focus of these studies was on amateur sport (Liebanau, 2010), the attraction and retention of members (Sotiriadou et al., 2014), and community sport venues (Sotiriadou et al., In Press). Therefore, the ARTN framework has not been applied yet in the elite sport context of one specific sport. Therein lays the following research question:

**RQ 2:**

*What are the roles of sport development stakeholders in elite player development pathways?*

Existing studies on elite athlete development show the significant role that different organisations have in the development of elite athletes (e.g., De Bosscher et al., 2015; Sotiriadou et al., 2008). For instance, it is well understood that NSOs have a significant input on athlete development (e.g., Sotiriadou & Shilbury, 2009). Roles of
local sport clubs in elite athlete development have been under-examined, most likely because they operate at grassroots level to provide sport for the community (e.g., Wicker & Breuer, 2011). Nevertheless, there is evidence that their input on elite athlete development is important (De Bosscher et al., 2015; Stenling & Fahlen, 2014), and deserves examination to identify how they assist and cooperate with NSOs to develop elite athletes (Brouwers et al., 2015a, 2015b).

Some researchers alluded to the importance of cooperation between clubs and NSOs to increase their organisational performance and to facilitate the development of elite athletes (Truyens et al., 2014; Bayle & Robinson, 2007; Brouwers et al., 2015a, 2015b). For example, Truyens et al. (2014) noted that cooperation between clubs, athletes, coaches, and the federation is important for elite athlete development in athletics as it helps uniting most vital human resources and organisations. Bayle and Robinson (2007) noted that NSOs are network organisations as they operate via a network of regional structures and clubs. Therefore, the operation and performance of NSOs depends on how they manage other organisations (e.g., clubs) in that network. NSOs should aim to improve the quality of the operating network, in terms of reactivity, reliability and the solidity of the links that create the network (Bayle & Robinson, 2007). Moreover, Bayle and Robinson (2007) noted that NSOs enter partnerships with organisations in their environment to improve organisational performance and obtain knowledge. These partnerships operate at various levels including vertical partnerships with clubs, horizontal partnerships with other NSOs, and systemic partnerships with national Olympic committees, the Ministry of Sports, sponsors and private partners. In a study on elite athlete development pathways in tennis, Brouwers et al. (2015a) argued that the role of tennis clubs extends beyond offering mass participation as they appear highly involved in talent identification and talent development processes. The heightened role of clubs in elite athlete development highlights the need for NSOs to revisit the level of support for clubs and the ways they cooperate with clubs to deliver optimal development pathways (Brouwers et al., 2015a). Even though some studies have noted the importance of coordination between NSOs and clubs, not much is known about the interactions within this cooperation and no studies have focussed their attention on the cooperation between clubs and NSOs in relation to elite athlete development.
2.4 Inter-Organisational Relationships (IORs)

IORs are broadly defined as “relatively enduring transactions, flows and linkages that occur among or between an organisation and one or more organisations in its environment” (Oliver, 1990, p. 241). Literature on IORs acknowledges that “organisations operate in a relational context of environmental interconnectedness and that an organisation’s survival and performance often depend critically upon its linkages to other organisations” (Oliver, 1990, p. 241). Kernaghan (1993) introduced the notion of achieving mutual goals when organisations work in partnerships. He stated that IORs involve “the sharing of power, work, support and/or information with others for the achievement of joint goals or mutual benefits” (p. 61). IORs (also referred to as collaborations, partnerships or linkages) can manifest in different forms including trade associations, agency federations, joint ventures, joint programs, corporate-financial interlocks, agency sponsor linkages, alliances and networks (e.g., Child & Faulkner, 1998; Oliver, 1990).

IORs have been widely applied to the context of sport and recreation as a new way of doing business (e.g., Babiak, 2003; Alexander, Thibault, & Frisby, 2008; Vail, 2007). In Canada, for example, IORs have become an integral part of the Canadian sport system with the goal to strengthen and develop collaboration between all key stakeholders in sport and eventually promote overall benefits of sport (e.g., Alexander et al., 2008; Babiak & Thibault, 2008; Canadian Heritage, 2002; Thibault & Harvey, 1997). Moreover, IORs across public, non-profit and commercial partners became a strategy to build capacity and pool resources to improve its poor sport performances at international level (Thibault & Babiak, 2005; Babiak, 2009).

Following the mounting applications of IORs in the sport sector, IORs have gained increasing interest in the sport management research (e.g., Alexander, Thibault, & Frisby, 2008; Babiak, 2007, 2009; Babiak & Thibault, 2008, 2009; Barnes, Cousens, & MacLean, 2007; Cleary, 2008; Cousens, Babiak, & Bradish, 2006; Frisby, Thibault, & Kikulis, 2004; Parent & Harvey, 2009; Thibault & Harvey, 1997). Some sport studies examined dyadic IORs between two organisations (e.g., Alexander et al., 2008), and others examined IORs between multiple organisations (e.g., Babiak & Thibault, 2008). It is also evident that there is a distinction between IORs that are established within one sector and those that are formed by a group of cross-sector partners (i.e., public, non-profit, and private or commercial) (e.g., Babiak, 2009; Babiak & Thibault, 2008, 2009).
The latter represents a challenging context for IORs due to the different goals and interests of the various IOR partners (Provan & Milward, 2001).

IOR literature within the sport context has focussed on three different stages (also called processes or phases) of IOR development including the formation, management and outcome evaluation (Alexander et al., 2008; Babiak, 2003). Parent and Harvey (2009) proposed a model for sport partnerships that includes a three-part feedback loop including partnership antecedents, management, and evaluation. The first of these stages, IOR formation, is concerned with the identification of determinants (Oliver, 1990), motives (Kouwenhoven, 1993), and antecedents (Parent & Harvey, 1998) that prompt partnership formation. Once IORs have been formed, processes need to be in place to manage them. These processes reflect the large amount of managerial factors and challenges of IOR management (Babiak & Thibault, 2008, 2009; Frisby et al., 2004; Misener & Doherty, 2013; Parent & Harvey, 2009). Last, the IOR outcomes must be assessed and evaluated (Babiak, 2009; Provan & Milward, 2001; Parent & Harvey, 1998). The conceptual framework in section 6.3 discusses the formation and management stages in more detail.

Existing sport management IOR studies focus on specific organisations and contexts. Some have examined IORs between community sport and leisure organisations with the aim of increasing physical activity and sport participation (e.g., Alexander et al., 2008; Cousens, Barnes, & MacLean, 2012; Frisby, Thibault, & Kikulis, 2004; Lucidarme, Marlier, Cardon, De Bourdeaudhuij, & Willem, 2014; MacLean, Cousens, & Barnes, 2011; Misener & Doherty, 2012, 2013; O’Reilly & Brunette, 2013; Parent & Harvey, 2009; Vail, 2007). Other studies examined IORs between community sports clubs and sponsors to assist sports clubs to acquire physical and financial resources in addition to government funding (e.g., Misener & Doherty, 2014), as well as IORs between sport properties and corporate sponsors that assist in meeting their strategic objectives (Cousens, Babiak, & Bradish, 2006; Morgan, Adair, Taylor, & Hermes, 2014). Hence, the application of IORs in sport appears to focus on community level organisations and sponsorships.

In comparison, the application of IORs to high performance sport and elite athlete development is limited. Specifically, Babiak (2003, 2007, 2009) and Babiak and Thibault (2008, 2009) have examined IORs between a Canadian Sport Centre and its partners including national sport federations, Sport Canada, Canadian Olympic
Committee, the coaching association of Canada, private commercial organisations and other Canadian sport centres. Babiak’s studies examined how a collaborative approach and the establishment of IORs between various partners served as a strategy to offer comprehensive support and resources for elite athletes and coaches in times of reduced government funding for elite sport.

These studies offer some insights in relation to elite sport. However, given the important role of sports clubs in elite athlete development (Brouwers et al., 2015b; De Bosscher et al., 2015; Stenling & Fahlen, 2014), it is surprising that no studies have examined IORs between clubs and their NSOs, and how these IORs facilitate elite player development. This gap in the literature introduces the third research question of this thesis:

**RQ 3:**

*How do IORs between the federation and clubs contribute to elite player development?*

### 2.5 Conclusion

This chapter provided an overview of relevant literature that informs the three layers of examination of this thesis. Section 2.2 introduced the research fields of sport policy and elite sport policy. The section then reviewed current elite sport policy studies and provided more detail on the SPLISS framework. The section concluded with the need for sport policy studies at sport-specific level in order to take into account the context of specific sports. Hence, the first research question is:

*What policy (or other) factors influence international tennis success?*

Section 2.3 explained how elite sport policies are filtered down to NSOs that initiate strategies, programs and pathways to develop elite athletes. This section provided a brief overview on athlete development models and noted that these models lack insights on how various sport organisations develop or support the different sport development stages. Subsequently, the section introduced the ARTN framework that does offer an organisational perspective to elite athlete development. The section concluded with the notion that the ARTN framework has not been applied yet in the elite sport context of one specific sport, leading to the second research question:

*What are the roles of sport development stakeholders in elite player development pathways?*
Last, section 2.3 highlighted the role of NSOs and sport clubs in elite player development, as well as the importance of their cooperation.

Section 2.4 advanced IORs as a useful framework to examine interactions and cooperation between sporting organisations. The section defined IORs as a concept and then overviewed studies in the field of sport management that have used IORs in various contexts. The section concluded with outlining the lack of research on IORs between clubs and NSOs and how they may facilitate the development of elite athletes. This gap in the IOR literature leads to the third research question:

*How do IORs between the federation and clubs contribute to elite player development?*

The next chapter presents the methods used in this thesis in response to the three research questions.
Chapter 3  Research Design and Methodology

3.1 Introduction

Chapter 2 provided a review of extant literature related to elite sport policy (macro-level), athlete development pathways (meso-level), and inter-organisational relationships in elite sport (micro-level). Chapter 3 describes the chosen research paradigm, strategies for enquiry and methods that were adopted in this research. Specifically, this chapter goes in depth on the overall three-phase sequential research design adopted in this study. Then specific methods including data collection and data analysis are outlined for each of the three studies that make up this research.

3.2 Research Paradigm

Social science contains a number of organising frameworks for theory and research, known as paradigms (Neuman, 2006). A research paradigm is the basic belief system that represents the worldview of a researcher (Guba & Lincoln, 1998). Worldviews can be seen as a general orientation about the world and the nature of research that a researcher holds (Creswell, 2009). Positivism, postpositivism, critical theory, constructivism, interpretivism, participatory, and pragmatism are current established research paradigms (Creswell, 2009; Creswell & Plano Clark, 2011; Edwards & Skinner, 2009; Guba & Lincoln, 1994, 1998; Heron & Reason, 1997). Hussey and Hussey (1997) noted that these research paradigms can be placed on a continuous line of paradigms with positivism and interpretivism as opposing ends of the research continuum.

Paradigms are differentiated through three elements including the ontology, epistemology and methodology (Guba & Lincoln, 1998). Thereby, ‘ontology’ refers to the form and nature of reality (Guba & Lincoln 1998). For example, Edwards and Skinner (2009) noted that for a positivist, reality is something that exists ‘out there’ waiting to be discovered as a truth that can be measured and quantified (Denzin & Lincoln, 1998), while for an interpretivist, reality can be observed and explained in a multiplicity of ways (Bryman & Burgess, 1994). ‘Epistemology’ refers to the relationship between that reality and the researcher (Guba & Lincoln 1998). Guba and Lincoln (1998) claimed that the epistemology is dependent on the ontology. For example, if the world is considered ‘real’, where a truth can be measured and quantified (i.e. positivism), the researcher is objectively separated from the object of research.
However, if ‘reality’ is intangible, a construction of the human mind shaped by experiences of the word (constructivism), the researcher and the research object are assumed to be interactively linked (Guba & Lincoln, 1998). ‘Methodology’ refers to how the researcher will go about the research (Guba & Lincoln 1998) or more specifically, what technique can be used to measure perceived reality (Edwards & Skinner, 2009). The worldview of the researcher guides the choice of methodology in ontologically and epistemologically fundamental ways (Guba & Lincoln, 1998).

Positivism is the longest-established, and still dominant research paradigm used in natural sciences and is also widely used in social science research today (Collis & Hussey, 2013; Neuman, 2006). Positivists rest on the assumption that social reality is singular and objective, not affected by the act of investigating it (Collins & Hussey, 2013). Positivism strategies of inquiry focus on discovering causal laws and careful empirical observations (Neuman, 2006). As an alternative to positivism, interpretivism is underpinned by the belief that social reality is multiple and highly subjective as it is shaped by the researchers’ perceptions and experiences of the world in which they live and work (Collis & Hussey, 2013; Creswell, 2009; Crotty, 1998). The two opposing research paradigms have attracted heated debates on views to the advancement of knowledge in social sciences (e.g., Gage, 1989; Feilzer, 2010; Onwuegbuzie & Leech, 2005). Pragmatism emerged as an alternative worldview to those of positivism and interpretivism, moving past the ‘paradigms wars’ by proposing a logical and practical alternative (Johnson & Onwuegbuzie, 2004).

Pragmatism (Creswell, 2009; Creswell & Plano Clark, 2011; Feilzer, 2010) was chosen as the appropriate worldview for the current research. Even though pragmatism is fairly recent compared to other philosophical positions, the paradigm is well present in research methods books (e.g., Collis & Hussey, 2013; Creswell, 2009; Creswell & Plano Clark, 2011; Hussey & Hussey, 1997; Tashakkori & Teddlie, 1998). Ontologically, pragmatism does not commit to any one system of philosophy and reality (Creswell, 2009). Specifically, Creswell and Plano Clark (2011) noted that the pragmatist views “reality as both singular (e.g., there may be a theory that operates to explain the phenomenon of study) as well as multiple (e.g., it is important to assess varied individual input into the nature of the phenomenon as well)” (p. 41). Powell (2001) claimed that “to a pragmatist, the mandate of science is not to find truth or reality, the existence of which are perpetually in dispute, but to facilitate human
problem-solving” (p. 884). The pragmatist conveys the importance of focussing attention on the research problem in social science research, and then using “whatever philosophical and/or methodological approach works for the particular research problem” (Tashakkori & Teddlie, 1998, p. 5). Accordingly to this view, the epistemology of pragmatists is based on practicality, whereby the researcher collects the data by “what works” to address the research questions (Creswell & Plano Clark, 2011).

Pragmatists question the dichotomy of (post)positivism and constructivism (Feilzer, 2010), and call for a pluralistic approach to provide best understanding of the research problem including a convergence of qualitative and quantitative methods (Creswell, 2009; Hanson, 2008; Johnson & Onwuegbuzie, 2004; Onwuegbuzie & Leech, 2005). Thereby, pragmatists reiterate that qualitative and quantitative methods are not different at an epistemological or ontological level, and that they share many commonalities in their approaches to research (Feilzer, 2010; Hanson, 2008; Johnson & Onwuegbuzie, 2004; Onwuegbuzie & Leech, 2005). Examples of these commonalities include that both orientations (1) use research questions that are addressed through some type of observation, (2) interpret the data using analytical techniques (through statistical procedures or phenomenological techniques), and (3) attempt to reduce dimensionality of data (through data-reduction methods or thematic analysis) (Onwuegbuzie & Leech, 2005).

Pragmatists believe in a central role of theory in both qualitative and quantitative research (Onwuegbuzie & Leech, 2005). As the researcher mixes qualitative and quantitative methods, and objective and subjective orientations, the approach may combine deductive and inductive thinking (Creswell & Plano Clark, 2011; Onwuegbuzie & Leech, 2005).

3.3 Study Design and Research Methods

To address the research questions, a three phase sequential design was used including three different studies. The results of study 1 partly shaped the research problem of study 2, and the results of study 2 shaped the research problem for study 3. Study 1 examined the factors that influence international tennis success using a convergent parallel mixed methods design. Study 2 examined the role of stakeholders and elite player pathways using qualitative methods. Study 3 examined the role of IORs between the tennis federation and clubs on elite player development.
Research methods involve specifics on forms of data collection, analysis and interpretation that researchers propose for their studies (Creswell, 2009). As research methods are specific for each of the three papers included in this thesis, these are discussed in separate sections. Figure 2 presents the three phase sequential design including its three studies, their aims, data collection and data analysis procedures and products, as well as their relation to the papers that shape this research.
Figure 2 Three-phase sequential design and research methods

**Study 1**
AIM: Explore policy or other factors that influence international tennis success

**QUAN + QUAL**
Convergent parallel design (Questionnaire)

**Procedures**
- Select tennis experts
- Likert scale questions (importance)

**Products**
- Numerical scores
- Rating average, standard deviation, standard error

**QUAN data collection**

**Procedures**
- Descriptive statistics

**Products**
- Compare content analysis and rating averages

**Merge results**

**Interpretation**

**Study 2**
AIM: Examine the role of stakeholders and elite player pathways in tennis

**QUAL Interviews**

**Procedures**
- Select tennis experts
- Semi-structured interview guide

**Products**
- Responses to open questions
- 11 themes, 44 1st level sub-themes, 52 2nd level sub-themes

**QUAL data collection**

**Procedures**
- Thematic analysis

**Products**
- Four development processes, Themes and sub-themes

**QUAL data analysis**

**Study 3**
AIM: Examine the role of club-federation IORs on elite athlete development in Flanders

**QUAL Interviews and document analysis**

**Procedures**
- Select representatives federation and clubs
- Semi-structured interview guide
- Collect documents

**Products**
- Interview transcripts
- Content analysis documents

**QUAL data collection**

**Procedures**
- Thematic analysis

**Products**
- IOR formation determinants, IOR management characteristics

**QUAL data analysis**

**Interpretation**

**PAPER 1**

**PAPER 2**

**PAPER 3**
3.3.1 Sport-specific policies and factors that influence international tennis success

The first study used mixed methods to examine sport-specific policy and other factors that influence international tennis success. The research question driving this study is ‘What policy or other factors influence international tennis success?’

**Method:** A convergent parallel mixed methods design was used to collect and analyse the data (Creswell & Plano Clark, 2011). Specifically, qualitative and quantitative data were collected in parallel but analysed separately, and then mixed for the overall interpretation of the findings. This design was useful as this study is explorative on one hand (tennis specific policies have never been examined) and explanatory on the other (the applicability of the SPLISS model for tennis is examined). An online questionnaire was used to collect data. The questionnaire consisted of open questions (i.e., qualitative) followed Likert scale questions (i.e. quantitative). In the open questions, the experts were asked to identify the five most important policy factors that contribute to international tennis success, three strengths of tennis policies in their country, and three weaknesses. The Likert scale questions included ratings on a 5-point Likert scale of the importance of (a) the nine SPLISS pillars and (b) the 31 SPLISS sub-dimensions for international tennis success.

**Data collection:** Ethics approval was granted from the institution authorising this research (Ethics project number RO1163) (See Appendix 1). An online questionnaire, designed using SurveyMonkey software, was used to collect data from international tennis experts including high performance directors, coach education managers and other tennis specialists.

**Participants:** The tennis experts were purposefully selected to include individuals with high levels of expertise on elite sport policies and elite player development in tennis (Creswell & Plano Clark, 2007). The experts were selected from countries that are successful in tennis. Based on the number of male and female top 100 and top 1000 players in the 2010 year-end rankings of the Association for Tennis Professionals and the Womens Tennis Association, 24 countries were chosen. In total, 25 high performance directors, 25 coach education managers and 25 other tennis experts (based on a list of presenters at the bi-annually held Worldwide Coaches Conference of the ITF between 2003 and 2011) were invited to participate in the study. After two reminder
emails and phone calls to increase participation rates, 35 experts from 15 countries completed the questionnaire (overall response rate 46.7%).

**Data analysis:** The qualitative and quantitative data sets were analysed separately and independently from each other using qualitative and quantitative analytic procedures (Creswell & Plano Clark, 2011). Using NVivo 10 to organise and analyse the data from the open questions, three types of analysis were performed to assist with the inductive and deductive reasoning (Grbich, 2013). These were (a) thematic analysis to code the responses under major themes, (b) constant comparison to develop more specific sub-themes, and (c) content analysis to identify the percentage of experts that referred to each of the elite sport policies. This processes resulted in 11 themes, 44 1st level sub-themes and 51 2nd level sub-themes. The quantitative data from the Likert scale questions were analysed using rating averages ranging between one (not important) and five (very important). Moreover, standard deviations and standard errors were reported. Last, qualitative and quantitative data were compared and combined into an overall discussion of the factors that influence international tennis success (Creswell & Plano Clark, 2011).

### 3.3.2 Stakeholders and elite player development pathways in tennis

The second study examined elite development in tennis and the role of various stakeholders in supporting sport development processes. Specifically, this study used the attraction, retention, transition and nurturing (ARTN) framework (Sotiriadou et al., 2008) to explore the roles that tennis stakeholders play in initiating or delivering programs and strategies.

**Method:** This study used qualitative research methods to explore (a) the pathways for the development of elite tennis players, and (b) the roles of stakeholders in initiating and delivering these pathways. For the purposes of this exploratory study, semi-structured in-depth interviews were conducted with international tennis experts.

**Data collection:** The data collection of this study builds further on the data collection of the questionnaire (see 3.3.1) and falls under the same ethics approval (i.e., Ethics project number RO1163, see Appendix 1). A semi-structured interview technique was used in order to allow the researcher to probe the interviewees for more detail and seek further information where uncertainty existed (Edwards & Skinner, 2009). The interview
schedule included questions based on the properties (i.e., stakeholders and strategies) of the ARTN framework (Sotiriadou et al., 2008) (See Appendix 4).

Participants: The 35 international tennis experts that participated in the questionnaire (paper 1) were invited for a follow-up interview. Eighteen experts agreed to participate. These represented 10 countries and included five high performance directors, three coach education managers and 10 other specialists including former high performance directors, elite coaches and science managers.

Data analysis: Taking the ARNT framework as a starting point, deductive reasoning was used to identify ‘who is involved with tennis development’, in ‘what ways’, at ‘which developmental level’, and for ‘which outcomes’. Thematic analysis as an inductive approach assisted the researchers to identify patterns in the data, working to develop a theoretical framework that could explain those patterns (Blackstone, 2012). Open coding and organising the nodes to create tree nodes using NVivo resulted an initial coding framework (i.e., themes, nodes and their sub-nodes or characteristics) that included all the tennis player development stakeholders and their roles, as well as all the strategies and their characteristics that facilitate elite tennis pathways. The last phase of analysis examined the relationships between nodes and sub-nodes to identify higher order categories (Hutchison, Johnston, & Breckon, 2010). The identified relationships between nodes and sub-nodes resulted in four higher order categories that reflect the ‘tennis specific player development processes’.

3.3.3 IORs that facilitate elite tennis player development

The third study examined how IORs between clubs and the tennis federation in Flanders can facilitate elite player development. IOR literature provided a conceptual framework on determinants of IOR formation and IOR management.

Method: This study used qualitative research methods including document analysis and semi-structured interviews with club and federation representatives to explore (a) determinants for IOR formation, and (b) characteristics of IOR management.

Selection of IOR partners: Two types of organisations were selected for this study. First, the Flemish Tennis Federation was selected on the basis of its involvement with elite player development. Second, tennis clubs that are actively involved in elite player development were selected. Specifically, tennis clubs were selected based on (1) Flemish tennis high performance director’s recommendations, and (2) a list of clubs
with the highest number of club players within the player development programs of the Flemish Tennis Federation. This resulted in a list of 10 tennis clubs. Emails were sent to the head coaches for player development in the clubs to invite them to participate. Seven clubs agreed to participate.

**Data collection:** Ethics approval was granted from the institution authorising this research (Ethics project number HSL/31/11/HREC) (See Appendix 5). Publicly available documents and strategic plans were collected. Representatives from seven tennis clubs and the Flemish tennis federation participated in semi-structured interviews. The purpose of the interviews was to examine how IORs between tennis clubs and the tennis federation contribute to elite player development. All interviewees received an information sheet that informed them about the study and signed the consent form before the start of the interview (see Appendix 6). The semi-structured interviews followed an interview guide that consisted of two parts (Appendix 7). The first part included questions about the capacity of the interviewees’ organisation to develop elite players. The second part included questions on the IORs between clubs and the federation.

**Participants:** Key representatives of each organisation participated in semi-structured interviews. Using purposive sampling (Patton, 2002), the representatives were chosen based on their role within the organisation and their expertise on elite player development. Study participants included seven representatives from the tennis federation in Flanders, five head coaches and two academy directors of the clubs. Table 10 in Chapter 6 provides a detailed overview of the organisational representatives of each organisation that participated in the interviews.

**Data analysis:** All organisational documents were reviewed and examined. For each organisation, all relevant information about IORs was recorded in a separate file. All interview transcripts and files were saved in NVivo which helped managing and organising the data. An interplay of inductive and deductive reasoning guided data analysis (Blackstone, 2012; Hennink, Hutter, & Bailey, 2011). Deductive reasoning was used as coding was guided by the conceptual framework of IOR formation and management (Hennink et al., 2011). Inductive reasoning allowed new themes to be added to the coding framework when new elements recurred in several interviews or when refinement was needed.
3.4 Summary

This chapter has outlined the research design of this thesis. First, the chapter outlined the research paradigm that clarifies the philosophical position of the research. Then, the three phase sequential study design was outlined. Following this, the research methods for each study were outlined including the methods, data collection and data analyses. The next three chapters, each in article form, present how the methods were implemented in three studies, as well as the results and discussions of each study.
Chapter 4  Study 1 Elite Sport Policy in Tennis

Sport-specific policies and factors that influence international success:  
The case of tennis

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4.1 Statement of Contribution to Co-Authored Published Paper

This chapter includes a co-authored paper. The bibliographic details of the co-authored paper, including all authors, are:


My contribution to the paper involved:

Jessie Brouwers designed the questionnaire and collected the data. She coded the qualitative data in NVivo and led the thematic analysis, constant comparisons and content analysis. Jessie analysed the quantitative data using descriptive statistics. She led the drafting of the manuscript, the submission process, the revisions of the manuscript and the response to the reviewers.

Popi Sotiriadou and Veerle De Bosscher provided advice on the structure of the questionnaire. They provided additional insights on the results and interpretation of the findings. Popi and Veerle provided feedback on the manuscript and contributed to and/or have approved the final manuscript.

(Countersigned)
04.09.2015
Veerle De Bosscher
Co-author and external supervisor
4.2 Abstract

Countries continue to seek ways to achieve and sustain elite athlete success. However, competitive advantages in elite sport are largely found within individual sports’ contexts and policies. This paper uses tennis as an exemplar and mixed methods to examine sport specific policy and other factors that influence international success. Thirty-five international tennis experts participated in a questionnaire which combined (a) open questions, and (b) Likert scale questions, based on the Sport Policy Factors that Lead to International Success (SPLISS) model. The findings support the significance of the SPLISS model at a tennis specific level. The most significant contribution of this paper rests on the emergence of two contextual themes, namely culture and commercial environment, which help explain the context within which tennis operates. These findings are important for understanding the ways elite sport success is fostered in professional sports like tennis and potentially transferring that knowledge to other commercialised sports. The paper advances the theoretical understanding of the combined meso-level and contextual factors at a sport specific level that influence international success. The practical implications address high performance directors’ and sport policy makers’ challenge of nurturing and enhancing the tennis culture and commercial environment.

Keywords: Tennis; elite sport policy; elite sport context; professionalisation; commercialisation; culture
4.3 Introduction

Over the past two decades elite sport policy has received an increased research attention. Such research has offered advancements including an understanding of the common approaches and the key characteristics of elite sport systems of different countries (e.g., Andersen & Ronglan, 2012; De Bosscher, De Knop, van Bottenburg, & Shibli, 2006; Digel, Burk, & Fahrner, 2006; Green & Houlihan, 2005; Houlihan & Green, 2008; Oakley & Green, 2001). It is well documented (e.g., De Bosscher, De Knop, van Bottenburg, Shibli, & Bingham, 2009; Robinson & Minikin, 2012; Truyens, De Bosscher, Heyndels, & Westerbeek, 2013) that countries and sports seek innovative ways to achieve and sustain elite success. On that note, several researchers called for research at sport specific level as elite sport development and sport competitive advantages are largely found within individual sports, their context and policies (e.g., De Bosscher, De Knop, & van Bottenburg, 2007; De Bosscher, De Knop, van Bottenburg, Shibli et al., 2009; Sotiriadou & Shilbury, 2009).

In the move away from country or sport generic studies and towards specific contexts, a few authors have further advanced the field of sport policies by studying certain aspects of the elite sport policy and key success factors of specific sports. These include the examples of Swedish athletics and Norwegian cross country skiing (Böhlke, 2007; Böhlke & Robinson, 2009); Norwegian handball, Finnish ice hockey, Danish track cycling and Swedish tennis and golf (Andersen & Ronglan, 2012); athletics (Truyens et al., 2013); and sprint canoe in Australia (Sotiriadou, Gowthorp, & De Bosscher, 2013). Even though each of these studies had a different scope, they all identified new areas or important factors for success that were not addressed in sport generic studies. These studies illustrate the value of sport specific studies and their implications to high performance directors and policy makers.

Whilst sport policy studies and their influence on practice are flourishing, the relevance and influence of contextual factors, such as the professionalisation and commercialisation of some sports, and the role of the cultural, historical, political and social context to elite success is less prominent. Various studies (e.g., Andersen & Ronglan, 2012; Bergsgard, Houlihan, Mansget, Nodland, & Rommetveit, 2007; Böhlke & Robinson, 2009; Digel et al., 2006; Houlihan & Green, 2008) showed that it is harder to analyse elite sport policy in isolation from contextual factors and these factors should be taken into account.
This paper addresses the need for sport specific research and the relevance of sport-specific contextual factors by examining the policy and other factors that influence international tennis success. Tennis is a sport where professionalisation and commercialisation have particularly increased over the past decades. However, the potential role of the professionalised and commercialised environment that tennis operates in is largely unknown. Consequently, tennis provides a valuable case for examination. The research question driving this study is ‘What policy or other factors influence international tennis success?’ Using a mixed methods approach, a questionnaire comprised of open and Likert scale questions was used to collect data from 35 international tennis experts. This paper contributes to the body of research on elite sport policy and high performance management by responding to the need to examine elite sport policy at a sport specific level (De Bosscher, De Knop, & van Bottenburg, 2007; De Bosscher, De Knop, & Van Bottenburg, 2009; De Bosscher, De Knop, van Bottenburg, Shibli, et al., 2009). In addition, the findings allow for contextual factors that are important for international tennis success to emerge.

4.4 Elite Sport Policies

Studies that examined elite sport policies (i.e., factors at the meso-level) (e.g., Bergsgard et al., 2007; De Bosscher, De Knop, & van Bottenburg, 2009; Digel et al., 2006; Green & Houlihan, 2005; Houlihan & Green, 2008; Oakley & Green, 2001) conclude that the common characteristics of elite sport systems of developed nations are based around a single model of elite sports development with variations in the way elite sport policies are implemented. One of the most inclusive studies of meso-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; De Bosscher, De Knop, van Bottenburg, et al., 2009). SPLISS identifies nine pillars (or policy areas) that influence international sporting success, and specifies 31 sub-dimensions and 126 critical success factors as key elements within pillars that are necessary to improve the elite sport success of a nation. Specifically, financial support (pillar 1) and an integrated approach to policy development (pillar 2) are necessary conditions for the development of sport and athletic careers within a given sport. Pillars 3, 4 and 5 represent the sequences of the athlete development stages including foundation and participation (pillar 3), talent identification and development (pillar 4) and athletic and post-career (pillar 5).
Investment in four remaining pillars (i.e., pillar 6 training facilities, pillar 7 the provision and development of coaches, pillar 8 national and international competition structure and pillar 9 scientific research and sports medicine support) is essential for the development of elite athletes (De Bosscher et al., 2006).

Even though the focus of the SPLISS study was meso-level factors, the model suggests the inclusion of a tenth dimension; the environment of sport systems. This environment contains contextual factors such as the education system, the general sport and elite sport culture, the tradition of a certain sport in a country, the tradition of success, the private sector as a sports development partner, the media and sponsoring (Digel et al., 2006). However, the environment of sport systems was not examined in the SPLISS study, as it cannot be influenced directly by sports policies. Nevertheless, De Bosscher et al. (2007) recognised that policy and contextual factors need to be examined at a sport specific level. Based on this call, some studies examined elite sport policy at sport specific level (e.g., Andersen & Ronglan, 2012; Böhlke, 2007; Böhlke & Robinson, 2009; Green & Houlihan, 2005; Sotiriadou et al., 2013; Truyens et al., 2013). Table 3 presents an overview of existing studies that include a sport specific level of analysis and shows their grounds for conducting sport specific research, the sports that were examined and the criteria for selecting these sports and countries. Furthermore, Table 4 shows the focus (including contextual factors), the methods and the frameworks used in previous studies.

All studies presented in Tables 3 and 4 examined elite sport policies by including some aspects of the context of elite sport (factors in italics in Table 4). Even though each of these studies had a different focus, they all concluded that when comparing the factors that influence international sporting success, each sport requires the examination of its contextual factors. For example, Böhlke (2007) and Böhlke and Robinson (2009) compared athlete development pathways, coaching structures, sport science support and athletic lifestyle support in Swedish athletics and Norwegian cross country skiing to conclude that the implementation of these policies is strongly dependent on the socio-cultural context of a country. Therefore, policy makers have to take into account specific conditions such as the socio-cultural context, existing club competition infrastructures and working atmospheres in the sport environment, when attempting to transfer best practices across countries.
Sotiriadou et al. (2013) explored sprint canoe in Australia and identified that the sport’s culture plays a key role in shaping policy, policy linkages and interrelationships. Truyens et al. (2013) examined the organisational resources (e.g., the existence of an organisation for the coordination and organisation of elite coach development) and first-order capabilities (e.g., a national coach qualification framework) that lead to a competitive advantage in athletics and classified these under the nine pillars of the SPLISS model. Also, an additional contextual category, called environmental success factors, emerged.

The sport examined in this study, tennis, is a highly globalised, professionalised and commercialised sport. These characteristics render tennis as an inviting case given that previous empirical studies have not explored policy and contextual factors that influence international tennis success. The following section explains the structure and organisation of tennis at international level and illustrates its globalised, professionalised and commercialised nature.
**Table 3** Sport policy studies at sport specific level: Reasons for the selection of sports and countries

<table>
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<tbody>
<tr>
<td>n/a</td>
<td>n/a</td>
<td>Discipline specific success of countries Focus on success in specific sports, rather than across all sports</td>
<td>Provide examples of Nordic sports’ sustained success within a diversity of sporting contexts</td>
<td>It is essential to discover what sport specific factors influence success Examine the influence of the environment of sport systems on a sport by sport basis</td>
<td>Examine the organisational development in specific sports Call for sport specific analysis (De Bosscher et al., 2007; Oakley &amp; Green, 2001)</td>
<td></td>
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<tr>
<td>Sports</td>
<td>Swimming Athletics Yachting</td>
<td>Overall + Athletics Swimming Volleyball</td>
<td>Athletics Cross-country skiing</td>
<td>Overall + Norway: Handball Finland: Ice hockey Denmark: Track cycling Sweden: Tennis, Golf</td>
<td>Sprint Canoe</td>
<td>Athletics</td>
</tr>
<tr>
<td>Selection criteria sport</td>
<td>n/a</td>
<td>n/a</td>
<td>Successful sports and elite sport systems in Scandinavia</td>
<td>Success stories of sport Variety in sports (male - female; individual - team sports; summer - winter sports)</td>
<td>Medal winning sport Tier 1 sport (funding)</td>
<td>Rich history and international popularity among international competitors</td>
</tr>
<tr>
<td>Countries</td>
<td>Australia, Canada, UK</td>
<td>Australia, China, France, Germany, Italy, Russia, UK, USA</td>
<td>Sweden (Athletics) Norway (Cross country skiing)</td>
<td>Nordic countries with similar systems</td>
<td>Australia</td>
<td>24 countries</td>
</tr>
<tr>
<td>Comparative ambition</td>
<td>Yes</td>
<td>Yes</td>
<td>Benchmarking</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Selection criteria countries</td>
<td>English speaking countries</td>
<td>Olympic tradition Countries that provide Olympic sports with privileged treatment Governed on the basis of ideological concepts</td>
<td>A democratic political environment with a stable economy</td>
<td>Similar countries (size, geographical region, societal, political institutions and welfare state arrangements) Lack of comparative elite sport studies in Nordic countries</td>
<td>Top 5 Nation in sprint canoe</td>
<td>n/a</td>
</tr>
</tbody>
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Table 4 Sport policy studies at sport specific level: Focus, methods and framework

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<tbody>
<tr>
<td>Methods</td>
<td>Descriptive and comparative; Interviews Analysis of literature Socio-demographic analysis of data Analysis of documents Questionnaires</td>
<td>Semi-structured interviews Documentary analysis</td>
<td>Specialists from each nation Variety of methods: Historical material Results statistics Policy documents Interviews</td>
<td>Interviews with high performance directors, coaches, sport scientists, athletes</td>
<td>Literature research (sport overall and athletics specific) 34 interviews with athletics experts</td>
<td></td>
</tr>
<tr>
<td>Framework</td>
<td>Advocacy coalition framework (ACF) to analyse policy changes 1. Success-Resources-model 2. Neo-institutionalism 3. Mintzberg’s organisation typology</td>
<td>Benchmarking objects and subjects Elite support services</td>
<td>Institutional perspective Relationship between convergence and divergence</td>
<td>SPLISS model (De Bosscher et al. 2006) Contextual, processual, specific policies (Houlihan, 2009)</td>
<td>Recourse based view Organisational resources and first order capabilities clustered under the SPLISS model</td>
<td></td>
</tr>
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</table>
4.5 Study Context

The International Tennis Federation (ITF) is responsible for developing and promoting tennis globally and regulates tennis through over 200 affiliated national tennis associations (ITFa, 2014). National Tennis Associations (NTAs) (e.g., Tennis Australia, the United States Tennis Association, and Tennis Canada) are the highest governing bodies in tennis at a national level, responsible for national tennis policies and programs. Professional tennis tournaments are controlled by the Association for Tennis Professionals (ATP) and the Women’s Tennis Association (WTA). The foundation of these associations in the 1970s was a sign of professionalisation in tennis (Houlihan, 2013; Shilbury & Kellett, 2011). Four of the most prestigious tennis competitions are the Grand Slam tournaments which are owned and organised by the NTAs of Australia, France, United Kingdom and the United States of America (ITFa, 2014). The worldwide competition structure of tennis and the increasing reputation of the sport in the Olympic Games (Fein, 2012) show the global nature of tennis. Tennis has the second highest global sport popularity after football (soccer), it is played in 190 countries, has 4.4 million fans and attracts 800 million television viewers worldwide (ATP, 2013a). Male tennis players including Roger Federer and Rafael Nadal are among the most recognisable athletes in the world (ATP, 2013a). In addition, the fact that the top 10 players on the women’s tour represented 10 different countries in 2011 and the increasingly diversity of countries in the ATP and WTA top 100 illustrates the globalisation of tennis (Marshall, 2011).

As a consequence of its globalisation, tennis has become a commercialised sport featuring players as marketing commodities, huge broadcast rights and sponsors competing for exclusive rights to events (Churchill, 2008). Commercialisation has affected the way in which athletes relate to their sport with the most obvious impact being the increasing number of athletes who see tennis as a significant source of income (Houlihan & Green, 2008). Tennis players can potentially earn a higher income from sponsorships than from their prize earnings. Houlihan (2013) argued that the commercialisation of high performance sport and the business of sport have impacted the relationship between players and their national governing bodies and International Federations. In tennis, the increasingly valuable sponsorship deals, prize money and the celebrity status of players have strengthened the power of players at the expense of
NTAs and the ITF.

Even though NTAs play a major role in the development of elite tennis players, private high performance tennis academies, such as the Evert Tennis Academy and the IMG Nick Bolletieri Tennis Academy, are also important contributors to tennis success. Private tennis academies often strive for profit maximisation and complement (or sometimes undermine) the role of the NTA activities in talent identification and development programs (Houlihan, 2013). The presence of these academies suggests that tennis players are not always ‘products’ of the formal system (i.e., the NTAs). There are several examples in the literature that illustrate the interplay between NTAs and private academies in producing elite athletes. A study in Flanders (the Northern part of Belgium), for instance, showed that tennis players training at an elite sport school have similar chances to become successful as those players training privately (De Bosscher & De Croock, 2011). In Serbia there is no national tennis centre and most players develop privately or are offered sponsorships by companies (MacCurdy, 2008). Still, there are six Serbian players in the ATP/WTA top 100 ranking list (ATP, 2013b; WTA, 2013). Spain is one of the most successful tennis countries with 20 top 100 ATP/WTA players in the year-end ranking of 2013 (ATP, 2013b; WTA, 2013). In Spain, the number of players training at the national training centre is fairly low and there are a lot of players training in private tennis academies. However, nearly all players are under the umbrella of the NTA through grants, training camps and tournaments (MacCurdy, 2008). In general, Crespo and Reid (2009) indicated that NTAs and private academies need to cooperate as they strive for the same goal; developing elite tennis players.

To summarise, globalisation, professionalisation and commercialisation appear to have a great influence on NTAs’ policies and should not be ignored when examining elite sport policy factors that influence international tennis success. This study examines such factors and policies in the context of tennis.

4.6 Method

4.6.1 Data Collection

An online questionnaire, designed using SurveyMonkey software, was used to collect data from international tennis experts including high performance directors, coach education managers and other tennis specialists. Drawing on experts’ opinion provides the best and most valid source of data (Bogner, Littig, & Menz, 2009) to
explore factors that influence international tennis success. The experts were selected from countries that are successful in tennis. Based on the number of male and female top 100 and 1000 players in the 2010 year-end rankings of the ATP and the WTA, 24 countries were chosen. Within these countries, two groups of tennis experts were selected using a purposive sampling process (Patton, 2002). The first group of experts included 25 high performance directors and 25 coach education managers from the NTAs of the 24 countries (with the exception of Belgium all other countries had one high performance director and one coach education manager). To increase the sample of participating experts, 25 more experts from the 24 countries were selected from the list of presenters at the bi-annually held Worldwide Coaches Conferences of the ITF between 2003 and 2011. This second group of experts included former high performance directors, elite coaches, science managers and researchers in tennis. This group is referred to as tennis specialists in the remainder of the paper.

The web address link of the questionnaire was distributed by email to the tennis experts of the 24 selected countries. Email addresses of the experts were obtained through the websites of the NTAs or personal contacts. After the initial distribution of the questionnaire, two reminder emails were sent and phone calls were made to countries where no response was obtained. After eight weeks of distributing the questionnaire a total of 35 experts from 15 countries completed the questionnaire (overall response rate 46.7%). The highest response rate was received from tennis specialists (68.0%). The response rate for high performance directors was 32.0% and for coach education managers 40.0%. More specifically, the experts included eight high performance directors (de-identified as HPD 1-8), 10 coach education managers (de-identified as CEM 1-10) and 17 tennis specialists (de-identified as Specialist 1-17).

4.6.2 Description of Data

A convergent parallel mixed methods design was used to collect and analyse the data (Creswell & Plano Clark, 2011). This design allows for qualitative and quantitative data to be collected in parallel but analysed separately, and then mixed for the overall interpretation of the findings. This design was useful as this study is exploratory on one hand (tennis specific policies have never been examined) and explanatory on the other (the applicability of the SPLISS model for tennis is examined). The questionnaire used in the study included two sections. Open questions followed by Likert scale questions
were used to collect both qualitative and quantitative data. Using open questions first in a questionnaire, followed by closed rating scale questions, is a recommended strategy in studies that examine the opinion of respondents (Brace, 2008; Reja, Manfreda, Hlebec, & Vehovar, 2003). The convergent parallel design enabled this study to (a) examine the importance of the SPLISS pillars and sub-dimensions in tennis, (b) identify the extent to which the answers to the open questions overlap and reflect the SPLISS policies, and (c) explore if any new aspects, policies or tennis specific factors would emerge.

The first section of the questionnaire comprised three open questions. Specifically, tennis experts were asked to describe the five most important policy factors that contribute to international tennis success of countries in general (not the country they represented). Then the experts were asked to describe three strengths and three weaknesses of the policies in the country they represented. The open questions were used to (a) allow in-depth opinions on what the participants perceived to be important policies for tennis success and (b) explore additional factors that contribute or hinder international success by asking for strengths and weaknesses of the experts’ countries. These questions allowed the experts to express their opinion without being influenced by a priori defined SPLISS pillars and sub-dimensions.

In the second section of the questionnaire, the tennis experts were asked to rate on a 5-point Likert scale the importance of (a) the nine SPLISS pillars and (b) the 31 SPLISS sub-dimensions for international tennis success. For these questions, the pillars and sub-dimensions of the SPLISS model were tailored to reflect the tennis specific context. For example, pillar 3 ‘sport participation’ was converted into ‘tennis participation’. In the remainder of this paper, single quotation marks are used to indicate SPLISS sub-dimensions (e.g., ‘high general tennis participation rate”).

4.6.3 Data Analysis

The qualitative and quantitative data sets were analysed separately and independently from each other using qualitative and quantitative analytic procedures (Creswell & Plano Clark, 2011). Within the qualitative data set, the three open questions were analysed independently in order to keep a clear distinction between factors that were mentioned as important and factors mentioned as strengths or weaknesses. Also, analysing answers separately allowed counting frequencies for each factor mentioned in each of the questions. Using NVivo10, the data from the three open
questions were organised through paragraph styles and nodes for each of the three open
questions for the independent analysis. Using NVivo10, three types of analyses were
performed to assist with inductive and deductive reasoning (Grbich, 2013). These were
(a) thematic analysis to code the responses under major themes, (b) constant
comparisons to develop more specific sub-themes, and (c) content analysis to identify
the percentage of experts that referred to each of the elite sport policies.

First, data were read and re-read in order to become familiar with what they
entailed, concentrating on emerging patterns. During thematic analysis data were coded
under the nine SPLISS a-priori policies in a deductive reasoning process. When a new
factor or policy area emerged a new code was assigned and a description of what the
new code meant was added (inductive reasoning). Subsequently, all quotations that
were coded within each policy area or theme were re-read and through constantly
comparing the quotations, data were coded under more specific 1st and 2nd level sub-
themes until no further coding was possible (inductive reasoning). During content
analysis, NVivo10 assisted in counting how many experts mentioned each theme and
sub-theme as an important factor, a strength or a weakness. This process resulted in 11
themes, 44 1st level sub-themes and 51 2nd level sub-themes. The 11 themes are
presented in italics in order to identify them easily.

The quantitative data from the Likert scale questions were analysed using rating
averages (r.a.) ranging between one (not important) and five (very important). The
standard deviation was calculated as an indication of the spread of the importance of the
SPLISS pillars and sub-dimensions in tennis. Additionally, the standard error was
calculated to examine whether rating averages were higher than the point of indifference
(i.e., 3) with 95% confidence. Last, the two sets of results were compared and combined
into an overall discussion of the factors that influence tennis success (Creswell & Plano
Clark, 2011).

4.7 Results

The results section starts with reporting the findings on the importance of the
SPLISS pillars in tennis based on the thematic coding and content analysis of the open
questions and the rating averages of the SPLISS pillars of the Likert scale questions.
Then, the importance of the SPLISS sub-dimensions is presented based on the results of
the Likert scale questions. This is followed by a discussion of the importance of each
policy area and its sub-themes. Last, findings with regard to the contextual factors including culture and commercial environment are discussed.

4.7.1 Important Policy Areas in Tennis

Thematic coding and constant comparisons of data from the open resulted in 11 themes including nine policy related themes and two contextual themes. The nine policy related themes are the a priori concepts of the SPLISS model including (1) financial support, (2) structure and organisation, (3) tennis participation, (4) talent identification and talent development, (5) athletic and post-career support, (6) training facilities, (7) coaching provision and coaches’ education, (8) competition, and (9) scientific research. The new tennis specific contextual themes that emerged are (10) culture and (11) commercial environment of tennis.

Table 5 shows the results of the content analysis from the open questions and compares them with the rating averages for each pillar. Coaching provision and development was according to both sets of data analyses the most important policy area for tennis success, mentioned by 29 (82.9%) tennis experts with a rating average of 4.83 (in bold in Table 5). This was followed by (inter)national competition, mentioned by 24 experts (68.6%) with a rating average of 4.79 (in bold in Table 5). The low standard deviations (0.38 and 0.51 respectively) indicate a small variance in the tennis experts’ responses. On the other hand, scientific research and athletic and post-career support were ranked in both data sets as the least important for tennis success (in italics in Table 5). Scientific research was mentioned by 14.3% with a rating average of 4.17 and athletic and post-career support was mentioned by 8.6% with a rating average of 4.14. The standard deviation for these pillars was 0.83 and 0.77 respectively, indicating that the answers of the experts were dispersed along the importance scale. Within pillar 5, 8.6% of the experts referred to athletic career support and there was no reference to post-career support. The rating average of the SPLISS pillars based on the Likert scale questions (Table 5) revealed that all rating averages of the SPLISS pillars are greater than four. This indicates that all pillars are important for tennis success. Even though the sample size of this study is relatively small (n = 35), standard errors are low (ranging from 0.08 to 0.17) indicating that representativeness of the sample is high.

With regard to the contextual themes, 60% of the experts referred to culture and 25.7% referred to the commercial environment of tennis (Table 5). Within the latter
theme, 14.3% of the experts referred to the private sector, 8.6% referred to the media and 5.7% referred to sponsors as important factors for international tennis success.

Table 5 Ranking of importance of the SPLISS pillars based on Likert scale questions (rating average, standard deviation and standard error) and open questions (content analysis)

<table>
<thead>
<tr>
<th>Type</th>
<th>Pillar/Theme</th>
<th>Open questions</th>
<th>Likert scale questions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Content analysis (c.a.)</td>
<td>Ranking based on c.a.</td>
</tr>
<tr>
<td>SPLISS pillars</td>
<td>Pillar 1: Financial support</td>
<td>42.9%</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Pillar 2: Structure and organisation of tennis policies</td>
<td>48.6%</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Pillar 3: Tennis Participation</td>
<td>51.4%</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Pillar 4: Talent identification and development system</td>
<td>60.0%</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>• Talent identification</td>
<td>5.7%</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>• Talent development</td>
<td>54.3%</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Pillar 5: Athletic and post-career support</td>
<td>8.6%</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>• Athletic career support</td>
<td>8.6%</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>• Post-career support</td>
<td>0%</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Pillar 6: Training facilities</td>
<td>45.7%</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Pillar 7: Coaching provision and coach development</td>
<td>82.9%</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>• Coaching provision</td>
<td>51.4%</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>• Coach development</td>
<td>51.4%</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Pillar 8: (Inter) national competition</td>
<td>68.6%</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Pillar 9: Scientific research</td>
<td>14.3%</td>
<td>8</td>
</tr>
</tbody>
</table>

4.7.2 SPLISS Sub-dimensions and Sub-themes in Tennis

After rating the importance of the SPLISS pillars in tennis, the experts rated the importance of the 31 pre-defined SPLISS sub-dimensions. These data added some additional depth to the nine pillars. In particular, the analysis showed that the rating averages of all sub-dimensions exceed the midpoint on the 5-point Likert scale (i.e., 3). Moreover, 25 of 31 sub-dimensions have an average rating higher than four (Figure 3).
Figure 3 Rating average on the importance of 31 SPLISS sub-dimensions according to tennis experts (n = 35).

Note: The error bars indicate the standard deviation.
Consistent with the analysis of the rating averages of the SPLISS pillars, the most important sub-dimensions related to coaching (pillar 7) and competitions (pillar 8). The high rating averages provide support that all SPLISS pillars and sub-dimensions are important in tennis. The rating averages of all sub-dimensions were more than two standard errors higher than the scale midpoint (i.e., 3) which indicates with 95% confidence that the importance of the sub-dimensions is real and not by chance.

In order to present the results on tennis specific sport policy factors, the remainder of this section details the 1st and 2nd level sub-themes that emerged from the thematic analysis and constant comparison of the open questions. Table 6 is an overview of the nine policy themes and their 1st and 2nd level sub-themes. It shows that with regard to the financial support NTAs are responsible for attracting funding from governments, sponsors and tournaments to invest it toward mass participation and elite sport.

An interesting finding with regard to the structure and organisation of the NTA was that the experts’ opinion on the suitability of a centralised or decentralised approach to elite development was polarised. Three experts indicated that decentralisation (i.e., strong regional training centres) is a policy strength, while four experts commented that the decentralisation of the NTA is a weakness.

Table 6 Overview table of policy themes and sub-themes of factors that influence international tennis success

<table>
<thead>
<tr>
<th>Theme</th>
<th>1st level sub-themes</th>
<th>2nd level sub-themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial support</td>
<td>Budget of the NTA</td>
<td>Having an international tournament with income for the NTA</td>
</tr>
<tr>
<td>(15, 8, 6)</td>
<td>Government support</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Budget for elite sport</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Budget for mass participation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Budget of private programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Budget from sponsors</td>
<td></td>
</tr>
<tr>
<td>Structure and organisation</td>
<td>Organisation of the NTA</td>
<td>Cooperation with regions</td>
</tr>
<tr>
<td>(17, 17, 10)</td>
<td>Structure of the NTA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HRM People management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Administration/bureaucracy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consistency/alignment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Decentralised organisation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Integration</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strategy/Planning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Governance</td>
<td></td>
</tr>
<tr>
<td>Tennis participation</td>
<td>Accessibility of tennis</td>
<td>Low Cost of tennis</td>
</tr>
<tr>
<td>(18, 8, 10)</td>
<td>Good tennis clubs implementing grassroots programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High number of players</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tennis promotion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Grassroots program</td>
<td></td>
</tr>
<tr>
<td>Talent identification and development (21, 14, 5)</td>
<td>Talent identification</td>
<td>Talent development</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Athletic and post-career support (3, 0, 5)</th>
<th>Athletic support</th>
<th>Training and coaching support</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Training and coaching support</td>
<td>Too much assistance for players</td>
</tr>
<tr>
<td></td>
<td>Financial support</td>
<td>Assistance for players in international competitions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bad influence from former elite players</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not enough input former players</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coaching provision and education (29, 20, 9)</th>
<th>Coaching provision</th>
<th>Good quality skilled coaches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Certified coaches</td>
<td>- Pool of elite coaches</td>
</tr>
<tr>
<td></td>
<td>- Specialists/coaches for talented players</td>
<td>- Number of coaches</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Former elite players as coaches</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Relationship between coaches</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Lack of support for local/regional coaches</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coaches education</th>
<th>Clear coach philosophy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clear pathway</td>
</tr>
<tr>
<td></td>
<td>Communication with coaches</td>
</tr>
<tr>
<td></td>
<td>Coaches workshops</td>
</tr>
<tr>
<td></td>
<td>Lack of strong certification</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Competition (24, 16, 6)</th>
<th>Competition structure in own country</th>
<th>National competition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Competition and tournaments at all levels</td>
<td>- Competition and tournaments at all levels</td>
</tr>
<tr>
<td></td>
<td>Senior competition</td>
<td>- Senior competition</td>
</tr>
<tr>
<td></td>
<td>Junior competition</td>
<td>- Junior competition</td>
</tr>
<tr>
<td></td>
<td>Quality competition</td>
<td>- Quality competition</td>
</tr>
<tr>
<td></td>
<td>Quantity competition</td>
<td>- Quantity competition</td>
</tr>
<tr>
<td></td>
<td>Team competitions</td>
<td>- Team competitions</td>
</tr>
<tr>
<td></td>
<td>International competition</td>
<td>- International competition</td>
</tr>
<tr>
<td></td>
<td>Organisation international competition</td>
<td>- Organisation international competition</td>
</tr>
<tr>
<td></td>
<td>Quantity tournaments</td>
<td>- Quantity tournaments</td>
</tr>
<tr>
<td></td>
<td>Quality tournaments</td>
<td>- Quality tournaments</td>
</tr>
<tr>
<td></td>
<td>Junior competition</td>
<td>- Junior competition</td>
</tr>
<tr>
<td></td>
<td>Senior competition</td>
<td>- Senior competition</td>
</tr>
<tr>
<td></td>
<td>Competitions on all surfaces</td>
<td>- Competitions on all surfaces</td>
</tr>
<tr>
<td></td>
<td>Access to competition</td>
<td>- Access to competition</td>
</tr>
<tr>
<td></td>
<td>Competitive environment</td>
<td>- Competitive environment</td>
</tr>
</tbody>
</table>

| Participation at international competitions | Send best players to international competitions |
Training facilities
(16, 4, 6)
- Availability (number of courts/facilities)
- Access to facilities
- A national training centre owned by NTA
- Developed tennis academies
- Low cost of training facilities
- Availability of different surfaces
- Funds for renovation and building of facilities

Scientific research
(5, 4, 1)
- Know how
- Player development criteria backed by research
- Exchange with the rest of the world

The numbers in brackets in the first column indicate the number of experts who referred to this for each question; the first number refers to important factors (Q1), the second and third refer respectively to a strength (Q2) or weakness (Q3).

The NTAs play an important role in the provision of pathways from mass participation to talent identification, talent development and the elite career of tennis players. In relation to tennis participation, NTAs are responsible for the development of a grassroots program, the promotion of tennis, tennis at school programs and the assurance of the quality of tennis clubs. Local tennis clubs are responsible for delivering quality programs and offering opportunities to play tennis at a low cost to increase the accessibility of tennis. Only two experts referred to the identification of talented players. In relation to talent development, the experts expressed the view that it is important to have, what Specialist 1 notes best, “collective training environments in which the best athletes train and push one another towards success” and “a school system which allows players to practice a lot with courses and exams adapted” (CEM 3).

Athletic and post-career support was the least frequently discussed policy in the open questions (Table 5). Athletic career support is concerned with the support for tennis players including training and coaching support, financial support and support at international competitions (Table 6). With regard to post-career support, a point for discussion among tennis experts related to the loss of expertise and experience of former elite players once they retired. HPD 5, for instance, mentioned that the small input of retired professional players to tennis was a weakness. Other experts indicated that former elite players may sometimes have a negative influence on the development of talented players. For example, HPD 1 found that “the influence of former players with a media profile that do not have the empirical evidence or developmental coaching experience” is a weakness.

Coaching and competitions appeared to be most important supporting policies for elite tennis success. Table 6 reveals that the availability of good quality and skilled
coaches is very important. The experts referred to the importance of “top players becoming elite coaches after they finished their career” (Specialist 16), “the relationship between coaches” (CEM 8) and “support for local and regional coaches” (Specialist 11). In relation to coaches’ education, experts saw value in “a clearly defined coaching philosophy” (Specialist 12) and “a coach development pathway” (Specialist 2).

With regard to competition, all three SPLISS sub-dimensions were in the top five of the highest rating averages (Figure 3). A good structure for both junior and senior competitions at national and international level is very important (Table 6), so that young talent and established players can compete regularly at an appropriate level. Furthermore, experts emphasised the importance of competitions played on different surfaces and the need for countries to organise international competitions in their country because it gives local players the opportunity to participate without having “to spend too much money to travel” (Specialist 15).

In relation to training facilities the experts referred to the availability and access to tennis courts. Also, experts indicated that NTAs should own a national training centre that serves as a collective training environment for young players. Finally, the experts referred to the importance of sharing the results of scientific research with the tennis community for better outcomes.

4.7.3 Contextual Factors that Influence International Tennis Success

Even though the experts were asked to mention policy factors in the open questions, more than half of the experts mentioned factors that are neither sport policies nor that can be fully controlled by sport policies. These emerging factors are related to the culture and the commercial environment of tennis (Table 7). As these factors are not included in the SPLISS model, they are discussed separately in this section.

Sixty percent of the experts referred to culturally related factors that influence tennis success. Tennis culture was the most important 1st level sub-theme and included the performances of elite players, the existence of tennis role models, the history of success in tennis and the cultural importance of tennis compared to other sports. For example, one expert highlighted the following:

[It is important] to have top players on the men's and the women's side that are capable of winning Grand Slam singles titles, Olympic gold medals and to have our tennis teams capable of winning the Davis Cup and the Fed Cup.
It is of paramount importance to have positive role models for the young players to look up to and emulate. (Specialist 12)

Table 7 Overview table of contextual themes and sub-themes that influence international tennis success

<table>
<thead>
<tr>
<th>Theme</th>
<th>1st level sub-theme</th>
<th>2nd level sub-theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culture</td>
<td>Tennis culture</td>
<td>Performance of elite players</td>
</tr>
<tr>
<td>(21, 9, 14)</td>
<td></td>
<td>Role models</td>
</tr>
<tr>
<td></td>
<td></td>
<td>History of success</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Importance of tennis in a country</td>
</tr>
<tr>
<td>Overall sporting culture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School culture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial environment</td>
<td>Private sector</td>
<td>Developed private academies and clubs</td>
</tr>
<tr>
<td>(9, 4, 7)</td>
<td></td>
<td>Avoiding too much commercial activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>clubs</td>
</tr>
<tr>
<td></td>
<td>Media</td>
<td>Communication with media</td>
</tr>
<tr>
<td>Media</td>
<td></td>
<td>Exposure in media</td>
</tr>
<tr>
<td></td>
<td>Sponsors</td>
<td>Communication-connection with sponsors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sufficient sponsors</td>
</tr>
</tbody>
</table>

The numbers in brackets in column 1 indicate the number of experts who referred to this for each question; the first number refers to important factors (Q1), the second and third refer respectively to a strength (Q2) or weakness (Q3)

Additionally, the overall sporting culture and the school culture emerged as important 1st level sub-themes. With regard to the school culture, the experts referred to the limited time available for athletes to train during and after school hours and the lack of flexibility in the curriculum. A highly demanding school curriculum appeared to hinder the development of talented players in some countries. For example, CEM 3 mentioned that “the school system is not adapted to permit the players to practice as much as they should” and Specialist 3 indicated that “our school system is too demanding for talented players”.

Nine experts (25.7%) referred to the commercial environment of tennis, the second new theme that influences international tennis success. This relates to the 1st level sub-themes private sector, media and sponsors. The private sector is concerned with the availability of high quality tennis clubs and their support programs for talented athletes (Table 7). This includes for example, “powerful tennis academies” (CEM 7), “tennis clubs running competitive junior programs and supporting competitive juniors” (Specialist 4) and “real tennis managers in the clubs” (HPD 7). Specialist 16 explains his view on the centralised or decentralised systems as follows:
[It is important to have] decentralised systems. Many high performance tennis academies and training centres run on a private basis throughout the country, not just one nationally ran program. [A centralised approach is] too narrow and cuts too many potential players out of the picture. Decentralised system adds a competitive atmosphere.

Based on the experts’ opinion, a good cooperation and communication between high performance academies and their NTA, and between clubs and NTA coaches is required to optimally support talented tennis players. For example, Specialist 3 mentioned the importance of “optimal collaboration between national training centres and private tennis projects for talents and elite players” and Specialist 2 stressed the need for “a clear and transparent pathway which offers athletes support across the entire developmental pathway with buy in from the private coach”. It should be noted that two experts also indicated negative points that related to the over-commercialisation of private high performance academies. For example, CEM 6 noted that “tennis schools are often favouring commercial elements above the quality of their development plans” and HPD 3 mentioned that “tennis clubs develop too much commercial activity to the detriment of the sporting activity of competition”. However, Specialist 3 mentioned that “the budget of the private programs” should supplement the budget of the government and the NTA.

With regard to the 1st level sub-themes of media and sponsors, experts referred to communication with the media, tennis exposure and promotion in the media. Some experts indicated that “a lack of media interest” (Specialist 13) and “a lack of promotion in the media” (CEM 10) are weaknesses in their country. Last, specialist 15 highlighted the importance of “a healthy federation from a financial point of view with excellent connections with sponsors and great communications with the media”.

4.8 Discussion

This study examined elite sport policies and other factors that influence international tennis success. The results provide support that the SPLISS model is applicable in tennis. However, based on the two grounds underlined below, the SPLISS model needs to be adapted in order to reflect the tennis specific context and therein lay the theoretical contributions of this study. The first ground for the adaptation of the SPLISS model relates to the emergence of two new contextual themes, culture and
commercial environment. The second ground for modifying the SPLISS model is based on the relative importance that the tennis experts placed on specific policy areas of the SPLISS model in tennis. For example, competitions attracted high importance whereas post-career support emerged as relatively unimportant.

In addition to the encouraging findings towards a more inclusive empirical framework for analysing the factors that influence international success in tennis, this study also helps draw several practical implications for high performance directors and policy makers. These implications resonate deeply within the theoretical contributions of the study. The discussion section is built around the two grounds for adapting the SPLISS model to reflect the tennis specific context and offering practical implications to sport policy makers.

4.8.1 The Emergence of Culture and the Commercial Environment

Culture and commercial environment emerged as new themes that are specific to tennis. Cultural factors include the school culture, the general sporting culture and the tennis specific culture. The latter refers to the history of success in tennis, the performance of elite players and the existence of tennis role models. The commercial environment includes the role of media, sponsors and the private sector. The role that media and sponsors can play for international tennis success is also confirmed in Andersen and Ronglan’s (2012) and Wijk’s (2012) findings who concluded that the exposure and promotion of tennis in the mass media and the existence of role models induced a wave of success in Swedish tennis in the 1980s. The example of Swedish tennis illustrates how the promotion and exposure of tennis in the media is closely linked to the popularity of tennis (i.e., tennis culture).

Also, with regard to the commercial environment, the findings showed that the private sector plays an important role in the development of elite athletes. However, it is quite possible that the private sector emerged as important because some of the tennis experts were (or may have been) active in the private sector during their careers. The results showed that the private sector in tennis offers highly professionalised training centres and high performance academies that are privately funded and offer complete athlete pathways from talent identification to elite level. There are many examples of successful tennis players that reached the ATP and WTA top 100 with no or little support from their NTA, including Rafael Nadal and David Ferrer. Examples of
pathways outside the NTA that tennis players follow to become successful include training in high performance tennis academies, participating in American college tennis, having a parent serving as a coach, or private coaching through family funding (MacCurdy, 2008). Sometimes, players have individual coaching at little cost in return for a contract based on percentage of future earnings or players are offered private sponsorship or contracts by management or equipment companies (MacCurdy, 2008; Wijk, 2012).

The role of culture to sporting success is supported by two previous sport specific studies including a study on sport policies that lead to the success of canoe and kayak (Sotiriadou et al., 2013) and a study on the key resources for a competitive advantage in athletics (Truyens et al., 2013). The results in the present study support such findings and reiterate that the ways elite sport policies are shaped and implemented vary in order to reflect sport-specific cultures. The importance of the commercial environment to tennis success emerged due to the highly commercialised nature of tennis and its wide popularity as a sport (ATP, 2013a; Churchill, 2008). A large portion of NTAs’ income emanates from sponsorships and tournament revenues (e.g., Tennis Australia’s income that is derived from organising and hosting the Australian Open). Therefore, NTAs might be less dependent on government funding than sports such as athletics, judo or swimming that are not as commercialised. Additionally, the tennis landscape has changed over the past 20 years. Private high performance academies exist in various countries (e.g., Spain, France, USA and Germany) and many elite tennis players use them as their training base (Brown, 2013; Idessane, 2011; Klemash, 2010). Therefore, this study supports that NTAs are not the sole organisations responsible for the development of elite tennis players, and that private high performance academies also play an essential role in the athlete development process. Consequently, it can be suggested that the importance of the private sector to elite athlete success may be similarly pivotal in sports like soccer and cycling where professional and commercial clubs (e.g., FC Barcelona in soccer and Cofidis in cycling) develop elite athletes.

Even though De Bosscher et al. (2006) excluded environmental factors (e.g., tradition of sport and success, the private sector, media and sponsors) from the SPLISS model as they cannot be influenced directly by sports policies, this study maintains that the culture and commercial environment should be considered when sport policy makers and managers examine factors that influence international tennis success. Taking
into account that culture is a driver for sporting success, “it would be reasonable to nurture and strengthen it” (Sotiriadou et al., 2013, p. 17). Moreover, available strategic and high performance plans for tennis (e.g., Tennis Canada, 2013; Tennis New Zealand, 2011) make no reference to the culture or the commercial environment on player development and success. The study findings suggest that high performance directors and policy makers can no longer overlook these factors when planning or implementing elite sport policy and strategies in tennis.

NTAs, in collaboration with schools, can offer an integrated approach to achieve a balanced sporting career and quality education to further advance the culture of tennis (i.e., the demanding school culture). Therefore, the occasional agreements between sports and tertiary education institutions on class attendance flexibility and assessment benefits (e.g., De Knop et al., 1999; Nestel, 1992) should also prevail at primary and secondary schools. Further to this, in their efforts to promote the culture of tennis, NTAs can work closely with media outlets to broadcast tennis more on TV, increase newspaper obituaries on tennis, place tennis role models on the spotlight, and promote tennis programs at grassroots level.

Partnerships between public and private sectors are a prevalent practice (Bovaird, 2004) in various domains, such as public health (e.g., Reich, 2000). However, this concept is more contested in sports with an opportunity for NTAs to formulate policies that would enhance the contribution of the private sector and the commercial environment to tennis success. A stronger cooperation between NTAs and private high performance academies would offer flexible pathways for players to receive NTA support (e.g., trainings camps, competition support) and concurrently train in a private academy with a private coach. These flexible pathways would offer more players the opportunity to develop and succeed.

4.8.2 Post-career Support in Tennis

Even though all SPLISS pillars were recognised as important for international tennis success, the findings illustrate that the tennis experts value the role of some pillars more than others. The thematic analysis indicated that some of the SPLISS pillars were mentioned less frequently by the experts. Athletic and post-career support, for instance, was mentioned by only eight experts. This finding challenges the wide acceptance of post-career support that is advocated in various studies (e.g., Young,
Pearce, Kane & Pain, 2006; Stambulova, Stephan, & Jäphag, 2007; Wylleman, Allermann, & Lavallee, 2004). However, this result can be explained on the basis that successful tennis players often earn more money through endorsement deals and sponsorships than they earn with prize money (Churchill, 2008). Such players can become financially independent and choose their own support team. Hence, the need for athletic and post-career support may be less prominent in tennis than in less commercialised sports such as judo or gymnastics (e.g., Wylleman et al., 2004). Another explanation for the low importance of post-career support could be that tennis experts are focused more on the success that athletes can achieve during their career and less on athletes’ lives beyond their careers. Based on Martinkova and Parry (2011), it is common for some sports to be driven by extrinsic goals and for athletes to be used as instruments to achieve various values such as money, fame and success. The commercialisation of sport has led to the increasing commodification of athletes (Green & Houlihan, 2008). Indeed, Connor (2009) argued that in commercialised environments elite athletes become interchangeable, are treated as business inputs and are exploited by high performance directors and coaches. In such business-like environments, it is likely that when athletes are injured or retire coaches and performance directors shift their support and focus to the next possible future elite athlete.

In a study on the retirement of 28 Australian female top 800 tennis players, Young et al. (2006) found that players would have benefited from the provision of a mentor, guidance or a sport psychologist, especially for lower ranked players who are not supported by the NTA. Research has shown that in order to give the best of their performance and to avoid and reduce adjustment problems after their sports career, athletes must start preparing during their sports career for life after sports (Stambulova et al., 2007; Wylleman et al., 2004). Therefore, post-career support could be a policy area that can be improved in many NTAs, or at the overall (national) sports level. Improved post-career support, such as the provision of a mentor or guidance by a sport psychologist (Young et al., 2006), will also decrease drop-out rates of talented tennis players, as their fear for a black hole after their tennis career will be less significant.

4.8.3 Coaching and Competitions in Tennis

The findings in this study show that the two most important policy areas for international tennis success are coaches’ provision and education and (inter)national
competition. While the SPLISS study has not yet validated the relative importance of the pillars, a small scale study in Flanders at sport generic level reported financial support, trainings facilities and coaches’ education as the three most important policy areas. Competition, the second most important policy area in tennis, was placed sixth of the nine pillars (De Bosscher & De Croock, 2012). However, the findings in this study support the key role of competition on tennis success which is reflective of previous research that showed that a nation’s provision of domestic, professional tournaments relates positively to that nation’s number of professionally ranked players (Crespo, Reid, Miley, & Atienza, 2003; Reid, Crespo, Santilli, Miley, & Dimmock, 2007).

Competitions and coach education deserve to be prioritised in tennis elite development plans as they appeared the most important policy areas in tennis. It is also advised that NTAs provide coaches with a clear development pathway, a clear coaching philosophy, and clear communication channels between them and the NTAs. In addition, a strong certification system and opportunities for coaches to attend national and international coaching workshops would result in high calibre and well-respected coaches with strong core competencies. These recommendations are consistent with the requirements placed by the ITF for the recognition of NTAs coach education systems (Crespo & van de Braam, 2011; ITF, 2014b). Additionally, it is recommended that NTAs concentrate on attracting and hosting high quality international competitions within their countries. These competitions would provide upcoming players exposure without expecting them to travel in their search for ranking points (Crespo et al., 2003; Reid et al., 2007).

4.9 Conclusion

This study provides an overview of the policy areas and contextual factors that influence international tennis success. Even though the SPLISS model served as a suitable framework to examine policies at tennis specific level, the culture of tennis and its commercial environment need to be taken into consideration when examining factors that influence international tennis success. Additionally, a tennis specific model has to take into account that coaching and competition are more important policy areas in tennis than post-career support and scientific research. The findings in this study confirm that the way elite sports policies are shaped and implemented vary in order to reflect sport specific needs (Sotiriadou et al., 2013; Truyens et al., 2013).
The tennis experts who participated in this study engage in a commercialised and professionalised high performance tennis system that constructs a particular set of presuppositions, beliefs and values. Therefore, it is likely that the sample of tennis experts might have influenced the findings of this study. From a social constructionist perspective, it is accepted that the environment within which people live and the past experiences they engender drive the construction of their reality and the choices they make (Hutchison & Charlesworth, 2011). Hence, it is not surprising that tennis experts rated the SPLISS policies as important. Also, the experts’ entrenched frame of reference could help interpret their relative lack of support for post-career support and the importance they placed on the role of culture and commercial environment. Last, the high importance of coaching provision and education could be related to the fact that 10 of the participating tennis experts were coach education managers and 17 other experts were recruited from a coaches’ conference.

Even though the focus of this study was on policy factors, this study is among the first to highlight the importance of the private sector including private high performance tennis academies and their budgets, coaches, facilities and programs to develop elite tennis players. Therefore, the examination of the tennis policies of the NTA to explain tennis success may be insufficient without the inclusion of the private sector. Given that SPLISS is built on the premise that government funding and policies drive elite sport (De Bosscher, van Bottenburg, Shibli, & De Knop, 2013), the emergence of the private sector in tennis draws attention to a potential weakness of the SPLISS study. The influence of the culture, media, sponsors and private sector on athlete development in tennis suggests that tennis operates in an open system where the sport maintains its internal differentiation and resists uniformity and homogeneity (Green & Oakley, 2001; Houlihan & Green, 2008; Pondy & Mitroff, 1979). It is therefore recommended that future research builds on the preliminary findings of this study and adopts an open systems perspective which suggests that “organisations are open systems in that they influence and are influenced by the social, cultural, and economic conditions of the community in which they operate” (Chelladurai, 2009, pp. 73-74). Such research should expand beyond the policies of the NTAs and examine the contribution of all the potential actors (including private high performance academies) to elite tennis success. The proposed research would require the inclusion of performance directors and elite coaches of private tennis academies to examine their
views on the ways the private sector contributes to elite tennis success. Also, further research is necessary to (a) examine the exact role that culture and commercial environment play in elite tennis success and (b) explore how NTAs can enhance the culture and enhance the role of the commercial environment to increase international tennis success.
4.10 References


Chapter 5  Study 2 Stakeholders and Elite Development Pathways

An examination of the stakeholders and elite player development pathways in tennis

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5.1 Statement of Contribution to Co-Authored Published Paper

This chapter includes a co-authored paper. The bibliographic details of the co-authored paper, including all authors, are:


My contribution to the paper involved:

Jessie Brouwers designed the interview guide and conducted the interviews. Popi Sotiriadou and Veerle De Bosscher provided advice on the design of the interview guide. Jessie transcribed the interviews. Jessie coded and analysed all interview transcripts in NVivo. Popi co-coded and analysed the data. Jessie and Popi had several meetings to compare their data analysis and discuss the results.

Jessie led the drafting of the manuscript, the submission process, the revisions of the manuscript and the response to the reviewers. Both Popi and Veerle provided feedback on the manuscript and contributed to and/or have approved the final manuscript.

(Countersigned)
04.09.2015
Veerle De Bosscher
Co-author and external supervisor
5.2 Abstract

Research question: The research questions that guided this investigation were (1) ‘What are the roles of sport development stakeholders in elite player development pathways?’ and (2) ‘How are those elite pathways modelled in tennis?’

Research methods: Data from 18 semi-structured in-depth interviews with international tennis experts were thematically analysed to explore stakeholder involvement and how their interactions and strategies shape elite tennis pathways.

Results and findings: The results show that during the attraction/retention process of elite sport development national tennis associations (NTAs) are responsible for initiating programmes that local clubs and coaches deliver. During the talent identification and selection process NTAs, clubs and coaches cooperate to identify talent. Throughout the talent development process, tennis players progress from clubs to NTA training centres or private academies. Last, during the nurturing process, NTAs support players in the transition from junior to senior level and once players are self-sufficient, the NTA support decreases.

Implications: These findings offer empirical evidence on the roles of stakeholders and their support to players in shaping development pathways in tennis. The shift in stakeholder dynamics and variation in their roles and relationships suggests that stakeholders can have different levels of involvement depending on the developmental process. These results help draw meaningful practical implications. For instance, the heightened role of local clubs during most of the sport development processes points towards the need to revisit the level of support clubs receive and their capacity to deliver optimal developmental pathways.

Keywords: Elite sport development, pathways, sport clubs, national sporting organisations, sport development stakeholders
5.3 Introduction

Many national sporting organisations (NSOs), or else sports federations or national sports governing bodies, are largely financially dependent on government funding (Berrett & Slack, 2001; Green & Houlihan, 2006; Winand, Riboux, Robinson, & Zintz, 2013). Government funding to NSOs is often performance based (Sam, 2012; Sotiriadou, Quick, & Shilbury, 2006) and driven by athlete results at the Olympic Games or other international and world sporting competitions (e.g., De Bosscher, Shibli, Westerbeek, & van Bottenburg, 2015; Green & Houlihan, 2006; Green & Oakley, 2001). The need to continually deliver success has over the years encouraged NSOs to closely improve their sport development practices and elite pathways and formulate sport development plans and strategies (Sotiriadou, 2013).

As a result, many sports utilise the sport development pyramid (Eady, 1993) or the Long-Term Athlete Development (LTAD) framework (Balyi & Hamilton, 2004) as platforms to design their elite development pathways (e.g., Canadian Sport Institute, 2014; Ford et al., 2011; Lang & Light, 2010). Despite the popularity of these sport development platforms, evidence suggests that the sport development pyramid is a metaphor that does not cover the full sport development processes (Bailey et al., 2010; De Bosscher, Sotiriadou, & van Bottenburg, 2013). Also, the LTAD framework is mainly a coaching tool (Ford et al., 2011) that is based on general principles from the physical training, physiology, and motor learning literature (Holt, 2010). There is a plethora of other athlete development frameworks that highlight various key features or development stages of athlete progress depending on the disciplinary background (e.g., Bloom, 1985; Côté & Fraser-Thomas, 2007; Wylleman & Lavallee, 2004). Most of these frameworks start from an athlete perspective (i.e., micro-level) and identify how factors like training load, motor skill development, specialisation, coach and parent involvement, and academic levels change during the different phases and transitions of athlete development. These frameworks do not offer an insight from an organisational or management perspective (i.e., meso-level) that would explain how sport organisations develop or support the different sport development stages (Sotiriadou & Shilbury, 2009, 2013). Moreover, these frameworks overlook ‘who is involved with sport development, in what ways they are involved, and with what outcomes’ (Sotiriadou & Shilbury, 2013, p. 144). Consequently, there is a gap between athlete development models (i.e., micro-level) and what these models denote in practical terms.
at the organisational level to NSOs, clubs and other stakeholders (i.e., meso-level) (Greyson, Kelly, Peyrebrune, & Furniss, 2010). Moreover, given the complexity of elite sport development pathways, generic talent development frameworks are inadequate to reflect sport specific pathways (Greyson et al., 2010; Sotiriadou, Shilbury, & Quick, 2008).

In response to these gaps, this study examines elite development in tennis and the role of various stakeholders in supporting sport development processes. Specifically, this study used the attraction, retention, transition and nurturing (ARTN) framework (Sotiriadou et al., 2008) to explore the roles that tennis stakeholders play in initiating or delivering programmes and strategies. The ARTN framework was chosen because it offers a managerial and organisational approach (i.e., meso-level) to studying elite athlete development. The two research questions that guided this investigation were: (1) ‘What are the roles of sport development stakeholders in elite player development pathways?’ and (2) ‘How are those elite pathways modelled in tennis?’ The findings extend the application of the ARTN framework in a sport specific setting and add an understanding on the role of stakeholders and their player support in shaping elite development pathways in tennis.

5.4 Sport Development Stakeholders

Sport development stakeholders and the athlete development strategies they initiate or implement enable the athlete’s entrance or introduction to sport, their retention or choice to continue to participate, and their advancement to higher levels of training and competitions (Green, 2005; Sotiriadou, 2013). Sport development stakeholders range from governments and statutory authorities, to sport organisations, and significant others such as athletes, coaches and sponsors (Sotiriadou et al., 2008). Evidence suggests that the role of these stakeholders varies as some of them (e.g., governments, NSOs) initiate or shape sport development strategies, whilst others (e.g., sport development officers, coaches, sport managers) implement them (Sotiriadou, 2009). For example, at the federal government level the sports commission in Australia sets the policy direction and coordinates delivery mechanisms to ensure the achievement of outcomes (Green & Houlihan, 2006). Such national policy- or performance-based directions set NSOs under increasing pressures to develop strategic
elite athlete development programmes and well performing athletes (Berrett & Slack, 2001; Sam, 2012).

At a local level, the role of sports clubs, as a key stakeholder in offering opportunities to participate in sport, is illustrated through the plethora of programmes they offer with modified equipment and competition formats for tennis participation (e.g., Anderson, 2010; Declercq, 2010; Miley, 2010). As young players engage in fun and social activities, certain club coaches or national tennis associations (NTAs) may engage in identifying talented players, as young as six years old, with the potential to become elite players (Pankhurst, 2013). Then, NTAs fund talent development programmes and competitions that facilitate player transition from local to state or national and international competitions and from junior to senior levels (Green, 2005; Sotiriadou et al., 2008).

Even though local clubs and NSOs, among other stakeholders, play a significant role in the development of elite athletes, the commercialisation of high performance sports, has led to the creation of other stakeholders, such as profit-driven event management companies (e.g., Phillips & Newland, 2014) and private academies (e.g., Webb, 2013) that cater for elite athletes. For example, in Australia and the USA triathlon depends on third party organisations (i.e., profit-driven event management companies) for the delivery of events and the development of the sport at the elite level (Newland & Kellett, 2012). Liebenau (2010) noted that in golf, private colleges and independent coaches and academies provide pathways to elite level, independently from the Golf Queensland (i.e., the state sport organisation) development programme. In tennis, the private tennis sector offers highly professionalised and commercialised training centres and high performance academies that provide complete player pathways from talent identification to elite level (Brouwers, Sotiriadou, & De Bosscher, 2015; Webb, 2013). Private tennis academies often strive for profit maximisation and complement (or sometimes undermine) the role of the NTA activities in talent identification and development programmes (Houlihan, 2013).

5.5 Elite Athlete Development Strategies

For sport development stakeholders to successfully deliver elite athlete development outcomes, including success at national and international sporting events, a strategic approach to elite athlete development is necessary (De Bosscher, De Knop,
& van Bottenburg, 2009). Consequently, researchers have focused on identifying the elite development strategies, policies, services or resources that contribute to successful elite athlete development (e.g., Böhlke & Robinson, 2009; De Bosscher, De Knop, van Bottenburg, & Shibli, 2006; De Bosscher, De Knop, van Bottenburg, Shibli, & Bingham, 2009; Digel, Burk, & Fahrner, 2006; Truyens, De Bosscher, Heyndels, & Westerbeek, 2014). Examples of sport development strategies or services that contribute to elite athlete development include development programmes, facilities, coaches, promotions, competitions or events, talent identification, talent development and athlete support. Even though there is consent among sport policy researchers on the factors that should be provided to develop elite athletes, ‘little is known about how sport systems should manage their elite services’ (Böhlke & Robinson, 2009, p. 70) or how stakeholders provide these strategies and services to shape the pathways that develop elite athletes. To assist in their strategic planning and the delivery of elite athlete development, NSOs, including NTAs, develop high performance plans or player development pathways (e.g., Vlaamse Tennis Vereniging, 2009; Tennis Canada, 2013). These include strategies on, for example, the competition structure, high performance pathways, training requirements, financial support programmes, and talent identification.

Even though sport policy researchers have showed that talent identification has become a key component of national elite sport development systems (e.g., De Bosscher et al., 2006; Green & Oakley, 2001), research highlights various issues with talent identification being used as an ex-ante prediction of talent and future success (e.g., Abbott & Collins, 2002; Green, 2005; Vaeyens, Lenoir, Williams, & Philippaerts, 2008). For example, Green (2005) argued that “the limitations of our technologies for long-range forecasting of individual potentials counsel against an elite performance system based solely on early identification and conscription” (p. 236). Moreover, the absence of agreed, measurable, and objective criteria applied during talent identification has resulted in using competition results and the coaches’ ‘eye’ as measures to identify talent in many sports (Brouwers, De Bosscher, & Sotiriadou, 2012; Lyle, 1997). Despite the plethora of studies on talent identification, “traditional talent identification and development models are likely to exclude many, especially late maturing, “talented” children from support programmes and available resources might be invested inappropriately” (Vaeyens et al., 2008, p. 711). Other ongoing disputes on the use of
talent identification to predict elite success include the stimulation of early specialisation (e.g., Wiersma, 2000), the relative age effect (e.g., Baxter-Jones & Helms, 1994), pre-mature deselection of talented children (Abbott & Collins, 2002), and early drop out (e.g., Weiss & Petlichkoff, 1989). There is evidence to suggest that in some sports, like tennis and swimming, only a minority of mature elite athletes have been identified as talented at younger ages (Kalinowski, 1985; Monsaas, 1985). Instead, the athletes progressed gradually to higher stages of involvement and development, and ‘talent’ was a post-hoc attribution for skilled or excellent performance (Bloom, 1985). Burgess and Naughton (2010), Green (2005), and Vaeyens et al. (2008) support this gradual athlete progression instead of a talent identification approach. Nevertheless, most countries with developed sport systems continue to invest in talent identification and view it as a sound national investment (De Bosscher et al., 2015).

5.6 Theoretical Framework: The Attraction, Retention/Transition and Nurturing Process

Sotiriadou et al. (2008) developed the ARTN framework which details three different, yet interrelated sport development processes. These processes are the attraction, retention/transition and nurturing. The framework was the result of a four-year grounded theory study of annual reports and other policy documents of 35 NSOs in Australia. It offers an organisational perspective on ‘who is involved with sport development’, in ‘what ways’, at ‘which developmental level’, and with ‘which outcomes’.

The attraction process aims to increase people’s awareness of sports programmes and the benefits of sport participation, encourage them to join a sport club and play sports. Often this process also aims to nurture large numbers of young participants that have the potential to become elite performers (Sotiriadou & Shilbury, 2013). Retention/transition is the process whereby ‘a range of policies, including development programmes and competitions/events, are implemented to identify talented junior athletes through to the highest levels of sport’ (Sotiriadou & Shilbury, 2013, p. 146). As the definition implies, the retention/transition process is inclusive of talent identification and talent development stages and focuses particularly on helping the most talented junior athletes to obtain the skills required to achieve international success. Talent identification refers to the process of recognising tennis participants that have the potential to become elite players (Unierzyski, 2006). Then, some of these
talented participants may be selected (i.e., talent selection) to participate in specific competitions or training activities (De Bosscher et al., 2015; Unierzyski, 2006). As a result talent identification and selection provide the linkages between mass participation and talent development where athletes become highly committed, train and specialise in a sport (Wylleman & Lavallee, 2004). Although the retention and transition shape the second process of the ARTN framework in Sotiriadou et al. (2008), some studies provided a separate definition of the retention process. These studies refer to retention as the process of maintaining ongoing participation after initial interest. This is achieved through (a) setting up activities with key elements of fun, fitness, healthy lifestyle and socialising (Darcy & Dowse, 2013) and (b) creating quality competitions, events or services such as coaching and development programmes to take participation level and commitment to a higher level (Sotiriadou, Wicker, & Quick, 2014). Subsequently, participants’ motivation, socialisation and commitment to sports will influence their decision to continue their participation (Green, 2005). Last, nurturing is defined as ‘the process whereby development programmes and practices are tailored to the individual athlete, team or sport to achieve best performances on the national and international sporting stage’ (Sotiriadou & Shilbury, 2013, p. 146). During the nurturing process stakeholders coordinate their efforts to tailor their strategies with the aim to achieve success at prestigious international events and competitions, and to sustain a culture of continued success at the highest level.

The three processes of the ARTN framework are analogous to the ones identified by Green (2005) including athlete entrance (they ways in which athletes are first introduced to the sport), retention (the athlete’s choice to continue to participate) and advancement (move towards more advanced levels of training and competitions). Table 8 is an overview of the studies that have applied the ARTN framework and the ways they used it. It shows that the ARTN framework has been used to examine (a) development processes in specific sports, (b) specific development processes (e.g., focus on one of the ARTN processes), (c) specific strategies (e.g., facilities), and (d) sport for specific populations (e.g., indigenous people and people with disabilities).
<table>
<thead>
<tr>
<th>Study</th>
<th>Study title</th>
<th>Processes</th>
<th>Strategies</th>
<th>Stakeholders</th>
<th>Sport</th>
<th>Context</th>
<th>Use of ARTN framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thomson, Darcy and Pearce (2010)</td>
<td>Gamma theory and third-sector sport-development programmes for Aboriginal and Torres Strait Islander youth: Implications for sports management</td>
<td>Three case studies 1: Operates outside ARTN 2: Retention, transition, nurturing process 3: Attraction</td>
<td>Programmes Talent identification and development (case study 2)</td>
<td>Third sector organisations, Aboriginal and Torres Strait Islander youth, communities, NSO, clubs, volunteers</td>
<td>Sport in general + ‘a popular Australian sport’</td>
<td>Aboriginal and Torres Strait Islander youth in Australia</td>
<td>Application of some of the ARTN concepts in cross-cultural context</td>
</tr>
<tr>
<td>Liebenau (2010)</td>
<td>Sport development pathways for amateur golfers: The case study of Queensland</td>
<td>Public and private pathways from grassroots to elite</td>
<td>Coaching Sport psychology Tournaments Facilities Physical conditioning Funding</td>
<td>Parents and family, sponsors, government, sporting organisations</td>
<td>Golf</td>
<td>Queensland</td>
<td>Helped to identify golf development pathways in Australia</td>
</tr>
<tr>
<td>Darcy &amp; Dowse (2013)</td>
<td>In search of a level playing field— the constraints and benefits of sport participation for people with intellectual disability</td>
<td>Attraction, retention</td>
<td>Facilities Programmes Support for participation Staff training</td>
<td>Support people/carers, volunteers, coaches, disability organisations</td>
<td>Not specified</td>
<td>People with intellectual disability. Australia</td>
<td>Extension of the ARTN to people with disability</td>
</tr>
<tr>
<td>Sotiriadou, Wicker and Quick (2014)</td>
<td>Attracting and retaining club members in times of changing societies: The case of cycling in Australia</td>
<td>Attraction, retention</td>
<td>Promotional activities and awareness Events, programmes and incentives</td>
<td>Clubs, members, volunteers, state bodies, sport federations</td>
<td>Cycling</td>
<td>Australia (nation), Queensland (state), clubs (local)</td>
<td>‘examine and test the inherent properties of the SDP framework’ (p. 6)</td>
</tr>
<tr>
<td>Sotiriadou, Wicker and Hill (In Press)</td>
<td>The role of community sport venues and servicescape in attracting and retaining users</td>
<td>Attraction, retention</td>
<td>Facilities Servicescape factors Environmental factors</td>
<td>Community sport venue stakeholders, local council, governments, sport organisations (federal, local, state), public and private schools, coaches, umpires, parents</td>
<td>Basketball</td>
<td>Queensland</td>
<td>‘Based on the ARTN model, a framework is developed that isolates community sport venues as sport development tactic’</td>
</tr>
</tbody>
</table>
Although the studies in Table 8 support the wide pertinence of the ARTN framework in examining stakeholder involvement with sport development and development pathways, the framework presents certain limitations. First, most of the studies in Table 8 report results on the attraction and retention levels, leaving a gap in relation to the application of all the processes at the elite level. Second, the existing applications of the framework (Table 8) explored sport development pathways in Australia, leaving room for the ARTN framework to be tested in wider contexts. A third limitation is that the framework was developed based on the analysis of NSO documents (Shilbury, Deane, & Kellett, 2006) and therefore, lacks direct insights from stakeholders involved in the sport development processes. This study broadens the application of the ARTN framework because it (a) focusses on tennis-specific development processes from the attraction and retention to the nurturing of elite athletes, (b) has an international focus, and (c) uses data from interviews with elite tennis experts.

5.7 Methods

This study used qualitative research methods to explore (a) the pathways for the development of elite tennis players and (b) the roles of stakeholders in initiating and delivering these pathways.

5.7.1 The Participants: International Tennis Experts

For the purposes of this exploratory study, semi-structured in-depth interviews were conducted with international tennis experts. The tennis experts were purposefully selected to include individuals with high levels of expertise on elite sport strategies and development pathways in tennis (Creswell & Plano Clark, 2007). The 35 experts\(^1\) that were invited to participate included high-performance directors (HPDs), coach education managers (CEMs) and other tennis experts (who presented at the bi-annually held Worldwide Coaches Conference of the International Tennis Federation between 2003 and 2011). Experts who showed interest to participate received an explanatory statement by email to inform them about the study and their involvement. Eighteen experts agreed to participate. These represented 10 countries and included five HPDs (de-identified as HPD 1-5), three CEMs (de-identified as CEM 1-3) and 10 other specialists including former HPDs, elite coaches and science managers (de-identified as
Specialist 1-10) (Table 9). In order to protect experts’ anonymity random numbers (e.g., Specialist 7) were allocated.

**Table 9 Overview of interviewed tennis experts**

<table>
<thead>
<tr>
<th>Country</th>
<th>Tennis experts</th>
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<tbody>
<tr>
<td>Australia</td>
<td>1 HPD, 1 CEM and 2 specialists</td>
</tr>
<tr>
<td>Belgium (Flanders)</td>
<td>1 HPD and 1 specialist</td>
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<tr>
<td>Belgium (Wallonia)</td>
<td>1 HPD</td>
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<tr>
<td>Brazil</td>
<td>1 HPD</td>
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<tr>
<td>Czech Republic</td>
<td>1 specialist</td>
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<tr>
<td>France</td>
<td>1 CEM</td>
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<tr>
<td>Germany</td>
<td>2 specialists</td>
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<td>Great Britain</td>
<td>1 specialist</td>
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<td>Spain</td>
<td>1 specialist</td>
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<td>The Netherlands</td>
<td>1 HPD and 1 CEM</td>
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<td>The USA</td>
<td>2 specialists</td>
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<tr>
<td><strong>Total: 10 Countries</strong></td>
<td><strong>5 HPDs, 3 CEMs and 10 specialists</strong></td>
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<tr>
<td><strong>Total: 18 experts</strong></td>
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Due to the widespread locations of the tennis experts, 16 of the interviews were conducted over Skype and two face-to-face. Ethics approval for data collection (RO1163) was obtained from the institution authorising this research. The interviews ranged in length from 30 to 70 minutes and were audio recorded. Recordings were manually transcribed and resulted in a total of 232 pages of double spaced verbatim transcripts.

5.7.2 Data Collection

A semi-structured interview technique was used in order to allow the researchers to probe the interviewees for more detail and seek further information where uncertainty existed (Edwards & Skinner, 2009). Open-ended questions were shaped to acquire detailed data on elite tennis pathways and identify how stakeholders shape these pathways. The interview schedule included questions based on the properties (i.e., stakeholders and strategies) of the ARTN framework. Examples of open questions used during the interviews included: ‘Who is involved with tennis player development?’, ‘What is the role of these stakeholders in tennis player development?’, ‘In what ways is tennis player development achieved (i.e., what strategies or programmes are used for tennis player development)?’, ‘At what developmental level is each of these stakeholders involved?’ and ‘How do they contribute to elite tennis success?’. Probing questions such as ‘Could you please explain that in more detail?’ or ‘What effect does
that have on elite tennis success?’ were used to understand the phenomenon under investigation and seek more detail and clarifications (Hanton, Fletcher, & Coughlan, 2005).

The results section reports on the experts’ views of generic tennis systems and includes data about stakeholders and strategies that shape elite tennis pathways. Country specific data in the results section are used to give examples or support generic findings and do not aim to compare or discuss country specific strategies.

5.7.3 Data Analysis

The interview transcripts were entered into the qualitative data analysis software, NVivo 10, to organise and manage the data (Sotiriadou, Brouwers, & Le, 2014). Both deductive and inductive reasoning guided the data analysis for a more complete understanding of the topic that a researcher is studying (Blackstone, 2012). The interplay between inductive and deductive analysis is common for qualitative data analysis as qualitative analysis is inevitably guided and framed by pre-existing ideas and concepts (Braun & Clarke, 2006; Gibbs & Flick, 2007). Taking the ARNT framework as a starting point, deductive reasoning was used to identify ‘who is involved with tennis development’, in ‘what ways’, at ‘which developmental level’, and with ‘which outcomes’. While deductive analysis was relatively quick and easy, Burnard, Gill, Stewart, Treasure, and Chadwick (2008) suggested that it ‘can potentially bias the whole analysis process as the coding framework has been decided in advance’ (p. 429), which can severely limit theme and theory development. Therefore, thematic analysis as an inductive approach assisted the researchers to look for patterns in the data, working to develop a theoretical framework that could explain those patterns (Blackstone, 2012). The researchers identified codes and themes that emerged from the data and gathered examples from the transcripts to illustrate the key findings. NVivo facilitated the identification of codes because it allows the creation of nodes, which provide storage areas for all text segments related to that node (i.e., open coding) (Bazeley, 2007). When all transcripts were coded, the emerged nodes were reorganised in order to create a node structure or ‘tree branch’ (Hutchison, Johnston, & Breckon, 2010). During this process, the researchers identified (1) sub-nodes within the nodes where a node had more than one characteristics and (2) themes where multiple nodes could be organised into a larger theme (Hutchison et al., 2010). This process was
repeated until no further themes or sub-nodes emerged (Pope, Ziebland, & Mays, 1999). Open coding and organising the nodes to create tree nodes resulted in an initial coding framework (i.e., themes, nodes and their sub-nodes or characteristics) that included all the tennis player development stakeholders and their roles, as well as all the strategies and their characteristics that facilitate elite tennis pathways. The last phase of analysis examined the relationships between nodes and sub-nodes to identify higher order categories (Hutchison et al., 2010). The identified relationships between nodes and sub-nodes resulted in four higher order categories that reflect the ‘tennis specific player development processes’. These are discussed in the next section.

Two of the authors coded and analysed the data separately, followed by meetings to compare and discuss the results (Patton, 1990). If there was discrepancy regarding the coding of the data, the authors assessed the data together to arrive at mutual consensus (Smith, 2007). This process provided confirmation that the data were analysed consistent with the imposed structure of the framework and that the process could be reliably duplicated (Smith, 2007).

5.8 Results

Higher order categories revealed that stakeholders (i.e., NTAs, local clubs, coaches, private academies and third party organisations) are involved within four development processes. These processes are specific to the development of elite tennis players and include (1) attraction and retention, (2) talent identification and selection, (3) talent development, and (4) nurturing. The NTAs, coaches and clubs emerged as the stakeholders that were consistently involved throughout all four development processes. However, their roles manifest differently at each process. Figure 4 shows how the role of these stakeholders varies for each of the four processes.
Figure 4 Stakeholder involvement and elite development pathways in tennis
5.8.1 The Attraction and Retention of Tennis Players

NTAs, clubs and club coaches are the key stakeholders during the attraction and retention of tennis players. Specifically, the NTAs provide programmes and other forms of support to the clubs, and the clubs deliver programmes and events, and provide facilities. The role of the coaches in the attraction and retention process is to ascertain that players have a great first and ongoing experience. The experts noted that local clubs are at the foundation of the attraction and retention of tennis players and implement strategies to facilitate these processes. For instance, Specialist 10 indicated: ‘the local tennis clubs, that is where the actual activity happens’. HPD 1 noted that the responsibility of the clubs is ‘to provide a great first and ongoing experience ... to make sure kids have a tennis experience with their peers. Clubs and coaches need to make sure kids have the same age so that they can socialise’. Clubs organise events or competitions that are adapted to mass participation level for young players and make the sport fun and enjoyable. Specialist 1 noted that these ‘competitions, leaning more towards informal competitions, can be organised by the local club or coach’.

In stressing the role of the clubs, Specialist 8 claimed that tennis facilities at mass participation level ‘are mainly provided by the local tennis clubs and sometimes by municipalities or city halls’. The clubs must ensure that there are sufficient courts that are affordable and accessible all year round. Specialist 1 illustrated the link between facility accessibility (the number of courts), availability and the development of tennis as follows: ‘If you don’t have enough of them [training facilities], or they are not accessible enough, it is very difficult to broaden the base of players and in turn, very difficult to offer enough training opportunities to help players develop’. With regard to the cost or fees of hiring tennis courts, experts repeatedly stressed that the clubs need ‘facilities with affordable prices’ (HPD 1) because ‘access to facilities is very important. Cost, it can’t be too prohibitive to play’ (Specialist 1).

The experts stressed that the NTAs, in cooperation with the clubs, should play a leading and supporting role in the attraction and retention process. HPD 1 summarised the NTA’s supporting role as follows: ‘the federation [NTA] helps resource clubs and they have an indirect impact on it [attraction and retention of tennis players] by providing club recourses, coaching resources and marketing for the sport’. Moreover, the NTAs develop modified tennis programmes for players aged 10 and under that the
clubs deliver. Specialist 9 captured the modified characteristics of programmes with the example of a programme in his country:

Grassroots programmes got to be well organised and structured and the kids have to have fun. Fun needs to be a big part of it and to that end the [NTA] has developed a [name] programme. And it’s been a big initiative the [name] programme to get kids all over the country starting with [the programme], which is the size appropriate courts, rackets, foam balls, graduated deadness of balls, so the ball doesn’t bounce over their head all of the time when they’re little.

Some NTAs offer consultants to the local clubs to help implement and promote programmes. In support of this point, Specialist 9 commented that: ‘The clubs implement the [name] programme but a lot of people are employed by the [NTA] to go around the country promoting [the programme] and teaching people how to apply it’. Additionally, experts suggested that some NTAs support clubs through offering them equipment or guidelines for the delivery of programmes or the organisation of activities. Specialist 5 explained: ‘We [NTA] have a special package. Clubs can get the small racquets, balls, net, lines from the federation. And how you can organise a tournament, a family day in the tennis club, we have all these programmes’. Other examples of NTA support that emerged included financial assistance for the construction or maintenance of tennis courts, and workshops for club coaches. HPD 1 explained how financial support of the NTA plays a role in the attraction and retention of players:

Mass participation is not as expensive as elite sport, because you rely more on the clubs and the club coaches ... But we [NTA] invest heavily in participation because we see a big opportunity to encouraging more kids to play and more coaches to promote their programmes with the community.

Expert 9 summarised the interplay between the NTA and the clubs: ‘The clubs are the ones that implement all the programmes, but the [NTA] provides information, training, support, programming support, a lot of information that the private clubs can implement and use in their programme’.

Experts expressed the view that well-educated and motivated coaches who are qualified to work with children are essential to the attraction and retention of tennis players. For instance, HPD 5 stated: ‘you need coaches who know how to relate and
how to communicate with the younger ones and get the fundamentals right, and know
the different stages of development’. HPD1 referred to coaches as a ‘sales force’ and
indicated that ‘coaches need to run [a] professional and well serviced orientated
business. … The first experience of a kid or young player needs to be a very good one’.
Specialist 1 confirmed that ‘professionalising coaching can help mass participation
because it improves the standard of coaching’.

5.8.2 The Identification and Selection of Talented Tennis Players

During talent identification and selection, the NTA along with the clubs and
coaches, are once again the most critical stakeholders. Specifically, club coaches are at
the base of talent identification at the local level. NTAs organise camps for talent
selection where coaches, from both the clubs and the NTA, identify talented players. A
key finding in relation to talent identification and selection was that it is a complex
process. Specialist 10 indicated: ‘I think, probably it [talent identification] needs to
work from the bottom-up. Talent identification is the most complicated thing in tennis.
And I don’t care what anybody tells you, nobody knows how to do it’. The analysis
revealed the role of stakeholders, including clubs and the club coaches, and the NTA, on
the talent identification and selection process. Specifically, ‘the coaches in the clubs, as
members of the NTA, they identify talent for you [NTA]’ (Specialist 1) because ‘the
federation typically doesn’t have that much reach’ (Specialist 10). With regard to this,
Specialist 10 indicated: ‘There is still no better way of selecting talent than an expert
coach’s eye. So, I think the coach’s expertise at the local level needs to be tapped into as
much as possible’. The NTA can steer talent identification and selection by ‘organising
one-day camps or selection days for all children in the region’ (CEM 2). Another expert
indicated that ‘we [the NTA] have private coaches who are part of the talent
development network...we [the NTA] created a network of private coaches, who are
certified and educated, who are out in the field and identify talent’ (Specialist 2).

The experts highlighted the need for the stakeholders to coordinate talent
identification and selection. For example, one expert claimed that the process is strong
in his country ‘because of the coordination between clubs, regional officers, and the
federation. It is because of the network, weaved by the regional officers who know what
clubs are working in a good way with the children’ (CEM 2).
5.8.3 Talent Development

As players move to higher levels of talent development, clubs are restricted in their capacity to offer them the required support. The NTAs become more involved as they provide collective training in their regional or national training centres with highly qualified coaches. The NTAs also play a role in providing competition opportunities as well as sport science and sport medicine support to all players during their talent development process. Experts stressed that during the talent development process ‘talented players need to stay for as long as possible in their own club’ (CEM 2) and ‘they should not be taken out of their clubs until they are 14, it is good that they stay with their families’ (Specialist 7). At some point, ‘When they [the players] improve too much, and the club cannot support them enough, they need the possibility to go to a regional or national centre’ (Specialist 8). However, CEM 2 suggested that this ‘depends on the clubs, if it is a big club with many coaches, many courts and many talented players, the children can stay longer’.

NTA support and regional or national NTA training programmes are the next step in player progression from local clubs. Specialist 10 commented: ‘The key is to get the good players to train with other good players as much as possible and to give that opportunity to play a lot and train together’. In order to facilitate collective training possibilities to talented players, the NTA needs regional and/or national training centre(s). The role of the regional centres is to ‘work with the younger kids and work as a feeder system for the national training centre’ (Specialist 10) and ‘create a positive, collective training environment, where the best coaches and the best young players come together to train’ (Specialist 7). Some experts noted that the NTA or a regional training centre can cooperate with the clubs for the development of talented players. For example, Specialist 6 noted:

> There should be cooperation in the system. It [talent development] is a cooperation between two or three coaches. They [talented players] play two or three days in the club, two days, maybe, one day in the district and maybe two days in the region. And all three coaches who take part in this must go the same way.

Another expert stated that the NTA can provide collective training moments in addition to the club training: ‘We [the NTA] invite talented players between 8 and 12 years to
the federation for 4-day camps, 6 times per year and give a report with working points of the players to the club coaches’ (HPD 2).

The NTAs also play a role in providing competition opportunities. For example, Specialist 1 noted: ‘you [NTA] need a tournament strategy, competitions that are coordinated, so the tennis association must have a clear vision as how they want to use the tournaments, from the junior game up to professional level’. HPD 1 added to this that the NTA ‘needs a competitions’ pathway that is organised at local, regional, national and international level’.

In addition NTAs provide sport science and sport medicine support to talented players and disseminate knowledge to coaches. Specialist 9 explained: ‘we’ve got nutritionists, sports psychologists, fitness consultants like [name] who is training a lot of the best players in the world, we’ve got Dr [name] who is one of the premiere sports psychologists in the world’. Furthermore, Specialist 9 noted the importance of sharing information with coaches and other experts:

All of the great information in the world doesn’t mean anything if you can’t practically apply it in your day-to-day coaching and training. The NTA needs to disseminate that information to coaching staff, trainers and sports psychologists to build an optimum programme for your players.

In addition to the publicly provided system that supports player development through NTAs, the NTA training centres, and the local clubs, some experts highlighted the importance of private academies on elite player development. For example, Specialist 1 explained: ‘In an ideal world you need a strong club and probably academy network and then alongside that you need the national federation [NTA] to have its own structure to allow players the flexibility to train through that system also’. Specialist 9 claimed that the success of tennis ‘is a collaborative effort between the association [NTA] and private clubs’. However, as Specialist 5 admitted: ‘We [NTA] have to cooperate with the private academies and private coaches. It’s a hard job, but we have to do it’. For example, Specialist 8 noted: ‘also if players are not in the federation [NTA] structure, the federation has to help and support them’.

Last, similar to other sport development processes, the experts stressed importance of having coaches ‘with the highest licence, without them it is impossible to develop talented players’ (Specialist 6). These coaches have to be willing ‘to go on the
road [travel] for 20-30 weeks a year, they need to make reports, chart and videotape the matches and analyse the matches with the players’ (Specialist 7). The experts believed that offering coaches sufficient financial rewards is necessary to compensate them for the intense work they do:

Obviously, travelling with the players and being away from family and friends is a very intense role. So financial rewards for coaches, paying them to a level that rewards them for the job that they are doing, being away 25-30 weeks of the year is critical. And then setting bonuses, ranking bonuses if they are hitting certain key performance indicators or ranking targets.

(Specialist 2)

5.8.4 The Nurturing of Elite Players: Transition to Professional Tennis

The results on the nurturing of elite players can be divided into two stages: (1) transitioning from junior to senior level, and (2) maintaining or improving a senior ranking. Even though NTAs’ support to players during the first stage is essential, the results show that this support is moderate during stage two when players become financially self-sufficient. Nevertheless, the NTAs seem to continue to provide opportunities for international competitions, in cooperation with other stakeholders, to all players in the nurturing process. The experts indicated that NTA support during the transition from junior to senior level is critical due to the complexity of this transition. Specialist 9 indicated:

When the players make that fulltime commitment to be a professional player, that is the hardest transition of all, from junior tennis to the Pro Tour. That’s when they need the most support…there is no kind of magic formula that’s going to be the same for every player, but by and large we [NTA] try to provide them with great support when they make the transition to the Pro Tour.

To achieve a successful transition from junior to senior level ‘we try to extend the player support after the age of 18, because if you stop at 18, you are nowhere’ (HPD 2). In fact, Specialist 2 claimed that:

the heaviest funded programme is between 16 and 21, that is because that is the key transition, that is where a lot of money is spent to get kids on the road for 20-25 weeks a year and thus we invest heavily in that space.
There was little consent between the experts on whether elite tennis players should receive NTA support throughout their careers once their prize money is high enough for them to be financially self-sufficient. One expert felt that ‘if they are pro players, they have to pay their own expenses like any other pro’. However, some other experts argued that even the best players should continue to receive NTA support. For example, Specialist 2 indicated: ‘our pathways support athletes all the way through to Davis Cup and Fed Cup, so right now we support Player X, top 10 in the world’ and Specialist 1 indicated: ‘when players earn more money, inside the top 100, they may be financial self-sufficient and have more options. But that doesn’t mean that the federation support, which can manifest in different ways, dries up’. Another expert stated that ‘if the player is ranked in the top 50 or top 100 and making a good living, then I don’t think the NTA should fund them, but rather provide advice’ (CEM 1). The experts also indicated that elite player support needs to be flexible and provided in different ways:

The federation can give a lot of funding to the players. But the federation could also support just by providing the coach, without the players having to pay their salary and hotel. … I think if the player is on track, the federation could help. Not all the federations are rich and they have to select some [players]. Sometimes it could be just helping them to have sponsors, because sometimes players don’t have managers. A national coach could help and meet them for their tour selection, tournament selection because they have no experience and sometimes they get discouraged, they go to the wrong place. There are different levels of support. … even if it is only an evaluation every three months by the leading coach in the national centre to give players some directions, or some private coaching, or a coach traveling, or money or so on. (Specialist 7)

The experts noted that in the nurturing process it is important that ‘the federation puts on events in their own country and allow players the opportunity to compete and potentially earn money in those events. That is a huge form of support for players’ (Specialist 2). Specifically, Specialist 9 indicated that ‘you [NTA] need to provide the entry level pro-competitive opportunities that will help your players to get a ranking started, they need a place to start’. The experts stressed that the organisation of
international competitions requires the NTA to cooperate with other stakeholders such as clubs and local governments. For example, HPD1 indicated:

The national tennis association [NTA] allows the clubs to put in a bid to host an event and the clubs work together with the association and the local government. The association [NTA] provides the marketing, collateral, officiating, the umpires, the balls, the scheduling expertise, the programme, the posters, the advertising campaign. The clubs should provide the infrastructure, which includes the courts, clubhouse, cafeteria they have opened for the players, nets, parking, transportation and hotels. And then the local council should provide funding, financial funding to help the club underwrite the event.

Some experts highlighted the role of third party organisations that cooperate with the NTA in order to organise events. For instance Specialist 1 explained: ‘you need a professional team with experience in event management and putting on tournaments to deliver those events ... and try to structure tournaments to benefit domestic players’. Similarly, HPD 4 indicated: ‘international competitions can be organised by the national federation in connection or in association with organisers or sport marketing companies’.

5.9 Discussion and Implications

This study applied the ARTN framework (Sotiriadou et al., 2008) in tennis to examine the roles that stakeholders play along the elite development pathway. The results showed that clubs, coaches and NTAs are involved with all the processes of athlete development. However, the findings suggest that the stakeholders’ roles, influence and involvement are specific to each development process. For example, during the attraction and retention process, NTAs initiate programmes, support clubs, and offer consultants to club coaches. Then, in the talent identification process, the NTAs’ role shifts towards organising talent selection days and managing talent identification processes. During talent development, the NTAs role is to provide player support at national and regional training centres, and provide opportunities for competitions as well as sport science and sport medicine support to players. Further, the NTAs provide extensive support to players in their transition from junior to senior level. When players reach a ranking where they are financially self-sufficient, the NTA
support becomes more flexible to reflect player specialised needs. This change of the stakeholders’ role at each development process confirms previous research claiming that the sport development strategies that stakeholders initiate and implement can be considerably different according to the development phase (Sotiriadou et al., 2008). Moreover, the findings in this study suggest that during the various sport development processes, stakeholders cooperate to obtain the best development outcomes from their strategies (Sotiriadou, 2009; Truyens et al., 2014). Last, the commercialised nature of tennis has triggered the involvement of various private sport organisations such as private academies and third party organisations in the development and support of elite players.

The theoretical contribution of this study lies in the identification of stakeholders and their roles in the initiation and implementation of support services that underpin the different processes of elite development pathways in tennis. The findings of this study offer an organisational and managerial perspective on the roles of NTAs, clubs, coaches, private academies and third party organisations during the different sport development processes. By examining elite player pathways from an organisational perspective and identifying the stakeholders that are involved in the sport development processes, this meso-level analysis complements previous studies on talent development frameworks that have used a micro-level perspective (e.g., Bloom, 1985; Côté & Fraser-Thomas, 2007; Wylleman & Lavallee, 2004). Hence, this study extends knowledge on tennis development processes from an organisational perceptive. Moreover, this study is a response to calls for sport specific studies (e.g., Greyson et al., 2010; Sotiriadou et al., 2008), as it advances knowledge specific to tennis. Last, this study extends the application of the ARTN framework (Sotiriadou et al., 2008) through (1) examining the development processes at the elite level in a specific sport, (2) applying it to an international context, and (3) using insights from stakeholders (i.e., HPDs, CEMs and other tennis specialists) that are directly involved in the elite player pathways.

Certain practical implications can also be drawn. The results show that some local clubs are highly involved in the talent identification, selection and development processes. This finding suggests that the role of clubs extends beyond offering opportunities that would achieve mass participation and socially based objectives such as community integration and the promotion of general health and wellbeing (Breuer & Haase, 2007). The heightened role of local clubs across most of the elite player
development processes points towards the need to revisit the level of support clubs receive and their capacity to deliver optimal developmental pathways. For instance, the findings show that the process of talent identification and selection takes place at the club level where the coaches play a significant role in gauging talented players. Also, the findings suggest that clubs need coaches who are professional, motivated, and equipped to work with children. Therefore, NTAs can facilitate that clubs have coaches with a range of knowledge and expertise from working with children to talent identification and selection (Pankhurst, 2013). Keeping talented players at the club level for as long as possible requires well-resourced clubs that have quality facilities, qualified coaches and a pool of talented players to match their skill level during training. This finding is in line with literature found in other sports such as swimming (Greyson et al., 2010). Overall, it would appear that clubs and their coaches are pressured to professionalise their services which reflects findings from previous research on similar club and personnel related pressures (e.g., Sotiriadou & Wicker, 2013). Research also shows that most local clubs do not have the financial means, facilities, expertise or coaches to support athletes through the development and nurturing process (Wicker & Breuer, 2011). Therefore, it is recommended that NTAs further invest in quality, well-resourced clubs and educated club coaches. In addition, as Bayle and Robinson (2007) noted, NSOs can use quality certification systems for sport clubs and offer support such as promotional material and financial support to reward clubs in return for the investment and commitment to quality.

The experts highlighted the complexity of talent identification and the lack of clear guidelines used in the process. Consequently, the experts saw talent identification as an emerging process that relied on clubs and coaches. We can therefore conclude that talent identification is seen as a process where coaches suggest players with apparent potential rather than a process of predicting intrinsic talent. This finding is reflective of the concerns that Green (2005) and Vaeyens et al. (2008) have expressed on the role of talent identification within the sport system. As Burgess and Naughton (2010) have suggested “ideally, talent identification should form part of an initial stage of a dynamic talent development model and pathway... the identification of successful attributes should serve only as a guide, rather than inclusion criteria for elite pathways” (p. 104). For example, the results on talent development show that player progress within the sport system as their skill level improves. This development allows them to progress
from their local club, to regional or national training centres or private academies when they need more specialised facilities, coaches and support. The importance that HPDs and CEMs place on player progression and development, as opposed to talent identification, has also been stressed in past research (Brouwers et al., 2015). Consequently, the findings suggest that NTAs should direct their elite development strategies towards providing quality talent development programmes and clear transitions to higher levels. To further support these findings and promote their endorsement by decision makers, it is recommended that future research further examines how the progression of athletes to higher levels of development (e.g., from clubs to regional training centres or private academies) supports elite development.

At some point during the talent development process, talented players reach a level when clubs are not able to provide them with specialised support (see Figure 4). Then, these players might enter programmes that the NTAs coordinate at regional or national training centres. When players transition from junior to senior level (i.e., nurturing process), NTA support for coaching, travelling and accommodation during international competitions is essential. That is potentially the case due to the high annual cost to travel with a coach (i.e., varying between USD 121,000 and 197,000 for 30 tournaments) (Quinlan, 2012) and the limited prize money that these players earn (Bane & Gescheit, 2015; Flatman, 2012). Moreover, the experts highlighted the importance of extending player support after the age of 18. This is an important finding as research has showed that the ‘road to the top’ is becoming longer for tennis players. Specifically, as the average age of ATP top 100 players has increased between 1990 and 2010 from 24.4 to 26.8 years (Reid, Morgan, Churchill, & Bane, 2014), it is recommended that NTA player support is prolonged too.

The experts indicated that once players reach a level where they are financially independent (approximately top 100), the nature of NTA support changes (Figure 4). Specifically, even though these players receive less financial support, the NTAs offer them tournament advice, the provision of physiotherapists and opportunities to train with players at national training centres. This finding reflects existing research that shows that players in the top 100 (approximately) earn sufficient prize money to cover the costs of playing on the international tour (Reid et al., 2014; Russell, 2010; Quinlan, 2012). Hence, NTA support for top 100 players is less needed. Moreover, Bane and Gescheit (2015) estimated that the top 1% of the player group (i.e., men ranked in the
top 50 and women ranked in the top 26) received 62% and 51% respectively of the entire professional prize-pool in 2014 (totalling USD 162 million for the men and USD 120 million for the women). In addition, Badenhausen (2013) found that the 10 highest-paid tennis players generated three times more from endorsements, exhibitions and appearance fees than from prize money. The high prize money and sponsorship income means that the absolute top players operate independently from their NTA (Houlihan, 2013) as they build (and pay) their own support team around them or have contracts with worldwide marketing and management companies to assist with their talent representation, commercial marketing and endorsements (International Management Group, 2015). These high earnings of absolute elite players may explain why NTAs often aim to produce top 100 players (Brouwers et al., 2012; De Bosscher, De Knop, & Heyndels, 2003).

The findings also stress the role of private tennis academies, particularly during the talent development and nurturing processes. Private academies can be an alternative to players who are not selected for NTA talent development programmes. Similar results were found in a study on elite pathways for golfers (Liebenau, 2010). The tennis experts in this study stressed that talent development should be a collaborative effort between the NTA and the private academies and NTAs should also provide support to players who chose to train privately.

Last, third party organisations emerged as an important stakeholder in organising international tournaments. Existing research suggests that countries that want to be successful in tennis aim to host all levels of competition as this allows players to participate at international level tournaments, without having to travel overseas (Filipcic, Panjan, Reid, Crespo, & Sarabon, 2013; Reid, Crespo, Atienza, & Dimmock, 2007). This study showed that both, NTAs and third party organisations play a role in the organisation of those competitions. Thereby, this study confirms the emerging role of commercial third party organisations in elite athlete development (Newland & Kellett, 2012; Philipps & Newland, 2014).

5.10 Conclusion

This study shows that a sport specific application of the ARTN framework is necessary for sport policy makers and high performance managers to draw practical implications for national, state and local sport organisations, and private sporting
organisations that are involved with elite player development strategies and services. The international standing and experience of the experts that participated in this study presents a strength in terms of the depth of knowledge they contributed. However, as these experts work within different sport systems, it is likely that the same terms (e.g., club, national sporting association) have different meanings or connotations to them (e.g., Henry, Amara, Al-Tauqi, & Ping Chao, 2005). Therefore, future research is required for country specific (and sport-specific) examination of the roles of stakeholders on elite athlete development.

A key stakeholder within elite athlete development that this study did not involve is the elite players themselves. Elite athletes’ opinion and experiences of elite pathways may offer an additional insight to the findings offered in this study that would allow sport policy makers, sport organisations, and governing bodies to better understand the sport development needs of players. Moreover, elite players’ opinions on elite player development would provide feedback about perceived barriers to elite player development.

Given the heightened role of clubs and the emergence of the private sector in developing elite tennis players, future research should include representatives from clubs, private academies and other third party organisations to further explore their interactions and investigate how they contribute to the development of talented players. It is therefore recommended that future research takes an open systems perspective which examines how sport organisations (e.g., NTAs) interact with private organisations in an ever-changing environment (Chelladurai, 2014). Understanding the role of the private sector is important in commercialised sports where third party organisations (e.g., commercial tournament organisers, management companies, private academies) operate alongside the traditional and institutionalised sport development pathways (Newland & Kellett, 2012; Phillips & Newland, 2014). It is likely that the involvement of the private sector leads to variations in the ways elite sport development in commercial sports is delivered. Subsequently, we conclude that future research is required to examine emerging models of elite sport delivery in commercialised sports.
5.11 Note

1. The results presented in this paper are part of a larger project that included two studies. At the first study, 75 international tennis experts were invited to take part in an online questionnaire. Thirty-five experts completed the online questionnaire. In a follow-up study (reported in this paper), these 35 experts were invited to participate in a follow-up interview.

5.12 References


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Chapter 6  Study 3  Inter-Organisational Relationships

The role of inter-organizational relationships on elite athlete development: The case of tennis in Flanders

This paper is submitted to an internationally recognised journal in the field of sport management

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6.1 Statement of Contribution to Co-Authored Working Paper

This chapter includes a co-authored working paper. The bibliographic details of the co-authored working paper, including all authors, are:

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My contribution to the paper involved:

Jessie Brouwers designed the interview guide and conducted the interviews. Popi Sotiriadou, Veerle De Bosscher and Graham Cuskelly provided advice on the design of the interview guide. Jessie transcribed the interviews. Jessie coded and analysed all interview transcripts in NVivo. Veerle co-coded part of interview transcripts. Jessie and Popi had several meetings to discuss the data analysis and the presentation of the results. Graham and Popi had a significant role in the conceptualisation of the paper. Jessie led the drafting of the manuscript. Popi, Veerle and Graham provided feedback on the manuscript.

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Conflict of Interest
All authors have declared no conflict of interest.
6.2 Abstract

Even though elite athlete development is the result of efforts from multiple organizations, little is known about the ways some of these organizations work together for this purpose. This study explores the formation and management of inter-organizational relationships (IORs) between a tennis federation and tennis clubs in their efforts to achieve player development. Qualitative methods, including document analysis and semi-structured interviews with representatives from clubs and the tennis federation in Flanders, were used. While both types of organizations engage in IORs for efficiency and reciprocity, the federation also engages for legitimacy and asymmetry. For clubs, stability and necessity prevailed as motives for IOR formation. Several formal and informal processes along with joint athlete development programs that the federation initiated and controlled emerged as key strategies in managing IORs and developing athletes. However, due to lower levels of necessity within well-resourced clubs developing players over the age of 12 presented a managerial challenge.

Keywords: Elite athlete development, Inter-organizational relationships, Joint programs, Sport clubs, Sport federations, Management, Formation, Pathways, Tennis.
6.3 Introduction

There are many sport organizations that are involved with the development and success of elite athletes, including national government agencies for sport, Olympic committees, national and regional sporting organizations (NSOs), clubs, and private sector organizations (e.g., Phillips & Newland, 2014; Sotiriadou, 2009). Sotiriadou and Shilbury (2009) indicated that NSOs (also referred to as sports federations or national sports governing bodies) are largely responsible for the provision and implementation of elite athlete development programs and pathways at a national level. However, in many sports, such as triathlon, football, tennis, and golf, there are athletes who follow pathways outside the NSOs structure. These athletes may choose to train in third party organizations such as private for-profit companies, private academies or clubs (Brouwers, Sotiriadou, & De Bosscher, 2015a, 2015b; Liebenau, 2010; MacCurdy, 2008; Newland & Kellett, 2012). Consequently, there exists a mix of nationally centralized (through NSOs) and decentralized (through clubs and private academies) athlete development pathways.

NSOs and many clubs or private academies pursue the common goal of developing talented athletes and ultimately elite athletes. Their efforts help build a national pool of athletes that would eventually drive more medals and sustained elite success. In this context, inter-organizational relationships (IORs) offer a useful framework to organizations wishing to work jointly in planning and implementing specific programs that would allow them to accomplish similar or common goals and objectives (Alexander, Thibault, & Frisby, 2008; Oliver, 1990).

IORs (also referred to as collaborations, partnerships or linkages) reflect interactions between two, or more, organizations that engage in accessing and exchanging tangible (e.g., facilities, financial resources, and technologies), and intangible (e.g., expertise and knowledge) resources (Babiak, 2003; Barnes, Cousens, & MacLean, 2007). There are various sport studies that have used IORs to examine the relationships between community sport and leisure organizations that aimed to increase physical activity and sport participation (e.g., Alexander et al., 2008; Cousens, Barnes, & MacLean, 2012; Frisby, Thibault, & Kikulis, 2004; Lucidarme, Marlier, Cardon, De Bourdeaudhuij, & Willem, 2014; MacLean, Cousens, & Barnes, 2011; Misener & Doherty, 2012, 2013; O’Reilly & Brunette, 2013; Parent & Harvey, 2009; Vail, 2007).
Other studies used IORs to examine partnerships between community sports clubs and sponsors and the ways IORs helped clubs acquire physical and financial resources in addition to government funding (e.g., Misener & Doherty, 2014). Another area of IOR research interest is present in studies on IORs between sport properties and corporate sponsors that assist in meeting strategic objectives (Cousens, Babiak, & Bradish, 2006; Morgan, Adair, Taylor, & Hermes, 2014). Hence, the application of IORs in sport appears to focus on community level organizations and sponsorships.

By comparison, the application of IORs to high performance sport and elite athlete development is limited. Specifically, Babiak (2003, 2007, 2009), and Babiak and Thibault (2008, 2009) offer the few existing studies that have examined IORs between a Canadian Sport Center and its partners (including NSOs, Sport Canada, Canadian Olympic Committee, Coaching Association of Canada, private commercial organizations and other Canadian Sport Centers). These studies examined how a collaborative approach and the establishment of IORs between various partners served as a strategy to offer comprehensive support and resources for elite athletes and coaches, particularly in times of reduced government funding for elite sport.

Interestingly, and despite the role of clubs and private academies on elite player development (Brouwers et al., 2015a, 2015b; Liebenau, 2010; MacCurdy, 2008; Stenling & Fahlén, 2014), studies in elite sport have not examined the IORs between NSOs and clubs or other private organizations. Moreover, even though there are studies that note the importance of NSOs collaborating with clubs (e.g., Bayle & Robinson, 2007; Truyens, De Bosscher, Heyndels, & Westerbeek, 2014), there are no studies that address the complexities of such IORs or investigate how this collaboration is formed or managed. This lack of empirical studies and suggestions to examine how NSOs and clubs interact in order to achieve elite athlete development is further stressed in elite sport policy literature (e.g., Andersen, Houlihan, & Ronglan, 2015; Brouwers et al., 2015a; De Bosscher, Shibli, Westerbeek, & van Bottenburg, 2015).

The current study contributes to the ongoing discussions on the ways IORs may facilitate elite athlete development as it examines IORs between a sport federation and clubs. Specifically, this study examines IORs between the tennis federation and tennis clubs in Flanders (i.e., the northern, Dutch speaking part of Belgium) (Taks & Kesenne, 2000). These are dyadic IORs that focus on the interactions between two types of
organizations (i.e., tennis federation and clubs) as opposed to interactions between the clubs themselves, or the relationships of the federation with other partners in the broader network (such as the Olympic Committee or the national sports administration) (Babiak, 2003). The following research question guided this study: ‘How do IORs between the federation and clubs contribute to elite player development?’

6.4 Conceptual Framework: Inter-organizational Relationships

Inter-organizational relationships are broadly defined as “relatively enduring transactions, flows and linkages that occur among or between an organization and one or more organizations in its environment” (Oliver, 1990, p. 241). Kernaghan (1993) introduced the notion of achieving mutual goals when organizations work in partnerships. They stated that IORs involve “the sharing of power, work, support and/or information with others for the achievement of joint goals or mutual benefits” (p. 61). This orientation for mutual benefit, solving a problem, or achieving a goal is stressed in Babiak’s (2003) study on the Canadian sport organizations networks. The literature describes three stages in the evolution and implementation of IORs (Alexander et al., 2008; Babiak, 2003; Parent & Harvey, 2009; Wood & Gray, 1991). The initial formation stage of IORs refers to the determinants, motives and antecedents to enter IORs (Babiak, 2007; Kouwenhoven, 1993; Oliver, 1990; Parent & Harvey, 2009). The subsequent management, or processes, stage reflects the large amount of managerial factors and challenges of IOR management (Babiak & Thibault, 2008, 2009; Frisby et al., 2004; Misener & Doherty, 2013; Parent & Harvey, 2009). Last, the IOR evaluation stage refers to the outcomes and effectiveness of the relationships (Babiak, 2009; Misener & Doherty, 2013, 2014; Parent & Harvey, 1998). This paper focusses on the formation and management stages of IORs and based on the results draws practical implication on IOR outcomes.

6.4.1 Formation of IORs

According to Oliver (1990) there are six causes, or determinants, that prompt or motivate organizations to form IORs. These determinants include (1) necessity (meet necessary legal or regulatory requirements), (2) asymmetry (exercise power or control over another organization or its resources), (3) reciprocity (pursue common or mutually beneficial goals or interests through cooperation, collaboration and coordination), (4)
efficiency (improve internal input/output ratio), (5) stability (adaptive response to environmental uncertainty), and (6) legitimacy (comply with norms, rules, beliefs or expectations). These motives may interact or occur concurrently when IORs are formed (Oliver, 1990). Building on Oliver’s (1990) seminal work on IORs, Kouwenhoven (1993) identified three additional conditions that need to be present for organizations to collaborate. These conditions are (1) interdependence (recognition by organizations that their actions are intertwined and the need to channel or exploit mutual interdependencies by means of cooperation), (2) convergence of objectives (mutual problem solved by a group of collaborating organizations), and (3) either the presence of a network (social or professional connections held by members of the organizations that contribute to partnership formation) or the presence of a broker (individual that assumes the responsibility of initiating partnership activity).

These determinants and conditions of IOR formation have been useful in informing sport management studies. Specifically, Babiak (2007) examined the determinants [based on Oliver (1990)] and conditions [based on Kouwenhoven (1993)] of IOR formation among a Canadian Sports Center and its partners (e.g., NSOs, Canadian Olympic Committee, corporate partners, and other Canadian Sports Centers). The results showed that not only each partner had different motives for entering a partnership but they also had multiple motives to do so. The author concluded that the presence of IOR determinants is often based on resource scarcity and dependence on external sources for funding, as well as institutional forces, power, and control. In addition to the determinants found in mainstream literature (e.g., asymmetry, necessity, efficiency and stability) individual-level factors (i.e., personal values and beliefs, previous history, prior experiences, and personal interactions of key individuals of partner organizations) emerged as a new construct that plays an important role in IOR formation within the context of sport organizations (Babiak, 2007). Building on Oliver’s (1990) and Kouwenhoven’s (1993) work, another Canadian study explored a joint initiative between a non-profit provincial tennis organization and a public sector recreation department to increase tennis participation (Alexander et al., 2008). The study showed that necessity, reciprocity and improved efficiencies motivated the tennis organization to enter the joint initiative whereas the sport and recreation department sought to offer a more legitimate program to the community. The study concluded that
even though motives can differ, clashes in motives can be offset when partners explain their positions clearly to one another.

Finally, in a later study on community based sport IORs, Parent and Harvey (2009) proposed slightly different antecedents to previous studies as essential to the success of a partnership. These antecedents included the project’s purpose (partnership goals); environment (strengths, weaknesses, opportunities and threats of the general and task environment); the nature of the partner organizations (profit, non-profit, public); the partners’ motives (degree of reciprocity of the partners); and their complementarity and fit (strategic and cultural fit). Parent and Harvey (2009) argued that partnership planning (i.e., actual partnership type, creation of roles and responsibilities and the development of policy and partnership norms and guidelines) was an essential antecedent.

In conclusion, the mainstream and sport specific literature suggest that there are many situation-specific determinants that prompt or motivate organizations to form IORs. Building on this work, this study examines the determinants of IOR formation between tennis clubs and the tennis federation for the purpose of elite athlete development. Therefore, the first sub-question driving this study is: ‘What are the determinants that lead to the formation of IORs between tennis clubs and the tennis federation?’

6.4.2 Managing IORs

Following the formation of IORs, organizations need to manage their partnership. Research on IOR management in the context of sport organizations determined a large amount of managerial factors contributing to the quality of IORs and the potential for successful collaboration. These factors include resource and information sharing, objectives and strategies, communication, trust, commitment, consistency, dependability, balance, mutuality, coordination, engagement, authority, responsibility, autonomy, monitoring and reporting, personal contact, relationship management competencies, operational competencies, and relational competencies (e.g., Alexander et al., 2008; Babiak & Thibault, 2008; Lucidarme et al., 2014; Misener & Doherty, 2013, 2014; Parent & Harvey, 2008). Babiak and Thibault (2008) distinguished IOR management factors based on formal controls and informal (social) processes to manage IORs. Formal controls include, for example, outlining objectives and strategies,
delineating roles and responsibilities, and developing guidelines and reports (Babiak & Thibault, 2008; Frisby et al., 2004; Huxham & Vangen, 1996). Informal (social) processes may include mutual trust, communication, commitment and engagement (Babiak & Thibault, 2008; Child & Faulkner, 1998; Misener & Doherty, 2013, 2014; Willem & Lucidarme, 2014). Babiak and Thibault (2008) found that informal control processes play a more important role than formal control mechanisms in IOR management in the Canadian sport system. Moreover, they found that IORs are often loosely structured and formal control mechanisms were not extensively used as they appeared to have a negative impact on trust.

Other studies highlighted the complexity of IOR management and discussed how poor managerial structures, inadequate managerial processes and strategic challenges cause under-managed partnerships (Babiak & Thibault, 2009; Frisby et al., 2004). Poor managerial structures encompass, for example, poor governance, the lack of formalized written rules, policies, guidelines and planning; the obscurity of roles, responsibilities and reporting channels; issues with regards to partnerships across sectors; and the lack of human resources to accomplish the duties necessary to sustain IORs (Babiak & Thibault, 2008; Frisby et al., 2004). Such structures often lead to poor managerial processes including insufficient training for staff, lack of time devoted to managing the partnership or negotiating competing values, poor communication and poor coordination of relationships (Frisby et al., 2004). In addition, Babiak and Thibault (2009) noted two strategic challenges in the management of IORs. The first is the focus of IOR partners on competition rather than collaboration. Even though sport organizations seemingly collaborate, they compete on different levels for resources such as money, coaches and athletes. This competition can result in tensions and can be a source of frustration between partners. The second strategic challenge relates to the changing missions and objectives throughout the duration of the relationship. For example, shifting investments of resources towards high performance sport as opposed to sport for all in the Canadian sport system created tensions between the Canadian Sport Center and its government partners (Babiak & Thibault, 2009).

To understand IOR management within the context of elite player development this study examines managerial factors and challenges in the partnerships between
tennis clubs and a tennis federation. Hence, the second sub-question is: ‘How are club-federation IORs managed?’

6.5 The Elite Tennis System in Flanders

During the late 1960s the three regions of Belgium (Flanders, Wallonia and the German community) were given cultural autonomy (Taks & Kesenne, 2000). As an outcome, Flanders developed its own sport policy and has a long tradition in developing a dense and complex network of sport organizations involved in its sport system (Taks & Kesenne, 2000). The elite tennis system in Flanders (as Figure 5 illustrates) is inclusive of various stakeholders [i.e., Tennis Vlaanderen (TV) and tennis clubs], development phases (i.e., scouting, development and elite tennis), and relevant programs [e.g., Kids Development Team (KDT), Junior Development Team (JDT) and the Elite Sport School (ESS)]. Figure 5 indicates whether programs are provided by TV (white), clubs (grey), or are based on collaborations between clubs and TV (half white, half grey). TV is involved in scouting, player development and elite player development (Tennis Vlaanderen, 2013a).

Figure 5 Elite tennis structure Tennis Vlaanderen (Adapted from Tennis Vlaanderen, 2013a)
Based on the scouting program outcomes, the most talented players between six and 12 years old are selected for a player development program called KDT. Players between the age of 12 and 18 who wish to pursue an international tennis career have three options. TV selects the most talented players to train full-time at the school especially designed for tennis, the ESS. The centralized support services of the ESS are located in one elite training center. Within this center, selected players train under the guidance of TV coaches, go to school, and reside in the boarding school. For players who miss out on the ESS selection criteria, or chose to train in their local club, TV offers the JDT. This program allows players to train in their club and at the same time receive some additional support from TV. The remaining pool of players can follow a development pathway in their clubs. In fact, as Figure 5 shows in grey, players have the option to remain and train in their clubs throughout their development stage. After the age of 18, at the elite tennis phase, TV provides a professional support framework (i.e., Profs/Be Gold program) for players who meet the selection criteria and are believed to be on track to reach a top 100 ranking. Players who are not selected can chose to finance their own support team and train with a private coach or in a club.

Overall, TV offers both a centralized (i.e., ESS) and a decentralized (i.e., KDT and JDT) approach to tennis player development that allows the federation to collaborate with clubs in joints programs. In conclusion, the context of player development in Flanders suggests that dyadic IORs exist between the federation and the clubs through existing joint programs (e.g., KDT and JDT) that aim to facilitate elite player development. This study draws on IOR theory to examine (1) the determinants that lead to the formation of IORs between clubs and TV, and (2) the ways these IORs are managed.

6.6 Method

To allow for quality, depth, and richness of data in this exploratory study, a qualitative research approach including document analysis and semi-structured interviews was used. Ethics approval was obtained to conduct this research (HSL/31/11/HREC).
6.6.1 Selection of IOR Partners

Two types of organizations were selected for this study. First, TV is the tennis federation in Flanders and has a strong involvement with elite player development through programs like the KDT, JDT, and the ESS (Figure 5). Second, clubs were selected based on their involvement in elite player development. The level of their involvement was identified using the number of KDT and JDT players that train in the club, and recommendations of the federation. At the time of data collection during 2014, 32 clubs had at least one KDT player (72 KDT players in total) and 18 of these clubs had at least one JDT player (19 JDT players in total). All clubs with JDT players also had at least one KDT player. In order to include in the study the clubs that are systematically involved with player development, only the clubs with a minimum of three KDT players were selected. This resulted in a list of nine clubs. In addition to this list, the federation recommended the inclusion of another two clubs that train many elite players on a private basis. One of these clubs had one KDT player and the other club had two JDT players. This resulted in an absolute total of 11 clubs that were contacted. The research team sent emails to club head coaches inviting them to participate in the study and seven clubs agreed to participate.

6.6.2 Data Collection

The study design incorporated two approaches to data collection: (1) document analysis of the selected organizations, and (2) semi-structured interviews with club and federation representatives. Using evidence from different types of data (i.e., documents and interviews) facilitated data-source triangulation (Yin, 1994) and an accurate description of the IORs and cross-checking of findings (Patton, 2002).

6.6.2.1 Documents

Publicly available information about the organizations, such as websites, organizations’ promotion materials and annual reports, were collected. In addition, the organizations were asked to provide strategic plans. These were only obtained from the federation as clubs indicated they did produce strategic plans. Table 10 is an overview of the documents that were collected for each organization. All documents were reviewed and examined. Specifically, a Word document was created for each organization where all relevant information about IORs between clubs and the
federation was recorded. Documents were used as a means to provide background information about each organization which assisted in the preparation of the interview guide. Moreover, the Word documents for each organization supplemented the interview data.

6.6.2.2 Semi-structured interviews

Key representatives of each organization participated in semi-structured interviews. Using purposive sampling (Patton, 2002), the representatives were chosen based on their role within the organization and their expertise on elite player development. Study participants included seven representatives (hereafter referred to as interviewees) from the tennis federation in Flanders, five head coaches and two academy directors of the clubs (Table 10).

Table 10 Organizational representatives interviewed and documents analysed

<table>
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<tr>
<th>Organization</th>
<th>Representatives interviewed (reference used in text)</th>
<th>Documents</th>
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<tbody>
<tr>
<td>Tennis Federation</td>
<td>1. Director elite tennis (*)</td>
<td>- Website</td>
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<td></td>
<td>2. Coordinator elite tennis (*)</td>
<td>- Annual report 2013 (Tennis Vlaanderen, 2013a)</td>
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<td></td>
<td>3. Head Coach Men’s Team (*)</td>
<td>- Strategic plan 2009-2012 (Tennis Vlaanderen, 2009)</td>
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<td></td>
<td>4. Head Coach Women’s Team (*)</td>
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<td></td>
<td>5. Coordinator Kids Development Team (*)</td>
<td>- Strategic plan 2013-2016 (Tennis Vlaanderen, 2013b)</td>
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<td></td>
<td>6. CEO (*)</td>
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<td>7. President (*)</td>
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<td>Tennis clubs</td>
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<td>Club 7</td>
<td>7. Academy director (Club 7)</td>
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* In order to protect the identity of the interviewees for confidentiality reasons in accordance with the ethics clearance, interviewees of the tennis federation were numbered randomly from TV1 to TV7

A semi-structured guide that consisted of two parts was used to collect interview data. The first part included questions on organizational capacities to develop elite players. Topics such as availability and condition of training programs, facilities, coaching, and financial support were covered. Moreover, the interviewees were asked to reflect on problems they may encounter with regard to elite player development. For
example, questions included ‘To what extent can the club/federation develop elite players?’ or ‘Which programs are offered to develop elite players?’ The second part of the interview included questions on the IORs between clubs and the federation that related to player development. Specifically, the interviewees were asked about their motives for engaging in IORs and ways in which their relationship is managed. This included questions such as ‘What motivates you/your organization to cooperate with the federation/clubs?’, ‘Is cooperation with the federation/clubs important for player development and why?’, ‘How would you describe the relationship with the federation/clubs?’, and ‘How is the relationship managed?’. The interviewer used probing questions to gain in-depth information on the different characteristics of partnership formation and partnership management. Moreover, interviewees were encouraged to discuss benefits, challenges and tensions in their relationships. The length of the interviews varied from 50 minutes to two hours.

6.6.3 Data Analysis

All interviews were digitally recorded and transcribed verbatim. Interview transcripts and the Word documents that resulted from the collected documents, were saved in NVivo, a qualitative research software that helped managing, organizing and coding the data (Sotiriadou, Brouwers, & Le, 2014). NVivo nodes were used to create a coding framework based on the a-priori concepts that emerged from the literature review on IOR formation (e.g., necessity, efficiency, and individual level factors) and management (e.g., objectives and strategies, communication, and trust). Data analysis was grounded both in a priori analysis of the phenomena and in detailed, critically informed reflection on the emerging issues encountered in forming and managing relationships between the clubs and the federation. Three members of the research team carefully read and coded the data. Subsequently, each concept was reviewed and discussed among the authors. Emerging concepts were compared and once the research team agreed on the concepts, the codes were applied to the data, revisions were made as necessary, and the codes were tightened up to the point that maximizes mutual exclusivity and exhaustiveness (Weber, 1990). This process allowed the research team to (a) code the same text in the same way, (b) make valid inferences from the text, and (c) safeguard the reliability and consistency of the classification/coding procedure (Weber, 1990). Then, the relationships between the concepts were examined to identify
themes. The themes that emerged within IOR formation included (a) common determinants for the federation and clubs (i.e., individual level factors, efficiency and reciprocity), (b) determinants for the federation (legitimacy and asymmetry), and (c) determinants for clubs (stability and necessity). Themes that emerged within IOR management included (a) formal control mechanisms, (b) informal control mechanisms, and (c) tensions over the best players. The results section is structured in this order.

6.7 Results IOR Formation

6.7.1 Common Determinants of IOR Formation for Clubs and the Federation

*Individual level factors*, such as personal contacts or network of contacts, emerged as important in partnership formation. For example, four club head coaches had contacts within the federation where they had previously worked. Also, some of the TV interviewees mentioned that they worked as coaches in the private sector (i.e., clubs) where they created personal values and beliefs that motivated IOR formation between the clubs and the federation. TV 7 for instance indicated: “I come from a club background myself, maybe that is why I believe so strongly in cooperation with clubs.”

The clubs and TV form IORs for *efficiency* and *reciprocity*. IOR formation was often based on the common desire between the federation and the clubs to increase the *efficiency* of elite player development. However, the two types of organizations indicated different efficiency motives. TV felt the need to intervene with player development at the club level because some of the clubs lacked the capacity to provide quality development programs, or training and coaching. For example, TV’s policy plan mentions that “viewing the restricted elite sport possibilities of many clubs and coaches, we will ascertain that we are involved with the development of all talented and elite players” (Tennis Vlaanderen, 2013b, p. 4). Specific goals of the plan included “having an open cooperation with the clubs in which the players are central”, “optimize the club-TV relationship”, and “work together with club coaches as partners in elite sport” (Tennis Vlaanderen, 2013b, p. 4). Particularly, at the more advanced levels of player development, clubs struggled to provide the necessary support for elite player development. One TV representative indicated:

Clubs can offer good support until players are 12 or 14 years old, but the last step of elite player development is too difficult for them. So, we let the clubs do
what they do well and then we offer a leading and coordinating role for additional support. (TV 5)

One way of achieving this is through programs (such as KDT) that help strengthening the expertise and skills of club coaches: “With the start of the KDT, TV gave more responsibility to the clubs and their qualified coaches. The project aims to increase support for talented players at club level through increasing support and assistance for the club coaches” (Tennis Vlaanderen, 2009, p. 56).

TV’s efficiency motives mirrored the clubs’ view on their motives for IOR formation. Specifically, clubs mentioned the need for (a) group training sessions for players, (b) coaching expertise, and (c) financial assistance. Clubs maintained that collaborating with TV allows club players to attend group training sessions where a large number of the best players of the country train together. This is beneficial as many clubs do not have enough talented players of the same age group to train together. TV invites club coaches to attend group training sessions allowing them to compare and assess players’ progress, and exchange information with federation coaches. The following quote is illustrative of the advantages that these training sessions offer to club and club coaches:

We are invited to attend some of the group training sessions at the center which is a big advantage because then we can position the level of our players within their age group. I only have one very good U11 player at the club, so attending the group training sessions allows monitoring his progress compared to his age group. Also, I can discuss his [club player] progress with the federation coaches, and then they often discuss technical aspects with us which is always very interesting. (Club 2)

Also, clubs indicated that cooperation with the federation coaches is useful as the federation has more expertise with the development of top 100 players: “I have never been a top 100 player, but I find it important that if you support an elite player that you involve someone who has reached that level himself and [federation coach] has that experience and gives feedback” (Club 7).

Reciprocity was also apparent as TV and clubs have player development as a common goal. As such, club-TV partnerships benefit both entities. The following quote
from TV3 illustrates the mutually beneficial relationship and how the federation is open to the idea of cooperation:

We are open to cooperate with clubs that have an elite sport mentality. The better we cooperate with clubs and coaches, the better for elite player development in Flanders. They make us stronger and we make them stronger. We need to support cooperation and make sure it grows. It will make us all stronger.

This reciprocity allows TV and clubs to pool their competencies together in order to develop talented players:

Ideally, we have a coordinating or leading role and the clubs work complementary. But if there are things that they do better, then it would be perfect to let them organize those things. The big strength of the federation is that we are subsidized. What we offer here [federation center] to the players costs lots of money in the clubs. So we need to cooperate, let the clubs do what they do well, and we play our role, that works. (TV 5)

Also clubs indicated that the cooperation with TV helps achieving a higher quality of player development. For example, Club 3 noted:

KDT works really well for us and the players. Players really benefit from being part of KDT as they have more opportunities to play with better players and get expert coaching at the federation. The mentality, attitude and training atmosphere they [federation] create through the KDT really helps to coach and educate the players more professionally.

6.7.2 Determinants of IOR Formation for the Federation

Other determinants of partnership formation for the federation included legitimacy and asymmetry. TV interviewees indicated that their legitimacy motives were founded on the desire to enhance the reputation and image of the federation as a center of expertise. TV captures these legitimacy considerations as follows:

In 2008 we made the choice to go down a different path. Back then I had the feeling that we [federation] were acting too much as a club between the other clubs basis. I mean that we were too busy with developing players that we had in our center, and we overlooked the clubs, other good coaches, and academies that also have the ability to develop elite players. So we took a different philosophy or vision. We said, the federation actually needs to be an overarching
organization that oversees everything that has to do with elite tennis in Flanders. It is our responsibility to help out the club coaches or academies, so we need to intervene where the club coaches have limitations. (TV 4)

Clubs also noted that the federation tried to change its image through cooperating more. For example, Club 4 noted:

The federation is too much focused on its own players. I doubt if they know what is going on in each club. I have the impression that the federation acts like a club that operates next to the other clubs, and that it does not really act like a federation. The federation should take care of all players, also if they chose to train in a club. Even though they are opening up now and try to cooperate more with clubs, they still don’t do it enough.

Strategic plans and annual reports further emphasize TV’s desire to profile itself as a center of expertise with a leading role in elite player development: “TV will strive to create an elite sport climate of which each player wants to be part of. [...] TV will assure that KDT serves all club coaches to improve the development of talented players” (Tennis Vlaanderen, 2013a, p. 12).

Asymmetry, in the form of power and control, emerged as IOR motive for the federation. The federation has control over which players they support, the types of support they offer, and the conditions under which players can train at the federation center. Club 7 mentioned how the federation assures they are always involved with the development of players who perform well:

If a child performs well, they [federation] are involved. If the child does not develop well, they decrease support and slowly support fades. [...] The good players that we have in our club automatically qualify for federation support through their good results at tournaments. So, they receive sufficient support from the federation; each player according to his needs be it financial or know-how.

The two strategies that allow TV to control the clubs include the ‘Youth Fund’ and the ‘flexible status’ of talented players. Through the Youth Fund, “an incentive fund that stimulates clubs to offer organized and structured player development” (TV 4), TV awards quality labels and subsidies to clubs that meet certain criteria (Tennis Vlaanderen, 2013a). TV 4 explained “one of the criteria for which the clubs receive points, and thus money, is the number of club players that participate in the club tests
for talent identification”. The federation also plays an important role in granting a flexible status to talented players which allows them to be absent from school in order to train or participate at international tournaments. The federation has the power to award a flexible status to players and in return requires that players meet certain criteria and attend training sessions at the federation. Some clubs indicated to struggle with this power asymmetry. For example, Club 6 noted “I think it is ridiculous that the federation cannot show some flexibility so that this player can train six extra hours during school time. I think, sometimes they are too strict with their rules”.

6.7.3 Determinants of IOR Formation for Clubs

In addition to efficiency and reciprocity, stability and necessity emerged as important motives for clubs to interact with the federation. Collaboration with the federation offers clubs stability as the development of talented players in a club environment is expensive for both the club and the players/parents. Club 5, for instance, explained that “tennis will always remain very expensive for players who are not selected to train in the ESS. You really need parents with a good income to pay for the children’s tennis development”. Clubs engage in IORs with the federation to obtain access to resources including subsidies, international competition support, and player development support. As mentioned earlier, clubs are eligible to receive subsidies if they meet certain criteria: “through the Youth Fund we [clubs] can get subsidies from the federation based on a point system where we get extra points to have KDT players, so we get a bit more subsidies” (Club 3). In addition to direct financial support, the federation can lower the cost for club players to participate at international competitions through providing the opportunity to travel with the federation players and coaches. The below excerpt offers an example comparing the two scenarios:

If a player can join the federation player group and coach, he needs to pay Euro 25 per day, everything included. If a club player wants to travel privately, he needs to multiply that by 10 if you look at the total cost, covering the coaches’ expenses for flights and accommodation, their time, etc. (Club 5)

Necessity emerged as another motive for clubs to enter into IORs with the federation as clubs have to comply with various regulations and meet certain TV requirements. Specially, if clubs meet the criteria that the federation sets they receive recognition through quality labels (e.g., youth friendly club, youth friendly club with
recognized kids tennis school, or youth friendly club with recognized kids- and elite tennis school). These criteria include, for example, the organization of talent selection tests and competitions, club player performances in competitions or coach education levels of club coaches (Tennis Vlaanderen, 2013a). Club 1 indicated that “obtaining quality labels is important for the image of the club and it facilitates the attraction of players and also sponsors”. Even though quality labels appeared to stimulate clubs to meet certain quality standards, Club 7 noted that “how the club develops talented players appears not important to the federation, it is how you tell them you do it, it has to be according to their guidelines, to receive points. That is very unfortunate”.

Club coaches are also required to cooperate with TV if they want their players to obtain a flexible status and funding. Some players with elite status receive subsidies based on certain conditions. As TV 1 explained: “funding for players with a flexible status is based on how well the club coach cooperates with the federation. Did he attend the coaching education sessions and consultancy sessions? Did he fill out the player reports?”.

6.8 Results on IOR Management

The results suggest that the management of club-federation IORs evolves around the player development programs that the federation initiates. This section presents the formal control mechanisms, such as objectives and strategies, division of roles and responsibilities, as well as reporting and authority that play a critical role in IOR management. In addition, informal control mechanisms, such as personal contracts, trust, commitment and engagement appeared to either facilitate or hinder IOR management. Last, the results section discusses how the competition for training the best players causes tensions between clubs and the federation.

6.8.1 Formal Control Mechanisms

6.8.1.1 Objectives and strategies

To increase their success in developing elite players, TV’s key objective is to be an ‘open house’ that shares support, expertise, and resources with clubs:

The federation states in the policy plan that it wants to be an ‘open house’ and I think we [federation] succeed in this more and more. Everybody is welcome here. Players can use our facilities and expertise. [...] I really see the added value
of our center, especially for players who train in a club or academy, because here they can train with other good players. (TV 4)

In order to operationalize their ‘open house’ objective, TV organizes and coordinates various player development programs (e.g., KDT for players aged six to 12 and JDT for players aged 12 to 18) that the clubs deliver. These programs emphasize the sharing of resources (e.g., subsidized group training sessions at the federation center with TV coaches, training camps, and travel support to participate at international competitions with federation coaches) and information (e.g., consultation sessions for club coaches). Club 1 noted that “since the start of KDT and JDT, the federation opened up itself and lets players develop predominantly in clubs with club coaches, whilst investing more in coaching the club coach to assure quality training”. In addition, as Club 2 explained, “club coaches play a very important role in the technical development of KDT players so it is the task of the federation to educate their coaches in technical coaching aspects. The consultation sessions are very important for that”.

Players at different development stages require different types of support (cooperation) from the federation. Club 7 illustrated this as follows:

…for player X who is in the ATP top 200, the federation provides financial support and a coach to travel a couple weeks a year with the player and provide feedback to me [club coach]. For an U14 player the club coach reports to the federation coach so that they can monitor the player’s progress. That is important because I am not specialized in U14 development, I don’t know what the player needs to be capable of at the age of 13, 14, [...]. The federation coaches know that very well because they have expertise and can compare with other players. The information exchange about player progress is very important.

6.8.1.2 Allocation of roles and responsibilities

The results show a clear division and allocation of roles and responsibilities between TV and club coaches. Club 5 illustrated the division of responsibilities when he mentioned that clubs “design the programs for the JDT players in dialogue with the federation because they [federation] provide guidelines on what the training should contain for players of each age and we try to take that into account”. Another example of clear roles relates to the federation coaches versus the club coaches roles. While the federation coaches focus on group training sessions where tactics, match situations, and
rallying skills with players of the same level are most important, club coaches are responsible for the technical development of the KDT players in the training sessions at club level. In addition, the federation provides feedback on the players’ technique via the club coach:

Feedback on technical progress of the [KDT/JDT] player always goes via the club coach as he has the final responsibility for the player. So, we don’t make major technical changes to a players’ technique, but we contact the club coach to discuss this. Because, in our opinion, we need to make the club coaches better. (TV 2)

6.8.1.3 Reporting and authority

In return for its support, the federation requires that club coaches provide reports on the progress of KDT and JDT players. Club 7 noted that “from the moment that a player receives help from the federation, the club coaches are accountable to the federation based on training schedules, training content and so on”. The reporting system demonstrates TV’s authority over the club coaches and KDT/JDT players. For example, TV 7 noted: “The club coaches fill out a document with the training schedule of the KDT players. We [federation] provide guidelines for the weekly and yearly training programs. So in a way we control the clubs”. The federation noted that there is a thin line between ‘supporting’ and ‘controlling’ the clubs:

We try to make sure that club programs follow a structure, so in a way we are a controlling body. Actually, I don’t like the term ‘controlling’, it’s rather ‘supporting’. Unfortunately, sometimes it leans more towards controlling, because we need to encourage club coaches often to send in their development goals and reports. (TV 4)

In addition, the federation has the authority to decide which players are select for the programs. Club 5 noted that “federation coaches decide which players are selected for the KDT, JDT and ESS programs. We [club] can give our opinion, but the final decision is made by the federation”. Similarly, the federation decides on which player they support at international competitions.

6.8.2 Informal Control Mechanisms
6.8.2.1 Personal contacts

Personal contacts, including having a family member or friend who works at the federation, emerged as an informal control mechanism that facilitated the management of IORs. Club 1, for instance, noted: “my son coaches some male players at the federation center so he knows the training programs and completion schedules of the federation players. So we [club] are up-to-date with that”. Moreover, Club 1 continued: “…the high performance director of the federation is a good friend of mine and [name federation coach] has played in our club, so I know a lot of people at the federation which makes contact easy”. Similarly, Club 7 noted that his sister is one of the head coaches in the federation and he is good friends with another head coach. These personal contacts “encourage the cooperation. So automatically, we have a good communication with the federation”. TV 4 explained that “elite tennis is a small world so we [federation] are all closely related [to club coaches]”.

6.8.2.2 Trust and communication

Another informal control mechanism that emerged as important was trust. The data showed that trust cannot be enforced, but it needs to grow over time. TV 2, for instance, maintained: “they [clubs] need to believe in what we [federation] do, trust us. They should not feel this as if we take their players away. I think that is based on trust”. Clear, open and direct communication between the federation and the club coaches emerged as essential in order to establish trust. Even though the federation maintained that it “has good contact with the club coaches and shows the respect that they [club coaches] deserve for developing good players” (TV 2), some clubs expressed their concerns regarding their trust toward the federation as follows:

The [federation] asked one of our players directly to transition to the ESS, without asking me. I learned later about her invitation. The federation really invited her behind my back. We won’t keep players here [club] when we don’t have the capacity to train them, but sometimes the federation takes our players away when we still have the capacity to coach them. That is very frustrating.

(Club 4)

6.8.2.3 Engagement and commitment

Club coaches recognize the benefits of attending consultancy sessions to share information with federation coaches. Club 2 showed its commitment and noted that “the
consultancy sessions are really worth it for us. We need to make time for it, but the feedback is worth it”. However, “tennis coaching at club level is often a secondary activity for people with another full time job” (TV 4), and other work commitments interfere with the coaching commitments. TV 7 explained that some “club coaches don’t make time for consultation sessions because if they have to give up four hours of coaching at their club to attend a consultation session, they lose 150 Euro. They think about their own income”. TV 4 explained the problematic nature of the club coaches’ commitments as follows:

It is difficult to motivate club coaches to come to the federation center. We send email invitations and call them to motivate them. Now we have criteria that club coaches need to meet to be a ‘KDT-coach’: a certain coaching education level, attend consultancy sessions, communicate and report. Otherwise they don’t receive recognition as KDT coach. It is a pity that we have to force it like that.

In response to acknowledging the restricted club coaches’ time, the federation indicated the below:

I don’t think we could communicate more, but maybe more efficiently. Communication can be done by phone or email, but most important is to meet the player and club coach in person at the federation, so that the player can play and we can discuss the player together. But then the club coaches need to reschedule their club training sessions. So we try to limit this to only a couple times a year. (TV 1)

Federation interviewees further indicated that IOR management requires their commitment. TV 4 indicated that “I don’t think we could cooperate more with the clubs at the moment. We also have our job, our players here, so we need to make sure we get our work done here first”. TV 7 indicated that more personnel would be required to follow up the KDT and JDT players more efficiently: “We have our own full time players at the center so our coaches do not always have time for external players. More personnel would help to follow up the KDT and JDT players closer in the clubs”.

6.8.3 Tension over the Best Players

At the age of 12, the best KDT players are selected to transition into a full-time program at the ESS. This school operates in isolation from the clubs and does not involve their cooperation. The interviewees agreed on the benefits of ESS including
financial support, training partners, centralized support services, and flexible school conditions. Club 2 outlined the benefits of the ESS as follows:

Our goal is that our players are selected to train at the ESS and then parents usually decide whether the child accepts it or not. For [name player], the choice was very clear. ‘Go to the elite sport school because we can no longer help you here, we don’t have training partners and there is no budget from the parents for private coaching’. You cannot put a break on their development by keeping them in your club.

In addition to the financial advantage of the ESS, Club 4 noted that player support is organized and centralized at the ESS: “Financially it is difficult to support elite players at club level whereas at the ESS everything is organized; tennis training, physio, strength and conditioning training and travel”. In addition, Club 5 mentioned that “the organization with school is much easier as ESS players only need to go to school 18 hours per week. Here [club], players need to go to school full-time minus six hours, that is a lot more difficult”.

Even though it was generally accepted that the ESS program is a logical continuation for the best players to further develop, some clubs (in particular clubs that had the resources to retain and develop players beyond the age of 12) were skeptical about ‘letting their best players go’ and they perceived the existence of ESS as a source of tension for ‘handing over’ their best players to the federation without receiving any formal recognition for their contribution to player development. Club 6 noted that “unconsciously there is some competition with the federation. If we see that our best players systematically go to the ESS, then I am almost better off to make them just not good enough so that they are not selected”. Clubs expressed their frustration when their players left the club in order to train full-time at the ESS. For example, Club 6 indicated:

The federation needs to lay out the strategy, but not at the expense of what goes well in the clubs. For example, [name player] in our club meets the criteria to train at the ESS. But where did she deserve these criteria? Here [club]. And who gets the reward? That player can go train at the ESS. [...] She is in very good hands here too and we have facilities to train her further. If all talented club players are invited to train at the ESS, then what’s in it for the clubs? Clubs invest time in the better players and when push comes to shove players...
leave. Clubs do not receive much recognition. So who bears the brunt of having a good player development system in the club? That is actually the clubs themselves. The federation really needs to watch out that they don’t obstruct the clubs who can offer equal quality development to players.

6.9 Discussion

This study used IOR formation and management as a framework to examine how the relationships between a tennis federation and clubs contribute to elite player development. Both types of organizations form IORs due to reciprocity and in order to achieve efficiency. As Oliver (1990) outlined, reciprocity is the desire to pursue common or mutually beneficial goals or interests. In this case the common goal was the development of elite tennis players. Reciprocity appeared to be a major determinant for the formation of the joint programs, such as the KDT, as it allowed the clubs and the federation to pool their competencies together in order to improve the development of players. The federation and the clubs believed that their collaboration offered players better development opportunities while at the same time improving club coaches’ skills and knowledge.

Some clubs lack certain resources required to achieve player development goals. In their efforts to compensate for resource scarcity, clubs partnered with the federation to increase their efficiencies. IOR with the federation offered financial benefits, allowed players to take part in group training sessions, and club coaches to gain an insight on player development through consultation sessions. The importance of resource scarcity in forming IORs is congruent with Babiak’s (2007) findings supporting that resources obtained through partnering can add strategic, functional and operational value to the organizations. For the federation, efficiency motives reflected its ambition to assure clubs can provide quality player development programs. In its role as the leading and coordinating organization for player development, the federation initiated IORs with clubs and shared resources and information in order to strengthen the clubs’ capacity and club coaches’ expertise on player development. This finding, consistent with previous research (Alexander et al., 2008; Babiak, 2007), highlights that organizations seek partnerships with other organizations that have more expertise in order to use external knowledge to increase the efficiency of programs.
In addition, the results showed that the federation forms IORs with clubs in an effort to gain *legitimacy* and *asymmetry*, whereas clubs are motivated to form IORs for *stability* or due to *necessity*. The federation’s effort to portray itself as an ‘open house’, where players can train, get advice and receive support, represents a strategy used to enhance its image and status, and legitimize its position to the clubs. The federation’s *legitimacy* and *asymmetry* determinants are deeply rooted in the traditional hierarchy of sport structures where federations are typically superior to clubs, and clubs are members of state or NSOs (Shilbury & Kellett, 2011). Subsequently, as Bayle and Robinson (2007) noted, NSOs need to be aware of and have some control over local sport club activities to ensure that the national policy is delivered at the local level. In this study, quality labels (i.e., the Youth Fund) emerged as a way for the federation to exercise power and control over the clubs, expressing an *asymmetry* in their relationship. The clubs, on the other hand, felt the *necessity* to comply with regulations and meet certain criteria to receive recognition from the federation through the quality labels. In addition, the type of quality label determined the amount of subsidies to clubs. Therefore, complying with the federation rules and aiming to achieve high quality labels reflected clubs’ motive to achieve financial *stability*. The emergence of *stability* as motivation for clubs to partner with the federation is not surprising as previous research has highlighted the resource scarcity of sport clubs (Wicker & Breuer, 2011). Sport at a competitive level can be time and cost intensive for both the athletes and the sports club (Breuer & Wicker 2009; Wicker, 2011). Hence, clubs with competitive athletes tend to have higher expenditures for coaches’ salaries, training lessons, and competition fees (Wicker, 2011).

*Formal* and *informal* control mechanisms (Babiak & Thibault, 2008) played a role in IOR management. The findings suggested that the club coaches understand their roles and responsibilities toward the federation. This is a promising feature of a potentially well managed relationship as there is research showing that unclear division of roles and responsibilities can result in under-managed IORs (e.g., Babiak & Thibault, 2008, 2009; Frisby et al., 2004). In addition, reports were used as a formal way to exchange information and share knowledge on programs and aspects of athlete progress. Division of roles and responsibilities and reporting mechanisms are typical traits of highly formalized NSOs (Theodoraki & Henry, 1994). Even though formalization allows the federation to be explicit over their structure and requirements, as the results
alluded to, it is likely that this formalization is also a source of frustration to coaches who have difficulties in complying with several reporting requirements.

The findings in this study highlighted the importance of personal contacts (e.g., through family or friendship connections), communication (e.g., between club and federation coaches), engagement and commitment (e.g., coaches making time to attend consultancy sessions) as key informal IOR management process mechanisms. Even though most of these informal control mechanisms facilitated positive IOR management, commitment [i.e., the willingness to exert efforts on behalf of the relationship, Lucidarme et al. (2014)] was a source of issues in the club-federation relationship. For example, as Lucidarme et al. (2014) suggested, when club coaches have another full time job, their availability to commit to training sessions and consultancies offered by the federation is restricted. The federation too indicated the need to focus on their own players first, before providing support to external players and noted their need for extra personnel if they were to increase their cooperation with club coaches. Consequently, time and personnel limitations appeared to restrict the outcomes of IORs.

Besides commitment issues, clubs that had enough resources to cater for player development over the age of 12, indicated tensions with the federation. Specifically, clubs expressed their frustration in losing their best players to the ESS without receiving any recognition for their time and effort in player development. These tensions over which organization trains elite players, confirm Babiak’s (2007) finding that while reciprocity can stimulate cooperation, it can simultaneously cause conflict, power and control issues. Babiak and Thibault (2009) noted that even though organizations in the Canadian sport system collaborate, they compete on different levels for resources. This competition-collaboration dichotomy is also evident in this study as clubs and the federation can cooperate well for the development of a players aged six to 12 yet tensions can grow when players transition from clubs to the ESS.

From a theoretical point of view, this paper complements existing studies that have examined IORs at community sport level (e.g., Alexander et al., 2008; Frisby et al., 2004; Misener & Doherty, 2012) and corporate level (e.g., Cousens et al., 2006; Misener & Doherty, 2014) as it extends the application of IORs to elite athlete development (e.g., Babiak, 2007). In particular, this paper contributes to the ongoing
discussion on the ways IORs facilitate sport organizations to achieve their common goals, in this instance elite athlete development. The examination of IORs between a sport federation and clubs enabled the identification of the role that joint programs and other strategies have on athlete development. Joint athlete development programs allowed the clubs and the federation to pool their strengths together, to exchange information, and to increase efficiencies in their operations (Oliver, 1990). Also, various formal and informal control mechanisms (e.g., Babiak & Thibault, 2008) illustrated the ways these organizations interact and the challenges they confront.

These interactions and challenges represent various managerial and practical implications. First, NSOs should aim to tailor their support and manage their partnerships based on the clubs’ capacity to deliver player development outcomes. For example, clubs that have few KDT players might need more group training sessions at the federation center, whilst clubs with many KDT players can organize high level group training at the club. Also, club coaches that have much expertise on elite player development might require less information sharing and consultancy compared to clubs coaches that have few KDT players, and thus little experience in developing players at that level. Clubs that have the resources to develop elite players might require more flexibility from the NSO to implement player development programs more autonomously. Therefore, it is important that NSOs (a) know the clubs’ capacity to develop athletes, and (b) tailor their support and IOR management accordingly.

Second, this study provides recommendations on the management of IORs that might reduce the tension between clubs and NTAs. For example, NTAs could examine ways to formally recognize or financially reward clubs that ‘deliver’ talented players to the ESS. Moreover, NTAs might have to consider allowing players to train longer at well-resourced clubs with their club coach, and invest more in providing external support to the clubs (e.g., financial), club coaches (e.g., consultancy sessions) and players (e.g., international tournament support and group training), instead of centralizing the best players at the ESS from the age of 12.

6.10 Conclusion

The examination of IORs between clubs and a tennis federation provided insights on their roles, actions and interactions (Andersen et al., 2015) within an elite development system. Specifically, this study confirms previous research that stressed
the important role of sport clubs on elite athlete development (e.g., Brouwers et al., 2015a; De Bosscher et al., 2015; Stenling & Fahlén, 2014). Based on the results in this study, various initiatives, including consultancy sessions, and reporting structures, are essential in order to achieve cooperation between clubs and the federation. In particular, joint player development programs appear to allow clubs and NSOs to combine their strengths and resources (Oliver, 1990). In addition, the study highlighted the importance of the federation to further recognize the contribution of clubs and club coaches on elite player development, and avert situations where clubs feel they are in competition with the federation for the best players.

Even though the results of this study may be relevant to other sports similar to tennis (e.g., middle to late specialization or commercialized sports), it is important to interpret the findings with caution as the focus of this study was on a specific sport and a specific sport system. Hence, it is likely that, in other sports or countries, IOR formation and management between clubs and the federation may vary. For instance, early specialization sports (e.g., gymnastics) might require NSOs to set up elite athlete development related IORs with clubs at a younger stage of athlete development than tennis. Similarly, in sports where athletes transition from another activity (e.g., transition from swimming to diving), club-NSO IORs for the organizations where athletes transfer to (e.g., diving) might be less prominent or important for athlete development. Therefore, future research should continue exploring the context of specific sports and examine different types of sports, the context they operate in and their IOR requirements.

Another consideration is the potential limitations that examining a relatively small region (the Dutch speaking community of Belgium), may present to this study. Flanders covers an area of 13,522 km² and has a population of 6.2 million (Belgian Federal Government, 2013). Hence, Flanders is a small region in comparison to some tennis champion powerhouses including Spain, France and America. It is likely that the geographic proximity between clubs and the federation in Flanders facilitates a coordinated approach to player development and the implementation of joint programs. As Alexander et al. (2008) explained, dyadic IORs (e.g., club-federation) are relatively simple to manage and in Flanders group player training sessions and coach consultancy sessions do not require excessive management or coordination other than clear
communication. In larger countries, IOR management may present challenges as these player development strategies may be limited due to distance, access to transportation or travel time. In addition, the likely presence of regional or state sporting organizations in larger countries (e.g., Canada and Australia) necessitates an examination of the multiple IORs which would be more challenging than dyadic IORs (Babiak & Thibault, 2008). Future research is recommended to examine how IORs may facilitate elite athlete development in larger nations, how these nations overcome challenges related to distance and the multitude of partners involved.

Last, this study offers insights of IOR formation and management at a certain point in time. Pressures for clubs to manage athlete development in a professional and efficient way can lead to increasing their expertise and capacities (Sotiriadou & Wicker, 2013). As clubs improve the quality of player development programs, their coaches gain more expertise and knowledge and more players achieve high standards, it is likely that interactions with the federation change over time. Therefore, federations might need to adapt their joint programs and support to the clubs according to the growing athlete development capacities of clubs. Hence, as Alexander et al. (2008) suggested, it is important to explore the ways IORs evolve over time. A study of this nature would allow sport organizations to revisit the management of their IOR over time and adapt accordingly.
6.11 References


Chapter 7  Discussion and Conclusion

7.1 Introduction

Chapters 4, 5 and 6 presented the three studies that formed the core of this PhD thesis. Each of these chapters includes a discussion of the results for each study. The next section (7.2) outlines how the three studies address the proposed research questions. Next, section 7.3 and 7.4 outline the theoretical and practical contributions of this thesis. This chapter concludes with the research limitations of this thesis and ideas on directions for future research.

7.2 Addressing the Research Questions

Before addressing the overall research question (‘Which factors facilitate the development of elite tennis players?’), this section revisits the research questions for each study. The research question driving the first study was ‘What policy (or other factors) influence international tennis success?’. Study 1 adopted a broad macro-level angle to evaluate international elite sport policies, and other factors as they emerged, that influence international tennis success. The findings of study 1 suggested that all SPLISS policy areas (i.e., financial support, structure and organisation, tennis participation, talent identification and development, athlete and post-career support, coaching provision and education, competitions, training facilities, and scientific research) (De Bosscher et al., 2006) are important for international tennis success. However, the tennis experts placed varying levels of importance on certain policy areas. For example, the organisation of national and international competitions, and coaching provision and education were clearly rated more important compared to post-career support. Therefore, study 1 provides insights on the relative importance of each policy. The most significant contribution of study 1 rests on the emergence of two contextual themes, namely culture and commercial environment that emerged as important factors for international tennis success. These new themes help explain the context within which tennis operates. The important role of culture (i.e., tennis culture, overall sporting culture, and school culture) is supported by previous sport-specific research in canoe and kayak (Sotiriadou et al., 2013) and athletics (Truyens et al., 2014). The commercial environment includes the role of media, sponsors and the private sector. The emergence of this theme is in accordance with the commercialised and professionalised nature of tennis (Churchill, 2008; Houlihan, 2013). The findings showed that the private sector
plays an important role in the development of elite athletes. The private sector offers highly professionalised training centres and private high performance tennis academies that deliver development programs for tennis players that help them achieve top rankings. This finding confirms the importance of athlete development pathways outside the structure of NTAs (MacCurdy, 2008). The highly commercialised nature of tennis might also explain the relative low importance placed on post-career support. Churchill (2008) noted that successful tennis players can earn more through endorsement deals and sponsorships than through prize money. Therefore, post-career support might be rated less important by international tennis experts than sports that are not highly commercialised, such as judo or gymnastics. Study 1 concluded that the environment in which the sport operates influences policy and other factors of international tennis success.

The research question of the second study was ‘What are the roles of sport development stakeholders in elite player development pathways?’ Even though this study was conducted at an international level, compared to the first study it was more focused in its scope. It applied the ARTN framework (Sotiriadou et al., 2008) to tennis in order to examine the roles that stakeholders play and the resulting elite development pathway. The results showed that clubs, coaches and NTAs are involved with all the processes of athlete development (i.e., attraction/retention, talent identification and selection, talent development, and nurturing of elite players). However, the findings suggested that the stakeholders’ roles, influence and involvement are specific to each development process. During the attraction/retention process NTAs provide programs, consultancy and other forms of support to clubs which are the foundation of the attraction and retention of tennis players. Clubs provide the facilities for athletes and organise the programs and events that club coaches help implement and deliver. During the second development process (i.e., talent identification), NTAs, clubs and coaches cooperate to identify talented players at club level. Throughout talent development, there is a progressive shift from local clubs to regional/national training centres or private academies. Last, at the nurturing of elite athletes, NTA support is crucial to support athletes in the transition from junior to senior level. However, once players are self-sufficient based on prize-money (approximately top-100 ranking), NTA support decreases and players are responsible for their private team. During the nurturing phase, third party organisations emerged as important stakeholder in organising international
tournaments. Providing international tournaments is important as previous research showed a strong relationship between the number of international tournaments in a country and the number of elite players (e.g., Filipcic, Panjan, Reid, Crespo, & Sarabon, 2013). The changing roles of the stakeholders at each development process confirms previous research claiming that the sport development strategies that stakeholders initiate and implement can be considerably different according to the development phase (Sotiriadou et al., 2008). Moreover, the findings in this study suggest that during the various sport development processes, stakeholders cooperate to obtain the best development outcomes from their strategies (Sotiriadou, 2009; Truyens et al., 2014). Significantly, the study showed that some clubs are highly involved in the talent identification, selection and development processes, suggesting that the role of clubs extends beyond offering opportunities that would achieve mass participation. Last, the commercialised nature of tennis triggers the involvement of various private sport organisations, such as private academies and third party organisations, in the development and support of elite players.

The last research questions was ‘How do IORs between the federation and clubs contribute to elite player development?’. To conduct this study it was important to narrow down the focus from an international level to a country specific level. Study 3 examined IORs as they take place in Flanders. The results showed that the clubs and the federation engage in IORs due to reciprocity (i.e., common goals of elite player development) and in order to improve efficiencies in elite player development. Joint player development programs between clubs and the federation allow these two entities to pool their competencies together and improve the development of talented players. The federation and the clubs indicated that their collaboration offers better player development opportunities, and at the same time improves club coaches’ skills and knowledge on athlete development. The federation’s objective was to be an open house and share resources (including training centre, coaching expertise and budget allocations toward international competitions) with the clubs and their players. In addition, knowledge and expertise is shared through consultation sessions and reporting structures between club coaches and federation coaches. Formal and informal IOR management control mechanisms (Babiak & Thibault, 2008) were also evident. At a formal level, the clubs and the federation have developed a clear understanding of each other’s roles within the joint programs and the reporting mechanisms that facilitate
formal communication on programs and player progress. At an informal level, personal contacts (e.g., through family or friendship connections) facilitate the communication between club coaches and federation coaches. Commitment [i.e., the willingness to exert efforts on behalf of the relationship (Lucidarme et al., 2014)] was a source of tensions between some clubs and the federation as both entities appeared to concentrate on achieving their own organisation activities first before putting their energies into their partnerships. For instance, clubs coaches, who have another full time job, indicated time restrictions, whereas the federation indicated the need for more personnel to improve the cooperation with clubs. In addition to commitment issues, there were tensions between the federation and certain clubs that have enough resources to cater for player over the age of 12. Specifically, these clubs felt frustrated because they tended to lose their best players to the federation’s ESS program without receiving any formal recognition. Overall, joint programs for players that are based on the exchange of resources and information appear to strengthen the development of elite athletes, as well as the skills of the club coaches.

In addressing the overall research question, the thesis concludes that the factors that facilitate the development of elite tennis players vary depending on the nature of the sport, the context in which it operates, the ways various stakeholders are involved with player development, the resulting player pathways, and the dynamics in the relationships between sport organisations. Importantly, elite sport policies in commercialised sports, like tennis, appear to shift away from the typical government driven policy and funding model to include the emerging influence of the private sector and private clubs/academics. The private sector, clubs and private academies have an input on player development which may sit outside government policy direction. Specifically, sponsorships, media, private academies and clubs appear to have an ever increasing influence on emerging sport development pathways that are the hybrid of private and public sector efforts. A closer examination of those pathways in study 2 further showed that the commercialised nature of tennis triggers the involvement of various private sport organisations, such as private academies and third party organisations in the development and support of elite players. The significant changes of sport development stakeholders’ roles at each development process (from the attraction to the nurturing of players) confirm previous research claiming that the sport development strategies that stakeholders initiate and implement can be considerably
different according to the development phase (Sotiriadou et al., 2008). Moreover, the findings in study 2 suggested that during the various sport development processes, stakeholders cooperate to obtain the best development outcomes from their strategies (Sotiriadou, 2009; Truyens et al., 2014). Study 2 highlighted the need to examine the ways clubs that aim to develop elite players, work along-side the federation in achieving a common goal. The results from study 3 show that club-NTA relationships are mostly initiated on the basis of efficiency and reciprocity. Based on its motivation to increase the efficiency of player development at the clubs, the federation intervenes with talent development at the club level and offers the clubs access to group training sessions for players, coaching expertise and financial benefits. Reciprocity between the two types of organisations is reflected on their common goal to develop elite players. Even though the federation has control over which players they support, the types of support they offer, and the conditions under which players can train at the federation centre (i.e., asymmetry), clubs’ need for stability and necessity emerged as key motives to interact with the federation. The way the clubs and the federation manage their IORs through formal (e.g., sharing of resources, allocation of roles and reporting) and informal (e.g., personal contacts, trust and communication) processes show the power position that the federation currently maintains. However, over time, as clubs become stronger financially and gain more expertise on developing elite players, the likelihood of ‘sharing’ their elite athletes with the federation could potentially become an outdated practice. At the same time, it could mean that, depending on how the organisations manage their IORs, a new era of athlete development (where clubs and NTAs cooperate and combine their strengths within a country in order to improve the country’s competitive advantage in sporting success) may emerge. These issues challenge current sport development practices and provide considerations for further research (discussed in section 7.5).

7.3 Theoretical Contributions

Each of the three studies in this thesis offers distinct and field related (elite sport policy, elite sport development and IORs for elite player development) theoretical contributions. At the same time the thesis advances overall knowledge on the field of elite athlete development.
The first study advanced the theoretical understanding of the combined elite sport policies and contextual factors at a sport-specific level that influence international tennis success. The SPLISS model, a widely accepted model on elite sport policy factors that influence international sporting success (De Bosscher et al., 2015), provided a good starting point to examine factors that influence international tennis success. The experts’ ratings of the importance of the policy areas of the sport generic SPLISS model showed that all SPLISS policy areas are also important for tennis. As such, the study showed that the SPLISS model is applicable at a sport specific level in tennis. However, quantitative and qualitative data showed the need to adapt the SPLISS model to reflect tennis specific characteristics. There are two grounds for adapting the SPLISS model that represent the areas where study 1 contributes to knowledge and adds new insights to an existing model.

First, the context of tennis prompted the emergence of two contextual themes including the commercial environment and culture. This new context–specific knowledge is consistent with key findings on other research on elite sport, such as Sotiriadou et al. (2013) and Truyens et al. (2013). These studies identified that the cultural and organisational environment in which a sport operates play a significant role on elite sport success. Importantly, the findings highlighted the importance of the private sector as a sub-theme of the commercial environment. The private sector includes private high performance academies and professional training centres, and their budgets, facilities, programs and coaches to develop elite tennis players. The second ground for adapting the SPLISS model is based on the relative importance that the tennis experts placed on specific policy areas of the SPLISS model in tennis. The SPLISS model does not weight the relative importance of policy areas or critical success factors (De Bosscher et al., 2006; 2015). Study 1 contributes to the theoretical knowledge in a specific sport context and illustrated that not all pillars are evenly important to achieve international tennis success. Specifically, the findings of study 1 showed that competitions and coaching attracted high importance whereas post-career support emerged as relatively unimportant in a tennis specific context. The findings of study 1 allowed adapting the generic SPLISS model to a tennis specific context. This is a theoretical advancement that helps towards a more inclusive empirical framework for analysing the factors that influence international success in tennis.
In order to then explore the ways these context specific policies are operationalised, study 2 applied the ARTN framework (Sotiriadou et al., 2008). The ARTN framework helped identify stakeholders and their roles in the initiation and implementation of support services that underpin the different processes of elite development pathways in tennis. The results showed that clubs, coaches and NTAs are involved in all player development processes. However, their roles and influence vary in each of the development processes (i.e., attraction and retention; talent identification; talent development; and nurturing of elite players). In addition to the traditional stakeholders mentioned above, the commercial nature of tennis has triggered the involvement of private sport organisations such as private academies and third party organisations. Study 2 extends the application of the ARTN framework (Sotiriadou et al., 2008), and offers an organisational and managerial perspective on the roles of NTAs, clubs, coaches, private academies and third party organisations during the different sport development processes. The examination of elite player pathways from an organisational perspective and the identification of the stakeholders that are involved in each of the sport development processes complement previous studies on talent development frameworks that used an athletic perspective (e.g., Bloom, 1985; Balyi, 2001; Côté & Fraser-Thomas, 2007; Wylleman & Lavallee, 2004). Hence, study 2 extends knowledge on elite athlete development pathways from an organisational perspective. In addition, study 2 extends the application of the ARTN framework through (1) examining the development processes at the elite level in a specific sport, (2) applying it to an international context, and (3) using insights from stakeholders (i.e., HPDs, CEMs and other tennis specialists) that are directly involved in the elite player pathways. These new applications of the ARTN framework offer unique insights on elite athlete development processes which collectively represent a theoretical advancement in the area of elite sport development. Specifically, the unique insights stress the role of clubs and private academies, particularly during the talent development and nurturing processes. This finding is significant because clubs and private academies can be an alternative pathway to players who are not selected for national government funded talent development programs. Another significant finding was the collaborative approach that sport organisations at various levels (national, local, private, no for profit) adopted in order to support players and player development. These findings of study 2 prompted the significance of further exploring the collaborations that sport
organisations at different levels form in order to achieve the common goal of the development of elite players.

Study 3 was a follow up effort to identify the ways the relationships between stakeholders at different levels influence the progression of elite players from a club to a national level. This study extends previous research that simply noted the importance of NSOs cooperating with clubs, without addressing the complexities of such cooperation (e.g., Bayle & Robinson, 2007; Truyens et al., 2014). Club-NSO IORs allowed the examination of elite player development beyond simply exploring the strategies and programs of NSOs. Using concepts derived from literature on IOR formation and management, study 3 provided a theoretical understanding on determinants for partnership formation, and formal and informal control mechanisms for partnership management. Moreover, the inclusion of the perspectives from club coaches allowed for bottom-up insights to emerge on the roles of clubs and club coaches, their capacity and challenges with regard to elite player development (Andersen et al., 2015). Including the stakeholders that implement player development programs provided an understanding of the implementation and the operation of the elite development system. In doing so, study 3 complemented the top-down view on elite sport development that reflects the positions of performance directors and policy makers of the elite sport system (Andersen et al., 2015). The need to further inform the elite athlete development and sport management domains on IORs between NSOs and clubs is stressed in numerous occasions (e.g., Andersen et al., 2015; Brouwers et al., 2015a; De Bosscher et al., 2015). Hence, study 3 contributes to the ongoing discussions on the ways IORs may facilitate elite athlete development.

In addition to specific theoretical contributions of each of the studies, general contributions are made based on the thesis as a whole. Each of the three studies emphasised the role of tennis clubs, and the commercial and private sector besides the role of NTAs in the elite player development systems. In study 1, tennis experts noted the importance of having clubs, high performance centres and academies that run on a private basis in addition to the nationally ran programs (Brouwers et al., 2015b). Having both, a centralised NTA program and decentralised private programs ensures a larger pool of talented players (Brouwers et al., 2015b). Study 2 further highlighted the important roles that clubs play during mass participation, talent identification and talent
development (Brouwers et al., 2015a). Moreover, study 2 stressed the role of private tennis academies and well-resourced tennis clubs, particularly during the talent development and nurturing processes. These academies and clubs provide an alternative to players who are not selected for NTA talent development programmes. Private academies and well-resourced clubs are complements for the traditional non-profit tennis clubs and NTA talent development programs. The emergence of the private sector in elite player development is an important finding because the influence of the private sector in commercialised sport appeared more entrenched then previously understood. The emergence of the private sector and understanding its role is important in commercialised sports where third party organisations (e.g., commercial tournament organisers, management companies, private academies) operate alongside the traditional and institutionalised sport development pathways (Newland & Kellett, 2012; Phillips & Newland, 2014). It is likely that the involvement of the private sector leads to variations in the ways elite sport development in commercial sports is delivered.

With regard to the delivery of elite player development programs, study 3 examined how IORs between well-resourced clubs and the tennis federation in Flanders (i.e., Tennis Vlaanderen) influence elite player development. Study 3 highlighted that the federation has developed joint talent development programs that stimulate clubs to cooperate with the federation to provide better player development support. These joint programs appeared key to federation and club collaboration as they allowed the clubs and the federation to pool their strengths together, to exchange information, and to increase efficiencies in their operations (Oliver, 1990). Joint programs appeared to be the glue between the federation and the clubs, and stimulated the sharing of resources and information in order to strengthen the clubs’ capacity and club coaches’ expertise on player development. Overall, IORs and joint programs might have changed the club-federation relationship from a hierarchical relationship towards a more collaborative setting where clubs and the federation work towards common objectives and activities.

The examination of IORs and the role of club-federation joint athlete development programs point out a weakness of current frameworks on elite sport success (e.g., SPLISS) and athlete development processes (e.g., ARTN). The SPLISS model does not take into account relationships between different stakeholders of talent development programs as it takes a government-driven policy-oriented focus (De
Bosscher et al. 2015). Even though the ARTN model highlights the significance of athlete development programs and the involvement of various stakeholders, it does not blend the need for organisations to coordinate their efforts to the delivery of talent development programs. In examining characteristics of IOR formation and management between key stakeholders of elite athlete development, this thesis builds on the SPLISS and ARTN models.

The thesis took into account the complex, multi-faceted and multi-layered nature of elite athlete development (Andersen et al., 2015; De Bosscher et al., 2015). Elite athlete development is the result of a combination of elite sport policies, athlete development pathways and interactions between the various stakeholders that are involved in the delivery of athlete pathways. Accordingly, the thesis took a holistic approach towards studying elite athlete development by examining three interrelated components: (1) elite sport policies (macro-level); (2) athlete development pathways (meso-level); and (3) IORs between key actors of athlete development (micro-level). The combination of these three components in one overall study on elite athlete development is unique and adds to studies that focus on one of the components. Significantly, the three studies collectively contribute to discussions and knowledge on elite athlete development (from a policy to a pathways and subsequently to an IORs perspective), the intricacies of sport-specific contexts, the evolving and convoluted nature of elite athlete development, and the need to provide a holistic approach to examining this phenomenon.

Despite the new knowledge and insights on elite player development, it is unrealistic to put forward a ‘one model fits all’ argument in tennis or any other sport. As De Bosscher et al. (2015) noted, there is “no generic blueprint [of policies] that can be transferred into any national context with the guarantee of delivering success […] it is simply a case of finding a set of ingredients that work effectively in a given context” (p. 361). In support of that statement, this thesis acknowledges that policies, pathways and IORs that influence international tennis success may differ within countries, depending on the various cultural and political contexts. For example, in countries where tennis is embedded in the education system (e.g., USA college tennis), there might be less need to develop additional programs that combine tennis and education. Elite development pathways could be effective with a centralised or decentralised approach, depending on
the political structure and size of the country. Larger countries, like Australia, might require more regional training centres that function as a link between club level and national training centre (i.e., decentralisation), whereas smaller countries, like the Netherlands and Flanders might benefit from having one central national training centre (centralisation). The choice between centralisation and decentralisation approaches also implies that IORs between the NTA and clubs are country specific. Study 3 showed that, in Flanders, there are multiple interactions and joint programs between the NTA and clubs. However, in larger countries (e.g., Australia) NTA-club interactions might be limited as clubs interact mainly with regional or state tennis associations, which in turn interact with the NTA. The influence of country specific contexts on athlete development in tennis suggests that tennis operates in an open system where the sport maintains its internal differentiation and resists uniformity and homogeneity (Green & Oakley, 2001; Houlihan & Green, 2008; Pondy & Mitroff, 1979).

7.4 Discussion of the Research Paradigm

This section represents a reflection on the theoretical research paradigm used in this thesis. Research paradigms are distinguished by specific ontological and epistemological assumptions and methodologies used (Guba & Lincoln, 1998). Ontology refers to the form and nature of reality, and epistemology refers to the relationship between that reality and the researcher. Methodology refers to how the researcher will go about the research (Guba & Lincoln 1998) or more specifically, what technique can be used to measure perceived reality (Edwards & Skinner, 2009).

As outlined in section 3.2 Research Paradigm, this thesis represents a pragmatic worldview (Creswell, 2009; Creswell & Plano Clarck, 2011; Feilzer, 2010). In accordance with the pragmatic worldview, this thesis did not aim to find a single truth or reality about the factors that facilitate the development of elite tennis players (Powell, 2001). Rather, the aim was to provide an understanding of the complexities of elite sport policies, the ways policies are operationalised through player development pathways and the relationships that clubs shape with the federation in order to achieve their elite sport development goals. In doing so, the thesis focused on facilitating human problem-solving (Powell, 2001), or in other words, identifying ways to further improve elite player development processes. When using a pragmatic worldview, the researcher applies “whatever philosophical and/or methodological approach works for the
particular research problem” (Tashakkori & Teddlie, 1998, p. 5). Even though the overarching view of this thesis was pragmatism, each of the three studies in this thesis represented specific worldviews.

The first study in this thesis represents a pragmatic worldview as ontologically it did not commit to any one system of philosophy and reality (Creswell, 2009). The research question of study 1 was ‘What policy or other factors influence international tennis success?’ According to the pragmatist views, the answers to this question can be “both singular (e.g., there may be a theory that operates to explain the phenomenon of study) as well as multiple (e.g., it is important to assess varied individual input into the nature of the phenomenon as well)” (Creswell & Plano Clark, p. 41). Subsequently, study 1 is explorative on one hand (tennis specific policies have never been examined) and explanatory on the other (the applicability of the SPLISS model for tennis is examined). Study 1 used a convergent parallel mixed methods design (Creswell & Plano Clark, 2011) to examine sport policy and other factors that influence international tennis success. Qualitative data (i.e., open ended questions) and quantitative data (i.e., expert ratings) on the same topic (i.e., elite sport policies that influence international tennis success) were collected simultaneously using an online questionnaire. This is in line with the philosophical stance of the pragmatic paradigm which calls for a pluralistic approach to provide best understanding of the research problem including a convergence of qualitative and quantitative methods (Creswell, 2009; Hanson, 2008; Johnson & Onwuegbuzie, 2004; Onwuegbuzie & Leech, 2005). In addition, mixing qualitative and quantitative methods allowed the combination of deductive and inductive thinking and analyses (Creswell & Plano Clark, 2011; Onwuegbuzie & Leech, 2005).

Studying the same phenomena using two different methods allows a mix of inductive and deductive research processes and may reveal divergence or corroboration of data, contradictions and paradoxes (Teddlie & Tashakkori, 2009). In study 1, the pluralistic approach proved useful and necessary to uncover contradictions and better understand of the policy and other factors that are important for international tennis success. Using the deductive approach, expert ratings of SPLISS pillars showed the importance of all SPLISS pillars in tennis (i.e., all rating averages were higher than 4 on a 5-point Likert scale). However, results on the open-ended questions (i.e., inductive
approach), provided more in-depth information on the relative importance of each of the policy areas. Findings from the open-ended questions showed, for example, that some policy areas (e.g., talent identification and post-career support) did not emerge as important policy areas in contrast with the findings of the expert ratings. Moreover, open-ended questions allowed the emergence of new tennis-specific themes. Using a mixed methods design highlighted how two ways of data (e.g., deductive quantitative expert ratings and inductive open questions) revealed complementary results on the same topic. Again, this is in line with the pragmatic worldview, which does not commit to any one system of philosophy and reality (Creswell, 2009).

Study 1 concluded with the critical reflection that the sample of tennis experts chosen to participate in the study might also have influenced the findings of the study (Brouwers et al., 2015b). From a social constructionist perspective, it is accepted that the environment within which people live and the past experiences they engender drive the construction of their reality and the choices they make (Hutchison & Charlesworth, 2011). The tennis experts who participated in this study engage in a commercialised and professionalised high performance tennis system that constructs a particular set of presuppositions, beliefs and values. Hence, it is not surprising that tennis experts rated the SPLISS policies as important. Also, the experts’ entrenched frame of reference could help interpret their relative lack of support for post-career support and the importance they placed on the role of culture and commercial environment. Therefore, future research requires the inclusion of other stakeholders such as elite players, performance directors and elite coaches of private tennis academies to examine their views on elite sport policies that influence international tennis success.

Studies 2 and 3 represent an interpretivism worldview underpinned by the belief that social reality is multiple and highly subjective (Creswell, 2009; Crotty, 1998). Therefore, the interpretivism worldview suggests that there is a need to obtain as many voices on phenomena as possible (Teddlie & Tashakkori, 2009). According to the interpretivism worldview, studies 2 and 3 aimed to establish meaning of a phenomenon from the views of participants (Creswell, 2009). An interpretative methodology was used to explore phenomena within elite tennis systems. Qualitative research methods, more specifically semi-structured interviews, were used in both studies.
In study 2, semi-structured in-depth interviews with international tennis experts provided insights on elite player development processes. Interviews with tennis experts only enabled tentative conclusions about elite player development pathways in tennis. Therefore, a key recommendation was that interviews with elite tennis players, an important stakeholder within elite player development, would offer additional insights based on players’ opinions and experiences (Brouwers et al., 2015a). In accordance with the interpretivism paradigm, this recommendation illustrates that ‘reality’ can be observed and explained in a multiplicity of ways (Bryman & Burgess, 1994). In other words, ‘reality’ is a construction of the human mind shaped by experiences of the world (Guba & Lincoln, 1998). This reflects that interviewing elite players, HPDs, CEMs, and tennis experts would provide different insights on elite player development pathways as each group has a particular set of experiences, presuppositions, beliefs and values.

Study 3 used qualitative research methods including document analysis and semi-structured interviews with tennis club and federation representatives to explore the ways these organisations form and manage their goals and relationships. While study 2 was conducted at an international level, study 3 was specific to the context of Flanders. Using the context of Flanders, the study showed the complexities of forming and managing IORs between tennis clubs and the tennis federation. The context specific research approach for study 3 is consistent and compatible with the epistemological and ontological assumptions of interpretivism that state that the world and reality are interpreted by people in the context of historical and social practices (Creswell, 2009). In other words, the characteristics of club-federation IORs are subjective and best understood in terms of individuals’ subjective meanings in a specific context.

Overall, the thesis examined factors that facilitate the development of elite players based on a questionnaire and interviews with international tennis experts (study 1 and 2), and interviews with NTA and club representatives in Flanders (study 3). In doing so, the thesis provided an understanding of the complexities of elite sport policies, the ways policies are operationalised through player development pathways, and the relationships that clubs shape with the federation in order to achieve their elite sport development goals. This thesis offered various practical recommendations for elite sport policy makers at national level, high performance directors, sport development offers, elite coaches, and club coaches. In accordance with the pragmatism worldview, and
focus on facilitating human problem-solving (Powell, 2001), this thesis identified various ways to further improve elite player development processes.

7.5 Implications for Practice

Each of the three studies in this thesis has strong implications for organisations and individuals that are involved in the initiation or implementation of policies, pathways and programs. This study offers practical recommendations for elite sport policy makers at national level, high performance directors, sport development offers, elite coaches, and club coaches.

At elite sport policy level, it is recommended that policy makers take into account the commercial and cultural environment of elite sport. Acknowledging the role of culture on elite sport success would allow policy makers and high performance directors to consider, nurture and strengthen it (Sotiriadou et al., 2013). The finding on the important role of the private sector (including private academies and high performance training centres) suggested the need for a stronger cooperation between NTAs and private high performance academies. Cooperation would offer more flexible pathways for players to receive NTA support (e.g., trainings camps, competition support) and at the same time train in a private academy with a private coach. These findings are important for understanding the ways elite sport success is fostered in a commercial sport like tennis. Also, it is likely that this knowledge could be relevant and applicable to other commercialised sports.

At the level of elite development pathways, policy makers and NTA high performance directors should take into account the heightened role that some tennis clubs have on elite athlete development. In doing so, they need to revisit the level of support clubs receive and the capacity clubs have to deliver optimal developmental pathways. It is recommended that NTAs further invest in quality, well-resourced clubs and educated club coaches to assure that they implement high quality talent development programs. Moreover, study 2 recommended that NTAs cooperate with third party organisations to organise international tournaments as this allows players to compete internationally and gain ranking points in own country, without having to pay for travel costs (Filipčič et al., 2013).
At the level of IORs between clubs and NTAs, several practical contributions are advanced. First, joint athlete development programs appeared a valuable way for clubs and NTAs to cooperate and achieve their common goal of elite athlete development. NTAs could consider investing more money, time and personnel in joint programs in order to further broaden the pool of talented players, and at the same time improve the quality of the development programs at club level through the education of club coaches. Second, the findings showed that it is important for NTAs to know the capacity of each of their clubs and to know which clubs offer quality development programs at the different athlete development stages. This is important as NTAs need to tailor their support according to the capacities of the clubs. Moreover, in cases where clubs have the capacity (e.g., elite level coaches, strength and conditioning facilities) to develop and support elite players, NTAs should recognise the contribution of these clubs to elite player development. Instead of ‘taking players away’ from clubs to train at the federation centre, NTAs could consider providing external support (e.g., financial support, advice, international competition support) while players train in the clubs.

7.6 Limitations and Future Research

Even though this thesis revealed significant and interesting insights for sport policy makers, high performance directors and sporting organisations involved with delivering athlete development opportunities, it has some limitations that represent avenues for future research. First, the data obtained were largely collected based on opinions of tennis experts (including high performance directors, coach education managers and other international tennis experts) (study 1 and 2). This represents a few limitations. As most of these experts represent the formal elite tennis system (high performance directors and coach education managers of NTAs), the results of this thesis are influenced by their presuppositions, values and beliefs. More importantly, due to time-related restrictions, a key stakeholder within elite player development that is not included in this thesis is the elite tennis players themselves. Elite players’ opinion and experience of transitioning through the elite development pathways would complement the findings in this thesis and offer additional insights on useful strategies and programs for elite player development. As tennis players appeared central actors in joint player development programs (since the programs are built around player support), views and assessments of joint programs by its primary user (i.e., the players) will provide insights
on how clubs and IORs can improve the management of their relationships. Future research is recommended to examine players’ views on the ways club-federation IORs could be better managed to further contribute to efficiencies in player development.

Second, the three studies concluded that it is necessary to look beyond government initiated policies and NTA initiated pathways. Specifically, study 1 highlighted the importance of the cultural and commercial (media, sponsors and private sector) environment, and study 2 highlighted the importance of the clubs, private academies and third party organisations. Despite the emergence of the cultural and commercial environment (study 1), and the importance of clubs, private academies, and third party organisations (study 2) for elite player development processes, study 3 solely focussed on NTA-club IORs. The focus on clubs in study 3 was based on space restrictions for the third journal article. Moreover, NTA-club IORs were expected to be more formal and substantial compared to loose and unstructured NTA-commercial sector IORs. Therefore, the examination of relationships between clubs and an NTA lends itself more to the application of IOR theory. Study 3 noted that IORs between clubs and NTAs can facilitate the development of elite tennis players. Overall, the thesis findings suggest that elite tennis is influenced by several social, cultural, and economic conditions of the environment in which it operates (Chelladurai, 2009). It is therefore recommended that future research uses an open systems approach to examine elite player development in order to expand beyond the government initiated policies of the NTAs and examine the contribution of all the potential actors to elite tennis success. Study 3 examined the IORs between NTAs and tennis clubs in a specific context, Flanders. However, an open systems approach would allow researchers to include not only clubs and the NTA, but also third party organisations, commercial tournament organisations, media, and sponsors that operate alongside the traditional and institutionalised athlete development pathways (Newland & Kellet, 2012; Phillips & Newland, 2014).

Last, all three studies noted that findings and conclusions may be relevant to other sports that operate in a highly commercialised environment in which the influence of the private sector is increasing. However, these generalisations need to be considered with caution because policies, pathways and IORs need to be examined at a sport-specific level to offer an accurate depiction of elite athlete development. It is likely that
the involvement of the private sector in sports leads to variations in the ways elite athlete development is delivered. Subsequently, future research is required to examine emerging models of elite athlete development in commercialised sports.

7.7 Conclusion

This thesis examined the role of elite sport policies, pathways and inter-organisational relationships in developing elite tennis players. In doing so, it responded to the need for studying elite athlete development at sport-specific level to take into account the context within which a sport operates in. The thesis offered a more holistic view on elite athlete development compared to elite sport policy studies that focus on the top-down view of policy implementation without taking into account how policies are filtered down into pathways and programs to develop elite athletes (Andersen et al., 2015). The thesis concluded that the factors that facilitate the development of elite tennis players vary depending on the relative importance that a sport places on various policies, the context in which it operates, the ways various stakeholders are involved in elite player development, the resulting elite player pathways, and the dynamics of IORs between clubs and NTA. Overall, elite sport policies in a commercialised sport, like tennis, appear to shift away from the typical government driven policy and funding model to include the emerging influence of the private sector including private tennis academies and clubs that have an input on elite player development which sits outside government policy direction.
Reference List


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Appendices

Appendix 1 – Study 1 and 2 ethical clearance (RO1163)

Note: PhD candidature commented at Bond University and was transferred to Griffith University. Therefore, data collection for studies one and two fell under Ethics clearance at Bond University.

24 June 2010

Asth Prof Popi Sotiropoulou, Jessie Brouwers
Faculty of Health Sciences and Medicine
Bond University

Dear Popi and Jesse

Project No: RO1163
Project Title: The competitiveness of nations in elite sports discipline: In the case of tennis

I am pleased to confirm that your Project, having been reviewed under the Expedited Review Procedure, has been granted approval to proceed.

It is important to remember that BUHREC's role is to monitor research projects until completion. The Committee requires, as a condition of approval, that all investigations be carried out in accordance with the National Health and Medical Research Council's (NHMRC) National Statement on Ethical Conduct in Research Involving Humans and Supplementary Notes. Specifically, approval is dependent upon your compliance, as the researcher, with the requirements set out in the National Statement.

Additionally, approval is given subject to the protocol of the study being undertaken as declared in your application, with amendments, where appropriate.

As you may be aware the Ethics Committee is required to annually report on the progress of research it has approved. We would greatly appreciate notification of the completed data collection process and the study completion date.

Should you have any queries or experience any problems, please liaise directly with Caroline C rustons early in your research project: Telephone: (07) 559 54194, Facsimile: (07) 559 51120, Email: buhrec@bond.edu.au.

We wish you well with your research project.

Yours sincerely,

Dr Mark Bahr
Chair
Appendix 2 – Study 1 online questionnaire

1. Introduction

Dear tennis expert,

This survey is estimated to take 10 minutes of your time to complete. Your participation is highly appreciated and valued.

All data obtained through the survey will be treated as personal, and will be stored securely to protect the participant’s identity from being made public. Data collected will be processed manually and with the aid of computer software. Anonymity of your participation can be assured by our procedure. Participation in this research is voluntary and you may withdraw at any stage.

On completion of this international study, all participants will receive a copy of the results. We hope that this will enable those who took part in the research to improve the national top level tennis policies in their own countries.

Thank you kindly for your time.

PhD Candidate Jessie Brouwers
Telephone +61 7 5595 4120
Fax +61 7 5595 4480
Mail jessie.brouwers@student.bond.edu.au

Principal Supervisor Popi Sotiriadou
Telephone +61 7 5595 1483
Fax +61 7 5595 4480
Mail pso@bond.edu.au

Should you have any concerns with regard to the conduct or nature of this research, please feel free to contact:
Senior Research Ethics Officer
Bond University Human Research Ethics Committee
c/o BURCS
Bond University
QLD 4229
Tel: 07 5595 4194
Fax: 07 5595 1120
Email: buhrec@bond.edu.au
2. Open question on the factors influencing tennis performances of countries

Question 1
Starting from the most important, what are the five key policy factors that you believe contribute the most to the international tennis success of a country?
(This question does not only relate to your country but to countries in general)

Factor 1

Factor 2

Factor 3

Factor 4

Factor 5
3. Strengths and weaknesses in your own country

Question 2
In which country are you currently working?
Country: 

Question 3
What are -according to your personal opinion- the three main strengths of the tennis policies in YOUR OWN country?
Strength 1

Strength 2

Strength 3

Question 4
What are -according to your personal opinion- the three main weaknesses of the tennis policies in YOUR OWN country?
Weakness 1

Weakness 2

Weakness 3
4. Policy factors that influence tennis success of countries: ratings

**Question 5**
The factors in the table below were identified in earlier sport policy studies as factors that influence elite sport success of a country in general (not sport specific). Please rate how important the following factors are to be a successful tennis country (in general, not in your own country).

<table>
<thead>
<tr>
<th>Factor</th>
<th>Unimportant</th>
<th>Of little importance</th>
<th>Moderately important</th>
<th>Important</th>
<th>Very important</th>
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<tbody>
<tr>
<td><strong>FINANCIAL SUPPORT</strong></td>
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<tr>
<td>- Sufficient financial support for tennis (grassroots tennis)</td>
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<tr>
<td>- Sufficient financial support for elite tennis</td>
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<tr>
<td>- Sufficient financial support for the national tennis association</td>
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<tr>
<td><strong>STRUCTURE AND ORGANISATION OF TENNIS POLICIES</strong></td>
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<tr>
<td>- A long term planning for elite tennis development with commitment of subsidies for elite tennis</td>
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<td>- A strong coordination of all agencies in elite tennis, with a clear task description and no overlap of different tasks</td>
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<td>- Simplicity of administration</td>
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<td>- Effective communication: there is an unbroken line up through all levels of tennis agencies</td>
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<td><strong>TENNIS PARTICIPATION</strong></td>
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<tr>
<td>- Children get opportunities to participate in tennis at school, during physical education or extra-curricular</td>
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<td>- A high general tennis participation rate</td>
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<td>- Talent quality management in tennis clubs is encouraged</td>
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<td><strong>TALENT IDENTIFICATION AND DEVELOPMENT SYSTEM</strong></td>
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<td>- An effective system for the detection of young talent (not sport specific, e.g. through schools)</td>
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<tr>
<td>- An effective system for the detection of young talent in tennis</td>
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<td>- A coordinated planning for the development of potential talent in tennis</td>
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<td>- Appropriate training and competition support for young tennis talents, supervised by expert coaches and with access to high standard facilities</td>
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<td>- A multidimensional support programme for young talents including medical support, mental support, nutrition, scientific support and career advice</td>
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<td>- Career support for young talents for the combination of tennis development and academic study</td>
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<td><strong>ATHLETIC AND POST CAREER SUPPORT</strong> (once an athlete starts performing at senior level)</td>
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<td>- Good individual living circumstances so that tennis players can concentrate on their sport full time</td>
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<td>- A coordinated support program for elite tennis players (e.g. coaching, legal advice, competition support, sport science support, sport medicine support)</td>
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<td>- Post career support and preparation for life after tennis career</td>
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<tr>
<td><strong>TRAINING FACILITIES</strong></td>
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<td>- A network of high quality national/regional elite tennis centres where tennis players can train under good conditions at any point of the day</td>
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<td>- National coordination plan where tennis facilities throughout the country are recorded and the needs of tennis players and coaches are known and clearly mapped out</td>
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<td>- The national tennis association and clubs can get funds for the renovation and building of sports facilities and elite sport facilities</td>
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<td><strong>COACHING PROVISION AND COACH DEVELOPMENT</strong></td>
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</table>
5. Ranking of the most important factors

Question 6
Which 5 factors of the 10 following factors have the greatest influence on a country’s international tennis success? Please indicate 1 (the most important factor), 2 (second most important factor), ..., 5 (fifth most important factor). Use each number only once.

- Financial support for tennis and elite tennis: total national and regional expenditures on tennis and elite tennis
- The structure and organisation of tennis policies: an integrated approach to policy development, long-term planning, clear task descriptions, simplicity of administration, effective communication
- Talent identification and development: an effective talent identification system, coordinated planning for talent development at the right age, multidimensional support programmes, study support
- Sporting and post career support: support for individual living circumstances, coordinated support programme for elite tennis players, post career support
- Training facilities: a network of high-quality national and regional elite tennis centres, national coordination
- Coaching provision and coach development: well-trained tennis coaches, a good (elite) coaches education system, support for the individual living circumstances of tennis coaches, the recognition of the job of coaches
- National and international tennis competition: a good national competition structure, sufficient opportunities to take part in international competitions, organisation of international tennis events in the country
- Scientific support for elite tennis: support for elite tennis by applied scientific research, dissemination and coordination of scientific information
- Elite tennis culture: the way people in a nation think about tennis, engage in tennis and are interested in tennis
6. Factors not influenced by policies

Question 7
Rank the importance of the following factors that are not controlled by tennis policies

<table>
<thead>
<tr>
<th>Factor</th>
<th>Unimportant</th>
<th>Of little importance</th>
<th>Moderately Important</th>
<th>Important</th>
<th>Very Important</th>
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<tbody>
<tr>
<td>Sport and tennis culture (popularity of tennis)</td>
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<tr>
<td>Tradition of tennis success</td>
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<td>Political context of a country</td>
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<td>Media support for tennis (financial)</td>
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<tr>
<td>Media attention for tennis (broadcasting, newspapers)</td>
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<tr>
<td>Sponsoring (for players, tennis organisations, clubs,...)</td>
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</table>

Question 8
Would you add any other factors that are important to develop elite tennis players in a country?

7. Thank you!

This study is confidential and all data obtained through this survey will be treated as personal. Your identity will not be made public. However, I would appreciate it if you could provide your name, email address and phone number to keep track of who has responded and as you might be selected for a short follow up interview by Skype or phone.

Name

Email address

Thank you kindly for your time and for sharing your opinion!

Jesse Brouwer
PhD Candidate
jbrouwer@bond.edu.au
Appendix 3 – Study 2 interviews: explanatory statement

Explanatory Statement

Date: 14 June 2010
Project title: The examination of the tennis policy factors that influence performances
BUHREC Project Number: RO-1163

Please take the time to read the following explanatory statement before completing the interview. My name is Jessie Brouwers and I am a PhD student under the supervision of Assistant Professor Popi Sotiriadou at Bond University at the Faculty of Health Sciences and Medicine and the sport management program.

I am researching the elite tennis policies. The research project aims to identify the critical success factors of elite tennis policies. The results of the study will indicate the importance of certain policy factors in the quest for international sporting excellence. A critical evaluation of these factors will deliver opportunities to optimise athlete success.

Participating in the study involves an 20 to 30 minutes phone or Skype interview which will be audio recorded. The interview is about various elite sport policy areas such as talent identification and coaches education. All data obtained through the interview will be treated as confidential, and will be stored securely to protect the participant’s identity from being made public. Data collected will be processed manually and with the aid of computer software. Anonymity of your participation can be assured by our procedure.

Contribution of tennis experts is fundamental to this study, however, participation in this research is voluntary and you may withdraw at any stage.

If you have any queries or would like to be informed of the aggregate research finding, feel free to contact me or my supervisor Dr. Sotiriadou.

Thank you kindly for your time.

PhD Candidate Jessie Brouwers          Supervisor Popi Sotiriadou

Signature___________________          Signature___________________
Telephone +61 7 5595 4120              Telephone +61 7 5595 1483
Fax +61 7 5595 4480                    Fax +61 7 5595 4480
Mail jessie.brouwers@student.bond.edu.au  Mail psotiria@bond.edu.au

Should you have any concerns with regard to the conduct or nature of this research, please feel free to contact:
Senior Research Ethics Officer
Bond University Human Research Ethics Committee
c/o BURCS
Bond University
QLD 4229
Tel: 07 5595 4194
Fax: 07 5595 1120
Email: buhrec@bond.edu.au
Appendix 4 – Study 2 interview guide

First of all thank you very much for your time and readiness to share your expertise. For my research I would like to ask some questions on important strategies and stakeholders in the delivery of elite development pathways.

- Which stakeholders are involved with the development of elite tennis players?
- What is the role of these stakeholders in tennis player development?
  - National tennis association
  - Clubs
  - Coaches
  - Other stakeholders
- What strategies or programs do these stakeholders provide for tennis player development?
- Do these stakeholders provide any other types of support?
- At which development stages are these stakeholders involved?
  - Who is involved at grassroots level? How?
  - Who is involved at talent identification level? How?
  - Who is involved at talent development level? How?
  - Who is involved at the elite level? How?
- Is there anything you would like to add about stakeholders and pathways in elite player development?

Probe questions:

- Why?
- How is that?
- Because?
- You mentioned [...], what do you mean by that?
- Could you please explain that in more detail?
- What effect does that have on elite tennis success?
Appendix 5 – Study 3 ethical clearance (HSL/31/11/HREC)

To Whom it May Concern

Human Research Ethics Approval

“Elite sport policies that influence the international tennis success of countries (phase 2)”
(Ref: HSL/31/11/HREC)

I am pleased to advise that this research has approval to commence from the Griffith University Human Research Ethics Committee, a committee established and operating in accordance with the standards and principles of the Australian National Statement on Ethical Conduct in Human Research (2007) and Griffith University policy.

The decision to approve is dated 23 August 2011 and covers the period 23 August 2011 to 31 December 2014.

For any queries regarding this ethical approval please contact the Committee Secretary on 3735 4375 or research-ethics@griffith.edu.au.

Yours sincerely,

Rick Williams
Secretary to the Griffith University
Human Research Ethics Committee and
Manager, Research Ethics and Integrity
Office for Research
Griffith University
Nathan Qld 4111 Australia

25 August 2015
Appendix 6 – Study 3 information sheet and consent form

Elite sport policies that influence the international tennis success of countries

INFORMATION SHEET

Traditional Investigators
Dr. Popi Sotiriadou
Griffith Business School
+61 (07) 555 29241
p.sotiriadou@griffith.edu.au
Prof. Graham Cuskelley
Griffith Business School
+61 (07) 555 28469
g.cuskelley@griffith.edu.au
Prof. Veerle De Bosscher
Vrije Universiteit Brussel
vdeboss@vub.ac.be

Student Investigator
Jessie Brouwers
Griffith Business School
PhD Sport Management
+61 420 859 952 (Australia)
+32 498 07 95 81 (Belgium)
Skype: jessi_brouwers
Jessie.brouwers@griffithuni.edu.au

Please take time to read the following information sheet before completing the interview.

Why is the research being conducted?

The aim of this study is to examine how the national tennis association (Tennis Vlaanderen) and private high performance academies contribute to the development of elite tennis players in Flanders. This will indicate the factors that are important for international tennis success in Flanders.

What you will be asked to do

You will be asked to participate in a face-to-face interview. Open questions will be asked about the implementation or organisation of policies that influence international tennis success. In some cases you might be asked to provide additional documentation (e.g., year reports, guidelines) to support your answers.

The interview will be conducted at a date & time and location (e.g., tennis club, training centre, office) that is convenient for you. The interview will take between 60 and 90 minutes depending on the amount of information that can be provided. You might be contacted at a later time for a short follow-up interview if required.

The basis for your selection for this research

You were selected for this interview as you are an important stakeholder of the elite tennis policy in your country (e.g., high performance director, competitions coordinator,
community tennis manager, other manager involved in tennis policy, elite player, elite coach at the national tennis association or in a private tennis academy/club). The selection was based on your function in the association or academy (managers/directors) or on your ranking (players) or the ranking of your players (coaches). Your contact details were found on the website of the national tennis association or tennis academy or provided by the national tennis association.

**The expected benefits of the research**

The benefits of this study will flow to the policy makers of national tennis associations and high performance academies. In a later stage, this study will also benefit other stakeholders of elite tennis policies (e.g., better support for future elite players and coaches). The benefits of this study are at a theoretical and practical level.

**Theoretical:**

- The study will contribute to other elite sport policy studies, which are mainly sport generic, through the development of a tennis specific model which illustrates the factors that influence the tennis performance of a country.

**Practical:**

- The study will provide insights to the sport policy and other factors that can influence the tennis success of countries.
- The study will inform policy makers and high performance directors in Flanders about the effectiveness, strengths and weaknesses of their policies. Policy makers and high performance directors will be in a better position to improve their policies. Recommendations will be made in order to improve the implementation of elite tennis policies countries involved in the study.
- The study will deliver insight in the inter-organisational relationship between the National Tennis Association and private high performance academies in Flanders.

**Risks to you**

There are no risks for the participants in this study.

**Your confidentiality**

As the interview is face-to-face, it is inevitable that the researcher will know your identity. You will be allocated a code to identify your personal details. The code will be used to identify your responses in the interviews. The data and identifying code will be stored separately so that your confidentiality will be preserved. The identifying codes will be destructed after completion of this study. The information you provide will not be reviewed by anyone other than the researchers listed on this information sheet.

Audio files will be stored on the investigators’ computer until transcribed. Once the audio files are transcribed, they will be erased/destroyed. Transcripts and any additional notes will be stored in a locked filing cabinet within the Griffith Business School. Your identity will not be made available to other parties and participants will remain anonymous in any publication of findings. In such publications we will refer to participants
as “an elite tennis player” or “a staff member of the national tennis association” or “a private academy coach”. We will not use participant descriptions where one might be able to identify the individual by inference (e.g., the high performance director of tennis association X).

**Your participation is voluntary**

Your participation is voluntary and you are free to withdraw from the study at any time.

**Questions / further information**

If you have any further questions in relation to the research, please feel free to contact the student investigator (Jessie Brouwers) by email, phone or Skype or the principal investigator (Popi Sotiriadou) by phone or email (contact details are provided on the top of this letter).

**The ethical conduct of this research**

Griffith University conducts research in accordance with the *National Statement on Ethical Conduct in Human Research*. If you have any concerns or complaints about the ethical conduct of the research project you should contact the Manager, Research Ethics on +61 (07) 3735 5585 or research-ethics@griffith.edu.au.

**Feedback to you**

If you would like to receive a report on the overall findings and results of the research, please tick the corresponding box in the consent form and provide your email address.

**Privacy Statement**

The conduct of this research involves the collection, access and / or use of your identified personal information. As outlined elsewhere in this information sheet, your identified personal information may appear in the publications/reports arising from this research. This is occurring with your consent. Any additional personal information collected is confidential and will not be disclosed to third parties without your consent, except to meet government, legal or other regulatory authority requirements. A de-identified copy of this data may be used for other research purposes. However, your anonymity will at all times be safeguarded, except where you have consented otherwise. For further information consult the University’s Privacy Plan at: http://www.griffith.edu.au/about-griffith/plans-publications/griffith-university-privacy-plan or telephone +61 (07) 3735 5585.
Elite sport policies that influence the international tennis success of countries

CONSENT FORM

Research Team
Senior investigators: Dr. Sotiriadou, Prof. Cuskelly and Prof. Veerle De Bosscher
Student investigator: Jessie Brouwers
Griffith Business School
+61 (07) 555 29241
p.sotiriadou@griffith.edu.au

By signing below, I confirm that I have read and understood the information package and in particular have noted that:

• I understand that my involvement in this research will include in an in-depth interview about the elite tennis policy in my country;
• I have had any questions answered to my satisfaction;
• I understand the risks involved;
• I understand that there will be no direct benefit to me from my participation in this research;
• I understand that my participation in this research is voluntary;
• I understand that if I have any additional questions I can contact the research team;
• I understand that I am free to withdraw at any time, without comment or penalty;
• I understand that I can contact the Manager, Research Ethics, at Griffith University Human Research Ethics Committee on 3735 5585 (or research-ethics@griffith.edu.au) if I have any concerns about the ethical conduct of the project; and
• I agree to participate in the project.

Tick the box if you would like to receive a report on the overall findings and results of the research and provide our email address.

☐ Email address: .................................................................

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Appendix 7 – Study 3 interview guide

The interview will start as follows:

“First I want to thank you in advance for your time and your participation in this study. This interview consists of open-ended questions regarding processes in elite tennis player development. I may take a few notes throughout the interview but I will mainly collect your information through means of this recording device. As mentioned in the Explanatory Statement sent to you, you will remain anonymous throughout this study and beyond.”

After this short introduction, some questions will be asked to build rapport with the interviewee. These questions allow collecting information about the background and working experience of the interviewees. Building rapport with the interviewee should take no longer than three to seven minutes. The following questions will be asked:

<table>
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<th>Questions to build rapport with the interviewee</th>
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<td>First, the interviewer will ask some questions about the background of the interviewee to build rapport. The questions depend on the role of the interviewees (i.e., high performance director, representative of the organisation with a leading role or coach).</td>
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**High performance directors or other representatives with a leading role in the organisation**

- Your current function in the federation/Club is xxx. How long have you been in this position?
- Which positions have you held before? How long? Where?
- Can you tell me a bit more about your current responsibilities?
- How long have you worked in the elite tennis sector?
- If not answered: have you always worked in the private/public sector? Explain.

**Coaches**

- Can you tell me about your current responsibilities as coach?
  - Which age group (stage of development)? How many players?
- Have you held other (coaching) positions before? Which ones? Where?
- How long have you worked in the elite tennis sector?
- If not answered: have you always worked in the public/private sector? Explain.
PART 1: Role of clubs/federation

CLUBS

- To what extent can the club develop elite tennis players?
- Until what age can the club support talented players of the highest level?
- Which programs and strategies are available in the club for elite player development?
- What is the talent development pathway in club?
  - Which support is given to talented players at each stage?
- What kind of support is offered to professional players?
- What are the challenges at club level for elite player development?

FEDERATION

- What is the role of the federation in elite player development?
- What is the talent development pathway in the federation?
  - Which support is given to talented players at each stage?
- What kind of support is offered to professional players?
- What are the challenges at the federation level for elite player development?

PART 2: Inter-organisational relationships between federation (TV) and clubs

- How do you see the role of the federation and the clubs for the development of elite players?
- Can you tell me a bit more about the relationships between the federation and clubs?
- What are your motives to cooperate with the clubs/federation?
- Why is cooperation with the clubs/federation important?
- How would you describe the relationship between the federation and the clubs?
- How do the clubs and the federation cooperate with regard to the Kids Development Team?
  - How would you describe this cooperation?
  - How is it managed?
  - Is it efficient? Why? Why not?
- How do the clubs and the federation cooperate with regard to the Junior Development Team?
  - How would you describe this cooperation?
  - How is it managed?
  - Is it efficient? Why? Why not?
- How do clubs and the federation cooperate with regard to the Elite Sport School?
  - How would you describe this cooperation?
  - How is it managed?
  - Is it efficient? Why? Why not?
- Are there any other levels at which there is a cooperation between the club and the federation?
  - Which levels? How? How are they managed?
- How flexible is it for players to transfer between programs of the federation and clubs?
- Can players receive partial support from the federation and a club? (e.g., are players who train in private academies invited to participate in training camps of the federation or for international competitions?)
- Do you think TV and clubs could/should work together to develop elite tennis players?
  - If yes, how?
  - If no, why not?
  - What would be the benefits of it?
  - What would be the potential problems/issues with it?