



Participation, retention and dropout of children and adolescents in club-based community tennis

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Abstract

Promoting participation in sport to achieve sporting excellence and health outcomes is a national policy of Australia. Organised, club-based sport at community level is important as it provides a pathway to elite sporting success and contributes to health and wellbeing of participants. Dropout from all forms of club-based sports including tennis occurs specifically during adolescence in Australia and internationally. Little is known about the factors that collectively influence this age group in their choice to continue playing club-sport or to drop out. This PhD program of research investigated the trends and determinants of retention and dropout among children and adolescents playing community level club-based tennis in the Australian state of Victoria.

The program of research used the socio-ecological model underpinned by Leisure Constraint Theory and Fun Integration Theory to understand the different factors that influence retention. The mixed-methods explanatory sequential research design comprised of two consecutive phases of quantitative study that involved secondary data analysis of state-wide club-tennis participation and an on-line survey that examined the determinants of retention and dropout with a socio-ecological perspective. This was followed by an informed qualitative study to explore the key findings in depth. Players aged 10-18 years who were or had been registered players at tennis clubs in Victoria were invited to participate. Analysis of survey data and interviews identified a range of factors that influence and impact the decision of young players to continue playing club-based tennis or to drop out.

The result from this program of research highlighted the two intrapersonal determinants ‘enjoyment’ and ‘competency’ as ‘core’ determinants of young players’

choice to be retained or to drop out. Many previous studies have listed enjoyment and competency and several other socio-ecological factors as determinants influencing retention. This research created new knowledge by explaining how each individual socio-ecological element influenced retention through enhancing or diminishing the two core determinants. Mapping of the interaction of multiple socio-ecological elements in leading to retention or dropout while presenting enjoyment and competency as core determinants is unique.

Improving retention in club-based tennis during adolescence is important for maintaining participation as a habit into adulthood. As a practical way to achieve this, factors that are identified in this study as influencing enjoyment and competency can be targeted through interventions at various levels through policies and strategies in delivering club programs, coaching and competition. Competency and enjoyment are interconnected in promoting retention. Increasing access to affordable and good quality coaching promotes enjoyment through improving competency and hence should be prioritised to sustain children's interest and passion for the game.

The knowledge about interconnectivity of several apparently distinct elements reiterates the importance of a holistic approach in sport retention studies. It provides the theoretical backing for strategies aimed at retaining more children and adolescents in organised sport which is important for carrying regular physical activity habit into adulthood and ensuring sustainability of organised sports.

Statement of Authorship

Except where explicit reference is made in the text of this thesis, this thesis contains no material published elsewhere or extracted in whole or in part from a thesis by which I have qualified for or been awarded another degree or diploma. No other person's work has been relied upon or used without due acknowledgement in the main text and bibliography of this thesis.

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Ethics Approval

- Ethics approval for Study 1 (Quantitative analysis of demographic variables in club tennis participation) was granted as part of project Sport and Recreation Spatial Ethics (Project No: C13-007; see Appendix 2).
- Ethics approval for Study 2 (Web-based survey exploring determinants of retention and dropout in club tennis players) was granted by University Human Research Ethics Committee for conducting online survey for children and adolescents in Victoria (Project No: A18-028; see Appendix 3) through Tennis Australia.
- Ethics-Amendment Approval for Study 2 (Web-based survey exploring determinants of retention and dropout in club tennis players) was granted by University Human Research Ethics Committee for conducting online survey (Project No: A18-028; see Appendix 3)
- Ethics approval for Study 3 (Qualitative study on determinants of retention and dropout) was granted by University Human Research Ethics Committee for conducting qualitative study (Project No: A19-136; see Appendix 9) to the target group through individual interviews through phone and or face-to-face.

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Abbreviations

<i>ABS</i>	Australian Bureau of Statistics
<i>ASC</i>	Australian Sports Commission
<i>LTPA</i>	Leisure Time Physical Activity
<i>WHO</i>	World Health Organisation
<i>AIHW</i>	Australian Institute of Health and Welfare
<i>FIT</i>	Fun Integration Theory
<i>LCT</i>	Leisure Constraint Theory

1. Introduction

Health professionals and policymakers have long been emphasising the importance of physical activity in improving health and wellbeing (WHO, 2017). The World Health Organisation (WHO) acknowledges this and advocates reintegrating physical activity in the daily routine of individuals (WHO, 2002). However, it is estimated that 28% adults and 81% adolescents (aged between 11-17 years) of the world do not meet the recommended minimum requirement of physical activity for good health (WHO, 2018). Likewise, in Australia, according to Australian Bureau of Statistics (ABS) in 2018, only 2% of 15 to 17-year-olds, 15% of 18 to 64-year-olds and 17% of 65+ year-olds were reported as meeting the physical activity guidelines (ABS, 2018a). Physical inactivity has a significant negative impact on Australia's economy evidenced by a study that estimated the annual direct healthcare cost of physical inactivity for Australia in 2013 as \$640 million (Ding et al., 2016).

1.1. Sport and health nexus

There are different ways for people to be physically active such as occupation, household work, transport and leisure-time activities (VicHealth, 2016). In economically advanced societies the most common mode of being physically active is engagement in leisure-time physical activities (LTPA). 'Sport', as a major form LTPA, encompasses a broad range of recreational and informal physical activities as well as traditional, organised and high-performance sports (Commonwealth of Australia, 2018). Sport can be 'organised' or 'non-organised', it can be in different formats such as 'individual sport' or 'team sport', and it can take place in various settings such as sports club, school or neighbourhood (Eime, Harvey, Sawyer, et al., 2013; Eime, Harvey, Sawyer, Craike, et al., 2016).

‘Club-based sport’ is organised sport delivered in a club setting through a sports or recreation club that require payment of a fee for participation or registration (Richards, 2017b). Despite its limitations, club-based sport is the most popular form of organised sport delivered at community level in several countries including Australia. Due to its social and team-based nature, club-based sport can be more beneficial in promoting wellbeing compared to other non-organised forms of physical activity that happen in isolation (Eime, Young, Harvey, et al., 2013; Eime, Harvey, Charity, et al., 2015). Sports clubs in several countries like the UK, Australia and the Scandinavian nations have the primary objective of delivering organised, recreational and competitive sport programmes (Eiðsdóttir et al., 2008; Mathisen et al., 2019; Misener et al., 2014; Nichols et al., 2008). Active members of sports clubs are much more likely to achieve the recommended levels of physical activity than others. Therefore, promoting sports clubs is an effective strategic intervention to increase overall physical activity levels within a population (Bellew et al., 2020; Kokko et al., 2019). Globally, many governments and health organisations view sports clubs as an important setting that can be utilised for promoting sports to achieve associated health and societal benefits (Fahlén et al., 2016; Ooms et al., 2019; Skille, 2011; Sport England, 2014; Waardenburg et al., 2013).

In Australia, community sports clubs are voluntary and non-profit organisations within the auspices of National and State Sporting Organisations (NSOs and SSOs). They are viewed as socially responsible organisations obliged to serve members through providing facilities to play recreational and competitive sport (May, 2021c; Misener et al., 2014; Robertson et al., 2019). Community sports clubs play a unique role in empowering people (Kelly et al., 2014) and in improving long term physical, emotional and mental health of participants, especially children and adolescents (Donaldson et al., 2006; Eime, Harvey, Payne, et al., 2009; Eime, Young, Harvey, et al., 2013; Eime, Harvey, Sawyer,

Casey, et al., 2015; Mullan et al., 2012). The drivers for Australian sport policy are achieving elite sporting success and increasing grass-roots community sport participation (Commonwealth of Australia, 2018). ‘Sport 2030’, a comprehensive and ambitious strategic plan that prioritises building a more active Australia, highlights participation in sports through local clubs as a path to increase physical activity (Commonwealth of Australia, 2018; Eime et al., 2010).

1.2. Levels of sport participation

Playing sport at a sports club can be a key component in an active and healthy lifestyle, particularly in youth (Kokko et al., 2019). World-wide, rates of sport participation are typically highest among young children but it declines rapidly during adolescence and adulthood (Australian Institute of Health and Welfare (AIHW), 2018a; Breuer et al., 2009; 2015; Dumith et al., 2011; Sport Australia, 2018a; Sport England, 2019). Some of the highest participation rates of children in club-based sports are in the Scandinavian countries; for example, 88% in Finland and 86% in Denmark (Breuer et al., 2015; Mathisen et al., 2019; Scheerder et al., 2011). Several European countries saw an increase in organised sport participation among children in the past decade (European Commission, 2020; Lange, 2019; Stefan et al., 2018; Tremblay et al., 2019) due to recruiting more young children into sport and attracting more girls via offering a wider variety of activities through sports clubs (Richards, 2021; Sport Australia, n.d a and n.d b). However, studies continue to find a much-reduced participation in organised sports by adolescents aged 15 years and older (Dumith et al., 2011; Trang et al., 2012; Jakobsson, 2012; Sport Australia, 2018a; 2018b) which points to significant issues in retaining this age group.

Community sports clubs in Australia have wide reach and appeal. Participation in club-based sports is a very popular form of LTPA among children and younger adolescents

(Richards, 2017a). Similar to many countries such as the UK and nations of the European Union (Eiðsdóttir et al., 2008; Kokko et al., 2019; Mathisen et al., 2019; Stöckel et al., 2010; Toftegaard, et al., 2010) the traditional and principal means of participation in club-based sports among children and younger adolescents in Australia is via membership of a sporting club (Eime & Payne, 2009; Eime, Harvey, Payne, et al., 2009; May, 2021c; Robertson et al., 2019). Availability of well-recorded membership data from sports clubs over the past several years makes it a good indicator to study retention and dropout for various cohorts.

State Sporting Organisations (SSOs) and National Sporting Organisations (NSO) focus on promoting community sport as a strategy (May, 2021a). Reports indicate an increase in participation of Australian children and adolescents in organised sport and physical activity from 2016-2019 (Australian Sport Commission (ASC), 2016; Sport Australia, 2019a). The highest increase in participation was reported for age group 5-8 years (8.1% increase from 2016, to 58%) followed by 9-11 years (6.3% increase from 2016, to 70.3%) and 12-14 years (5.5% increase from 2016, to 65%). There was only marginal increase (0.4% from 2016, to 53%) for the adolescent age group of 15-17 years (ASC, 2016; Sport Australia, 2019a). Despite this increase in participation in recent years, disparities based on gender and socio-economic status are prevalent. Wide gaps have been reported in organised sport and physical activity participation outside of school among children aged 0-14 years, based on gender (44% males compared to 36% females (Sport Australia, 2021); region (58% from remote areas compared to 76% from major cities (Sport Australia, 2018a) and socio-economic level (58% of children from low-income families compared to 84 % from high-income families (Sport Australia, 2018a). Narrowing these gaps via appropriate policies and strategies has the potential to reap immense socio-economic and health benefits.

1.3. Dropout from club-based sport

In several aspects, adolescence is a transitional period of life when a person is becoming increasingly independent (Dumith et al., 2011; UNICEF, 2011). High dropout from organised sports during adolescence is reported world-wide (Breuer et al., 2015; Dumith et al., 2011; Emmonds et al., 2021; Sport England, 2019; Telford et al., 2015; Trang et al., 2012) and from Australia (ASC, 2016, 2017; Eime, Harvey, Charity, Casey, et al., 2016; Eime et al., 2019; Olds et al., 2009). A sharp drop in sports participation occurs during adolescence and this trend continues through to adulthood (Eime, Harvey, Charity, and Payne, 2016; Eime et al., 2019; Koko et al., 2019; Sport Australia, 2018a; VicHealth, 2021). For example, sports participation of children through sporting clubs or associations showed a sharp decline from 40% for the age group 0-14 years to 21% for those aged 15+ years (Sport Australia, 2021) despite efforts by sporting organisations to increase children's participation (VicHealth, 2019b; Richards, 2017a). The trend of massive dropout from club-based sport on reaching adolescence highlights the opportunity to improve (Eime and Westerbeek, 2020). Sport 2030, the national sports plan for Australia, aims to improve overall health and wellbeing through encouraging more Australians to participate more regularly in a wide variety of exercise and movement activities including competitive sports (Commonwealth of Australia, 2018). Strategies to reduce dropout from club-based sport during adolescence is highly relevant in this context.

1.4. Determinants of retention: existing knowledge and gap

Previous studies identified a number of factors that determine whether a child or adolescent is more likely to continue participation in club-based sport or not (Crane et al, 2012, 2015; Eime, Harvey, Sawyer, et al., 2013; Eime, Harvey, Sawyer, Craike, et al., 2016; Fraser-Thomas et al, 2008; Gardner et al., 2016; Ullrich-French et al., 2009). A socio-

ecological model is useful in the holistic examination of various determinants that promote retention or lead to dropout. Within a socio-ecological framework, these determinants relate to different categories namely intrapersonal (or individual), interpersonal, social, community, environmental and policy (Elder et al., 2007). The collective influence of determinants seems to increase from early to late adolescence (Elder et al., 2007; Vella et al., 2014). Past studies on the issue of retaining children and adolescents in playing sport in a club setting found that sport-specific factors play a crucial role in their retention (Crane et al., 2015; Jõesaar et al., 2011; Talpey et al., 2017; Wagnsson et al., 2013) along with major demographic factors such as age, sex, region and socio-economic status (Eime, Charity, Harvey, & Payne, 2015; Eime, Casey, Harvey, Sawyer, et al., 2015; Gardner, Vella, & Magee, 2017; Vella et al., 2014).

In a socio-ecological perspective, intrapersonal factors such as enjoyment, competency, improvement of skills, thrills of competition and time spent on social or voluntary activities at the sports club were found to influence retention of children and adolescents in club-based sports (Deelen et al., 2018; Gardner, Vella, & Magee, 2017; Siesmaa, et al., 2011; Sirard, et al., 2006; Talpey et al., 2017; Ulrich-French et al., 2009; Wagnsson et al., 2013). Parents and coaches mostly influence participants as interpersonal factors that drive them to engage or disengage from sport. Motivation is directly associated with opportunity and access to participate. Parents play a critical role in creating and maintaining these for the young participant (Crane et al., 2012, 2015; Gardner, Vella, & Magee, 2017). Apart from parents and coaches, friends and role models also act as significant interpersonal factors that determine retention. Factors such as availability and accessibility of sports facilities in the neighbourhood, availability of transport and local weather (Berger et al., 2008; Craggs et al., 2011; Eime, Charity, Harvey, & Payne, 2015; VicHealth, n.d) may be categorised as environmental determinants of retention. Several

organisational or policy related factors are known to promote or restrict the motivation of children and adolescents to continue in club-based sports (Talpey et al., 2017). However, further understanding is needed on how the influence of these determinants vary across different types of sports and different age and gender cohorts of children and adolescents.

Fun and enjoyment (often combined as a single element, as enjoyment derives from fun) is considered the primary reasons for youngsters to play club-based sports (Visek et al., 2015). The role of fun and enjoyment as a determinant in developing dedication within a player to stay on is not clearly understood. Fun and enjoyment have been explored in this context using Leisure Constraints Theory (Crawford et al., 1987) and Fun Integration Theory (Visek et al., 2015), attempting to understand and define the secondary factors that associate with them in determining retention of children and adolescents in organised sport (Palen et al., 2010; Visek, et al., 2015). Leisure Constraints Theory explains the importance of successful negotiation of intrapersonal, interpersonal and structural constraints for an individual's leisure participation (Godbey et al., 2010; Jackson, Crawford, & Godbey, 1993; Jackson & Scott, 1999; White, 2008). The previous use of the relatively new Fun Integration Theory has been to focus on a small age group and a single type of sport, comprehending the concept of 'fun determinants' that influence sport participation behaviour through positive sporting experiences. Both these behavioural theories have hardly been used in understanding how the various factors collectively influence players' motivation across different age and gender cohorts, forcing retention or dropout in the case of a specific sport in a structured setting like a community sport club.

Much of the literature on sport participation of children and adolescents focus on organised sport in school settings (Guddal et al., 2019; Mullan et al., 2012; Somerset et al., 2018; Wagnsson et al., 2013). The influence of determinants in a sports club setting (e.g., peer pressure, location, availability of facilities) are known to differ from those in other

settings such as schools, community / leisure centres and neighbourhood recreational facilities (Eime, Harvey, Sawyer, et al., 2013). Also, determinants of retention and dropout can be vastly different for different sports. Hence a ‘one-size-fits-all’ approach is not practical in developing strategies to improve retention in sports.

1.5. Addressing knowledge gap

To my knowledge, there is very limited research that investigated participation, retention and dropout among children and adolescents in consecutive age levels, in the context of a specific club-based sport and across the domains of the socio-ecological model. This study aims to address this knowledge gap by comparing players within the same age cohort who opted to continue playing a particular popular sport (i.e., tennis) in a club-based setting, with those who chose to drop out, across the socio-ecological model with the objective of understand the determinants that influence retention and dropout in tennis as a club-based sport in Victoria.

Tennis is a major sport that is mostly played in a club setting, both internationally and in Australia (ASC, 2016; Sport Australia, 2018a, 2019b, 2019c). Tennis is considered a lifelong sport and club tennis is very popular in Australia; at the same time, rate of dropout from club tennis is high and excessive dropout occurs during adolescence (Eime et al., 2016b). Based on a mixed method using census level secondary data, primary data from a web-based survey and qualitative information collected through interviews, this PhD program of research investigated the different aspects of the issue in the state of Victoria.

Whilst tennis is an individual sport, there is a strong social aspect to playing tennis as a club-based sport. This is more pertinent to children and adolescents whose continued participation is highly influenced by their social connections (such as family, coaches and peers). It is acknowledged that social (or interpersonal) aspects cannot independently

influence players' sporting behaviour which is intertwined with many aspects belonging to intrapersonal, environmental and organisational layers. Hence, only a holistic approach could provide a detailed understanding of the interplay of determinants leading to attrition to provide strategic recommendations to improve retention.

This PhD program of research quantitatively examined the rates of participation, retention and dropout among children and adolescents playing club tennis in Victoria, and qualitatively analysed the determinants that lead to continued participation (i.e., retention) or to dropout in a socio-ecological framework. The following are the key research questions investigated:

- What are the rates of retention and dropout among children and adolescents registered to play club tennis in Victoria?
- What are the major determinants associated with retention / dropout for children and adolescents?
- How do the identified major determinants influence the continued participation or discontinuation of children and adolescents in club tennis?
- What recommendations can be suggested to improve participation and retention in club tennis for children and adolescents?

2. Review of literature

Chapter 2 examines the literature pertinent to club-based sport participation as the type of leisure-time physical activity that help the participants, especially children and adolescents, to gain maximum health benefits. The review examines literature describing the factors that influence participation and retention of children and adolescents in club-based sport and summarises research studies that utilised a socio-ecological approach to understand sport participation behaviours.

2.1. Physical activity and wellbeing

Regular physical activity (PA) contributes to a healthy life, through helping to prevent a multitude of chronic health problems across the lifespan (Booth et al., 2012; Warburton et al., 2006). It also significantly benefits society by increasing social interaction and engagement within the community (Chau, 2007; Sport England, 2009). Health benefits from participating in physical activity include reduced depression, stress and anxiety, improved moods (Biddle, 2011; Bull, 2004; Nieman, 2002; Taliaferro, 2008), improved self-esteem, confidence, energy levels, sleep quality and ability to concentrate (AIHW, 2010; Ekeland et al., 2004; Sharma et al., 2006). It also leads to better social interaction, reciprocity and cooperation and can instil collective identity and trust within the community (Chau, 2007).

2.2. Physical inactivity and health

Physical inactivity can lead to a range of chronic conditions such as obesity, cardiovascular disease, diabetes and some types of cancers (AIHW, 2016; Boyle et al., 2012; Lee et al., 2012). While the ill effects of chronic diseases manifest mainly in adulthood, it is increasingly becoming evident that these conditions start to develop in childhood and adolescence (Cook et al., 2009; Halfon et al., 2012; Hallal et al., 2006).

Average physical activity levels among children and adolescents differ substantially between countries (Guthold et al., 2020). There are studies showing that physical activity levels among adolescents are comparatively high in northern European countries (Lang et al., 2020; Tremblay et al., 2016) but globally an average of just one in five adolescents across 146 countries met the levels of physical activity recommended for good health. An alarming 81% of children aged 11–17 years (78% of boys and 85% of girls) were insufficiently physically active (Guthold et al., 2020).

In Australia, over a quarter of children in the age group 5-14 years and nearly 37% in the age group 15-24 years were overweight or obese in 2014-15 (AIHW, 2018b). Most Australians (71% children, 92% young people and 45% adults) do not get the recommended level of regular physical activity to gain health benefits (ABS, 2013; Australian Health Policy Collaboration, 2016a; 2016b). A study by Guthold et al. (2020) ranked Australia in the 140th place in meeting the WHO physical activity recommendation, out of 146 countries listed. Another report showed that 92% of Australians in the age group of 12-17 years do not meet the recommended Australian physical activity guideline of 60 minutes of PA each day (VicHealth, 2018). Only one in three children aged 0-14 years were active at least twice per week (VicHealth, 2018). The Australian Health Survey (2011-12) showed that the ratio of physical activity to screen-based activity for 5 to 8-year-olds was almost 1:1. They had approximately 100 minutes of moderate to vigorous physical activity (not including active transport) and 100 minutes of screen-based activity per day. For 15 to 17-year-olds the ratio was almost 1:5 with fewer than 40 minutes of physical activity and more than 180 minutes of screen-based activity per day (VicHealth, 2018).

2.3. Recommended levels of physical activity

World Health Organisation (WHO) defines physical activity as any bodily movement produced by skeletal muscles that requires energy expenditure. (WHO, 2020). Recognising

the interlinks between frequency, intensity, duration and type of physical activity WHO developed specific guidelines for the optimum combination of these elements in providing adequate health benefits. Accordingly, WHO recommends at least 30 minutes of moderately intense physical activity per day (totalling 210 minutes per week) for adults, and over 60 minutes of moderate to vigorous physical activity per day (totalling 420 minutes per week) for children and young adults for a healthy life. (WHO, 2010: 2020).

Australian Physical Activity Guidelines are similar in recommending that adults must have 75-150 minutes of vigorous or 150-300 minutes of moderately intense physical activity (or an equivalent combination of both) per week for adequate health benefits (more or less similar to WHO guideline). The recommendation for children aged 5-17 years is at least an hour of moderate to vigorous physical activity each day (same as WHO guideline), limiting the use of electronic media to two hours or less per day, and breaking up long periods of sitting as often as possible. (Australian Government, 2019; Australian Medical Association, 2014; WHO 2010).

2.4. Types of physical activity

There are a range of ways for individuals to be active to meet the recommended PA guidelines for gaining health benefits. These included different contexts or domains that are related to occupation, routines of daily living (e.g., household work), active transport (e.g., walking or cycling for transport) and leisure-time physical activity (e.g., exercise and sports). The total amount of physical activity of a person is determined by the intensity, duration and frequency within each of these domains (Samitz et al., 2011).

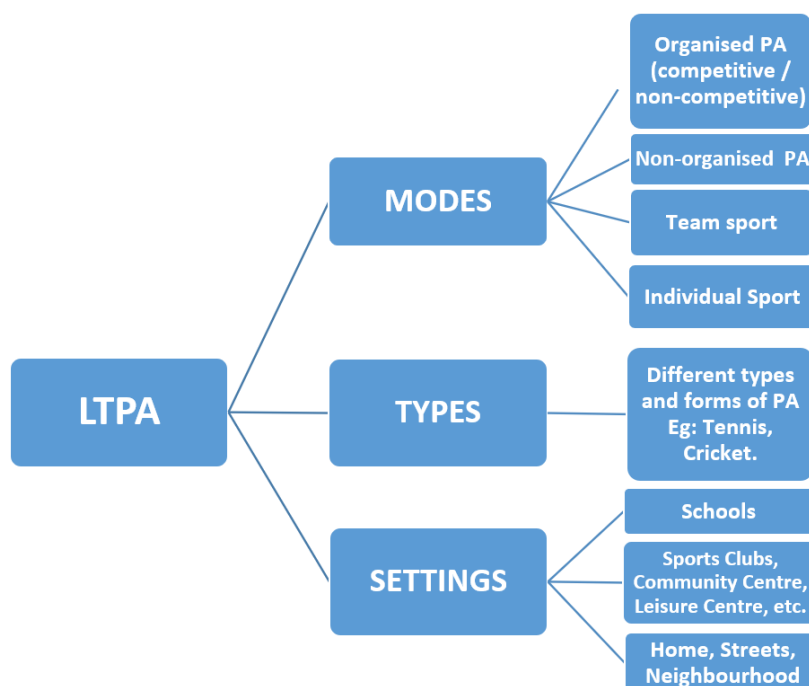
Physical activity guidelines do not differentiate between different domains (such as physical activity for leisure, work or other purposes). However, different physical activity domains and participation settings are known to have different psychological and social benefits (Tsenkova, 2017). In the case of socio-economically advanced countries including

Australia, leisure-time physical activity (LTPA) is the most prominent domain of physical activity. While LTPA encompasses a broad range of physical activities that individuals engage in for enjoyment or for other reasons, this research program is focusing explicitly on sport played in an organised setting, i.e., sports clubs. It is therefore to be noted that reference to dropout from club sports in this study does not mean dropout from PA altogether. However, from a sports management perspective it is important to understand retention and drop-out to ensure sports programs and competitions are developed and delivered to maximise player retention. The different forms and settings of LTPA are discussed further in section 2.4.1 below.

2.4.1. Leisure-time physical activity

The Australian Bureau of Statistics defines ‘leisure’ as “the free time people have for pursuits other than those which are necessary, contracted or committed” (ABS, 1992; P.349). The perspective of LTPA have been categorized in terms of *modes*, *settings* and *types* (Figure 1).

Figure 1: Schematic representation of categories of leisure-time physical activity



The identified *modes* of LTPA are: non-organised physical activity, organised physical activity (competitive / non-competitive), team sport and individual sport. *Settings* comprise of school, club or community centre, home and neighbourhood. *Types* refer to the many specific sports and other forms of LTPA such as tennis, cricket, and soccer (Eime, Harvey, Sawyer, et al., 2013; Eime, Harvey, Sawyer, Craike, et al., 2016). In being physically active it is not uncommon for participants to switch from one mode, setting or type of LPTA to another, based on their change of preference or circumstances (Brunet et al., 2011; Côté et al., 2002; Eime et al., 2013; 2016). This may not be a concern for overall health benefits if the individuals remain active; however, it is an issue for sports organisations and their management of player developments, competitions and player pathway.

2.5. Sport: modes and settings

Sport as a form of LTPA always has a strong foundation within Australian culture and identity (Pettigrew, 2002). Often considered as a demonstration of physical prowess of participants, sport also results in improved fitness and personal enjoyment for participants and provides social interaction, entertainment and employment (ABS, 2011). Beyond the enjoyment and overall wellbeing experienced by participants, sports make significant contributions to national and local economies (Delaney et al., 2005). The estimated monetary value to Australia economy that sports provides annually as economic, health and education benefits is \$83 billion (Intergenerational Review of Australian Sport, 2017).

Sport encompasses physical activities that are generally competitive and have rules that formally exist through governing organisations. According to Sport Australia's strategic plan 'Sport 2030', the definition of sport encompasses "a broad range of physical activities including informal, unstructured activity such as walking, riding, swimming and running as well as traditional, structured sport such as tennis, cricket and new and evolving

sport and physical activity offerings such as mixed martial arts, “ninja” style obstacle courses and stand-up-paddle boarding” (Commonwealth of Australia, 2018, p.6)

The scope and definition of sport are influenced by different contexts. There are forms of sport that are organised and competitive whereas there are others that are more informal, non-organised and non-competitive (Eime, Harvey, Sawyer, Craike, et al., 2016; Richards, 2017). Sport can also be played in a range of modes and settings. For example, sports like football, hockey and cricket can be played at school or parks as well as in a more competitive and organised mode through sports clubs. Diversity in sport settings (e.g., parks, streets, community centres, etc.) is considered important for increasing overall PA levels due to the potential to reach larger number of people (Wickel et al., 2007).

2.6. Benefits of participation in club-based sports

Club-based sport is the most popular form of organised sport delivered at community level in several countries including Australia and can be defined as organised sport delivered in a club setting through a sports or recreation club that require payment of a fee for participation or registration (Richards, 2017b). Several research studies ascertain that quality of life for participants of club-based sport is generally high, as this setting contributes to the physical, psychological and social wellbeing (Eime, Harvey, Payne, et al., 2009; Eime et al., 2010; Eime, Young, Harvey, et al., 2013; Eime, Harvey, Charity, et al., 2015; Eime, Harvey, Charity, & Payne, 2016; Fraser-Thomas et al., 2015; Howie, et al., 2016). Participation in club-based sport provides a higher likelihood for fulfilling the physical activity recommendations than other forms of LTPA, particularly in the case of children and adolescents (Geidne, et al., 2013).

Participation in club-based sport by children and adolescents is associated with a range of physical, social, educational, cognitive and psychological benefits that can last

into adulthood (Australian Medical Association, 2014; Bidzan-Bluma et al., 2018; Drake et al., 2012; Eime, Young, Harvey, et al., 2013; Ekeland, 2004; Geidne et al., 2013; Seabra et al., 2016). Kjønniksen et al., (2009) and Wichstrøm et al., (2012) reported that membership in sports clubs during childhood can predict higher levels of leisure-time physical activity in adulthood. Research shows that in the case of children and adolescents, participating in club-based sport promotes social skills like cooperation, responsibility, empathy and self-control, paving the way towards a sense of initiative, leadership skills, positive peer relations, social success and good citizenship. (Bailey, 2016; Fraser-Thomas, 2005; 2006). Sports participation exposes children and adolescents to a pro-social environment fostering positive attributes such as competitiveness, sportsmanship and fair play (Opstoel, et al., 2020). Mahoney (2000), Eime et al. (2010), Eime, Young, Harvey, et al. (2013) and Rutten et al. (2008) observed that besides improving sporting skills, participation in club-based sport contributes to positive social and physical competencies and positive attitude toward one's own body. Exposure to organised competitive sport during childhood and adolescence imparts social training such as learning of rules, norms, and values. Bjarnason (2000), Diehl et al. (2012), and Pate et al. (2000) found that regular sports participation influences attitudes and behaviours through inhibiting negative influences leading to unhealthy and anti-social behaviours such as use of tobacco, alcohol and illicit drugs. Engaging in organised sports programs during after-school hours and weekends can reduce the probability of adolescents engaging in negative behaviours (Fawcett, 2007).

Sport organisations are valuable community assets that assist in providing a range of positive outputs to society such as youth empowerment, social integration and crime prevention (Heinemann, 2007; Robertson, 2019; Ulseth 2004; Vos et al., 2012). Sports club membership leads to the development of social connection through mateship and can be

the ideal setting to encourage positive contact and cooperation between people from different backgrounds and abilities (Chau, 2007; The Centre for Multicultural Youth-Issues, 2007). Community sports club also play a unique role in empowering people (Kelly et al., 2014) by providing opportunities and experiences which they otherwise would not have had and allowing engagement with the broader community (Van Hoye et al., 2016). The direct economic productivity and volunteering benefits from sports comes to a value of approximately \$50 billion annually and a good part of it is related to sports clubs.

There are also some known potential negative aspects related to children's participation in club-based sports such as burnout, mental stress due to overemphasis on winning, issues due to mismatch in sport readiness and sport injuries (Carlman et al., 2013; Crane et al., 2015; Dangi et al., 2016) which may relate more to advanced level players (Curren et al., 2011; Merkel, 2013). Further, there are reports of bullying and abusive culture within some sports club environments (Merkel, 2013; Ommundsen et al., 1997; Rutten et al., 2008). Despite the negatives, participation and continuation in club-based sports provide the transition for children and adolescents from playing sports at school which should end when they leave school, to playing community sports that they can continue life-long. The benefits of club-sport participation of children and adolescents clearly outweigh the negatives (Kathryn et al., 2019; Malm et al., 2019) as sports clubs offer an attractive leisure-time engagement for them to achieve highly positive personal and social outcomes.

2.7. Policy on community sport participation in major sporting nations

Benefits from wider participation in sport have prompted many countries to frame national policies that promote community sports through creating the environment for all citizens to participate in sport (Government of the Czech Republic, 2000; Time for sport,

2005; Westerbeek et al., 2019; WHO, 2011). Finland's Sports Act of 2014 focused on sports participation for all, recognising sports and physical activity as important factors in a strong civil society and healthy population (Ministry of Social Affairs and Health-Finland, 2013; Prime Minister's Office Finland, 2015; WHO, 2018). The Netherlands' national policy 'Sport for all' aims at increasing sport participation of disadvantaged families and groups (Hoekman et al., 2013; Waardenburg et al., 2013). Another program, 'Sport clubs for health' supports sports clubs in delivering sports programmes with focus on health promotion (Kenniscentrum sport, 2016; Waardenburg et al., 2013, WHO, 2018). In the United Kingdom, the policy framework 'Sporting Future' promotes sport activity among groups with low sport involvement (Government of UK, 2015). Agencies like Sport England and Central Council for Physical Recreation support local sporting clubs in improving facilities and promoting sport in the community. Canadian Sport Policy (effective from 2012 to 2022) gives greater attention on diversity of people participating in sport and aims for a positive impact on the community through sport (Government of Canada, 2019). Commonwealth and State governments of Australia also have policies and strategies to promote community level sport.

2.8. Sport structure and policy in Australia

Sports is a defining and dominant feature of Australian lifestyle. The attitude of Australians to sport ('more than just a game') is influenced by the historic evolution of sport as an integral part of the nation's culture (Commonwealth of Australia, 2013; Hede et al., 2011). Australia's pride as a high achiever in sports explains the priority that Australian governments place on funding and promoting sport; however, there is still a long way to go in providing equal opportunity to all Australians in fulfilling their sporting aspirations.

Similar to the UK and several other countries, sports sector in Australia broadly consists of a range of government and non-government organisations (e.g., community groups, sporting clubs, schools and universities) working together to promote sports and enhance opportunities for participation in physical activity (ref. Figure 2). As major stakeholders the federal, state and local governments have important roles in supporting community sport such as developing sporting infrastructure, hosting major sporting events and developing sports related policy and programmes (Hume, 2013).

The Australian Commonwealth Government is committed to promoting sport from community level to elite through supporting participation, staging major sporting events and utilising sport to address disparities in the society (Department of Health, 2013). The Australian Sports Commission Act (1989) had the objectives to provide leadership in the development of sport in Australia, encourage sport participation and improve sport performance. Sport policies and programs by State and Territory governments focus on developing sports infrastructure, active recreation through community sport participation and high-performance sport pathways. Local governments across Australia facilitate resources like funding to clubs and individuals, building and maintaining sports related infrastructure and sponsoring local sports events. Local governments keep close working relationship with sporting and active recreation organisations, especially when planning for new facilities and services (Department of Health, 2013; May, 2021a).

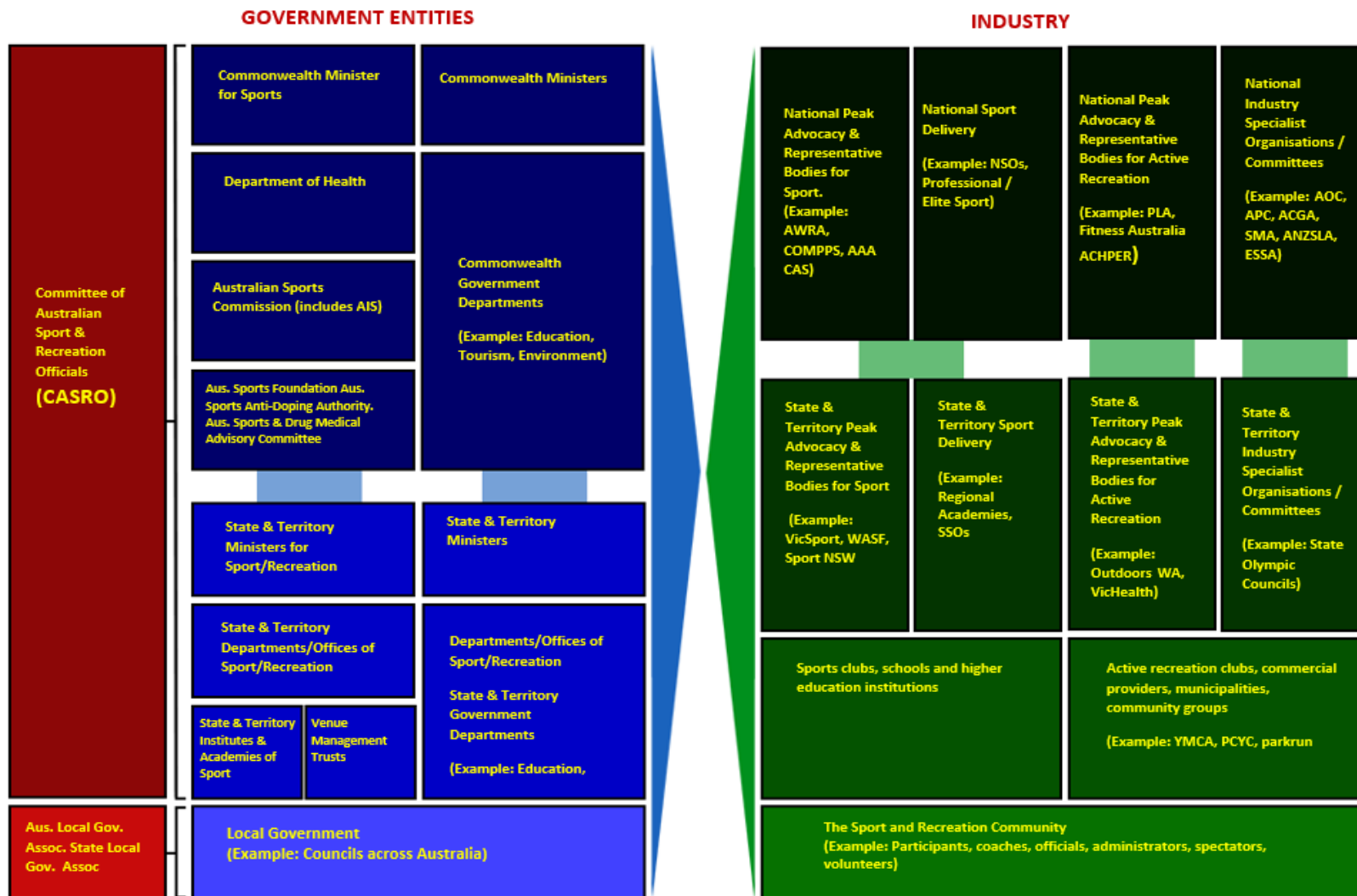
Australia launched its national sport plan ‘Sport 2030’ in 2018 with focus on improving population-based participation and elite performance. Sport 2030 aims at an increased level of physical activity throughout the Australian population (Commonwealth of Australia, 2018). As a priority it sets a target of achieving 15% reduction in inactivity in the Australian population by 2030 (Commonwealth of Australia, 2018; Sport Australia, n.d

b). This aligns with the WHO-recommended worldwide target for improving physical activity for populations.

Sport Australia is a corporate Commonwealth entity within the Department of Health with aims to excel in elite sport, maintain sporting integrity, support grassroots sporting organisations, and promote sports for better health and wellbeing (Commonwealth of Australia, 2018). Sporting organisations such as State Sporting Organisations (SSOs), and National Sporting Organisations (NSO) have a major role for developing sport from community participation to high performance levels. Peak advocacies (e.g., Confederation of Australian Sport), governance organisations (e.g., Tennis Australia) and organisations in the community sector (such as sports clubs, schools, fitness industries) also play a big role in delivering and promoting community sport in the nation (May, 2021c). These bodies collaborate in realising the vision of Sport 2030 through improving the sports infrastructure and strengthening sporting organisations and clubs to improve participation (Confederation of Australian Sport, 2019).

The Australian Government uses sports as a platform to support a number of public policy objectives. The National Sport and Active Recreation Policy Framework (Figure 2) guides public policy and programs for sports and active recreation sectors (Australian Government, 2017; Department of Health, 2013). It identifies priority areas for developing policy objectives for sports and making investments by the Government (Hume, 2013).

Figure 2: System governance map: sport and active recreation (National Sport and Active Recreation Policy Framework, Commonwealth of Australia, 2011).



Increasing sports participation is one of the main objectives of Australian sports policy 'Sport 2030' which assimilates objectives such as building a more active Australia; achieving sporting excellence; safeguarding the integrity of sport; and strengthening Australia's sport industry (Commonwealth of Australia, 2018). Committed towards supporting sports from grassroots to elite level, the anticipated outcome of the policy is to promote physical and mental wellbeing, strengthening communities and growing the economy while building the capacity to achieve the highest level of sporting success internationally.

National sports policy of Australia provides the leadership for sports organisations to develop their own strategic plans, policies and practices (Eime & Westerbeek, 2020). Sports clubs develop policies and implement strategies to promote participation at grassroots community sports clubs. These sports clubs make sport accessible to the Australian community and provide a valuable contribution to Australian society by facilitating community-building through sports. Sport Australia provides support and funding for Australian National Sporting Organisations (NSOs) and works closely with these organisations towards delivering the opportunity for sport participation and physical activity to all Australians (Commonwealth of Australia, 2018).

The priority assigned as a part of Australian community-level sports policy to increasing sports participation at grassroots or community level resulted in improvement in sports participation since 2016 (ASC, 2016; Sport Australia, 2018b, 2019a). At the same time the trend of dropout of a large number of children from club-based sport when they reach adolescence and adulthood has not changed (Eime et al., 2019; VicHealth, 2018). Eime et al. (2020) argued that strategic priorities for community level sport are driven by sports policies that are mainly based on elite development pathways and in order to feed this system, they focus on increasing the number of new participants in club-based sport.

Consequently, national sporting organisations concentrate their strategies on increasing the number of new players each season rather than taking measures to address the issue of dropout. Absence of strategies for improving retention can be seen as a gap in sports policy and expansion of existing knowledge on this issue requires further research.

Internationally, sport policies consistently have a focus on increasing sport participation to build a healthy population (Fahlén, et al., 2016; Waardenburg et al., 2013, WHO, 2018). However, it is impossible to achieve lifelong health benefits without taking measures to improve continuity in sport participation. It is important that sports policies recognise this and assign importance on addressing dropout from sports participation to achieve the objective of building an active community. Focusing on increasing membership without increasing retention is not ideal in the perspective of a sporting organisation as well. It is often easier and cheaper to strategise to retain current participants than recruiting new members each season/year.

In summary, while the focus in sport policy has been on increasing participation, improving retention has had only limited attention. Changes in policy and strategies to include specific focus on improving retention may be more appropriate to achieve the objectives of building a healthier population through higher sport participation and leading to more economically sustainable sporting organisations.

2.9. Sport participation in Australia and Victoria

It is important to understand sport participation trends to make informed decision relating to sports policy, investment and strategies to get more people active through sports. Participation in sports-related activities in Australia has reportedly increased over recent years. In 2020, 62% of Australians aged 15 year and older participated in sports-related activities at least once per year, compared to 57% in 2016 (Sport Australia, 2021). In the

same year 72 % of all Australian children up to 14 years participated in organised sports / physical activities at least once per year outside their school hours (Sport Australia, 2021), compared to 69% in 2015-16 (ASC, 2016). Overall participation in organised out-of-school physical activity at least once a week rose from 56% in 2016 to 63% in 2017 in conjunction with a rise in children's sport participation from 70% in 2016 to 74% in 2017 (Sport Australia, 2018a; 2018b). This increase may be attributed to a great extent to the promotion that sport receives in Australia at community level and school level (Blood, 2020).

Despite the increase in sport participation among Australians in recent years, the frequency of participation remains low (ASC, 2016; Sport Australia, 2018a, 2018b). For instance, whilst 63% of children participated in organised physical activity outside of school hours at least once per week, only 25% participated at least three times per week (Sport Australia, 2018a). In addition, there are gender and age-related differences in sport participation. Women and girls have lower sport participation rates than men and boys (ABS, 2013; Eime et al., 2014; May, 2020) and sport participation declines as individuals age (AIHW, 2018a; Sport Australia, 2018a). In Victoria, nearly twice as many males (20%) as females (11%) participate in organised sport. The highest rate of organised sport participation of 68% was observed among those aged between 10-14 years, which fell sharply to 32% during later adolescence and early adulthood (VicHealth, 2020).

2.10. Importance of club-based sport

Club-based sport is defined as “physical activity for exercise, recreation or sport that are organised in full or in part by a formal club or association that requires payment of membership fees or registration” (ASC, 2015; P.9). Community level sports clubs are an important setting of LTPA that help their members achieve regular physical activity at health-enhancing levels (Kokko et al., 2006; Wickel et al., 2007; Eime, Harvey, Charity et

al., 2015; Doherty, 2014; Kokko et al., 2015; Misener et al., 2014; Stamm et al., 2015; Taylor et al., 2009; Tokarsk, 2004).

Having a clear understanding about the trends in sport participation and dropout is important for sport management. As the definition of sport encompasses a broad range of physical activities that include informal and unstructured as well as structured activities (Commonwealth of Australia, 2018, p.6), it is difficult to measure sport participation behaviour in general. Engagement in sport is spread across different domains, types and structures. In the case of children who try out multiple sports before developing sustained interest in a specific sport, quantifying general sport participation, retention and dropout is even more challenging (Eime et al., 2019). However, in the specific case of club sport, availability of club membership records of several years makes it possible to analyse trends of retention and dropout for various cohorts. Club-based sports being the primary mode of organised leisure-time physical activity in Australia, participation and dropout trends in club-based sports is a good indicator of physical activity habits of different demographics.

2.11. Participation of children and adolescents in club-based sport

Club-based sports is the most popular form of LTPA available to children in several countries. An estimated 88% of all children in Finland (Blomqvist et al., 2019) and 70-80% of children in Norway (Støckel, 2010) were a member of a sports club or team at some point in their childhood or adolescence (Mathisen et al., 2019). In Denmark, 86% of the population aged 7-15 years had been a member of a sport club during 2015-16 and 83% of 7 to 15-year-olds participated in organised sport / physical activity programs on a regular basis (Danish Health Authority, 2016). A report from the UK indicates an increase in sports club memberships among children aged 5 to 16 years and that team sport participation is highly popular among this age group (Sport England, 2019). In the USA, 58% of those aged

6 to 17 years participated in team sports or took sports lessons at a sports club after school or on weekends (U.S. Department of Health and Human Services, 2019).

In Australia, club-based sport is the main setting for children's sports participation outside of schools (ASC, 2016). More than half of children aged 5 to 17 years participated in a club-based sport between 2018 and 2019 (Sport Australia, 2019a). In Victoria, a study on 12 popular community club-based sports found that the overall participation numbers increased each year from 2015 to 2017 at a rate of approximately 1% (VicHealth, 2019a). Highest increases in participation were for the age group 10-14 years (4.6%). Participation of females has clearly improved over these years. For instance, female participation increased by 5.5% for age group 10-14 years during 2015 to 2017 and in comparison, the increase was only 3.7% for males in the same age group. The highest growth rate in participation for any gender/age subgroup was for females aged between 5-9 years (6.4%). For males, the highest increase was for age group 15-19 years (4.3%). The study also reported considerable increase in female participation in some traditionally male-dominated sports such as Australian rules football, soccer and cricket (Eime et al., 2019; VicHealth, 2019a; 2019b).

In recent years, local volunteer run sports clubs have been asked to take on a range of health promotion activities and strategies. However, taking on these broader social aims and objectives distracts from the core-business of sports clubs, that is developing players and delivering local competitions (Kokko et al., 2015). Agreeing to this, Robertson et al. (2019) observed that pressure on sports clubs to implement strategies such as health promotion can affect their ability to perform their primary responsibility of delivering sport for the community. Sport clubs need to explore how they can improve the playing experience of their members in order to attract and retain more players. Most children who have an enjoyable playing experience at sport clubs continue to play throughout

adolescence and adulthood. Planning of strategies for improving sports participation and promoting a healthy and active lifestyle heavily depends on further understanding of the factors leading to such an enjoyable playing experience.

2.12. Retention and dropout in club-based sport: knowledge and gap

Adolescence is the transitional period from childhood to adulthood in an individual's progress towards becoming independent. In the process, they undergo significant physical and psychological changes (UNICEF, n.d). During adolescence, individuals divide their leisure time for a range of activities that catalyse the development to adulthood such as socialisation, making friendships, attaining physical fitness, developing interest and skills in sports and enjoying life (Auhuber et al., 2019). In terms of physical activity there is evidence that those who are active in sport as a child are more likely to continue to be active as an adult (Loprinzi et al., 2012; May, 2021d).

Club-based sport participation declines significantly during late childhood and adolescence (ASC, 2016; Eime, Harvey, Charity, Casey, et al., 2016; Eime et al., 2016c; Eime et al., 2019; Howie et al., 2016; Mathisen et al., 2019; Merkel, 2013) indicating that this is a significant issue. A survey in Australia showed that club-based sport participation reduced from 70.4% among children in age group of 9-11 years to 65.5% for the age group of 12-14 years which further reduced to 53.4% for 15-17 years (Sport Australia, 2019a). Similar trends were observed in other OECD nations also (Crane, et al., 2015; Lange, 2020; Manz et al., 2016; Seippel et al., 2011). Studies have reported similar dropout patterns in the Scandinavian countries (Jakobsson et al., 2012; Krange, et al., 2004; Seippel et al., 2011) and in Germany (Manz et al., 2016). Statistics of people who do exercise or play sport in the European Union show that the rate of dropout from sport among youth increases with age, especially among females (Lange, 2020). Most of these studies are based on

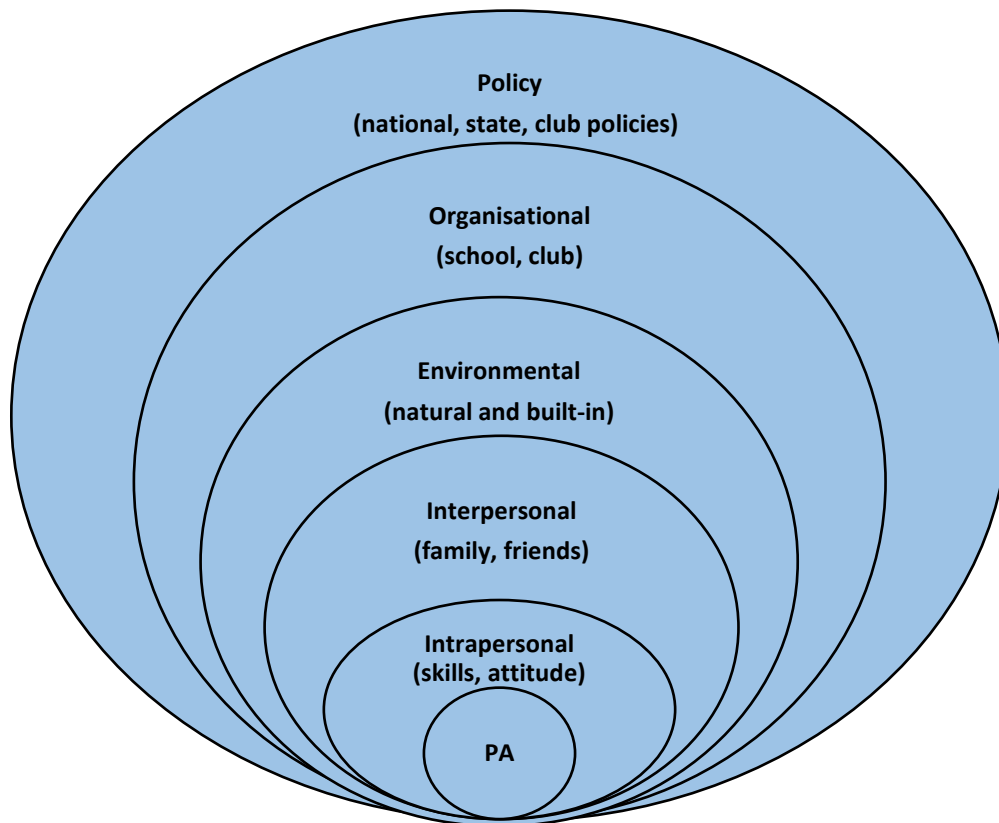
different cohorts of children and adolescents drawn from various contexts and are based on representative samples, however they tend to be cross-sectional studies. There is a dearth of longitudinal research analysing participation, retention and dropout in sport.

The widely observed decline in sport participation during and after adolescence led researchers to explore the underlying factors that affect the continuity in sport participation (Berger, et al., 2008; Casper et al., 2011; Eime, Harvey, Sawyer, et al., 2013; Eime, Harvey, Charity, Casey, et al., 2016; Gardner, Vella, & Magee, 2017; Hoekman et al., 2016; Siesmaa et al., 2011; Strandbu et al., 2020). Much of this research focused independently on intrapersonal determinants like enjoyment, competency and passion across personal attributes like age and sex (Eime, Harvey, Sawyer, et al., 2013; Eime, Harvey, Charity, Casey, et al., 2016; Gardner, Vella, & Magee, 2017; Gardner, Magee, & Vella, 2017; Ullrich-French et al., 2009). Many researchers now advocate an approach based on a more holistic framework (such as the socio-ecological model discussed in the following section) to understand sport participation behaviours (Elder et al., 2007; Rowe et al., 2013; Vella et al., 2014).

2.13. The socio-ecological model

The Socio-ecological model as a framework (Figure 3) was first introduced to understand various elements that enhance or inhibit social behaviours and has more recently been applied to study sport participation (Elder et al., 2007; Rowe et al., 2013). The model can provide a holistic approach for developing effective strategies for different populations (Eime, Charity, Harvey, & Payne, 2015).

Figure 3: Socio-ecological determinants of sport participation



The socio-ecological model incorporates key determinants of behaviour that relate to the intrapersonal, interpersonal, environmental, organisational and policy domains (Elder et al., 2007). The determinants of club-based sport participation are not mutually independent; instead, they interact and influence each other in generating behavioural outcomes. The determinants influencing sport and physical activity behaviours vary across the life stages of participants (Allender et al., 2006; Biddle et al., 2005). Understanding the inter-relationship between the different elements of the socio-ecological model helps to inform strategies to improve physical activity behaviours across the population such as retention in sport participation (Basterfield et al., 2016; Elder et al., 2007).

2.13.1. Socio-ecological perspective of determinants

Factors that influence sport participation and retention may have varied in the recent years with the significant social, economic, cultural, political and global changes altering

the society. Exploring the major determinants of continued participation of children and adolescents in club-based sport can provide a better understanding of the current scenario. Some of the determinants of participation may be common for general physical activity as well as club-based sport. However, club-based sport is different in nature and so is likely to have unique key determinants for retention and dropout. Most existing studies focused on either retention or drop-out. They did not explore the influence of the determinants on those who continue to play a sport compared to those who previously played and since dropped out. (Berger et al., 2008; Crane et al., 2012; Cervelló et al., 2007; Eime, Charity, Harvey, & Payne, 2015).

There has been some research on the determinants of participation in elite sport which excluded the general ‘non-elite’ participants (Cervelló et al., 2007; Merkel, 2013). Other studies relate more broadly to physical activity within the school or educational setting and identified that intrapersonal and interpersonal determinants are dominant in these settings (Allbaugh et al., 2016; Biddle et al., 2005; Eime, Casey, Harvey, Sawyer, et al., 2015; Hu et al., 2021). As such there is limited knowledge on the key determinants of retention and drop-out of children and adolescents in club-based sport.

Every sport has its own characteristics, and an individual’s choice to play a sport will depend on whether some or all of these characteristics appeal to their interests, abilities, and expectations (Richards, 2017b). Early studies on sport participation focused on individualistic factors such as opportunity for participation in early years of life, positive attitude towards sport during childhood and competency in fundamental movement skills developed in childhood. These individualistic factors were thought to strengthen the likelihood of continued sport participation later in life (Gallant, et al., 2017; Richards, 2017a; 2017b). It has now been recognised that sport participation behaviour is influenced by a myriad of factors and hence it is very complex (Rowe et al., 2013). Therefore, in recent

years researchers have been examining determinants of sport participation from a socio-ecological perspective. Introduction of socio-ecological model is an evidence-based approach that provides understanding of complex association of factors that influence participation behaviour. It critically provides a holistic framework to design and implement strategies to influence positive health behaviours like sport participation.

Recent studies have examined the aspects of socio-ecological model to understand why people play sport (Cheng, et al., 2014; Craike et al., 2011; Crane et al., 2012; Eime et al., 2017; Hinkley et al., 2014; Richards, 2017a) and why they drop out from sport (Basterfield et al., 2016; Crane et al., 2015; Eime, Harvey, Charity, & Payne, 2016; Kim et al., 2016; McClone et al., 2015). Research relating to each classification of determinants is presented and discussed and the main findings are presented below.

2.13.1.1. Intrapersonal

Intrapersonal factors encompass physical factors such as gender and age and psychological factors such as knowledge, skill, attitude, beliefs and perceptions that can influence the individual's sport participation behaviour (Eime et al., 2014; Mehtälä et al., 2014; Yi et al., 2016). The influence of intrapersonal factors on sport participation is presented in this section.

There is consistent evidence that gender is a key determinant associated with all modes of sport participation for children and adolescents. Numerous studies demonstrate that the male gender positively associates with sport participation (Eime, Casey, Harvey, Sawyer, et al., 2015; Yi-Hsiu et al., 2013; Van Der Horst, et al., 2007). This may partly explain gender differences in sport and sport participation (Deaner et al., 2015; May, 2020). Across the lifespan, males are consistently seen as participating in sports at higher rates than females (Eime, Harvey, Charity, & Payne, 2016; Eime, Harvey, Charity, Casey, et al., 2016; May, 2021b). Mullan et al. (2012) observed that sports participation of boys is higher

compared to girls, especially as they get older. Corresponding to this finding, Nunes et al. (2019) observed that a higher percentage of boys (45.8%) who practiced in sports during childhood maintained it during adolescence compared to girls (14.1%). Among adolescents who did not practice sports in childhood, a higher percentage of males (27.6%) started practising sports during adolescence compared to girls (12.5%).

Motives for participation in sports and other types of physical activity differ across gender and age of participants and type of activity (Breuer et al., 2011; Kudlacek, 2021; Molanorouzi et al., 2015). Relating to this, studies of Egli et al. (2011) and Van Tuyckom et al. (2010) on gender differences in motivation for sport participation show that females were motivated by health maintenance and appearance whereas for males, challenge and status were found to be important reasons for sport participation. It is well established that sport participation decreases significantly as age increases (Eime, Harvey, Charity, & Payne, 2016; Maia et al., 2010) and the dominant motives of sport participation for children and adolescents include establishing relationships and maintaining physical appearance, whereas health outcomes motivate adults (Brunet et al., 2011; Molanorouzi et al., 2015). Eime, Harvey, Sawyer, et al. (2013) found that the context of sport participation changes with increases in age, whereby older adolescent females (16–18 years) shift their physical activity participation away from organised, competitive modes and settings such as club-based sports towards non-organised and non-competitive modes and settings. This corresponds to a change from team-based sport to individual types of physical activity. Similarly, Borgers et al. (2018) found that motives for sports participation in non-traditional settings were often improving health and appearance, rather than performance-related goals or socialisation as in the case of participation in sports clubs. There is very limited research on the motives for participation across different age groups based on age and gender for a specific sport, especially for children and adolescents. The current study provides an insight

on how the influence of the major motivating factors change across such groups in the case of tennis.

There is consistent evidence that across all ages of children and adolescents, perceived low sporting ability or competence is a barrier in continued sport participation (Cope et al., 2013; Jose et al., 2011; Pate et al., 2009; Ullrich-French et al., 2009). Loprinzi et al. (2015) and Carroll et al. (2001) observed that perceived competence of children and adolescents had significant influence in the amount and intensity of their sport participation which also influenced their enjoyment. This can be one of the reasons for children and adolescents with lower skills and ability switching to non-competitive and non-organised sport (Eime, Harvey, Sawyer, et al., 2013; Eime, Harvey, Sawyer, Casey, et al., 2015; Merkel et al., 2013). During adolescence, children become more aware of their relative competency and those who fall behind in physical ability and skills may find it challenging to continue (Carlman et al., 2013; Carroll et al., 2001). Miss-match of sports readiness, early specialisation and overemphasis on skill development are other known factors that can lead to dropout from sports (Fraser-Thomas et al., 2008; Merkel et al., 2013). Children who specialise in a single sport and undergo heavy training at an early age are likely to face decline in performance due to fatigue and stress injuries that can lead to 'burnout' (Myer et al., 2015). Furthermore, dramatic changes in body composition due to rapid growth unique to this age group may sometimes cause injuries. This is less of an issue in the case of sports at community level, compared to elite level (Crane et al., 2015). The extent of impact of early specialisation on children's retention in club-based community sports requires further analysis.

Modified sports programmes (e.g., in the case of tennis, the Hot Shot program and Tennis for Teens) were introduced for developing sport-specific skills, sports readiness and interest in children before they enter into competitive club-based sport (Eime, Casey,

Harvey, Charity, et al., 2015). These programs offer slightly modified versions of the sport with rules and equipment adapted to suit the skill level and maturity of participating children (Eime & Westerbeek, 2020). The impact of such programs in children's motivation is unclear, as the rate of transition to club-based sport is low and withdrawal rates are high (Eime, Casey, Harvey, Charity, et al., 2015). It is known that boys make the transition from modified sport to club competition generally at an earlier age than girls (Eime, Casey, Harvey, Charity, et al., 2015; Eime et al., 2011).

Although physical ability and sports skills have been linked to sports participation, players' perception of their own capability to perform at a given level affects their thought patterns, behaviours (such as effort, persistence and choice of activities), and emotional reactions in tense situations (Bandura, 1986). Self-efficacy has been considered a significant influence in players' performance and consistently identified as a significant predictor for participation in sport (Feltz et al., 2008; Mcauley et al., 2000; Zaira et al., 2020). However, there is limited study on the role of self-efficacy on continued participation in sports.

Further, perceptions of competency, fun and enjoyment are key determinants of sport participation during childhood and adolescence (Cope et al., 2013; Crane et al., 2015; Gardner, Magee, & Vella, 2017; Jose et al., 2011; Mullan et al., 2012). Jakobsson et al. (2014) found that for players in advanced adolescence the main reasons to continue in club-based sports are fun and enjoyment that they feel from the sense of belonging and the sense of improving sport skills (Kimiecik et al., 1996). Enjoyment as a broader concept was highlighted as the primary reason for sport participation in earlier research and the concept of fun emerged from the concept of enjoyment (Berki et al., 2017; Scanlan et al., 1992; 1993a). According to Scanlan's definition, enjoyment in sport is "a positive affective response to the sporting experience that reflects generalised feelings such as pleasure, liking

and fun” (Scanlan et al., 1993b, p. 6). Fun and enjoyment have at times been used interchangeably as reason for sport participation. There are studies confirming fun as a key motivating factor for children’s participation and retention in sport, and its absence as the main reason for dropout (ASC, 2017; Cope et al., 2013; Visek et al., 2015; Whitehead et al., 2008). Fun being noted as the primary reason for participation in organised sport resulted in the emergence of Fun Integration Theory that help to understand the fun factors and determinants that influence sport participation behaviour of children and adolescents (Visek et al., 2015). It is explained in detail under Section 2.14: Behavioural theories. According to a study by Kelley et al. (2013), 38% of girls and 39% of boys suggested that lack of fun was the biggest reason for dropping out from sports. In a study on participation of youth in organised sports, Logan et al. (2019) observed that fun instead of winning is a key factor for enjoyment and motivation for continued participation in sports. Lagestad et al. (2018) observed that enjoyment from sport participation varied between early and late adolescence. The study found that enjoying sports competitions is a main predictor for adolescents’ enjoyment of sport participation. However, O’Sullivan (2015) and Williams (2016) observed that dropout resulting from lack of enjoyment may be due to reasons that take away the fun such as inflexible practice routines, strict rules and lack of competency (Crane et al., 2015; Dangi, 2016; Sáez et al., 2021). Overall, more research is needed to understand the concept of enjoyment across the lifespan, sport contexts and/or settings, and socio-ecological model (e.g., coaching, parents’ support, club environment) to better retain sport participants.

2.13.1.2. Interpersonal

The interpersonal domain of behaviour-influencing factors comprises of the relationships (with family, friends, coaches, etc), the culture and the society with whom the individual interacts (Barkley et al., 2014; Cope et al., 2013; Eime, Harvey, Sawyer, et al., 2013; Keegan et al., 2010; Spink et al., 2012). Such relationships and social interactions

can influence sport participation by providing support or creating barriers for an individual. Adolescents are likely to be exposed to different types of social influences in their choice of sport participation such as compliance with the wish or request of others, conformance with the social norms and obedience to someone in authority (Gardner et al., 2016; Spink et al., 2012). Family compliance, obedience and peer compliance influence participation in structured physical activity settings (Spink et al., 2012). For example, Williams et al. (2013) found that retention of female golfers may be facilitated through promoting valued relationships (e.g., respect, trust) with parents, peers, coaches, and golfing clubs.

The family is perhaps the most significant interpersonal determinant of sport participation for young children (Eime, Harvey, Sawyer et al., 2013; Eime, Casey, Harvey, Sawyer et al., 2015; Strandbu et al., 2019). Parents have an important role in developing children's life-long engagement with sport acting as role models along with providing financial and emotional support and transport for children to regularly participate in sport. There is evidence that parental involvement and support have a critical role in developing motivation for playing sport for children by providing financial, practical and psychological support (Chris et al., 2014; May, 2020; Sánchez-Miguel et al., 2013; Turman, 2007). Also, parents' interest in a specific sport influences children's participation and continuation in that sport as there is a higher chance of parental support and encouragement (May, 2020). McCarthy et al. (2008) observed that positive parental involvement has been reported as the most prominent source of enjoyment for young sport-participants of either sex. However, this influence changes throughout childhood and adolescence (Tam et al., 2019). As they reach adolescence, children are more independent in deciding their own physical activity behaviour. Peer influence (mainly peer acceptance) becomes an important interpersonal determinant; especially in the late adolescent stage (Berger et al., 2008; De Goede et al., 2009).

On the other side, negative parental influence related to sport such as pressure to excel and hostility (Amado et al., 2015; Bonavolontà et al., 2021; Elliott et al., 2017; Ommundsen et al., 2006) may result in a negative experience for children playing sport. A study by Lochbaum et al. (1993) on the role of stress in sport from the perspective of young athletes explains that parents can unknowingly create a stressful environment by placing too much pressure on participation and too much emphasis on winning. Social norms may influence parental decisions on whether their child plays a sport or not, such as restricting girls from participating in some sports considering them as ‘inappropriate’ and not socially acceptable due to gender stereotyping of the sport (Guillet, et al., 2000; Hannon et al., 2009). There are not many studies discussing the social influences in the continued participation in club-based sports specifically during adolescence (Howie et al., 2018; Keresztes et al., 2008). In addition to parents, siblings have a big influence on children’s behaviour as well as in initiating and supporting children’s participation in elite or non-elite sports (Allbaugh et al., 2016; Hopwood et al., 2015).

While family plays a central role in shaping an adolescents’ physical activity habits, peers act as important agents that foster or undermine their participation in general physical activity and sport (Biddle et al., 2005; Cheng et al., 2014; Kubayi et al., 2014; Reimers et al., 2019). This is particularly evident during early adolescence and in school settings (Barkley et al, 2014; Brustad, 1996; Keresztes et al., 2008; Smith, 2003). Studies in this area have shown that children’s perceived competency in sport is strongly related to gaining acceptance of their competency by their peer group (Weiss et al., 1992; Salvy et al., 2009). Influence of peers (especially boyfriends/ girlfriends) in adolescents’ choice of starting, continuing or dropping out from a specific sport in community club settings is likely to be different from that in the school setting and has hardly been studied. Whilst parental support is a major influence in sport participation, socio-economic status (SES) of the family is also a main determinant. Parents’ education, occupation and income can influence continued

participation of children in club-based sport as these factors are indicators of the family's SES. Studies in this context found that low socio-economic background influences continued participation in club-based sport, as participation or club membership normally involves a cost (Eime, Harvey, Sawyer, et al., 2013; Eime, Charity, Harvey & Payne, 2015; Eime, Casey, Harvey, Sawyer, et al., 2015; Karusisi, et al., 2013).

Like parents, coaches also can have positive as well as negative influence in adolescent children's sport participation (Brustad et al., 2001; Cope et al., 2013; Fraser-Thomas et al., 2005; Merkel, 2013; Smoll et al., 2002; Weinburg et al., 2001). Bailey et al. (2013) observed that negative (such as more controlling or autocratic) environment created by coaches, physical trainers or other sports club officials can deter the motivation of players. Coaches' behaviours and practices should match the expectation of young participants if they are to remain involved in sport (Bailey et al., 2013). They can influence positively through friendliness and encouragement, as well as by setting themselves as a role model for players. Different to the school setting, influence of coaches is very significant in club setting. As club-based sports are more structured and competitive and would be challenging for many players to motivate themselves in continue playing. Poor coaching tactics, incompetence, indecent behaviour and increased pressure to win will all have a negative impact on children's choice of participation in club-based sport (Merkel, 2013; Smoll et al., 2002).

In the case of competitive sports that require developing high levels of skill and competence to do well, children who are unable to perform to the expectation of parents and coaches can lose confidence and drop out (Crespo et al., 2007; Merkel, 2013). Understanding the influence of coaches in developing intrinsic motivation in children is especially important in such type of sports. Ensuring appropriate coaching behaviour, structure of coaching sessions and prominence for enjoyment are vital for children's active

participation (Cope et al., 2013; Crane et al., 2015). There are studies in the context of elite sport which is more rigid and highly competitive (Merkel et al., 2013), as well as in the school setting (Eime, Casey, Harvey, Sawyer, et al., 2015; Spink et al., 2012) but there is no clear understanding about the influence of these factors in the community club-based sport environment which is different from the above settings.

2.13.1.3. Organisational

Organisational factors that influence participation in sport include the sports rules, regulations, policies and formal or informal norms that exist in a group, organisation or community that constrain or promote sport participation. Rules and regulations of institutions (e.g., community organisations and sports clubs) that provide a sporting facility strongly influence the decision of a participant to start, continue or drop out (Balish et al., 2014; Hajkiewicz et al., 2013). It is important that sports clubs develop strong relationships with all participants to enhance retention. Casey et al. (2017) and Eime et al. (2008) observed a positive link between retention of members and a positive, healthy, and inclusive culture within the sport club by creating a welcoming environment and treating players fairly with respect and dignity regardless of gender, sexual orientation, ability, cultural background or life stage. An inclusive sport club culture can help players who have concerns about their own sporting ability to feel more at ease at sports clubs (Sport Australia, n. d b).

Harmful and toxic culture in sports clubs act as a barrier to participation and retention (Casey et al., 2017; Gardner et al., 2016). In the study on the influence of a healthy and welcoming environment on club sport participation by adolescent girls, Casey et al. (2017) found that friendliness of the club, knowing someone at a club and friendliness of the coach were critical factors that influenced the club sport participation more than 80% of adolescent girls. Similarly, independent studies by Balish et al. (2014) and Gardner et al.

(2016) pointed out the influence of social climate on sport attrition among youth. Players who did not experience a positive social climate and positive relationship with their coach were less likely to continue in organised sport.

Eime and Payne (2009) found that formalising club-based sport into competitive levels can impact the continuation of involvement by children and adolescents, as the rigidity and competitiveness become more demanding as they advance in age. Participants' preferences for specific sports settings also depend on socio-demographic characteristics. For instance, female participants are more likely to opt for less rigid and flexible sports settings such as gyms and informal groups (Borgers et al., 2015; Eime, Casey, Harvey, Sawyer, et al., 2015; Klostermann et al., 2014). Rundle-Thiele et al. (2009) observed that the overemphasis on sports delivery with a focus on winning rather than having fun and enjoyment is impacting the retention of players within community sporting clubs. Relating to this, Richards (2017b) observed that the structure in which a sport is played has a major influence on the retention of young participants, through removing or creating constraints on their long-term engagement in sport. Inflexibility around the scheduling of sport can result in breaking of friendship groups through regrouping of participants and restricting participation of people with lower competency, fostering dropout from club-based sports (May, 2021c; Richards, 2017b). Agreeing with this, Deelen et al. (2018) recommended sports club managers to offer more flexibility in schedules and promote social activities at sports clubs. Attention to members' needs can include allowing practice of sports outside of regular training hours and at external venues in the neighbourhood. Sporting organisations have started to emphasise in their policy to give priority to participants' interests, in order to attract more youngsters to organised sports and increase retention (Kirkham, 2020). At a time when new options like adventure sports (e.g., hiking, skateboarding) are gaining popularity among adolescents (Westerståhl et al., 2003; WHO,

2010), conventional sporting clubs have to be dynamic in creating flexible and alternate formats and establishing programs that suit the evolving needs of young participants.

The motivational factors for participation in club-based sport (e.g., socialisation in rural settings and performance based in urban setting) can reflect in the organisational structure and environment of clubs (Deelen et al., 2018). This may vary with the type of sport. The current study investigates how the organisational factors and club environment influence the decisions of players in continuing their participation in club-based sport in both settings.

2.13.1.4. Environmental

The environment in which the sporting activity is taking place can control or constrain sport participation behaviours (Sallis et al., 1998). In this section, some of the environmental factors that influence club-based sport participation, such as physical environmental factors (e.g., built-up environment that includes sport facilities) and social environmental factors (such as demography, socio-economic status etc.) are being reviewed.

There is evidence for positive association between sport participation and availability and accessibility of facilities (Halonen, et al., 2015; Limstrand et al., 2008; McCormack et al., 2011; Veitch et al., 2016). Heesch et al. (2015), Eime, Casey, Harvey, Sawyer, et al. (2015) and Eime et al. (2017) investigated the influence of sport facilities on sport participation and found that better provision of sport facilities increases sport participation among young people. Further, Wicker et al. (2009) and O'Reilly et al. (2015) found that availability of sport infrastructure influenced the pattern and frequency of sport participation. An Australian study that examined the geographical association between sport facilities and sport participation found a positive association between the participation rate and availability of facilities in non-metropolitan regions (Eime et al., 2017).

According to several other studies, greater distance to sporting facility in non-metropolitan regions is a barrier for sport participation (May et al., 2020; Meldrum et al., 2012; Steinmayr et al., 2011). Relating to this, in a study on understanding the contexts of adolescent female participation in sport and physical activity Eime, Harvey, Sawyer, et al. (2013) projected that improving access to sports facilities should be one of the key strategies to facilitate and promote greater participation in club-based sport among adolescents.

Deficits in facilities, accessibility and service can affect sport retention (Deelen et al., 2018; Wicker et al., 2013) by influencing the motivation of participants. At the same time, there are studies that show mixed results as well. For instance, Hoekman et al. (2011) found that distance to facilities was not a key factor related to participation. A study in Germany assessing the association of proximity of facilities to participation in the corresponding sports activities found that the distance from home to the nearest sport facility did not significantly relate to participation rates for children of either sex in the case of tennis, swimming and water polo (Reimers, et al., 2014). However, this study has the limitation that it is a cross-sectional study and does not allow for causal inferences of relationships. In a study, investigating the association of the extent of constraints and sport participation frequency, Deelen et al. (2016) observed that in the Netherlands the distance to indoor sport facilities and swimming pools were major constraints on sport participation of adults. However, in another study the same author (Deelen et al., 2018) observed that for young participants aged 13-21 years, environmental determinants did not significantly contribute to dropout and interestingly, that tennis players who travelled greater distances from home to the tennis club were less likely to drop out.

Further, Dalene et al. (2018) observed that in the urban context, young people's physical activity behaviour can be linked to macro-environmental factors such as

availability of space for playing sport. The wider demographic spectrum and higher degree of social stratification in an urban setting could be a cause for lower sport-participation. Greater homogeneity in rural areas could lead to a stronger sense of solidarity, which is more congenial to wider participation in community sports (Castells, 1977, Oppelaar et al., 2006) and this is more likely to result in higher levels of sport participation (Beenackers et al., 2011; Collins, 2010; Hoekman et al., 2017).

Apart from physical environment (such as space available for sports) there is evidence for influence of elements from the social environment such as the demography, socio-economic status (SES) and safety of the neighbourhood on sport participation (Beenackers, et al., 2011; Deelen, et al., 2017; Eime, Charity, Harvey, & Payne, 2015; Hoekman et al., 2017; Kramer et al., 2015). Observations in Australia show that people with lower levels of education and income and those who live in socioeconomically disadvantaged neighbourhoods tend to be less physically active. This can be attributed to lower self-efficacy, poorer access to facilities and lower social support. Eime et al. (2017) found an association between sport participation and availability of sporting facilities, which to a great extent links with region and the SES of the neighbourhood. Cost to participate is a known barrier for playing club-based sport and its impact varies between sports (Hardy et al., 2010; Somerset et al., 2018). Children from lower SES backgrounds were observed as spending less time compared to their higher-SES counterparts in playing organised sport outside-of-school (Kumar et.al., 2009; Maher et al., 2011). This is not necessarily due to the direct cost to play sport outside school. Constraints on lower-SES parents to provide support such as transport to sports facilities also have an impact.

2.13.1.5. Policy

Policy-related factors refer to the state and federal policies or legislation that have ramifications on sport participation. They also include the informal local policies or rules

in the sports settings such as those at the sports club (Sallis et al., 2006; Tehrani, 2016). Regulatory actions or policymaking have the potential to influence the wider constraints of sport participation in all domains, through effective strategies and investment that support participation for all. Government and sport governing bodies have made several policy-based interventions to address intrapersonal, interpersonal and environment-related barriers of sport participation. However, there is only limited research (Eime, Harvey, Charity, & Payne, 2016; Westerbeek et al., 2019) on policy factors that impact participation in club-based community sport. The literature available is on policy factors related to participation in all types of physical activities that comes under the term 'sport' which also encompasses a variety of physical activities other than organised club-sport. This section discusses the different aspects of policies and regulations formed at various levels in influencing participation and retention in club-based sport.

Many governments and organisations strategically invest in developing policy initiatives to enhance sport participation. For example, Sport Australia identified the importance of providing sports programs that are inclusive, promoting equal treatment and focusing on fun and participation rather than skill and ability. Australia's anti-discrimination legislation upholds the right of everyone to participate in sport and recreation (State Government of Victoria, 2019; Sport Australia, n.d b). Similarly, there are several initiatives at state level and organisational levels to increase sport participation of women by implementing gender specific policies and strategic investments (Casey et al., 2019; May, 2020). Several policies related to urban planning, environment and active transport also result in increasing opportunities of sport participation to people from different skills, ability and background within the community (Eime, Young, Harvey, et al., 2013; Elder et al., 2007).

Traditional sports now have to compete with more individual and less organised physical activities that provide a much greater diversity of options for physical activity (Westerbeek et al., 2020). Identifying that this can reduce participation in traditional sports and memberships at community sports clubs, there are numerous government-initiated sport policies that aim to increase popularity of club-based sport through funding programs that assist sporting clubs in attracting children. Policies like funding the training of community coaches and officials aim at and lead to increase of participation at traditional community sports clubs.

The successes and shortfalls related to most policy-based initiatives and interventions have not been comprehensively analysed. For example, 'Sporting Schools' is a national sports policy initiative to help schools to increase children's participation in sport and connect them with community sport (Department of Health, 2020; Sport Australia, n.d a). However, it has been observed that the transition of school-based sports programmes to club-based sport is not very effective, with only a few children in school-based programs transitioning into club-based participation (ASC, 2015; Eime & Payne, 2009). This is possibly due to reasons such as lack of coordination between schools and sports clubs, inability of coaches to motivate children to continue playing the sport outside of school, and inadequate support and involvement of parents (Eime, Casey, Harvey, Charity, et al., 2015; May, 2021d).

The steady decline in club-based sport participation after childhood indicates that there are inadequacies in the policies and strategies to promote continuity in sport participation. Informal policies set by community organisations and sports clubs such as rigid timing, mandatory attendance and strict dress codes may impact children's interest and commitment at the intrapersonal level (Eime, Young, Harvey, et al., 2013; Sallis et al., 1998; 2006). Such policy issues could be affecting all popular sports but the true degree of

impact for different sports has not been studied in detail. Understanding the underlying factors that influence community sport participation will be helpful in developing a new insight on the issue.

2.14. Behavioural theories

There are several behavioural theories that help to understand and explain how the various determinants interact in forming an individual's motivation and decision to continue sport participation or to drop out (Ames, 1992; Buchan et al., 2012; Crawford et al., 1987; Deci et al., 2000; Visek et al., 2015). Leisure Constraint Theory (LCT) and Fun Integration Theory (FIT) are two important psychological and motivational orientation frameworks that emphasise different physical activity behaviours of individuals due to their varying motivational orientations (Buchan et al., 2012; Crawford et al., 1987; Visek et al., 2015). An individual's refrainment from participation in physical activities and recreational sport may be attributed to different levels of constraints (Jackson & Searle, 1985; Jackson & Henderson, 1995; Jackson, 1997). Overcoming these constraints is important for continued participation. Conceptualised on the basis of the hierarchy of constraints that influence behaviours, LCT is ideal to understand and explain the multi-layered constraints of retention of children and adolescents in club-based sport. Among many motivational factors that influence children and adolescents in overcoming the constraints of sport participation, fun/enjoyment is seen as the most critical (Visek, et al., 2015). Therefore, FIT is an ideal model to understand and explain how the multi-layered positive playing experiences determine fun/enjoyment in sport participation and promote retention of children and adolescents in club-based sport.

2.14.1. Leisure Constraints Theory

Leisure Constraints Theory (LCT) precedes socio-ecological model and has similar constraints and domains (intrapersonal, interpersonal and structural). It differs in that it is

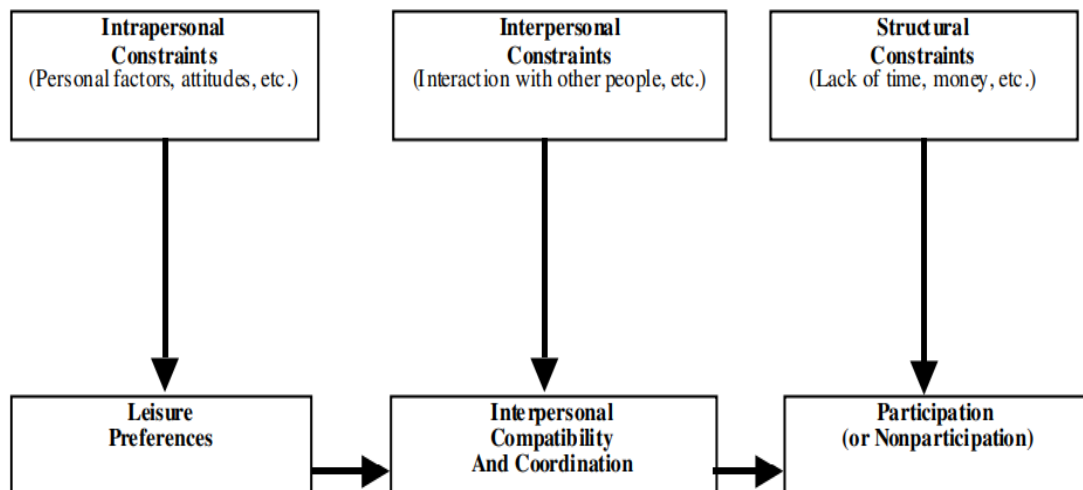
conceptualised as a hierarchical model in comparison with the multilayered and interacting the socio-ecological model (Crawford et al., 1987). Leisure constraints are factors that inhibit or prohibit participation in leisure activities (Jackson & Searle, 1985; Jackson & Rucks, 1993; Jackson,1997) and include three types of constraints that affect preferences and participation in an activity:

- (1) Intrapersonal: related to individual's psychological state- skill, attitude, ability etc.
- (2) Interpersonal: related to social factors- interaction / relationships with individuals or groups); and
- (3) Structural: external factors- lack of time, facilities, funds, transportations, etc.

(Casper et al., 2011; Crawford et al., 1987).

Effectively overcoming the multiple layers of constraints is essential to motivate individuals to participate in LTPA such as sports (Ommundsen et al., 1997).

Figure 4: Hierarchical model of leisure constraints



Although there are studies that have examined the influence of perceived constraints in physical activity participation of children and adolescents, not many of them are focused

on how these constraints differ across different age cohorts as well as gender in a structured environment such as a community sport club. Constraints of sport participation is known to vary with the type of sport (ASC, 2017; Deelen et al., 2018; Hoekman et al., 2011). An examination of constraints to participation in club-based sport will enable policy-makers and administrators to be more diligent in making the best use of resources (Casper et al., 2011). Furthermore, given the potential of sport to positively impact children's physical activity level, an examination of constraints to sport participation is necessary; especially in a structured environment like a community level sports club.

2.14.2. Fun Integration Theory

Fun/enjoyment is the key reason for children to play sport, and lack of fun and enjoyment is the major reason for kids to drop out from sport. Children and adolescents' enjoyment from playing sport can be due to different reasons. What children see as fun varies between individuals, and can be based on their sex, age group and competency. It can vary from adults' perspective of fun. Fun Integration Theory (FIT) is conceptualised to understand fun factors and determinants that influence sport participation behaviour of children and adolescents (Visek et al., 2015). The Fun Integration Theory has been used as a framework to understand the role of fun as an intrinsic as well as extrinsic motivator. It is a multi-theoretical, multidimensional behavioural framework which emphasise the use of fun to promote and sustain an active and healthy lifestyle through sport and FUN MAPS are developed from concept mapping are the basis of the Fun Integration Theory (Visek et al., 2015). The theory explains that fun is an accumulation of experiences derived from internal, external, social and contextual factors of fun determinants. Fun determinants are specific, actionable behaviours that foster fun. The Fun Integration Theory identifies eleven interrelated fun factors (Table 1), defined by 81 fun-determinants (Visek et al., 2015; 2018).

Table 1: Fun factors and fun determinants (Kirkham,2020)

NOTE: The 11 Fun Factors and the 81 Fun Determinants are listed in order of importance from highest to lowest.

THE 11 FUN FACTORS	THE 81 FUN DETERMINANTS
1. Trying Hard	<ul style="list-style-type: none"> 1. Trying your best 2. Working hard 3. Exercising and being active 4. Getting / staying in shape 5. Playing well during a game 6. Being strong and confident 7. Competing 8. Making a good play by scoring, making a big save, etc. 9. Setting and achieving goals 10. Playing hard
2. Positive Team Dynamics	<ul style="list-style-type: none"> 11. Playing well together as a team 12. Supporting my teammates 13. When players show good sportsmanship 14. Being supported by my teammates 15. Getting help from teammates 16. Warming up and stretching as a team
3. Positive Coaching	<ul style="list-style-type: none"> 17. When a coach treats players with respect 18. A coach who knows a lot about the sport 19. Having a coach who is a good role model 20. When a coach encourages the team 21. Getting clear, consistent communication from coaches 22. A coach who listens and considers players' opinions 23. A coach who allows mistakes, while staying positive 24. A coach who you can talk to easily 25. A nice, friendly coach 26. Getting compliments from coaches 27. When a coach participates with players during practice 28. When a coach jokes around
4. Learning and Improving	<ul style="list-style-type: none"> 29. Being challenged to improve and get better at your sport 30. Learning from mistakes 31. Improving athletic skills to play at the next level 32. Ball touches, including dribbling, passing, shooting, etc. 33. Learning new skills 34. Using a skill you learned in practice during a game 35. Playing different positions 36. Going to sports camp 37. Copying moves and tricks that professional athletes do
5. Games	<ul style="list-style-type: none"> 38. Getting playing time 39. Playing your favourite position 40. Playing against an evenly matched team 41. Being known by others for your sports skills 42. Playing on a nice field 43. Playing in tournaments

6. Practice	<ul style="list-style-type: none"> 44. Having well organised practices 45. Taking water breaks during practice 46. Having the freedom to play creatively 47. Doing lots of different drills and activities during practice 48. Scrimmaging during practice 49. Partner and small group drills 50. Practicing with specialty trainers / coaches
7. Team Friendships	<ul style="list-style-type: none"> 51. Getting along with your teammates 52. Being around your friends 53. Having a group of friends outside of school 54. Hanging out with teammates outside of practice or games 55. Being part of the same team year after year 56. Meeting new people 57. Talking and goofing off with your teammates
8. Mental Bonuses	<ul style="list-style-type: none"> 58. Keeping a positive attitude 59. Winning 60. It relieves stress 61. Ignoring the score
9. Game Time Support	<ul style="list-style-type: none"> 62. A referee who makes consistent calls 63. When parents show good sportsmanship by being encouraging 64. Being congratulated for playing well 65. Having people cheer at the game 66. Having your parent(s) watch your games 67. Getting complimented by other parents
10. Team Rituals	<ul style="list-style-type: none"> 68. Showing team spirit with gear, ribbons, signs, etc. 69. High Fiving, fist bumping, hugging 70. End of season / team parties 71. Going out to eat as a team 72. Doing team rituals 73. Carpooling with teammates to practices and games 74. Doing a cool team cheer
11. Swag	<ul style="list-style-type: none"> 75. Having nice sports gear and equipment 76. Earning medals or trophies 77. Traveling to new places to play 78. Wearing a special, cool uniform 79. Eating snacks/ treats after the game 80. Staying in hotels for games / tournaments 81. Getting pictures taken

(Table: Fun factors and fun determinants (Kirkham,2020) Continued from previous page)

Fun Integration Theory encompasses major theories and concepts that are used to understand sport participation behaviour and positive sporting experience. For instance, many of the fun factors identified in the theory are extrapolated across socio-ecological domains, though most of them are linked mainly with intrapersonal domain such as trying hard, learning and improving, mental bonuses, games, practice, swag etc. and interpersonal

domains such as positive team dynamics, positive coaching, team rituals, team friendship and game time support. Visek et al. (2015) observed that the difference of fun determinants in playing sport is very little between the genders, socioeconomic backgrounds and competency levels of participants. The motivational framework has not previously been used extensively to understand determinants of sport participation, retention and dropout in club-based sport. Also, it focused only on a small age group with one type of sport and in one country. Exploring the variability of fun determinants between different cohorts, backgrounds and environments, especially during the transitional period from childhood to late adolescent years in a structured context like community sports club will result in new knowledge that will help to understand the fun determinants for retained players and specifically reveal what motivate them to continue playing. This information will assist in framing strategies that lead to positive playing experience for the targeted group of players and thereby improve their retention in community club-based sport.

2.15. Tennis as a club-based sport

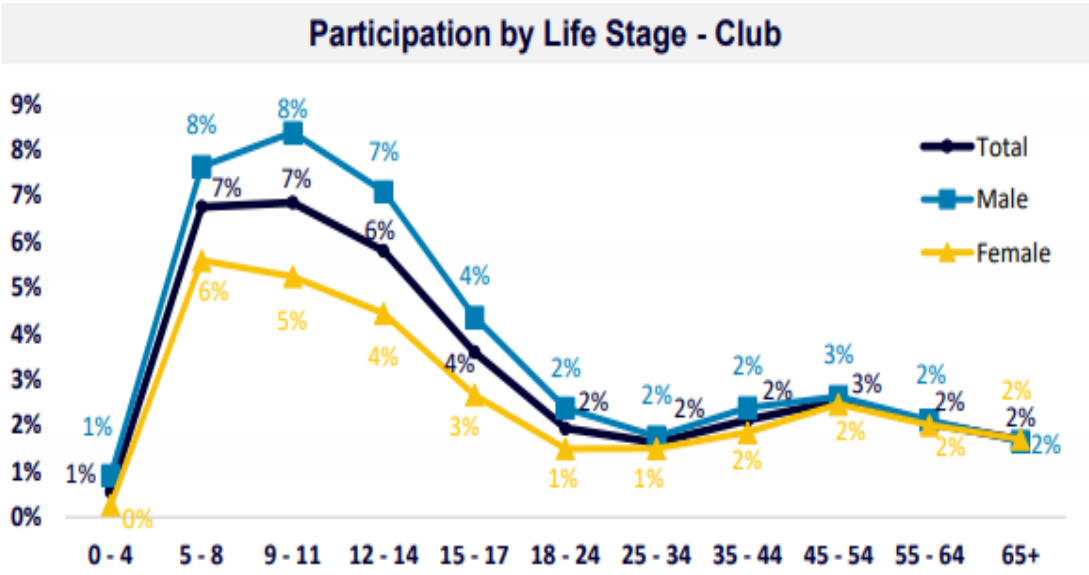
Tennis is one of the most popular sports played, watched and followed all over the world (International Tennis Federation, 2021). Tennis is also a complex sport that requires good physical and psychological skills to play successfully and enjoy. According data from Sport Australia (2019b; 2019c), tennis ranks as the seventh most participated sport/physical activity in Australia. The country is the host for one of the four most prestigious tennis tournaments (Grand Slams) in the world which helps the growth of tennis in Australia by popularising the sport (Sport Australia, 2019c; Tennis Australia, 2015; 2021a; 2021b). A national survey in 2019 showed that 5% of the total 15+ population in Australia played tennis and 81.5% of the organised tennis participation was through tennis clubs (Sport Australia, 2019b). It was reported that in 2016 nearly one million Australians aged 15 years

and above played tennis as a sport. The leading motivation to participate in tennis has been fun/enjoyment, social reasons and health or physical fitness (Sport Australia 2019a; 2019b).

In 2017 an estimated 290,611 children between 0-14 years participated in organised out-of-school tennis in Australia. A higher proportion of them (63%) were males, and peak participation rate was observed to occur between 9-11 years for both genders (Sport Australia, 2019b). In the same year the estimated number of Australian tennis players aged 15 years and higher was 911,400 (4.5% of the group’s population) with a higher proportion of male participation (57%) and peak participation between 15-17 years (Sport Australia, 2019b).

Figure 5 shows the age and gender related trends in tennis participation in Australia in 2019. Similar to the overall organised sport participation, there is higher participation of males than females for all age groups. Highest participation for both sexes is among 5 to 11-year-olds (Eime et al., 2016c; Roger, 2014; Sport Australia, 2019b) and a steep fall in participation is observed from late adolescence.

Figure 5: Snapshot of tennis participation in Australia in 2019, by age and gender- Sports Australia 2019



(Tennis Participation by Life Stage, Ausplay data, Sport Australia 2019b. P.9. Numbers show % population of participants in each group.)

Tennis Australia, the governing body for the sport in Australia, has been implementing strategies to promote club tennis participation among children and adolescents. These include:

- Tennis starter program for children (ANZ Tennis Hot Shots) to introduce tennis to kids under 12 to tennis through fun and engaging lessons;
- School based programmes connecting schools and sporting clubs;
- Game sense approach to improve motivation in children and to promote tactical understanding of the game;
- Tournaments and events providing many different opportunities for people of all ages and abilities to get involved in tennis.

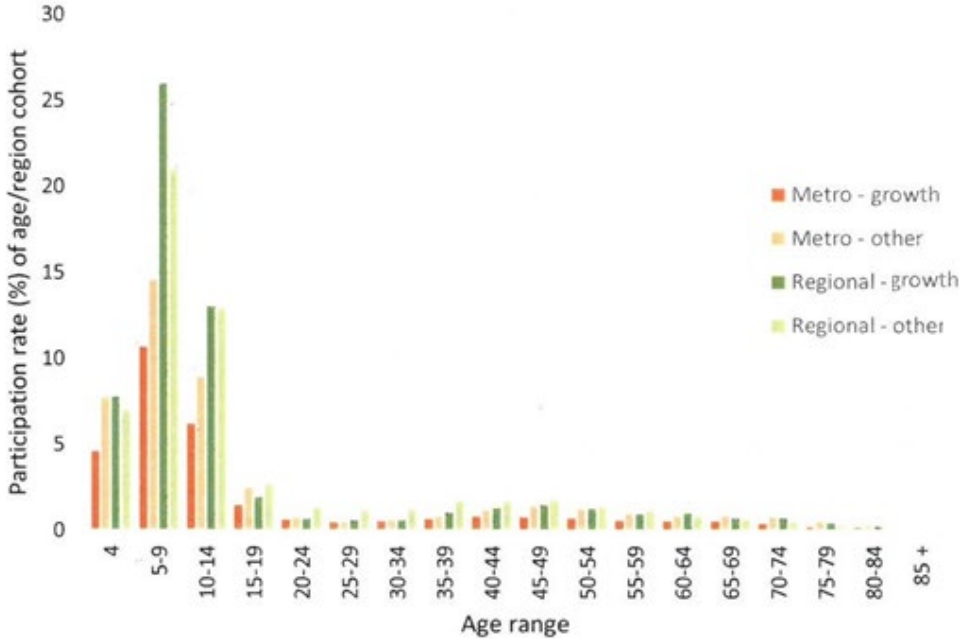
(Tennis Australia, 2017, 2021b).

With the objective of attracting new players, Tennis Australia introduced programs that provide entry level opportunities in tennis for people of all ages and abilities (Tennis Australia, 2021b). Tournaments and club-level competitions provide players the opportunity to play team-based competitive tennis representing their club or association, promote high standards of competition and open pathways to elite sport. These programs attract more children and adolescents to playing tennis (Tennis Australia, 2021b) which improved overall tennis participation in Australia. At the same time, a large number of tennis players discontinue participation during adolescence and early adulthood. This remains a concern especially in terms of individual as well as community benefits that are being missed due to high dropout. Organisational efficiency, good facilities and quality coaching are collectively seen to associate strongly with continued sport participation at grassroots. Therefore, tennis clubs must strive to develop and implement policies and strategies that effectively meet these demands and promote structured participation through

tactics to create a welcoming and inclusive environment to all groups of population (Richards, 2017).

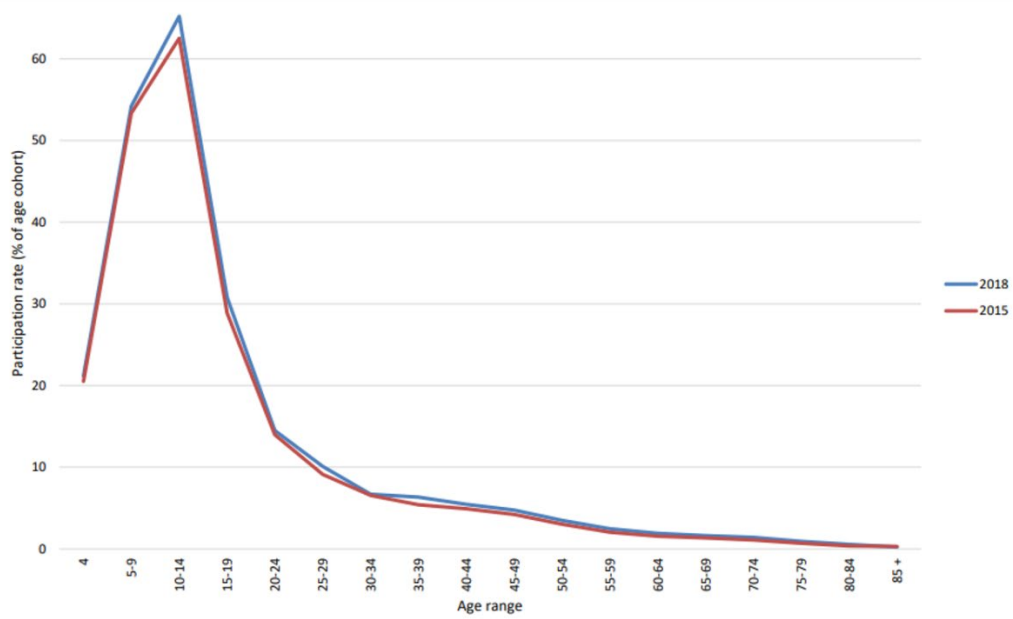
As a sporting capital of Australia, Victoria has the highest proportion of tennis players in the country (Sport Australia, 2019b). Tennis participation rates in Victoria in 2015 (Figure 6) shows the age-specific trend in participation across different regions. Peak participation can be seen to occur at the age group 5-9 years for both metropolitan and non-metropolitan regions (Eime et al., 2016b, 2016c, 2016d).

Figure 6: Age-specific tennis participation rates, 2015, Victoria: by region (Eime et al., 2016c)



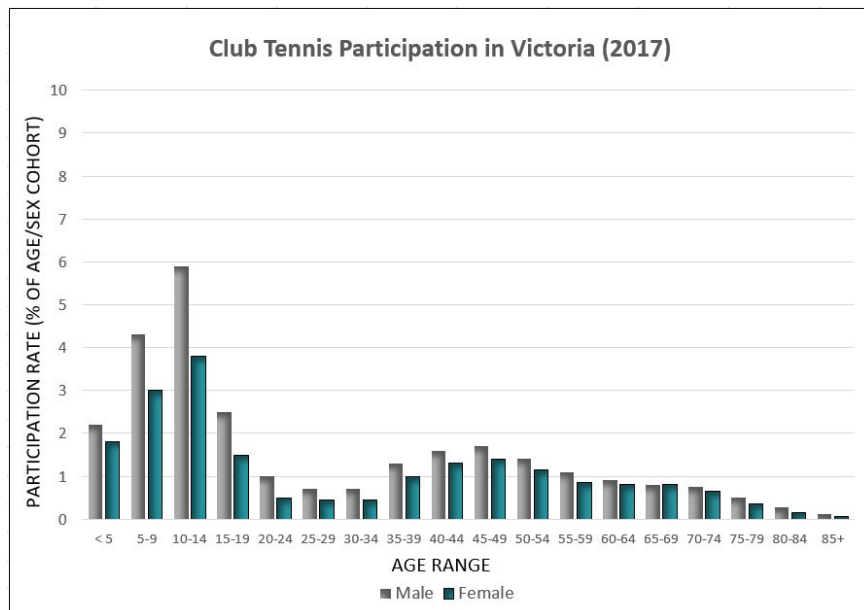
Overall club-based sport participation across different age groups in Victoria (Figure 7) indicate peak rate of participation (65.2%) among the age group 10-14 years in 2018, followed by 54.2% among 5-9 years (Eime, Charity, Jenna, et al., 2020). Comparison of overall club-based sport participation in Victoria between 2015 and 2018 shows a general increase in 2018, with the largest growth (4.6%) among the 10-14-year age group followed by 3.1% for the 15-19 years (Figure 7).

Figure 7: Overall club-based sport participation rates: 2015 and 2018, Victoria, by age



The trend for overall club-sport participation (Figure 7) has been mirrored in the club tennis participation in Victoria in 2017 (Figure 8), with peak participation between 10-14 years and a significant increase in the participation in late adolescent years (Tennis Victoria Participation 2017: Eime et al., 2018b).

Figure 8: Age and sex specific participation rates in club-tennis, 2017- Victoria



Source: Tennis Victoria Participation 2017

Trends in club-based tennis participation in Victoria is very similar to the general trend of club-based sport participation in Australia and most similar countries of the world. This research study specifically focuses on club tennis participation in Victoria to investigate the factors that influence the retention of children and adolescents in club-based organised sport.

2.16. Rationale of the study

Regular physical activity is important for a healthy life. The literature review highlights the significance of club-based organised sport as the mode of LTPA that can lead to life-long physical activity habits for children and adolescents which will enhance the holistic health and wellbeing. Maintaining continuity of participation in club-based sport from childhood through adolescence and to adulthood is important for long-lasting benefits. Previous studies mostly focused on factors that influence the rates of participation in club-based sport. There is a void in the research knowledge on how the various socio-ecological determinants collectively influence the retention and dropout among children and adolescents in a specific community-based sport.

The broad objective of this research study is to holistically analyse, using the socio-ecological model, the factors that influence the choice of children and adolescents either to continue playing community club-based tennis or to drop out. Currently there are working strategies for improving retention in club-based tennis (Tennis Australia, 2021a) but once a player drops out there is no ‘touch-point’ to understand the intrapersonal and circumstantial factors that collectively acted on them in the lead-up to the point where they chose to drop out. The determinants that influence dropout from club-based sport are complex, interconnected and can vary with the type of sport. Therefore, as a feasible strategy to holistically understand the issue in detail, this study explores the intrapersonal

and external factors that influence retention and dropout from club tennis. Identifying the key determinants and their relative and cumulative impacts will assist in shaping informed strategies to maintain participation in club tennis and club-based sports in general.

The literature identifies several socio-ecological determinants that influence the behaviours and choices regarding sports participation. The combined effect of these determinants either lead to retention or cause dropout. Collection and analysis of existing (secondary) and new (primary) data identify the significant determinants of the two choices (i.e., continue playing or to drop out) in the case of children and adolescents participating in club-based tennis in Victoria. Constructing a socio-ecological model with the backing of relevant behavioural theories is useful to analyse the multi-layered nature of their interaction. The psychological and motivational orientation frameworks Leisure Constraints Theory (LCT) and Fun Integration Theory (FIT) would provide the theoretical backing for the analysis.

3. Research design and methodology

This chapter presents the research design and methodology of this program of research. It provides the epistemological stance and an outline of the research design (see Table 2) that comprises the research questions, design and methodology specific for each study. A flow chart of the research study plan demonstrates how the studies have been designed and carried out to achieve the overarching aim of the research program (see Figure 10).

3.1. Epistemology

This program of research takes a constructivist approach based on the principle that knowledge is built or constructed through experiences of the learner, rather than discovered (Elliott et al., 2000, p. 256). In this approach the individual's opinion, attitudes, values and behaviour are shaped through the environment they are exposed to and also through a range of circumstances they have gone through in their life (Jonassen, 1991). Based on this constructivist view, this program of research has tried to recognise the determinant factors of retention and dropout in club tennis by considering the understandings and opinions of the participants representing the target group. This approach is believed to give the research subjects the opportunity to express their ideas and opinion that are influenced by their lived experiences that might have impacted their decision to continue participation or to drop out of playing tennis.

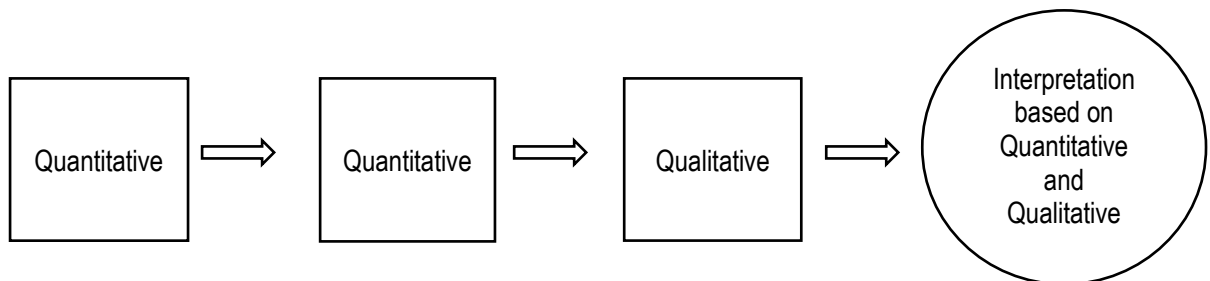
3.2. Research design

Tennis is widely played at community level as a club-sport in Australia, especially by children and adolescents. The level of participation in club tennis in Victoria makes it an ideal sport to investigate the trends and determinants for children and adolescents to participate, retention and drop out from the sport. Also, Tennis Australia, the governing

organisation for the game in Australia, extended their support in carrying out this research study.

Mixed-method explanatory sequential design was chosen for this program of research (see Figure 9). The advantage of using this research design is that multiple sources of data can be used to explore the overall research problem and capture different dimensions of the phenomenon; i.e., data triangulation (Almalki, 2016; Ivankova et al.,2006; Wisdom et al., 2013). Integrating both quantitative and qualitative data in the research process allows for a robust analysis of the research problem and is common in social and behavioural science research (Creswell, 2014, Leech et al., 2009). This provides the opportunity for the researcher to take advantage of the strengths of each method and to investigate the research problem using both words and numbers (Almalki, 2016).

Figure 9: Mixed-methods explanatory sequential design



Source: Creswell and Plano Clark (2007, p.73)

In this program of research, the quantitative component involved collecting, analysing and interpreting quantitative data to understand participation trends and the broad range of determinants influencing children’s and adolescents’ decisions to continue playing club tennis. Qualitative data was then collected to help explain and elaborate the quantitative data to gain an in-depth understanding of specific factors that are influential in children’s and adolescents’ decisions to continue playing cub tennis (see Figure 10).

Qualitative data collected from various stakeholders (children, parents, coaches) provide a good understanding of the problem from different perspectives (Bekhet et al., 2012; Creswell et al., 2007; Denzin, 2018; Greene et al., 1989; Mertens, 2014). The advantage of using this research design is that it provides the opportunity to understand discrepancies between quantitative results and qualitative findings, and ensures that study findings are truly based on participants' experiences (Wisdom,2013).

Figure 10: Research study plan

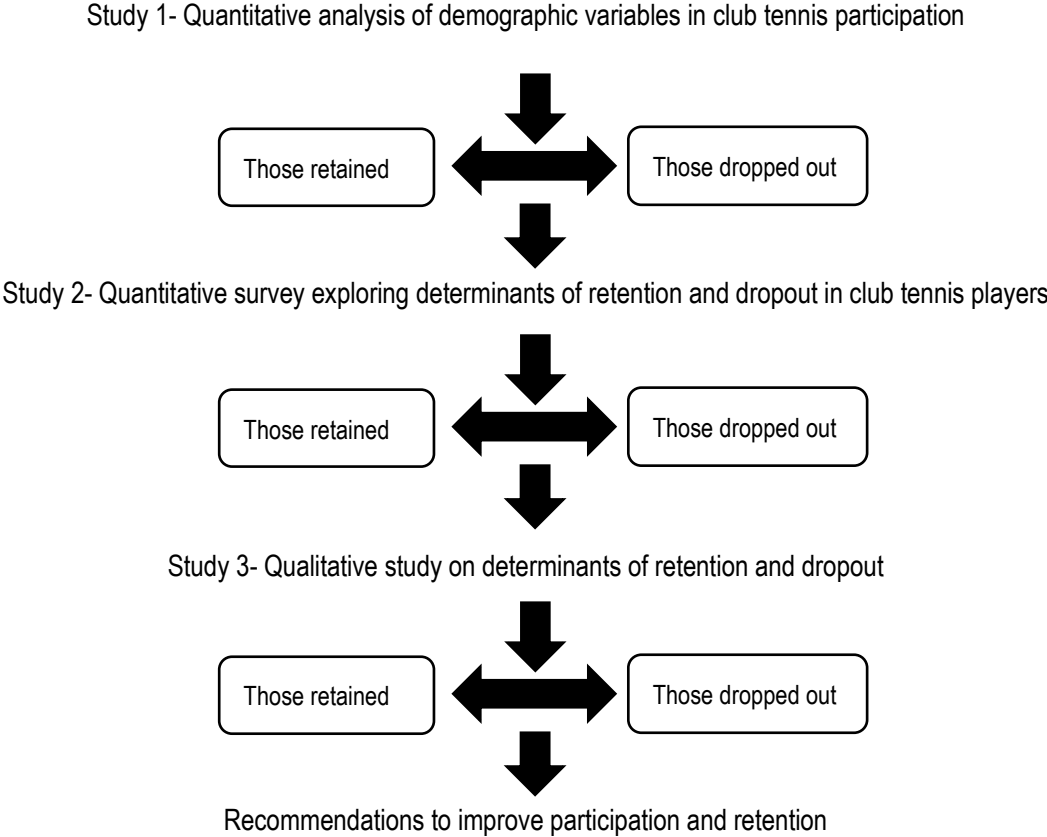


Table 2 presents an overview of each study within this program of research. It outlines the research questions of each study along with study sample, variables, methodology and study objectives.

Table 2: Overview of the research methodology

Study	Research Question	Sub Question	Samples	Variables	Data Collection Methods	Objectives
1	What are the retention and dropout rates for children and adolescents registered to play club tennis in Victoria?	What are the demographic differences (sex, age, region, and socio-economic status) between the retained group and the dropout group?	Children and adolescents (10-18 years) who are / were playing tennis and registered with Tennis Australia	Age: 10-18 years Sex: male, female Location: rural, metro Socio-economic status	Secondary data analysis	To investigate any demographic variation between retained and dropout players playing club tennis in the state of Victoria
2	What are the major determinants associated with retention / dropout of children and adolescents	What are the differences in the key determinants between the retained group and the dropout group? How is the retention / dropout of a child / adolescent in tennis associated with the indicators of overall health and wellbeing?	Children and adolescents (10-18 years) who are or were playing tennis and registered with Tennis Australia	Age: 10-18 years Sex: male, female Location: rural, metro Socio-economic status	Online quantitative survey	To investigate the determinants of retention and drop out in club tennis players in the state of Victoria.
3.	How do the major determinants identified from Study 2 influence the continued participation or discontinuation of children and adolescents in club tennis? What recommendations can be suggested to improve participation and retention in club tennis for children and adolescents?		Players who provided their contact details from study 2, parents and coaches and snowball sampling		Qualitative semi-structured interviews	To investigate the factors that influence the players decision to retain or dropout from playing club tennis.

3.3. Theory underpinning research design

This section of the methodology explains the theoretical models underpinning the research design and why they were used. This include the socio-ecological model used as the overarching model for this program of research, and the behavioural theories Fun Integration Theory (FIT) and Leisure Constraint Theory (LCT) applied to explore determinants that collectively lead to the adequate level of motivation to be retained or to a level of deterrence that cause dropout.

3.3.1. Building of socio-ecological model

Described in the previous chapter (section 2.13), socio-ecological model is a multi-layered model that recognises the interaction of different factors that influence specific behaviours (Elder et al., 2007). Various factors that collectively act on an individual or group leading them towards a behavioural choice can be modelled and analysed using this tool. Using this model enables a holistic approach in developing strategies to intervene and reshape the behavioural trend of the studied cohort (Eime, Charity, Harvey, & Payne, 2015). Many studies have utilised the socio-ecological model to holistically understand the interaction of factors that influence physical activity behaviour and sport participation (Casey et al., 2009; Eime et al., 2014; Essiet et al., 2017; Martínez-Andrés et al., 2020; Rowe et al., 2013; Vella et al., 2014). The model has been used in this program of research for analysing the behavioural choices of retention or dropout in club-based community tennis participation by children and adolescents in Victoria.

The collection and analysis of quantitative data and the development of interview questions for the qualitative study were based on principles of the socio-ecological model. The quantitative and qualitative studies comprised of variables categorised into intrapersonal factors (age, sex etc.), interpersonal factors (parents, siblings, friends and coaches), environmental factors (location, distance) and organisational factors (club

environment, policy, etc.) to understand the influence and interaction between them in influencing the studied behaviour (retention / dropout) of the club tennis players.

3.3.2. Application of behavioural theories

Behavioural theories explain how various influencing factors interact in forming adequate motivation to retain or enough restraint to drop out from a physical activity or sport (section 2.12). Psychological and motivational orientation frameworks Leisure Constraint Theory (LCT) and Fun Integration Theory (FIT) were applied in this research study to provide guidance and direction in explaining retention and dropout in club-based tennis.

Refrainment from participation in physical activities and sports may be attributed to a variety of perceived constraints. The mindset for participation strongly depends on the capacity to negotiate with different constraints (Arzu, et al., 2006; Crawford et al., 1991; Young et al., 2003). LCT was applied to explain the proximal (e.g., competency) and distal (e.g., environmental) constraints in the hierarchical model of influence of leisure constraints that determine children's and adolescents' retention and dropout.

Considering fun as a critical factor in club tennis participation, FIT was used to understand and explain the role of fun as an intrinsic (e.g., enjoyment) as well as extrinsic motivator (e.g., winning, getting rewards). The FUN MAPS concept used in FIT facilitate mapping to understand the multidimensional complexity of fun in juvenile sports (Vissek et al., 2015; 2018). Being a relatively new behavioural theory, FIT has not been widely used outside of the United States to analyse children's participation in sport. The research study utilised this behaviour theory to understand how 'fun' determinants influence continued participation in the structured context of club-based tennis for a wider age group during the transitional period from childhood to late adolescent years.

3.4. Description of methodology

This section outlines the methodology of each of the three studies in this program of research. Each study outlines the research question, study sample, variables explored, data collection and preparation, data analysis and trustworthiness strategies adopted to ensure validity in the research findings. This program of research was carried out in association with Tennis Australia (Research agreement with Tennis Australia, Appendix 1).

3.4.1. Study 1: Quantitative analysis of demographic variables

This quantitative study involved secondary data analysis to investigate the retention trends in club-based tennis across key demographic variables (age, gender, region of residence and socio-economic status) to understand demographic variation between retained and dropout players. Ethics approval was obtained for this study as part of project Sport and Recreation Spatial Ethics (project number C13-007 see Appendix 2) from Federation University's Human Research Ethics Committee.

3.4.1.1. Research questions

The research questions for Study 1 were:

- What are the retention and dropout rates for children and adolescents registered to play club tennis in Victoria?
- How does the demographic distribution (sex, age, region and socio-economic status) vary between those who were retained, compared to those who discontinued club tennis?

3.4.1.2. Study sample

Study 1 involved secondary data analysis of existing registered player data from all 659 tennis clubs in Victoria that were affiliated with Tennis Australia. Participants who were aged between 10 and 18 years in 2015-16 yielded a sample size comprising of 24,303 players, effectively a census of participation among this age group. Among these players, only some continued their participation in the following year (2016-17). Those who played

for both years were classified as the ‘Retained Group’ and those who played only during the first year were classified as the ‘Dropout Group’.

3.4.1.3. Variables

The following variables were selected to pursue the research objective of understanding the demographic variation between the retained and dropout players among the selected population of children and adolescents: age (10-18 years); sex (male/female); region (metropolitan/ non-metropolitan); socio-economic status (Based on Socio-Economic Index for Areas for Relative Socio-Economic Advantage and Disadvantage (SEIFA RSAD) values on the residential postcodes).

3.4.1.4. Data collection and preparation

Secondary data analysis is the practice of using data collected for a different purpose or study. It is often cost-effective, saving time in data collection and avoids unnecessary duplication of efforts. Secondary data analysis is widely used in research studies to investigate new research questions as well as to analyse the previously investigated problem in a different perspective. (Boo et al., 2013; Cheng et al., 2014; Magee et al., 2006). In the case of Study 1, it had further advantages over primary data collection such as the ease of obtaining a large and comprehensive player registration data (i.e., census) for a valid conclusion, and the readiness of data in electronic format leading to relatively efficient statistical analysis. A minor limitation of making use of secondary data for the study was that players with any one or more of the relevant information missing in their registration data such as date of birth, had to be left out from the analysis.

Tennis Australia supplied the relevant data on all registered tennis players from their database during the selected time period (2015-16 and 2016-17). The data was cleaned and formatted using the following inclusion/exclusion criteria: samples (a) containing all relevant information of background (age, gender, and postcode) and (b) that were a

registered player aged 10 to 18 years during the first year (2015/2016) were included for analysis. Out of these players, those who continued playing in the following year (2016-17) were identified as 'retained' and those who did not (i.e., those who discontinued club tennis after playing in 2015-16) were identified as 'dropout'. Participant data for the 2 years was merged in SPSS Version 24 by using the participant identification code (ID). The individual player data was checked and consolidated by age, sex, and postcode across the two years. Based on residential postcode, each player was allocated a region (metropolitan/non-metropolitan) through the integration of the data with Australian Bureau of Statistics data that ranks postcodes in Australia according to relative socio-economic advantage and disadvantage (ABS, 2018b). Postcode-based Australian Socio-Economic Index for Areas for Relative Socio-Economic Advantage and Disadvantage (SEIFA RSAD) was also assigned to each player. The grouping of SEIFA values has been on the basis of the individual SEIFA values and based on this the study population was categorised into 5 equal-sized groups (Quintiles) with Quintile 1 as most disadvantaged and Quintile 5 as the most advantaged.

3.4.1.5. Data analysis

The cleaned player data was formatted to SPSS version 24 for statistical analysis. The playing status of player groups were coded as 1 for 'retention' and 2 for 'dropout'; sex was coded as 1 for 'female' and 2 for 'male'; region was coded as 1 for 'metro' and 2 for 'non-metro' and socio-economic status was coded as ranging from 1 for 'most disadvantaged group' to 5 for 'most advantaged group'.

Quantitative data analysis included descriptive statistics of players in the retained group compared to those in the dropout group. Chi-square analysis and multiple logistic regression were used to compare retention rates across the demographic characteristics: age (10-18 years), sex (male/female), region (metropolitan/non-metropolitan) and socio-

economic classification (1- most disadvantaged to 5- most advantaged). Independent samples *t* test was used to compare the mean age of both retention and dropout group in order to determine whether there is statistical evidence that the associated population means are significantly different. Logistic regression was used to predict the relative likelihood (represented by the 'odds') of a player being retained in club-tennis versus dropout group, using predictors gender, age, region and socio-economic status quintiles. A set of 'odds ratios' shows the influence of each determinant. Each odds ratio compares the odds for the particular demographic category with the odds for a chosen 'reference category'. Statistical significance was set at $p < 0.05$. Analyses were performed using SPSS Version 24 and MS Excel.

3.4.1.6. Trustworthiness strategies

Quantitative analysis of demographic variables in club tennis participation was based on a census of all registered club-based tennis participants in the Australian state of Victoria. Validity of the data is confirmed from the source of the data (Tennis Australia), which is a professional organisation governing the sport in Australia. Analysis of secondary data was based on the analysis plan driven by research question (Boo et al., 2013; Cheng et al., 2014). Based on the analysis plan, data for the study was extracted, cleaned and formatted from the player data by an experienced research personnel in the research team. The cleaned data was processed based on inclusion criteria for the study namely age (10-18 years), sex (male and female), residence post code and e-mail address and the year of registration (2015/16 and 2016/2017).

Expertise of the research team in analysis of the data has been used in every step of the study including the data preparation, development of analysis plan, analysis of the sample population and report writing. Selection of sample population, statistical analysis

and interpretation of the results were done in consultation with the research teams Senior Statistician and with constant interaction and discussion with the research supervisory team.

3.4.2. Study 2: Quantitative survey exploring determinants of retention and dropout

Understanding the variation of the factors that influence decisions to continue or discontinue playing club tennis will be helpful in drawing up strategies to reduce dropout from club-sport for the target age group. Focusing on this objective, a web-based survey was designed to identify determinants of retention and drop out in club tennis players.

3.4.2.1. Research questions

The research questions for Study 2 were:

- What are the major factors associated with retention / dropout of children and adolescents?
- What are the differences in the key determinants to playing club tennis between the retained group and the dropout group?
- How is the retention / dropout of a child / adolescent in club tennis associated with the indicators of overall health and wellbeing?

3.4.2.2. Study sample

Participants in the study consisted of registered club tennis players during the time of the survey and past players (those who were not playing at the time of the survey but were previous participants within the past five years), representing both sexes and living in the metropolitan and non-metropolitan regions in Victoria. The intended age group of the study was 10-18 years but due to the low response rate, some respondents who were just a few months away from turning 10 and some who recorded their age as higher than 18 years were also included. Thus, the age group of the study sample was 9-21 years. In total, 103 completed responses were collected, consisting of 80 retained and 23 dropout players. Details of sample collection are explained under section 3.4.2.6: Survey procedure.

3.4.2.3. Web survey development

Study 2 was designed as a self-report online survey to analyse the socio-ecological factors influencing the determinants of players' choice to continue (retention) or discontinue (dropout) participation in club tennis. It also aimed to identify whether the choice of continued tennis participation had a significant positive effect on the overall health and wellbeing outcome of the retained group, in comparison with those who chose to drop out (dropout group). Ethics approval for Study 2 for conducting online survey was obtained from Federation University Human Research Ethics Committee (Appendix 3).

The survey questions were developed using a combination of developed survey-items (Casey, et al, 2014, Varni, 2017) research findings from peer-reviewed literature on sport participation (Allison, et al., 1999; Casper et al., 2011; Cope et al., 2013; Crane et al., 2012; Eime, Harvey, Sawyer, et al., 2013; Eime, Casey, Harvey, Sawyer, et al., 2015; Loprinzi et al., 2012) and the guidance of Tennis Australia (Appendix 1). Questions designed in the survey were suitable for children to complete and in each section of the questionnaire were framed to elicit information about various determinants that may influence participants' choice to continue (retain) or discontinue (dropout) from playing club tennis.

The survey questionnaire was developed using Lime Survey software and had five sections, namely: A. Background information, B. Leisure-time physical activity, C. Tennis playing history, D. Influences on participation and E. Health outcome (see Appendix 4). Questions were branched out to two formats; one for respondents who participated in club-based community tennis at the time of the survey (2018-19), and another for those who previously played club tennis but were not playing tennis at all during the year of the study. The retained players automatically skipped the questions intended for dropout players and were directed to the next section of questions. The questionnaire again branched out to get appropriate responses from participants who were having coaching 'now' (i.e., during the

year of the study) and those who had coaching in the past but not during the study period. The description and rationale for questions in each of the five sections of the survey are discussed below.

3.4.2.4. Survey questions

Background information: This section comprised of mandatory and non-mandatory questions to collect the background information of the participants. Questions such as Age (to ensure the participants fall into the target group age category) and Home Postcode (to identify the region, metro/non-metro) were framed as numerical open-ended question. Non-mandatory questions such as sex, family composition and occupational status were included to see whether these factors influenced the playing status of participants. Questions were framed with multiple choice answers that prompted the participant to choose their preference.

Leisure-time physical activity: This section was framed to understand whether the general leisure-time physical activity behaviour of participants including organised and non-organised physical activities and screen-based leisure activities influenced their club tennis participation. Questions in this section comprised of the preference, choice, type and frequency of physical activity and sport participation of participants to understand participants' interest in participation in sport and physical activity in different setting which can reflects their general aptitude in playing sport and their preferences in playing sport in different settings as a leisure activity.

Screen-time: Participants were asked about the average time spent for screen-based activities on a weekday and a weekend day to see if it influenced retention or dropout in club tennis. Questions in this section were adopted from an existing survey to measure the physical activity levels of adolescent girls (Casey et al., 2014) and modified slightly for the current target group.

Tennis playing history: This section of the questionnaire collected information from participants regarding their tennis playing background, and whether they were a present or past tennis player. The questions explored the age at which the participant was introduced to club tennis, number of years of playing tennis, whether they participated in multiple clubs and programs and the level that they played in the competitions and format. Question on current tennis playing status in this section was mandatory for all participants. The present and past players branched out on the basis of the response, leading them to the appropriate format of questions framed for retained and dropout players. Participants who chose ‘currently registered member in a tennis club’, ‘intended to register during the time of the survey (2018-19)’ or ‘not registered but still play’ would be automatically directed to format of questionnaire framed for the retained players. Those who chose the option of ‘not currently playing tennis’ would get the format for dropout players.

Influences on participation: Questions in this section were framed to understand the socio-ecological determinants (intrapersonal, interpersonal, environmental and organisational factors) influencing tennis playing status (retention or dropout) of the participants. Questions on the intrapersonal factors included general sporting ability, self-efficacy, enjoyment, tennis competency, gender and body-image. Questions in this section were based on the Harter’s Self-Perception of Athletic Competence Scale (Casey, et al., 2014; Harte, 1982), and similar surveys used in other studies (Dishman et al., 2005; Glanz et al., 2008; Motl, et al., 2000) with appropriate modifications to meet the purpose of the study. Interpersonal factors include influence of parents, siblings, friends, role models and coaches. This section of the questionnaire was based on the questions in the previous studies by Casey et al. (2014) and Sallis, et al. (2002). Questions on coaching in this section branches out to two separate formats for participants who had coaching and who never had coaching. Responses were based on Likert scale with a set of statements aimed to measure participants’ attitudes and opinions in a 5-points scale from ‘strongly agree’ to ‘strongly disagree’.

Environmental factors consist of distance and location, and organisational factors include perception on club facilities, cost, play structure, play schedule and policies. Questions in this section were based on previous studies on physical activity such as Casey et al. (2014) and Sallis et al. (2002). Influence of environmental and organisational factors on the playing status (retention or dropout) was explored by collecting responses of the participants on the related determinants using a 3-point Likert scale, with possible responses ‘not important’, ‘somewhat important’ and ‘very important’.

Health outcomes: The study also aimed to investigate the perceived health and well-being of the retained group compared to the dropout group by using the validated measurement tool, paediatric quality of life inventory (PedsQL™) 4.0 Generic Core Scales (Varni, 2017) for children (8-12), teens (13-18) and young adults (18-25). The PedsQL tool composed of 23 items, containing four dimensions of health namely physical functioning (8 items), emotional functioning (5 items), social functioning (5 items) and school functioning (5 items). Each item is measured using 5-point Likert scale response from 0 (‘Never’) to 4 (‘Almost always’), reverse-scored and linearly transformed to a 0 to 100 scale (0 → 100, 1 → 75, 2 → 50, 3 → 25, 4 → 0) and used to arrive at summated scores for physical and psycho-social (emotional, social and school) health. Higher scores indicate better HRQoL. Parent proxy report for young children (8-12 years) and adolescents (13-18 years) was used to evaluate the state of wellbeing of both retained and dropout players.

3.4.2.5. Pilot testing

The survey was pilot tested with a sample population of three parents and seven players to assess content and reliability of the tool, including the suitability of the used language for the target group and the time required for the completion of the survey. Participants for the pilot study were chosen through personal contacts of the principal supervisor and the research student at different tennis clubs. Players from tennis clubs were contacted through their coach, and players of less than 18 years of age were allowed to

participate only after receiving a signed consent from parents. Three parents of children under 13 years of age, who were personal contacts of the principal supervisor, participated in the pilot survey on behalf of their children. No changes were made in the content of the questionnaire after the pilot study; however, the time of the survey was extended from 10-15 minutes to 15-20 minutes on the basis of the feedback.

3.4.2.6. Survey procedure

The online survey was conducted through collaborative research agreement with Tennis Australia (Appendix 1). A pre-notification e-mail (Appendix 6) to the targeted participants (i.e., tennis players between 10-18 years who were/had been registered tennis club members in Victoria) through Tennis Australia prior to the launch of the online survey informed them about the upcoming survey. Brief of the study in plain language and a consent form were incorporated with the web survey questionnaire (Appendix 4, 5). Prospective participants were informed that participation was voluntary and that they could quit from the study if they felt uncomfortable at any point. They were informed about the nature and purpose of the study through a Plain Language Information Statement (PLIS), and assured that their responses would be 'de-identified' and kept confidential. Contact details of the Principal Researcher, and details of counselling services in case they experienced any discomfort during the survey were also communicated.

Following the initial contact, the survey was launched via the website and social media page of Tennis Australia. The response for the request to participate in the online survey was very low, with only ten completed responses received out of over 24,000 registered players in the targeted age group (response rate: < 0.04%). Therefore, an alternate methodology of directly contacting young players and their parents via tennis clubs and coaches was implemented after obtaining an amendment to ethics approval (Appendix 3).

Tennis clubs were contacted through emails as well as in person and coaches were contacted through tennis club administrators. Consent forms were distributed to the potential participants through club officials and coaches and those who consented to participate completed the on-line survey using Samsung e-Tablets provided by the University. Players above 18 years were allowed to fill in the responses after receiving their own consent form. Players aged between 13-17 years were allowed to fill in their responses after receiving consent from their parents or caregivers. In the case of players younger than 13 years, parents filled in the data on behalf of their children. While conducting the study, every effort was taken to make sure that the participants were comfortable and that any potential risks were either removed or at least minimised. Participants who were approached in person were debriefed and thanked for their cooperation after they completed the web survey.

3.4.2.7. Data analysis

Descriptive statistics were used for preliminary analysis of the data. First, participants were categorised as either retained player or dropout player. Retained players included those who were registered tennis players in the study year 2018-19, were planning to register during the year or those who actively played tennis though not planning to register. Dropout players included those who were not playing tennis at all in the year 2018-19. Statistical analysis was carried out using IBM SPSS Version 25. Association of variables with retention or dropout was examined using Chi-square test and Fischer test. Fisher exact test was used to analyse the data with limited count. Independent t-test was used to identify the association of playing status (Retention/Dropout) with the health and wellbeing of the participants. A p-value of < 0.05 (level of significance 95%) was adopted to confirm statistical significance.

3.4.2.8. Trustworthiness strategies

A range of strategies were adopted to ensure trustworthiness of the collected survey data and the subsequent research findings (Dollman et al., 2009; Scherpenzeel et al., 1997). First, validity of the content and format of the web-survey questionnaire were established using reliable self-report measures (Heale et al., 2015; Huitt et al., 1999; Mohajan, 2017). Second, the content and format of the survey were reviewed by experts including the research team and industry partner. The use of self-report measures is appropriate for the age group 13-18 years whilst parent proxy report is appropriate for those aged 10-12 years (Dollman et al., 2009; Varni et al., 2007). Third, the objectivity of the survey was pilot tested with a sample population of participants (players between 10-18 years; parents of players 12 years and younger) to test the face validity of the survey (Lincoln et al., 1985; Mohajan, 2017; Payne et al., 2004).

3.4.3. Study 3: Qualitative study on determinants of retention and dropout

The final study in this program of research was qualitative in nature and was informed by the findings of Study 2. Ethics approval for the qualitative study (Appendix 9) was obtained from Federation University's Human Research Ethics Committee. Competency and enjoyment (Intrapersonal); parent support, coaching and role models (Interpersonal); location, play structure and schedule, club facilities, club environment (Environmental, Organisational/policy) emerged as significant determinants of playing status (retention or dropout) of children and adolescents playing club tennis. Study 3 aimed for an in-depth investigation of how these factors influenced the decision-making of children and adolescents to continue playing club-based tennis or drop out. In addition, Study 3 also aimed to identify strategies that can improve children's and adolescent's participation in club tennis on the basis of the knowledge accrued. With these objectives, this study focused on addressing the following research questions.

3.4.3.1. Research question

- How do factors such as competency and enjoyment (Intrapersonal), parent support, coaching and role models (Interpersonal), location, play structure and schedule, club facilities and club environment (Environmental and Organisational/policy) influence the continued participation or drop-out of children and adolescents in club tennis?
- What recommendations can be suggested to improve participation rates in club tennis by children and adolescents?

3.4.3.2. Study sample

The sample groups for the qualitative study included club tennis players (past and present), parents and coaches. The study aimed to interview six to eight participants from each sample group and finished with a total sample population of 23 that included 8 players, 7 parents and 8 coaches. One sample had to be discarded due to poor audio quality of the interview. Table 3 shows the details of the participants.

Table 3: Details of qualitative study samples

	Name	Participant's role	Region
1	Trixie	Player	Non-Metro
2	Aiden	Player (drop-out)	Metro
3	Olivia	Player	Metro
4	John	Player	Non-Metro
5	Jewel	Player	Metro
6	Hannah	Player	Metro
7	Levis	Player	Non-Metro
8	Henry	Player	Non-Metro
9	Stacey	Parent	Non-metro
10	Jai	Parent	Metro
11	Natalia	Parent	Non-metro
12	Teresa	Parent	Non-metro
13	Anna	Parent	Non-metro
14	Derik	Parent	Non-metro
15	Alice	Parent	Non-metro
16	Jack	Coach	Non-metro
17	Patrick	Coach	Non-metro
18	Stanley	Coach	Non-metro
19	Desmond	Coach	Metro
20	Alex	Coach	Metro
21	Daniel	Coach	Non-metro
22	Sam	Coach	Non-metro
23	Jose	Coach	Metro

3.4.3.3. Qualitative study tool and study procedure

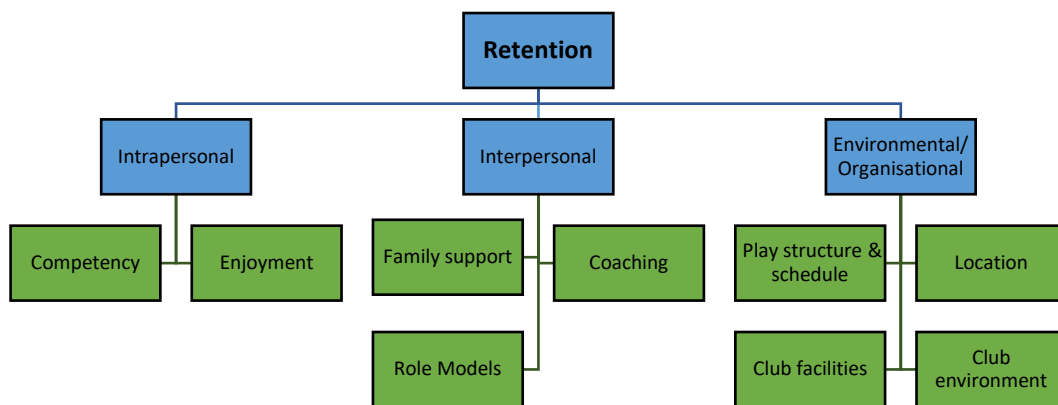
Semi-structured face-to-face or over-the-phone individual interviews (up to 30 minutes) with tennis players, parents, and tennis coaches were framed for Study 3. Age range of tennis-playing participants was between 9-21 years (instead of 10-18 years chosen for the base study) as an adequate number of willing participants from 10-18 age group was not available.

The study included parents, coaches and players to get the different perspective of the same issue. For instance, when talking about cost, parents who usually pay for their children's tennis participation would have a better understanding about its impact as a constraint to their children's tennis participation. Similarly, parents' perspective on the club facilities would be different from coaches and players whereas coaches usually have more insight on the policy aspects than parents or players. Players, parents and coaches were interviewed separately. Parents of four players were included in the study but each participant was interviewed separately, ensuring that the player and parent were not together when either was being interviewed to avoid influencing each other's response. Different prompts were used for parents and players to get their specific perspective on the same issue. Slightly different questions with appropriate prompts were used while interviewing coaches.

Six to eight representatives from players, parents and coaches were to be interviewed either face to face or via telephone, based on the convenience of the participants. This sample size was deemed adequate for each group to reach saturation (Galletta et al., 2013) and appropriate as the study was exploratory and qualitative in nature to investigate key issues in-depth and in the context of the local community.

A semi-structured interview guide was developed on the basis of key findings from Study 2. This included the following concepts: enjoyment and competency (intrapersonal), social support and role models (interpersonal), location, club environment, facilities, play structure and schedule (environmental and organisational / policy). Figure 11 gives an overview of the study outline.

Figure 11: Qualitative study outline



Interview questionnaire was framed with different versions for players, parents and coaches (Appendix 15) and each version consisted of four sections:

1. **Background:** To understand each player's club tennis playing experience, questions were asked such as the age they started playing tennis, number of years of playing club tennis and current tennis playing status. Parents were asked about their children's playing experience and coaches were asked about their experience in coaching children and adolescents.
2. **Competency and enjoyment:** Exploring the significance of competency and enjoyment in retention, such as level of competency, being challenged in their tennis skills, level of enjoyment and fun factors.
3. **Support:** Influence of support from family and coaches on retaining players in club tennis.
4. **Play structure / club environment:** Exploring the significance of environmental and organisational factors (play format, play schedule, location of the tennis club and

distance, club administration, affordability, facilities and available opportunities) on the retention of players in club tennis.

Participation in the interview was voluntary and participants were given the choice to stop at any stage of the interview and not to answer any particular question if they did not want to. A \$20 sports gift voucher was offered as an incentive for participating in the interview. Interviews were audio-recorded and transcribed verbatim. The identity of participants was kept confidential through assigning a pseudonym.

3.4.3.4. Pilot testing

The interview tool was pilot tested with representatives of key stakeholders such as tennis coaches (n=1), registered tennis players between 11-19 years (n=2) and parents (n=2). Outcome of the pilot test confirmed the reliability of the interview tool by verifying the suitability of the language, time required for completing an interview and testing the ability of the tool to collect rich data. Participants for the pilot test were recruited through personal contact. Those who agreed to participate were sent a plain language statement and consent form prior to the interview and the interviews were conducted only after conforming individual consent. Parents' consent was secured before interviewing one of the players who was under 18 years of age. All pilot interviews except that with the coach were done through telephone.

3.4.3.5. Recruitment of participant and data collection

Qualitative research involves data collection based on human experiences which is flexible and creates openness during research (Sutton et al., 2015). Participants were recruited via email (Appendix 13) through following ways:

- Players or parents of young children (<13 years) who had provided their email address during participation in the Study 2 web survey were invited to participate in this next phase of the research.

- Coaches were selected randomly from the tennis clubs' websites and invited to participate.
- Due to low response from participants of Study 2, snowball sampling method was used to find more participants ensuring representation from different geographic settings.

A plain language statement and consent form were sent to those who confirmed willingness to participate in the interview. Confirmation of consent (players' own consent in the case of those aged 18 years and higher. Parental consent for participants under 18 years was obtained before every interview. Children under 13 years were interviewed in the presence of a parent or the parent answered questions on their behalf.

The primary set of interviewees included an accredited tennis coach, two young tennis-players and a parent of a dropout tennis player. Each of them was known directly or indirectly to a member of the research team. Following the interview, some of the initial interviewees provided the contact phone numbers of a few (approximately 4 to 6) other potential participants that included other young tennis players, parents and coaches. The student researcher made contact with the next level of potential participants. Most of those who contacted were not willing to participate in the interview due to personal inconvenience or lack of interest. The next level interviews were set up with those who expressed willingness and met the selection criteria in terms of ensuring diversity in age, gender and region. The cycle continued until an adequate number of interviews were completed. Several interviews had to be discarded due to inadequacy of responses or lack of clarity in the recorded audio.

The following precautions were applied to avoid any bias or influence of conflict of interest due to the snowball sampling:

- The interview questions were framed so as to extract the specific experiences and views of each individual participant flowing out from a discussion with the interviewer. Therefore, the possibility of one participant trying to influence the response of another was practically nil.
- Out of the five or six persons suggested by an interviewee, the number of subsequent participants were restricted to not more than two.
- Verbal assurance was sought from the initial interviewees that they would not discuss the content of the interview with the subsequent potential participants that they introduced.

The research team confirmed that there was no prior contact between participants or a potential conflict of interest that may influence their responses. Verbal consent from the participant was also recorded at the start of each interview. Interviews were conducted either through telephone or in person, as chosen by the participant. Face-to-face interviews were conducted at an informal setting at a venue with adequate privacy like a sports ground or tennis court.

3.4.3.6. Analysis of qualitative data

Audio recorded interviews were transcribed verbatim for research purpose by an external provider. Coding of the interview was initially based on the areas outlined in the interview schedule such as background; competency/enjoyment (intrapersonal), social support- parents/ coach (interpersonal aspects), play structure/ club environment (environmental and organisational).

Coding trees containing these themes were generated and along with the transcript content they were subjected to review and discussion with the research supervisor. Based on feedbacks more coding themes were included to increase the richness of the data and

accuracy of the analysis (Miles et al., 1994). Transcripts were re-coded using inductive content analysis that include open coding (Elo et al., 2008). Validity and reliability of coding were assured by means of collaborative coding and data analysis with a research supervisor. Specifically, the following strategies were used:

- Progressive, collaborative data analysis between the research student and a supervisor to formulate themes, and to enhance methodological rigor and accuracy of findings (Edward & Skinner, 2009).
- Peer debriefing during research process/analysis stages to keep the researcher's honesty and prevent developing any researcher-bias (Edward & Skinner, 2009).

Throughout the coding process, transcripts were re-read to ensure that all codes were identified and coded under the appropriate themes. The themes generated were assigned to nodes depicting appropriate socio-ecological domain or background. The final thematic coding trees are shown in Figures 12, 13 and 14.

Figure 12: Coding Tree for Qualitative Analysis: Retention-Intrapersonal Factors

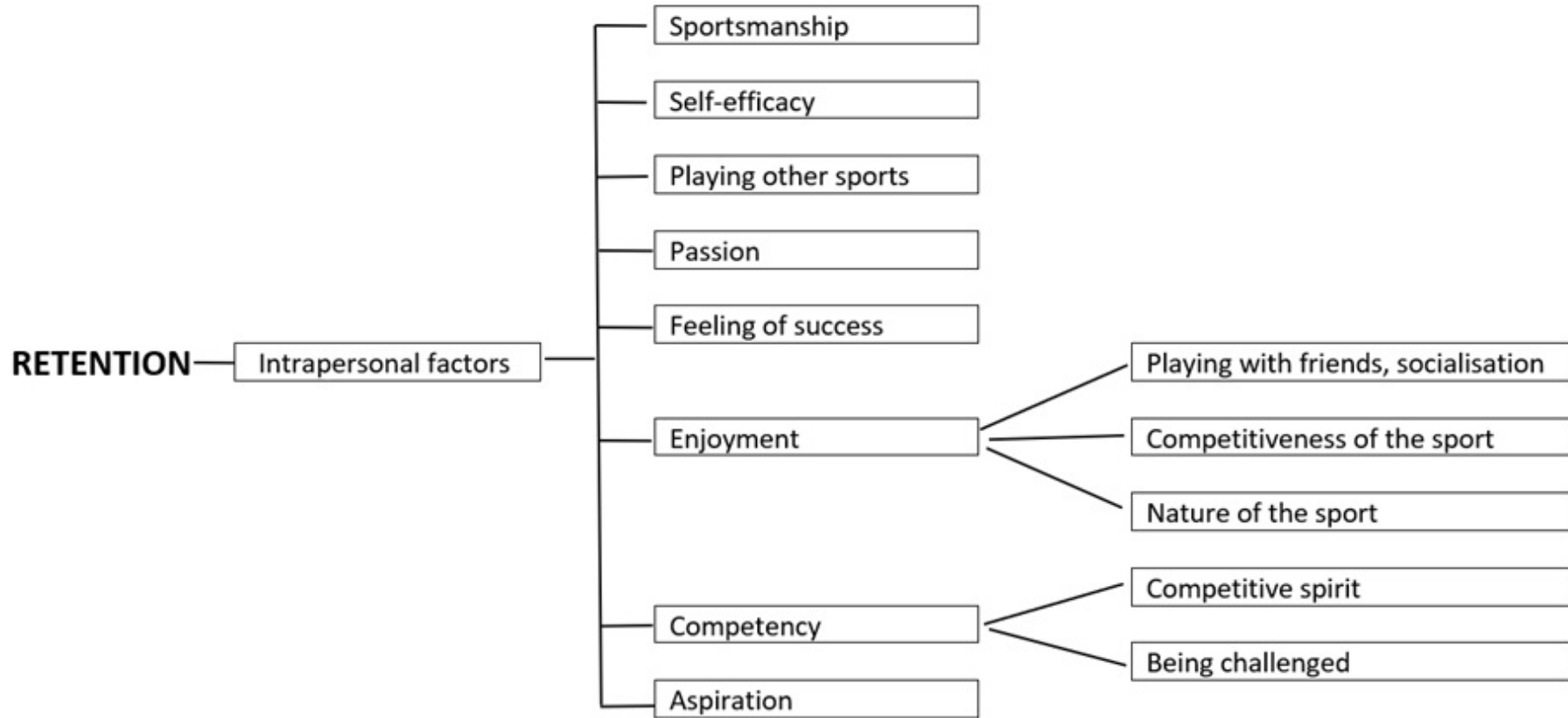


Figure 13: Coding Tree for Qualitative Analysis: Retention-Interpersonal Factors

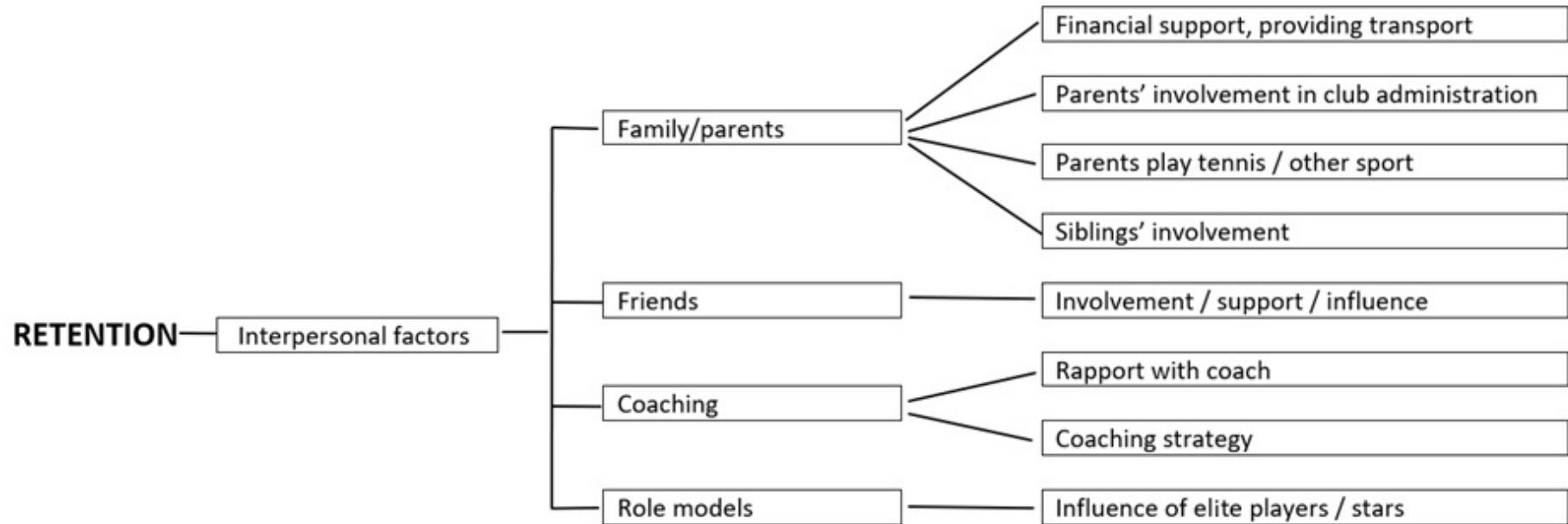
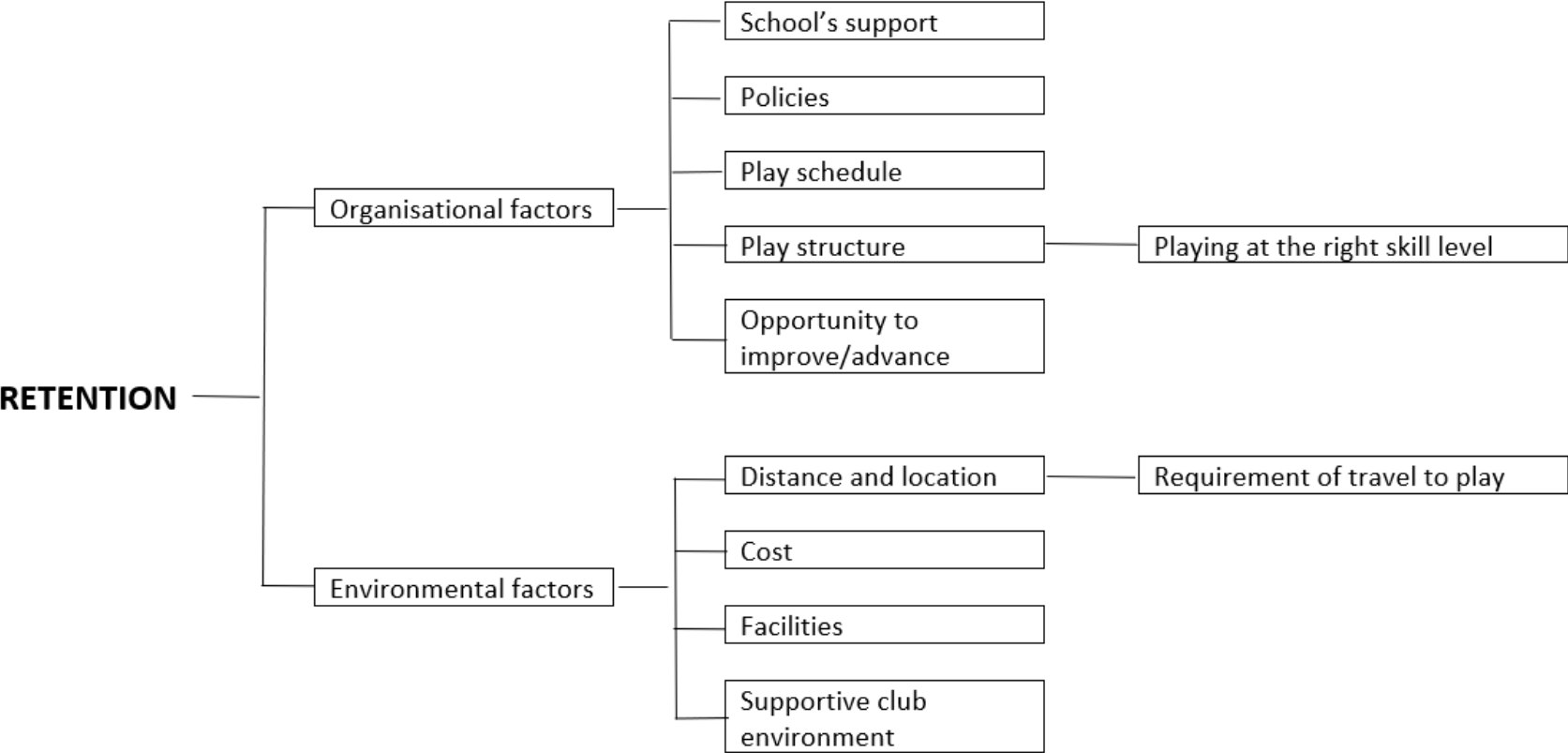


Figure 14: Coding Tree for Qualitative Analysis: Retention-Environmental and Organisational Factors



Transcribed data from 23 interviews conducted during Study 3 (eight players, seven parents and eight coaches) was analysed thematically on the basis of the coding tree structures. Thematic and content analysis of the interviews was conducted using Nvivo qualitative data analysis software Version 12 (Miles et al, 2014) and the transcripts were coded according to the themes identified using this software.

Outcome of the qualitative study is presented as quasi-quantitative data with the inclusion of numbers where it is appropriate for clarity. This is accepted as a legitimate and useful strategy for qualitative researchers when it complements an overall process orientation to the research, and has been used in a number of different studies (Barron et al., 2018; Hannah et al., 2011; Maxwell et al., 2010). The outcome is discussed in the following chapter (section 4.3.2.; Table 38, 39 40 &41) with details of major themes and subthemes identified from the analysis of the transcribed data.

4. Results

This chapter presents the results of the three studies in the research program. It is divided into three major sections. Study 1 presents the descriptive statistics of players in the retained group compared to that in the dropout group across the selected variables. Study 2 presents the results of the quantitative web-survey and Study 3 presents the outcome of qualitative analysis.

4.1. Study 1: Quantitative analysis of demographic variables

Study 1 examined the variation in the retention and dropout pattern of children and adolescents in club-based community tennis participation across selected demographic variables. The study involved the analysis of data of 24,303 players who were a registered member of a Victorian tennis club during the year 2015-2016. Of these players, those who continued participation in the subsequent year (2016-2017) formed the 'retained' group (n=13,119; 54 %) and those who did not constituted the 'dropout' group (n=11,184; 46 %).

4.1.1. Characteristics of the players

Almost two thirds of the players registered with a Victorian tennis club were male (63.3%). Amongst the age groups, children aged 12 years made the largest group (14.4%) and the numbers declined steadily for higher ages (14 years: 12.7%; 16 years: 8.8%; 18 years: 4.7%). There were many more metropolitan participants (70.9%) than non-metropolitan participants. The pattern of retention and dropout within groups based on demographic variables are summarised in Table 13: Retention pattern in club-tennis across the demographic variables. Bivariate chi-square analysis showed significant association between retention in club-tennis participation and all selected demographic variables.

The relationship between each of the categorical variables: age (10-18 years), gender (male/female), region (metropolitan/non-metropolitan) and socio-economic classification

(grouping based on SEIFA Index for postcode of residence) and the outcome variables (retention/dropout) were identified. This involved analysing the distribution of cases of retention and dropout within each categorical group as well as the variation of the rate of retention and dropout between categorical groups.

4.1.2. Retention pattern by region

Player data was grouped into metropolitan and non-metropolitan, based on the residence for each player. Figure 15 and Table 4 show the distribution of the players in the metropolitan and non-metropolitan regions of Victoria, comparing the retained and dropout groups. The majority of players were from metropolitan regions (70.9%) and as such metropolitan players dominated both the dropout (68.8%) and retained groups (72.7%).

Figure 15: Regional distribution within retention and dropout groups

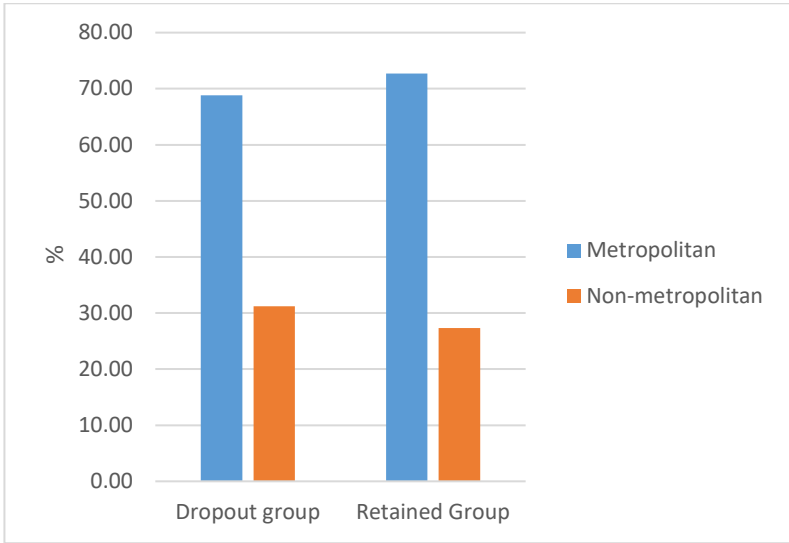


Table 4: Regional distribution within retention and dropout groups

	Metropolitan		Non-metropolitan		Victoria	
	N	%	N	%	N	%
Dropout Group	7,691	68.8	3,493	31.2	11,184	100.0
Retained Group	9,540	72.7	3,579	27.3	13,119	100.0
Total	17,231	70.9	7,072	29.1	24,303	100.0

Figure 16 and Table 5 compare the percentages of retention and dropout in the metropolitan and non-metropolitan regions. The rate of retention was higher in

metropolitan region (55.4%) than in the non-metropolitan areas (50.6%). The difference in the rate of retention and dropout was nominal in non-metropolitan regions (1.2%) compared to a 10.8% difference in the metropolitan region in favour of retention. Hence there was a significant difference between retention by region, with the metropolitan region having significantly higher retention rate ($\chi^2 = 45.681, p = 0.001$).

Figure 16: Regional distribution between retention and dropout groups

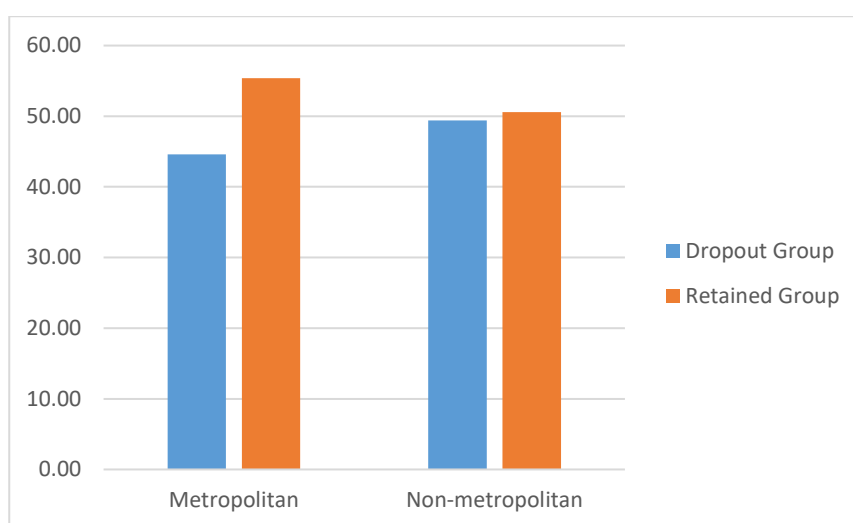


Table 5: Regional distribution between retention and dropout groups

	Metropolitan		Non-metropolitan		Victoria	
	N	%	N	%	N	%
Dropout Group	7,691	44.6	3,493	49.4	11,184	46.0
Retained Group	9,540	55.4	3,579	50.6	13,119	54.0
Total	17,231	100.0	7,072	100.0	24,303	100.0

4.1.3. Retention pattern by age of players

Figure 17 and Table 6 illustrate the age distribution of the sample. The largest group within the sample were 12-year-olds (total: 14.4%; retained:15.2%; dropout: 13.4%). Overall, the number of registered players in tennis decreased as children aged from 12 years, with a steep decline seen after 14 years and therefore the smallest group of players (5.2% of whole sample) were the 18-year-olds. Between the ages of 10 and 13 retention was more likely than dropout, which reversed as players become older.

Figure 17: Age distribution within retention and dropout groups

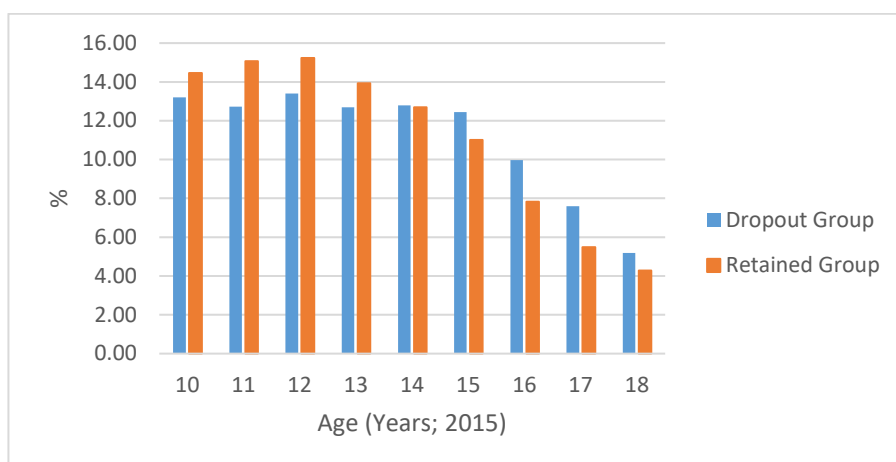


Table 6: Age distribution within retention and dropout groups

Age- years (2015)		Dropout Group	Retained Group	Total
10	N	1,477	1,897	3,374
	%	13.2	14.5	13.9
11	N	1,424	1,977	3,401
	%	12.7	15.1	14.0
12	N	1,499	1,999	3,498
	%	13.4	15.2	14.4
13	N	1,419	1,828	3,247
	%	12.7	13.9	13.4
14	N	1,430	1,666	3,096
	%	12.8	12.7	12.7
15	N	1,391	1,444	2,835
	%	12.4	11.0	11.7
16	N	1,115	1,027	2,142
	%	10.0	7.8	8.8
17	N	849	720	1,569
	%	7.6	5.5	6.5
18	N	580	561	1,141
	%	5.2	4.3	4.7
All Victoria	N	11,184	13,119	24,303
	%	100.0	100.0	100.0

Figure 18 and Table 7 show the comparison of percentages of distribution of retention and dropout for each age category. The analysis shows that 54% of the total registered players were retained and the rest dropped out (46%). Players aged 11 years had the highest rate of retention (58.1%) and there was a gradual decline in the rate of retention starting

from 11 years of age (Figure 18). The retention rate slightly improves at the age of 18 years (49.2%) after a systematic rate of decline in retention rate from 12 years of age.

Significant association was seen between age and retention rate ($\chi^2 = 145.564$, $p = 0.001$). Retention rate was significantly higher for early adolescent age groups (ages 10 – 13 years) compared to the late adolescent age groups (ages 14 – 18 years).

Figure 18: Age distribution between retention and dropout groups

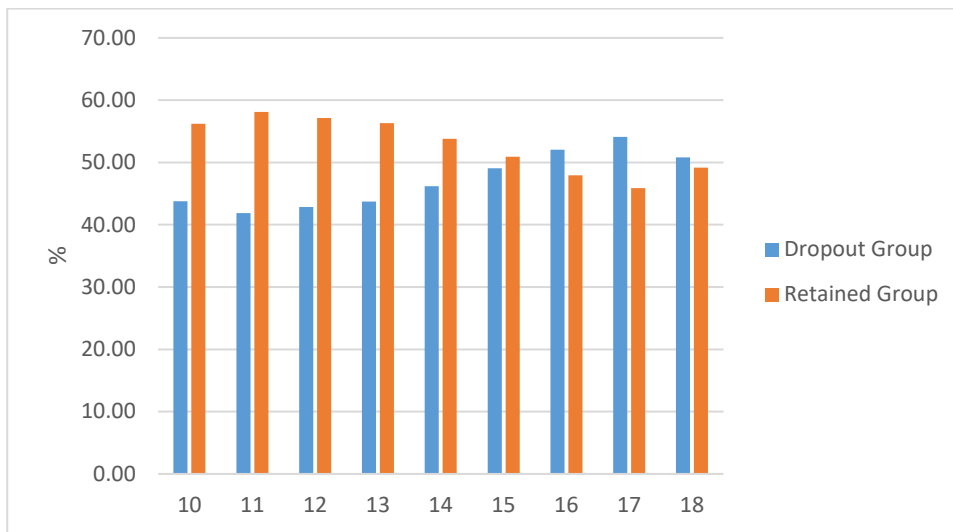


Table 7: Age distribution between retention and dropout groups

Age- Years		Dropout Group	Retained Group	Total
10	N	1,477	1,897	3,374
	%	43.8	56.2	100.0
11	N	1,424	1,977	3,401
	%	41.9	58.1	100.0
12	N	1,499	1,999	3,498
	%	42.9	57.1	100.0
13	N	1,419	1,828	3,247
	%	43.7	56.3	100.0
14	N	1,430	1,666	3,096
	%	46.2	53.8	100.0
15	N	1,391	1,444	2,835
	%	49.1	50.9	100.0
16	N	1,115	1,027	2,142
	%	52.1	47.9	100.0
17	N	849	720	1,569
	%	54.1	45.9	100.0
18	N	580	561	1,141
	%	50.8	49.2	100.0
Victoria	N	11,184	13,119	24,303
	%	46.0	54.0	100.0

There was a significant difference in mean age between dropout and retention group with those in the retained group slightly younger (m=13.1 years) than those in the dropout group (m=13.5 years) ($t=10.825, p=0.001$).

4.1.4. Retention pattern by sex

Figure 19 and Table 8 provides the details of the percentage of females and males in the retained and dropout group. Overall, two-thirds of players were male (63.3%) compared to female (36.7%) and there was a higher percentage of males in both the retained and dropout groups. The data shows a very close dispersal pattern for dropout and retention group for both male and female; whereby female players had 36.1% retention rate and 37.4% dropout rate and male players had 63.9% retention rate and 62.6% dropout rate.

Figure 19: Distribution of sex categories within retention and dropout groups

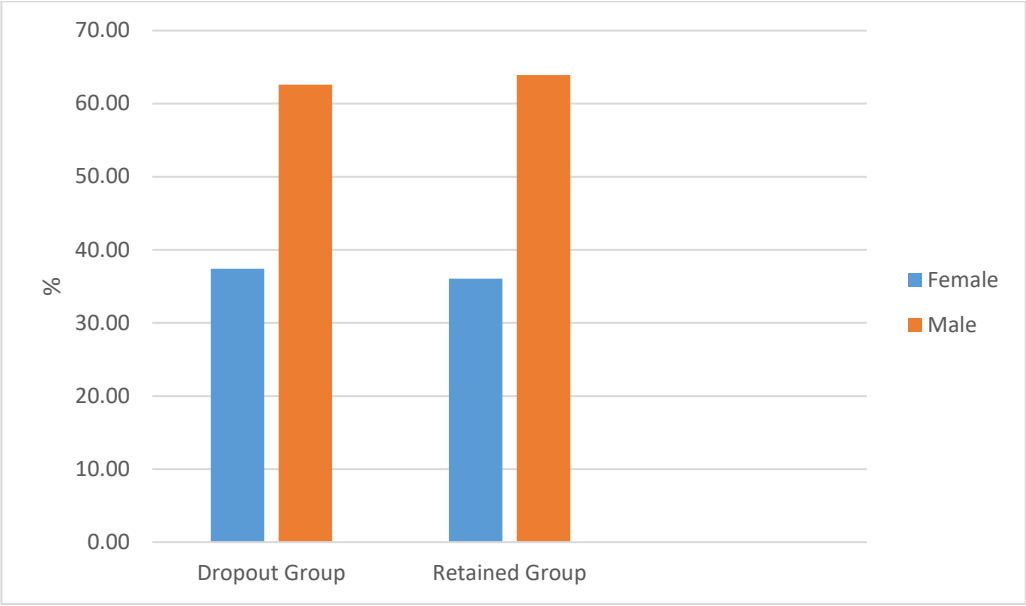


Table 8: Distribution of sex categories within retention and dropout groups

	Female		Male		Total	
	N	%	N	%	n	%
Dropout Group	4,184	37.4	7,000	62.6	11,184	100.0
Retention Group	4,733	36.1	8,386	63.9	13,119	100.0
Total	8,917	36.7	15,386	63.3	24,303	100.0

Figure 20 and Table 9 describe the comparison of retention and dropout among males and females, revealing that the retention rate was marginally higher in males than females. Of 54% total retention population, 54.4% are males and 53.1 % are females. There was no substantial difference (1.4%) between the rate of dropout between the sex groups (females 46.9%, males 45.5%). Although this difference seems small, a statistically significant association ($\chi^2 = 4.619, p=0.032$) was observed between sex and the retention/dropout rates; males show a significantly higher chances of being retained as tennis players compared to females.

Figure 20: Distribution of sex categories between the retention and dropout groups

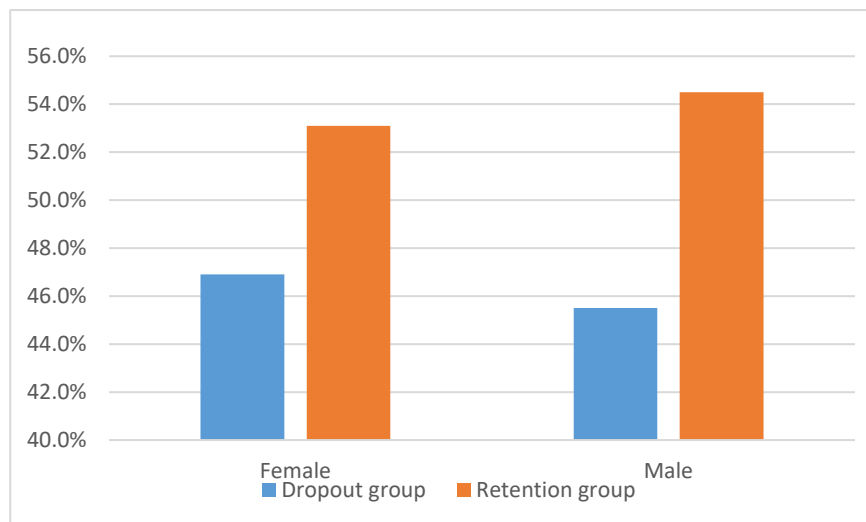


Table 9: Distribution of sex categories between the retention and dropout groups

	Female		Male		Total	
	N	%	N	%	n	%
Dropout Group	4,184	46.9	7,000	45.5	11,184	46.0
Retention Group	4,733	53.1	8,386	54.5	13,119	54.0
Total	8,917	100.0	15,386	100.0	24,303	100.0

4.1.5. Categorisation of samples based on socio-economic status

Socio-Economic Index for Areas (SEIFA) is a general measure of socio-economic standard of areas. SEIFA is used as a tool to distinguish between advantaged and disadvantaged areas. Analysis was conducted by grouping the samples into 5 categories

(quintiles) based on player’s residential postcode, with Quintile 1 as ‘most disadvantaged’ and Quintile 5 as ‘most advantaged’ (Table 10).

Table 10: SEIFA RSAD 2011 Quintiles

Quintile	N	SEIFA		
		Minimum	Maximum	Median
1	4857	805	973	940.63
2	4900	973	1018	995.73
3	4770	1019	1057	1038.07
4	4970	1058	1081	1073.95
5	4806	1081	1,151	1108.74

4.1.6. Retention pattern by SEIFA RSAD Quintiles

Figure 21 and Table 11 show that a higher percentage of players in Quintiles 4 and 5 (advantaged areas) had higher levels of retention than those in the lower quintiles (disadvantaged areas).

Figure 21: SES distribution within the retention and dropout group

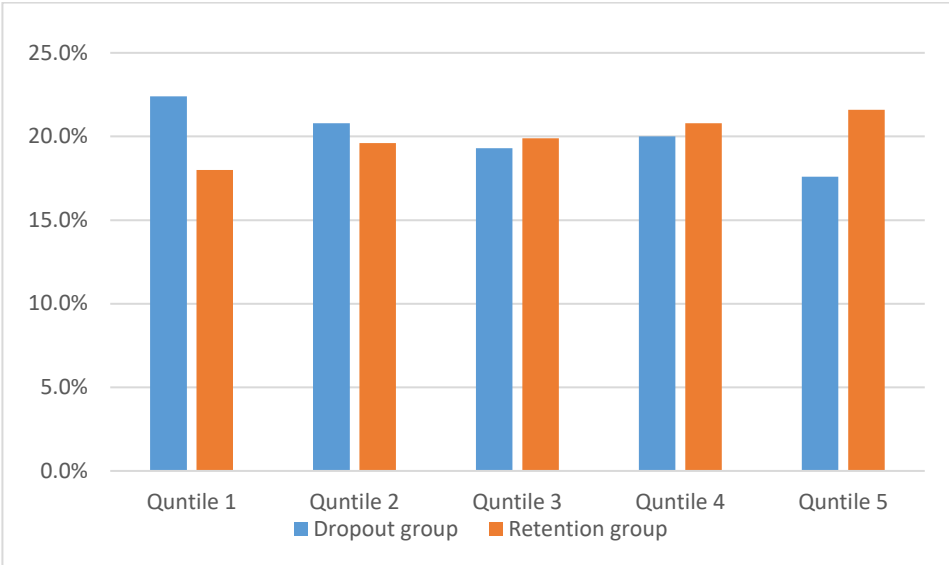


Table 11 : SES distribution (quintiles) within the retention and dropout group

	1		2		3		4		5		Victoria	
	N	%	n	%	n	%	n	%	n	%	n	%
Dropout Group	2500	22.4	2325	20.8	2154	19.3	2235	20.0	1970	17.6	11,184	100
Retention Group	2357	18.0	2575	19.6	2616	19.9	2735	20.8	2836	21.6	13,119	100
Total	4857	20.2	4900	20.2	4770	19.6	4,970	20.5	4806	19.80	24,303	100

Players from SES Quintile 5 showed highest retention rate (59.0%) of the total retention rate of 54% and lowest dropout rate (41.0%), which comes under the category of “most advantaged” group. Players in the SES Quintile 1 show the lowest retention rate of 48.5% and highest dropout rate of 51.5%. A gradual increase can be seen in the retention pattern from Quintile 1 to Quintile 5 with retention rates increasing from 48.5% for Quintile 1 to 59.0% for Quintile 5 (Figure 22 and Table 12).

Figure 22: SES distribution between the retention and dropout group

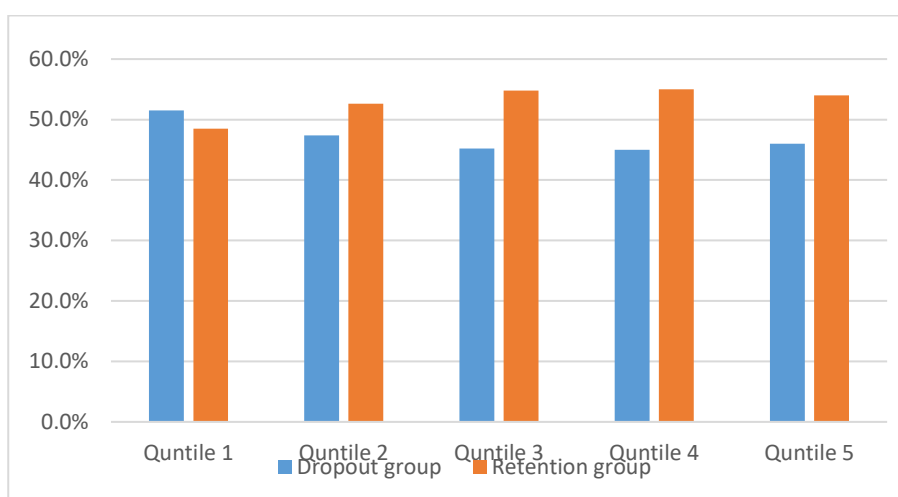


Table 12: SES distribution (quintiles) between the retention and dropout group

	1		2		3		4		5		Victoria	
	N	%	n	%	n	%	n	%	n	%	n	%
Dropout Group	2500	51.5	2325	47.4	2154	45.2	2235	45.0	1970	41.0	11,184	46.0
Retention Group	2357	48.5	2575	52.6	2616	54.8	2735	55.0	2836	59.0	13,119	54.0
Total	4857	100.0	4900	100.0	4770	100.0	4970	100.0	4806	100.0	24,303	100.0

4.1.7. Logistic regression analysis

Table 13 (following page) shows the results of the logistic regression analysis. A test of the full model against a constant only model was statistically significant $\chi^2 = 3.359$, $p > 0.005$ with $df = 8$).

Male participants showed a higher probability of retention compared to females (OR=1.06, 95% CI: 1.00,1.11). The 11-year-olds (OR=1.09, 95% CI: 0.99,1.20) and 12-year-olds (OR=1.05, 95% CI: 0.95,1.15) were seen as more likely to be retained in club-tennis participation than the 10-year-olds. The likelihood of retention fell with further increases in age. Late adolescents (13 years to 17 years) had a lower probability of retention compared to 10-year-olds.

Table 13: Retention pattern in club-tennis across the demographic variables

	Cross-tabulation (bivariate)						Multiple logistic regression				
	Dropout group		Retained group		Total	Total	p-value*	OR	95% CI		p-value**
	N	%	n	%	N	%					
Sex	11,184	46.0	13,119	54.0	24,303		0.033				0.046
Female	4,184	46.9	4,733	53.1	8,917	36.7		ref			
Male	7,000	45.5	8,386	54.5	15,386	63.3		1.06	1.00	1.11	
Age	11,184	46.0	13,119	54	24,303		0.001				
10	1,477	43.8	1,897	56.2	3,374	13.9		ref			
11	1,424	41.9	1,977	58.1	3,401	14.0		1.09	0.99	1.20	0.860
12	1,499	42.9	1,999	57.1	3,498	14.4		1.05	0.95	1.15	0.360
13	1,419	43.7	1,828	56.3	3,247	13.4		1.01	0.92	1.11	0.853
14	1,430	46.2	1,666	53.8	3,096	12.7		0.91	0.82	1.00	0.057
15	1,391	49.1	1,444	50.9	2,835	11.7		0.81	0.73	0.90	0.000
16	1,115	52.1	1,027	47.9	2,142	8.8		0.72	0.65	0.80	0.000
17	849	54.1	720	45.9	1,569	6.5		0.66	0.58	0.74	0.000
18	580	50.8	561	49.2	1,141	4.7		0.76	0.66	0.86	0.000
Region	11,184	46.0	13,119	54	24,303		0.001				0.227
Metro	7,691	44.6	9,540	55.4	17,231	70.9		ref			
Non-metro	3,493	49.4	3,579	50.6	7,072	29.1		0.96	0.89	1.00	
SEIFA RSAD 2011	11,184	46.0	13,119	54	24,303		0.001				
1 (Most disadvantaged)	2,500	51.5	2,357	48.5	4,857	20.0		ref			
2	2,325	47.4	2,575	52.6	4,900	20.2		1.16	0.96	1.07	0.000
3	2,154	45.2	2,616	54.8	4,770	19.6		1.27	1.07	1.17	0.000
4	2,235	45.0	2,735	55.0	4,970	20.5		1.26	1.16	1.15	0.000
5 (Most advantaged)	1,970	41.0	2,836	59.0	4,806	19.8		1.48	1.26	1.35	0.000

* Chi square analysis

** Logistic regression

OR odds ratio

CI confidence interval

Ref reference category

Children and adolescents from non-metropolitan region (OR=0.96, 95% CI: 0.89,1.00) were less likely to be retained in club-tennis participation than their metropolitan counterparts. The analysis confirmed the direct association of socio-economic status to retention, with children from the most advantaged socio-economic neighbourhoods identified as having higher likelihood of retention (OR=1.48, 95% CI: 1.26,1.35) compared to those from the more disadvantaged neighbourhoods.

4.2. Study 2: Quantitative survey exploring determinants

This study investigated the major factors influencing the choice of retention or dropout (dropout) from playing club-based tennis by the participants who were past and present players aged 9-21 years. A total of 103 participants completed the web survey. These participants had been registered with Tennis Victoria and indicated their current (2018/19) tennis playing status in club tennis (Table 14). The majority of participants were retained players (n=80; 77.7%). Participants categorised as retention group (n=80) included registered members of a tennis club, those who responded that they intend to register during the survey year and those who will not register but still play tennis. Participants who are not registered currently and not intending to play tennis were grouped as dropout or dropout group (n=23).

Table 14: Tennis playing status

Tennis playing status	Number	%
Total Retained:	80	77.7%
Registered member	65	63.1%
Will register now	6	5.8%
Will not register but still play	9	8.7%
Total Dropout:	23	22.3%
Do not play tennis	23	22.3%
Total	103	100%

The results of Study 2 are presented in the following sections.

4.2.1. Background information

Table 15 provides the distribution of the survey respondents based on key demographic variables such as sex, age, region of residence, family composition and occupational status. The majority of participants were male (65%), aged 13 - 17 years (49.5%), from metropolitan region (80.6%), two parent families (88.3%) and were a full-time student (84.5%).

Table 15: Demographic Variable distribution

Variables	Total (n)	%
Sex	103	
Male	67	65
Female	36	35
Age	103	
9-12	38	36.9
13-17	51	49.5
18-21	14	13.6
Region	103	
Metro	83	80.6
Non-Metro	20	19.4
Family Composition	103	
Two parent family	91	88.3
Other types	12	11.7
Occupation	103	
Full-time Student	87	84.5
Other	16	15.5

Table 16 provides the distribution of survey respondents based on selected demographic variables (sex, age, region of domicile, family composition and occupational status) across playing status (retention / dropout) in club tennis.

Sex is a dichotomous variable shown by whether the participant is male or female. Male respondents outnumbered females (67 and 36 respectively) and a higher proportion of the male respondents were in the retained category compared to females (82.1% and

69.4% respectively). The association between the playing status (retention/dropout or dropout) and the sex of the players is not statistically significant (p=0.142).

Table 16: Demographic variation in tennis playing status

	Retention %	Dropout %	Total (N)	p-value	Direction of association ^{^1}
Sex	77.7	22.3	103	0.142	NS
Male	82.1	17.9	67		
Female	69.4	30.6	36		
Age	77.7	22.3	103	0.072	NS
9-12	89.5	10.5	38		
13-17	72.5	27.5	51		
18-21	64.3	35.7	14		
Region	77.7	22.3	103	0.007	+
Metro	83.1	16.9	83		
Non-Metro	55.0	45.0	20		
Family Composition	77.7	22.3	103	0.014	+
Two parent family	81.3	18.7	91		
Other types	50.0	50.0	12		
Occupation			103	0.093	NS
Full-time Student	74.7	25.3	87		
Other	93.8	6.3	16		
Total:	77.7	22.3	103		

^{^1} NS Not significant, + significant positive association.

The lowest age group (9-12 years) showed higher retention (89.5%) compared to the two higher age groups (72.5% and 64.3% respectively). Highest proportion of dropouts is for the highest age group (18-21 years). The survey outcome indicate that the association observed between age and tennis playing status (retention in club tennis participation) is not statistically significant (p=0.072).

In relation to region of residence, metropolitan regions have higher proportion of respondents (83 out of 103) and the percentage of the retained in the metro region is significantly higher ($p=0.007$) compared to non-metro (83.1% and 55% respectively).

Family composition of the survey participants were compressed to two categories from the eight options in the survey questionnaire (see Appendix 4) due to the low response rate in some of the categories. The majority of participants were from families with two parents; therefore, this group was compared with the group comprising of all other family types. There was a positive association between family composition and tennis playing status, whereby participants from families with two parents were significantly more likely to be retained than those from other family compositions $p=0.014$).

The six options in the survey questionnaire for occupation (full time student, part-time student, working full-time, working casual, neither studying nor working and other) were reduced to two groups ('full-time student' and 'other') due to small numbers in categories other than full time students. Percentage of retention among full-time students was lower compared to others (74.7% and 93.8% respectively). Commitment to full-time studies is considered as a major reason triggering dropout from club-sport, especially for adolescents. However, statistical analysis did not show a significant association ($p=0.093$) between the participant's tennis playing status and occupational status.

Table 17 shows the postcode (postcode of residence) counts in the survey responses for metropolitan and non-metropolitan regions. Postcodes were included in the survey to categorise the region of the respondents. Retained respondents were from 33 different metropolitan postcodes and 9 different postcodes in the non-metropolitan region. Dropout respondents were from 11 different metropolitan postcodes and a single non-metropolitan postcode.

Table 17: Survey postcodes

Type of postcode	Postcode counts		
	Retention (n)	Dropout/Dropout (n)	Total (n)
Metropolitan	33	11	38
Non-metropolitan	9	1	9
Total	42	12	47

4.2.2. Leisure-time activities outside school hours

Investigation on the association of participants' preferences for other leisure-time activities (Table 18) found that retained players preferred to be involved in more leisure-time activities than dropout players. The response "Never tried" was filtered out before statistical analysis due to insignificantly small counts.

Analysis of the data revealed that retained players generally liked to participate in active leisure time activities outside school hours more than dropout players. The difference is clear especially in the case of engaging in competitive sport and physical activity (82% compared to 18%) and other organised sport & physical activities (83.7% compared to 16.3%). Preference to participate in these activities showed a statistically significant association with club tennis retention ($p < 0.001$ and $p = 0.023$ respectively; see Table 19). On the other hand, dropout players showed greater preference to participate in activities such as using the phone (chatting, texting, Skype and FaceTime; $p = 0.001$) and social networking (Facebook, Twitter, Instagram, blogging and Snapchat; $p = 0.001$) than retained players. It can be inferred that players who indicate affinity to passive leisure time activities were significantly more likely to dropout from club tennis.

Table 18: Participation in activities outside school hours and tennis playing status

Activity	Never Tried			Don't like it			Like it			Fisher's exact test p-value	Direction of association ^{^1}
	Retained %	Dropout %	N	Retained %	Dropout %	N	Retained %	Dropout %	n N		
Competitive sport & PA	100.0	0.0	1	22.2	77.8	9	82.0	18.0	89 98	0.000	+
Other organised sport & PA	87.5	12.5	16	60.6	39.4	33	83.7	16.3	49 82	0.023	+
Non-organised PA	100.0	0.0	1	69.6	30.4	23	78.4	21.6	74 97	0.408	NS
Talking/texting on phone	100.0	0.0	1	100.0	0.0	22	69.3	30.7	75 97	0.001	-
TV, movies	0.0	0.0	0	100.0	0.0	7	74.2	25.8	89 96	0.191	NS
Electronic games	100.0	0.0	1	80.0	20.0	25	74.6	25.4	71 96	0.786	NS
Surfing internet	0.0	0.0	0	91.7	8.3	24	71.2	28.8	73 97	0.053	NS
Social networking	92.3	7.7	13	100.0	0.0	21	65.1	34.9	63 84	0.001	-
Board games, cards etc.	100.0	0.0	2	70.2	29.8	47	81.3	18.8	48 95	0.238	NS
Listening to music	0.0	0.0	0	78.6	21.4	14	75.6	24.4	82 96	1.000	NS
Reading	0.0	0.0	0	57.1	42.9	28	83.8	16.2	68 96	0.008	+
Art and craft	66.7	33.3	3	70.6	29.4	51	83.3	16.7	42 93	0.220	NS
Talking face-to-face	100.0	0.0	1	73.1	26.9	26	76.8	23.2	69 95	0.790	NS

^{^1} NS Not significant, + significant positive association, - significant negative association, +/- more complex association

4.2.3. Screen time

Time spent on screen-based leisure time activities such as watching television, videos, computer for entertainment, iPod/pad, smartphone, tablet, and social networking such as Facebook, Twitter, Skype, on both weekdays and weekends was collected in the survey in a 7-point scale ranging from ‘none’ to ‘over 5 hours’ (Table 19). These were compressed into two categories; ‘2 hours and less’ and ‘more than two hours’, based on the Australian Government’s physical activity and sedentary behaviour guidelines for children aged 5-17 years (Australian Government, 2019).

A significantly higher proportion of those who spent the recommended 2 hours or less screen time on both weekdays and weekends were in the retained group (93.3% and 92.9% respectively) compared to the dropout group (35.7% and 28.4%). Statistical analysis showed a positive association between playing status and limited screen time, both on weekdays ($p < 0.001$) and weekends ($p = 0.022$).

Table 19: Screen time and tennis playing status

	Retention	Dropout	Total (n)	p-value ($p < 0.05$)	Direction of association [†]
	%	%			
Screen time – weekdays				0.000	+
2 hours and less	93.3	6.7	45		
More than 2 hours	64.3	35.7	56		
Total	77.2	22.8	101		
Screen time – weekends				0.022	+
2 hours and less	92.9	7.1	28		
More than 2 hours	71.6	28.4	74		
Total	77.5	22.5	102		

+ Significant positive association

4.2.4. Regular physical activity participation

Association of tennis playing status with the weekly frequency of the players engaging in moderate or vigorous physical activity for one hour or more per day was

investigated. Weekly physical activity habits of respondents were grouped into three, namely ‘no days’ (no sport or exercise participation at all), ‘less than four days’ (physically active but not attaining the recommended level) and ‘four days and more’ (attaining the recommended level of physical activity based on Australian guidelines of physical activity for children and adolescents, Australian Government, 2019). Comparison between the retained and dropout is presented as Table 20. Among those who achieved one hour or more physical activity for more than four days, 90.4 % were in the retained category and 100% of those who were totally sedentary were dropouts. Statistical analysis showed a highly significant positive association between retention in playing club tennis and regular physical activity ($p<0.001$), with players who were more physical active more likely to be retained than others.

Table 20: Regular physical activity and tennis playing status

	Retention	Dropout	Total (N)	p-value ($p<0.05$)	Direction of association ¹
	%	%			
Days per week with more than 1 hr of PA				0.000	+
No days	0.0	100.0	6		
Less than 4 days	72.7	27.3	44		
4 days and more	90.4	9.6	52		
Total	77.5	22.5	102		

+ Significant positive association

4.2.5. Sport participation in past twelve months

Participants’ involvement in different sporting activities for the previous 12 months at different venues and whether any of it could have had an association with their tennis playing status was investigated in the study (Table 21). Due to limitations in sample size, Fisher’s exact test has been used for identifying the statistical correlation of each variable to the tennis playing status of the survey participants.

Table 21: Tennis playing status and the type of other sports that the respondent participated in during the previous 12 months

	Do not participate					At School					At sport club/centre					Other venues (home, gym etc.)					n
	No		Yes		p-value	No		Yes		p-value	No		Yes		p-value	No		Yes		p-value	
	Retained	Drop out	Retained	Drop out		Retained	Drop out	Retained	Drop out		Retained	Drop out	Retained	Drop out		Retained	Drop out	Retained	Drop out		
	%	%	%	%		%	%	%	%		%	%	%	%		%	%	%	%		
Athletics	80.8	19.2	68.0	32.0	0.268	73.0	27.0	80.3	19.7	0.462	76.5	23.5	100.0	0.0	0.584	77.6	22.4	80.0	20.0	1.000	103
Australian Rules Football	86.7	13.3	70.7	29.3	0.061	73.8	26.3	91.3	8.7	0.092	77.7	22.3	77.8	22.2	1.000	77.3	22.7	83.3	16.7	1.000	103
Basketball	81.7	18.3	68.8	31.3	0.200	75.5	24.5	79.6	20.4	0.643	76.8	23.2	87.5	12.5	0.680	75.0	25.0	93.3	6.7	0.180	103
Gymnastics	88.9	11.1	73.7	26.3	0.117	75.0	25.0	93.3	6.7	0.180	77.2	22.8	100.0	0.0	1.000	78.2	21.8	50.0	50.0	0.398	103
Hockey	84.6	15.4	73.4	26.6	0.228	76.7	23.3	80.0	20.0	0.799	77.5	22.5	100.0	0.0	1.000	77.7	22.3	0.0	0.0	__*	103
Golf	83.9	16.1	75.0	25.0	0.441	78.7	21.3	71.4	28.6	0.509	76.8	23.2	100.0	0.0	0.573	76.8	23.2	100.0	0.0	0.573	103
Netball	79.6	20.4	75.9	24.1	0.813	76.4	23.6	80.6	19.4	0.798	79.8	20.2	55.6	44.4	0.110	77.8	22.2	75.0	25.0	1.000	103
Soccer	84.6	15.4	65.8	34.2	0.048	70.2	29.8	87.0	13.0	0.057	80.0	20.0	61.5	38.5	0.159	77.5	22.5	78.6	21.4	1.000	103
Swimming (Competitive)	88.2	11.8	67.3	32.7	0.017	75.0	25.0	87.0	13.0	0.270	73.6	26.4	100.0	0.0	0.020	77.9	22.1	75.0	25.0	1.000	103
Cricket	85.5	14.5	68.8	31.3	0.058	73.3	26.7	89.3	10.7	0.112	82.0	18.0	50.0	50.0	0.014	78.5	21.5	70.0	30.0	0.689	103
Squash	88.9	11.1	75.3	24.7	0.350	76.8	23.2	87.5	12.5	0.680	77.7	22.3	0.0	0.0	__*	77.0	23.0	100.0	0.0	1.000	103
Cycling (Competitive)	93.1	6.9	71.6	28.4	0.019	76.5	23.5	100.0	0.0	0.584	77.2	22.8	100.0	0.0	1.000	75.3	24.7	92.9	7.1	0.184	103
Dancing	84.4	15.6	74.6	25.4	0.317	75.3	24.7	92.9	7.1	0.184	78.4	21.6	66.7	33.3	0.613	76.9	23.1	83.3	16.7	1.000	103
Horse riding	83.3	16.7	76.9	23.1	1.000	77.5	22.5	100.0	0.0	1.000	77.7	22.3	0.0	0.0	__*	77.8	22.2	75.0	25.0	1.000	103
Jogging/Running	84.1	15.9	52.4	47.6	0.006	72.2	27.8	83.7	16.3	0.236	74.4	25.6	94.1	5.9	0.110	72.1	27.9	85.7	14.3	0.148	103
Karate/Martial arts/ Judo/Self defence	87.0	13.0	75.0	25.0	0.270	77.3	22.7	83.3	16.7	1.000	76.3	23.7	100.0	0.0	0.333	77.0	23.0	100.0	0.0	1.000	103
Scooter/ Skateboarding	94.9	5.1	67.2	32.8	0.001	76.8	23.2	100.0	0.0	0.573	77.5	22.5	100.0	0.0	1.000	71.4	28.6	96.2	3.8	0.007	103
Stationary exercises (cycle, treadmill)	88.9	11.1	71.6	28.4	0.051	76.8	23.2	87.5	12.5	0.680	77.5	22.5	100.0	0.0	1.000	74.4	25.6	90.5	9.5	0.148	103
Surfing or Boogie boarding	82.4	17.6	75.4	24.6	0.464	77.2	22.8	100.0	0.0	1.000	77.5	22.5	100.0	0.0	1.000	76.9	23.1	80.0	20.0	1.000	103
Cycling	82.5	17.5	70.0	30.0	0.152	76.0	24.0	100.0	0.0	0.344	77.5	22.5	100.0	0.0	1.000	75.5	24.5	80.0	20.0	0.641	103
Swimming (recreational)	80.6	19.4	72.2	27.8	0.334	73.9	26.1	100.0	0.0	0.021	73.8	26.2	94.7	5.3	0.066	80.6	19.4	72.2	27.8	0.334	103
Walking	80.2	19.8	68.2	31.8	0.254	75.0	25.0	82.9	17.1	0.458	75.5	24.5	100.0	0.0	0.202	73.7	26.3	80.0	20.0	0.472	103
Gym/Weights/Circuit training/Pilates	80.0	20.0	76.2	23.8	0.809	75.3	24.7	88.9	11.1	0.350	75.8	24.2	100.0	0.0	0.194	79.5	20.5	70.0	30.0	0.378	103
Aerobics/Yoga	80.0	20.0	77.1	22.9	1.000	78.4	21.6	66.7	33.3	0.613	78.0	22.0	66.7	33.3	0.535	77.6	22.4	80.0	20.0	1.000	103
Other	80.4	19.6	75.4	24.6	0.637	76.1	23.9	90.9	9.1	0.448	76.0	24.0	100.0	0.0	0.344	79.8	20.2	64.3	35.7	0.297	103

(__* Blank cells refer to not valid due to no responses)

General participation in soccer ($p=0.048$), competitive swimming ($p=0.017$), competitive cycling ($p=0.019$), jogging / running ($p= 0.006$) and scooter / skateboarding ($p<0.001$) had significant positive association with tennis playing status (retention). Furthermore, participants who participated in competitive swimming ($p=0.020$) at sport club/centre showed a positive association with retaining in club tennis. Those who play club tennis are generally more active in most sports and physical activities at the school level compared to their counterparts except in playing golf and aerobics/yoga.

Participation in cricket ($p=0.014$) at the club level (which, similar to club tennis, takes place in summer) has a significant positive association with dropout from club tennis. A similar but statistically not significant association can be seen also in the case of participation in netball and soccer at club level.

4.2.6. Age at starting club tennis

Table 22 shows the age of participants when they started playing club tennis and this is tabulated against playing status.

Table 22: Age at start of playing club tennis and club tennis playing status

	Retention	Dropout	Total (n)	p-value	Direction of association ¹
	%	%			
Age at start of playing club tennis				0.089	NS
5 years and less	88.0	12.0	25		
6-9 years	79.6	20.4	54		
10 years and above	62.5	37.5	24		
Total	77.7	22.3	103		

¹ NS Not significant

Participants were given the option of entering a whole number value between 3 and 18 for answering the question (see Appendix 4: Web- based Survey Questionnaire) and for analysis the responses were grouped into 3 ranges. The majority (52.4%) of the respondents

started playing tennis between 6 and 9 years of age. Retention was also higher among participants that started playing club tennis at younger ages (e.g., 88% at ≤ 5 yrs compared to 62.5% at ≥ 10 yrs. These results indicate that a young age at commencing club tennis might lead to higher retention although the relationship is not statistically significant ($p=0.089$).

4.2.7. Number of years of playing club tennis

Table 23 shows tennis playing status against the number of years of playing club tennis. The survey questionnaire gave the option of entering 0 to 15 years as a response to this question (see Appendix 4: Web- based Survey Questionnaire). Responses were grouped into 3 ranges; less than 3 years, 3 to 6 years and 6 or more years. The result indicates that chances of dropping out was lower among those who played club tennis for 3 years or less (17.9%) and for 6 years or more (15.6%); at the same time, it is significantly higher among those who played for more than 3 years but less than 6 years (30.2%). This was not a statistically significant association ($p=0.259$).

Table 23: Number of years playing tennis as a club member vs. tennis playing status

	Retention	Dropout	Total (n)	p-value	Direction of association ^{^1}
	%	%			
No. of years playing club tennis				0.259	NS
Less than 3 Years	82.1	17.9	28		
3 to 6 Years	69.8	30.2	43		
6 Years and more	84.4	15.6	32		
Total	77.7	22.3	103		

^{^1} NS Not significant

4.2.8. Membership at multiple tennis clubs

Information on whether the respondent had played tennis at more than one tennis club was collected with possible response in a dichotomous scale (Yes/No). Table 24 shows that a greater proportion of retained players (86.3%) played in multiple clubs than dropout

players (69.2%). This may be indicating that the retained players value their participation to a greater extent than those who dropped out. Statistical analysis confirmed a significant association ($p=0.038$) of playing at multiple tennis clubs with retention in playing club tennis.

Table 24: Multiple tennis club membership and club tennis playing status

	Retention	Dropout	Total (n)	p-value	Fischer's exact test
	%	%			
Have you played at more than one tennis club or centre?				0.038	0.057
Yes	86.3	13.7	51		
No	69.2	30.8	52		
Total	77.7	22.3	103		

4.2.9. Participation in tennis competitions / programs

Participants of the survey were asked whether they participate (or used to participate, in the case of dropout players) in the various types of club competitions. Table 25 shows the distribution of responses versus tennis playing status of the respondents. As expected, retained players showed higher participation in almost all competitions / programs except casual court booking (76.2 %) compared to drop-out players.

Table 25: Participation in the types of competition / program vs. tennis playing status

Type of Competition	Retention	Dropout	Total (n)
	%	%	
Weekday competition- Senior	80.0	20.0	25
Weekday competition- Junior	77.6	22.4	49
Weekend competition- Senior	94.4	5.6	18
Weekend competition- Junior	83.8	16.2	74
Fast 4	100.0	0.0	15
Hot Shots	89.7	10.3	29
Casual court bookings	76.2	23.8	42
Coaching	79.3	20.7	58
Cardio-tennis	84.6	15.4	13
Tournaments	81.6	18.4	49
Total	77.7	22.3	103

4.2.10. Level (age group) of competition

Participants were asked to choose the level (age group) of competition that they play (or played before dropping out). Table 26 shows that players who had been playing at a higher level (age group) of competition (higher than ‘Junior 16 & under’) showed higher retention in club tennis than those in the lower levels with the exception of ‘Junior 14 & under’. The lower retention amongst those playing competition at lower age groups may be an indication of pressure of playing competition felt in the early years.

The stress of competition may be causing higher dropout among younger age groups, and those who attain skill levels to play competitive tennis by making it to higher levels (i.e., Under 18 and Senior) show high retention. Participation in competitions showed a negative relation with play status for those who played junior age group competitions up to 13 years.

Table 26: Level (Age Group) of competition played vs. tennis playing status

Level (Age Group) of competition	Retention	Dropout	Total (n)
	%	%	
Junior 10 & under (or Under 11s)	69.6	30.4	23
Junior 11 & under (or Under 12s)	60.9	39.1	23
Junior 12 & under (or Under 13s)	52.4	47.6	21
Junior 13 & under (or Under 14s)	61.5	38.5	26
Junior 14 & under (or Under 15s)	81.0	19.0	21
Junior 15 & under (or Under 16s)	61.5	38.5	13
Junior 16 & under (or Under 17s)	77.8	22.2	9
Junior 17 & under (or Under 18s)	88.9	11.1	9
Junior 18 & under (or Under 19s)	100.0	0.0	8
Senior	87.5	12.5	16
All respondents	77.7	22.3	103

4.2.11. Tennis format in club competition

The format of tennis that the players participated versus tennis playing status is tabulated below (Table 27). Playing in the ‘singles’ format of tennis competition was the most popular (89.3%); at the same time the percentage of dropout players among those who

played singles was marginally higher (25.0%) than the other tennis competition. Singles competitions, being more physically demanding and individualistic than doubles, may be less enjoyable to the average participant and this could be a factor contributing to the higher dropout.

Table 27: Format of competition and club tennis playing status

Format of competition	Retention	Dropout	Total (n)
	%	%	
Singles	75.0	25.0	92
Doubles	78.3	21.7	83
Mixed Doubles	81.3	18.8	32
Total	77.7	22.3	103

4.2.12. Playing level/ grade/ section

Result displayed in Table 28 suggests that several of the dropouts were participating as reserve players before they stopped playing. Most number of players were in Section 1/A. Section 5/E and section 5/E reserve showed 100% retention.

Table 28: Current playing level/ grade/ section and club tennis playing status

Playing level/ grade/ section	Retention	Dropout	Total (n)
	%	%	
Section 1/A	83.3	16.7	18
Section 1/A reserve	63.6	36.4	11
Section 2/B	81.3	18.8	16
Section 2/B reserve	45.5	54.5	11
Section 3/C	72.7	27.3	11
Section 3/C reserve	50.0	50.0	6
Section 4/D	75.0	25.0	12
Section 4/D reserve	37.5	62.5	8
Section 5/E	100.0	0.0	3
Section 5/E reserve	100.0	0.0	2
Section 6/F	-	-	0
Section 6/F reserve	50.0	50.0	2
Total	77.7	22.3	103

With small sample size, diverse playing grades and lack of adequate valid cases for many variables the data has limitation to provide a plausible outcome for the analysis of relating players' current tennis playing level to their tennis playing status.

4.2.13. Socio-ecological determinants of retention

The study examined the possible determinants that can influence participants' decision to continue playing club tennis or to drop out. The determinants for retaining or dropping out from club tennis were investigated by collecting responses about a number of statements, to be marked on a 5-point Likert scale ranging from 'strongly agree' to 'strongly disagree'. Each statement is related to a variable determining the playing status in club tennis and was framed on the basis of the various interpersonal, intrapersonal, organisational, environmental and policy factors of socio-ecological model in conjunction with principles of Leisure Constraints Theory and the Fun Integration Theory.

Due to the lower number of responses, the 5-point scale of responses were compressed in to 3 groups before statistical analysis of the data. Responses 'Strongly agree' and 'Agree' were merged together, to make a single group 'Agree'. Similarly, 'Disagree' and 'Strongly disagree' were merged to form a single group 'Disagree'.

4.2.14. Interpersonal and intrapersonal determinants

Socio-ecological determinants of an intrapersonal and interpersonal dimension were measured by responses on a 3-point Likert scale to the 32 statements given in Table 29 (e.g. I play/played tennis because it is fun). The statements were framed based on the intrapersonal and interpersonal aspects (self-efficacy, enjoyment, abilities, perceived skills and competence, gender, influence of family, peer group, famous sporting personalities, etc.) of socio-ecological model. Table 29 (following page) summarises the results. The section that follows the table discusses the observations.

Table 29: Reasons for playing tennis vs. tennis playing status

Statement	Agree			Neither agree nor disagree			Disagree			N	p-value	Direction of association ^{^1}
	Retained %	Dropout %	N	Retained %	Dropout %	n	Retained %	Dropout %	n			
I enjoy playing competitive sports	81.6	18.4	87	85.7	14.3	7	14.3	85.7	7	101	0.000	+
I do very well at all kinds of sports	85.1	14.9	67	73.7	26.3	19	26.3	53.3	15	101	0.005	+
I do not feel that I am very athletic	41.2	58.8	17	88.9	11.1	18	11.1	17.2	64	99	0.001	-
I enjoy playing individual sports	78.2	21.8	78	83.3	16.7	18	16.7	60.0	5	101	0.113	NS
I enjoy playing team sports	78.6	21.4	84	91.7	8.3	12	8.3	100.0	4	100	0.001	+
I play sport for social reasons	74.6	25.4	67	79.2	20.8	24	20.8	10.0	10	101	0.539	NS
I play sport because it is fun	80.9	19.1	89	57.1	42.9	7	42.9	60.0	5	101	0.044	+
I am very embarrassed about my look while I play sports	60.0	40.0	15	73.3	26.7	15	26.7	18.8	69	99	0.201	NS
My parents get frustrated if I do not win	78.6	21.4	14	62.5	37.5	16	37.5	19.7	71	101	0.307	NS
Playing tennis helps me to keep fit	84.6	15.4	78	71.4	28.6	14	28.6	77.8	9	101	0.000	+
I generally win most tennis matches	85.7	14.3	35	75.0	25.0	44	25.0	33.3	21	100	0.239	NS
I do not enjoy playing tennis with boys	60.0	40.0	10	71.4	28.6	14	28.6	19.7	76	100	0.311	NS
I do not enjoy playing tennis with girls	66.7	33.3	9	86.7	13.3	15	13.3	23.4	77	101	0.510	NS
I am not confident in playing tennis in front of others	56.5	43.5	23	76.5	23.5	17	23.5	14.8	61	101	0.020	-
I am not very good at playing tennis	60.0	40.0	15	68.0	32.0	25	32.0	15.3	59	99	0.062	NS
I play/played tennis because it is fun	78.6	21.4	84	83.3	16.7	6	16.7	80.0	5	95	0.011	+
I feel that comparatively, tennis is a hard sport to play	72.7	27.3	33	84.4	15.6	32	15.6	30.0	30	95	0.367	NS
I feel that I am better than most others of my age at tennis	90.0	10.0	30	80.5	19.5	41	19.5	50.0	24	95	0.002	+
I have friends that play tennis	77.3	22.7	75	80.0	20.0	10	20.0	40.0	10	95	0.460	NS
I am discouraged when my opponents cheat in tennis	75.8	24.2	62	70.8	29.2	24	29.2	11.1	9	95	0.559	NS
I am a fan of a famous tennis star; I want to play like them	80.4	19.6	56	84.2	15.8	19	15.8	47.4	19	94	0.032	+
I do not/did not have any friends in my tennis team	57.1	42.9	14	71.4	28.6	14	28.6	19.4	67	95	0.162	NS
Playing tennis gives/gave me a break from my study/work	77.1	22.9	70	90.9	9.1	11	9.1	42.9	14	95	0.129	NS
Playing tennis helps/helped me gain new sports skills	78.8	21.3	80	77.8	22.2	9	22.2	66.7	6	95	0.043	+
Tennis is my favourite sport	98.2	1.8	56	55.6	44.4	18	44.4	70.0	20	94	0.000	+
My parents play/played tennis	84.8	15.2	46	75.0	25.0	4	25.0	33.3	45	95	0.131	NS
My family encourage/encouraged me to play tennis	78.8	21.2	85	75.0	25.0	4	25.0	66.7	6	95	0.042	+
My family play/played tennis with me	84.5	15.5	58	90.0	10.0	10	10.0	46.2	26	94	0.005	+
My family watch/watched me playing tennis	78.6	21.4	84	60.0	40.0	5	40.0	50.0	6	95	0.201	NS
My siblings play /played tennis	75.4	24.6	61	63.6	36.4	11	36.4	14.3	21	93	0.362	NS
My parents compare my tennis skills with that of others	60.0	40.0	30	95.0	5.0	20	5.0	22.2	45	95	0.017	-
My friends ask me to play tennis	76.7	23.3	43	72.2	27.8%	18	27.8	23.5	34	95	0.926	NS

^{^1} NS Not significant; + positive association; - negative association; +/- more complex association

Retained group of club tennis players was found to be significantly more likely than the dropout group to indicate that they enjoyed playing all sports in general as well as tennis (*I enjoy playing competitive sports*: 81.6%, $p < 0.001$; *I enjoy playing team sports*: 78.6%, $p = 0.001$; *I play sport because it is fun*: 80.9%, $p = 0.044$; *I play/played tennis because it is fun*: 78.6%, $p = 0.011$; *Tennis is my favourite sport*: 98.2%, $p = 0 < 001$.) Variability in the responses to these statements showed a statistically significant association with being retained in club tennis, reiterating that liking the sport and enjoying playing it are important determinants that influence players' decision of continue in club tennis.

The retained group was significantly more likely than the dropout group to agree with statements that positively associated with confidence in personal skills, competence in tennis and self-efficacy (e.g., *I do very well at all kinds of sports*: 85.1%, $p = 0.005$; *I feel that I am better than most others of my age at tennis*: 90.0%, $p = 0.002$). Responses based on perceived benefits from playing tennis also reveals that retained players were significantly more positive than the drop out group (*Playing tennis helps/helped me gain new sports skills*: 78.8%, $p = 0.043$; *Playing tennis helps me to keep fit*: 84.6%, $p < 0001$). Conversely, responses in agreement to negative statements on self-efficacy showed a statistically significant association with dropout in playing club tennis compared to retention (e.g., *I do not feel that I am very athletic*: 41.2%, $p = 0.001$; *I am not confident in playing tennis in front of others*: 56.5%, $p = 0.020$). The results confirm that sports skills, competency in tennis, self-efficacy and awareness about positive outcomes from playing tennis are important determinants that influence retention of children and adolescents in club tennis.

Perception of parental and family support was significantly higher in the retention group compared to the dropout group (*My family encourage/encouraged me to play tennis*: 78.8%, $p = 0.042$; *My family play/played tennis with me* (84.5%, $p = 0.005$). This has to be

read in conjunction with the earlier finding that respondents from families with two parents have significantly higher probability to be retained in club tennis. On the other hand, perceived parental pressure on players was significantly higher in the case of dropout players than retained players (*My parents compare my tennis skills with that of others*: 40%, $p = 0.017$).

Responses to the two questions regarding influence of friends being a reason for playing or not playing tennis did not record a statistically significant association with tennis playing status (*I have friends that play tennis*: 77.3%, $p = 0.460$; *I do not/did not have any friends in my tennis team*: 57.1%; $p = 0.162$; *My friends ask me to play tennis*: 76.7%, $p = 0.926$). This is contrary to the perception that peer influence is a significant factor on children and adolescents in their choice to play tennis. At the same time a statistically significant association for retention in club tennis has been seen with having a celebrity role model (*I am a fan of a famous tennis player and want to play like him/her*: 80.4%, $p = 0.032$). At the same time there is a significant difference in the influence of celebrity role models between retained players and dropout players.

4.2.15. Tennis coaching

Availability, affordability and quality of tennis coaching and the personal influence of the coach on young tennis players combine interpersonal, environmental and organisational elements of the socio-ecological model in influencing their choice to continue in club tennis or to stop playing. The survey questionnaire included questions aimed at investigating the influence of coaching on the respondents. Table 30 shows the coaching exposure of the respondents, indicating a significant positive association with tennis playing status. There was a statistically significant association ($p < 0.001$) between getting the opportunity for professional tennis coaching and tennis playing status. Players who had coaching were more likely to be retained than who did not. All except one (98.4%)

of those who had tennis coaching in the year of the study (2018-19) and a good majority (80.4%) of those who ever had tennis coaching were in the retained group. For those who never had tennis coaching the distribution between retained and dropout was even.

Table 30: Tennis coaching and club tennis playing status

	Retention	Dropout	Total (n)	p-value
	%	%		
Have you had tennis coaching?				0.000
YES	80.4	19.6	92	
Yes; in the current year	98.4	1.6	63	
Yes; in the past	41.4	58.6	29	
NEVER	50.0	50.0	10	
Total	77.5	22.5	102	

Table 31 shows the association between playing status in club tennis and the type and duration of tennis coaching that the respondent received. Group coaching, which was the most common and is also more affordable form of coaching.

Table 31: Number of years of coaching and club tennis playing status

	Retention	Dropout	Total (n)	p-value	Direction of association ^{^1}
	%	%			
Individual coaching				0.202	NS
0 to less than 3 years	74.4	25.6	78		
3-5 years	81.3	18.8	16		
6 years and more	100.0	0.0	9		
Total	77.7	22.3	103		
Group coaching				0.020	+/-
0 to less than 3 years	66.0	34.0	47		
3-5 years	83.3	16.7	36		
6 years and more	95.0	5.0	20		
Total	77.7	22.3	103		
Both individual and group				0.080	NS
0 to less than 3 years	74.0	26.0	73		
3-5 years	73.3	26.7	15		
6 years and more	100.0	0.0	15		
Total	77.7	22.3	103		

^{^1} NS Not significant, + positive association, - negative association, +/- more complex association

A direct positive association was seen between higher retention and the number of years of tennis coaching that the respondent had for all types of coaching. There was only one dropout among respondents who had six years or more of coaching of any type.

4.2.16. Coaching experience

Players' impression on the various interpersonal aspects of coaching that they received was investigated by inviting responses to statements on a Likert scale from agree to disagree. The results are displayed in Table 32 (following page).

Significantly higher proportion of retained players compared to dropout players agreed with statements reflecting positive coaching experience, indicating a statistically significant association between retention and positive coaching experience (e.g., *Confidence gained from coaching makes me want to play competitive tennis: 87.5%, $p=0.005$*). On the other hand, higher percentage of dropout players (30.8%) agreed with a statement reflecting negative coaching experiences (i.e., *The coach puts pressure on me to win: 30.8%, $p = 0.552$*).

4.2.17. Club Environment

Table 33 (following page) displays the descriptive statistics of responses on variables based on environmental, organisational and policy dimensions of the socio-ecological framework. Each variable was framed as a statement and responses on each statement was recorded using 3- point Likert scale (*Not important, Somewhat important, Very important*).

Table 32: Coaching experience and club tennis playing status

	Agree			Neither agree nor disagree			Disagree			N	p-value	Direction of association ^1
	Retained %	Dropout %	n	Retained %	Dropout %	n	Retained %	Dropout %	n			
My coach encourages me regardless of my performances	80.0	20.0	75	70.0	30.0	10	100.0	0.0	2	87	0.585	NS
I feel that the team selection is done fairly	76.6	23.4	64	82.4	17.6	17	100.0	0.0	7	88	0.328	NS
I always receive appropriate feedback	80.0	20.0	80	71.4	28.6	7	100.0	0.0	1	88	0.759	NS
My coach is friendly	80.2	19.8	86	100.0	0.0	1	0.0	100.0	1	88	0.124	NS
My coach puts pressure on me to win	69.2	30.8	13	78.3	21.7	23	82.7	17.3	52	88	0.552	NS
Confidence from coaching makes me want to play	87.5	12.5	64	63.2	36.8	19	40.0	60.0	5	88	0.005	+

^1 NS Not significant, + positive association, - negative association, +/- more complex association

Table 33: Club environment and club tennis playing status

	Very Important			Somewhat Important			Not Important			N	p-value	Direction of association ^1
	Retained %	Dropout %	n	Retained %	Dropout %	n	Retained %	Dropout %	n			
Availability of tennis courts near to my home	93.5	6.5	46	67.4	32.6	43	54.5	45.5	11	100	0.002	+
Knowing someone at a club or centre	81.8	18.2	44	75.7	24.3	37	73.7	26.3	19	100	0.706	NS
Having affordable facilities	93.9	6.1	49	66.7	33.3	45	33.3	66.7	6	100	0.000	+
Access to players of similar standard	89.6	10.4	48	64.4	35.6	45	85.7	14.3	7	100	0.012	+
Access to players of similar gender	76.9	23.1	13	70.5	29.5	44	86	14	43	100	0.213	NS
Friendliness of coach	92.5	7.5	53	65.6	34.4	32	50	50	14	99	0.000	+
Having healthy eating options in the canteen	95.5	4.5	22	75.8	24.2	33	71.1	28.9	45	100	0.073	NS
A friendly atmosphere	88.3	11.7	60	66.7	33.3	33	42.9	57.1	7	100	0.004	+
There are people who make me feel included	85.7	14.3	56	69.7	30.3	33	63.6	36.4	11	100	0.101	NS
Having good quality facilities/ courts	96.2	3.8	53	62.2	37.8	37	40	60	10	100	0.000	+
There are injury prevention strategies in place	90	10	40	83.3	16.7	36	50	50	24	100	0.001	+
Good umpiring and score keeping	91.7	8.3	36	74.5	25.5	47	58.8	41.2	17	100	0.019	+
Being smoke-free	92.7	7.3	55	63.0	37.0	27	55.6	44.4	18	100	0.000	+
There is someone to talk to if I feel being bullied	88.2	11.8	51	77.8	22.2	27	52.4	47.6	21	99	0.004	+
There are strict rules for social events	84.6	15.4	26	78.6	21.4	42	71	29	31	99	0.461	NS
Day/time of competition/practice sessions	79.6	20.4	54	78.0	22.0	41	60	40	5	100	0.598	NS

^1 NS Not significant, + positive association, - negative association, +/- more complex association

Importance assigned to environment and organisation related factors such as location of the tennis court, good facilities, good environment and friendly policies at tennis clubs showed statistically significant association with retention of players in club tennis (Table 33). Retained players responded that location of tennis clubs was very important for them. Quality and affordability of club facilities, supportive and friendly club environment and positive club policies were also found as very important for them in playing club tennis.

4.2.18. Club competitions and playing structure

Table 34 (following page) displays the descriptive analysis of responses to variables based on club competitions and play structure. The responses were recorded on a Likert scale from agree to disagree. Compared to dropout players, retained players were significantly more in agreement with statements indicating positivity towards existing play structure of club tennis (i.e., *Days of competition are suitable: $p = 0.005$; Timing of the competition on the weekends are convenient: $p < 0.001$*). Also, a significantly lower percentage of retained players than dropout players responded that the duration of competitions was an issue for them (*Duration of competition is too long: $p = 0.025$*). These outcomes mean that young tennis players feeling comfortable about the playing structure such as timing and duration positively influenced their retention in club tennis.

Statistically significant association between retention and agreement expressed to statements regarding cost of playing club tennis (*Cost of equipment is high: $p = 0.027$; Tennis coaching is expensive: $p = 0.025$*) indicate that most participants consider playing club tennis as expensive but cost was not a major constraint that prevented them from playing. In addition, a significantly lower proportion of retained players than dropout players responded that club membership cost is an issue (*Membership cost is high: $p = 0.039$*).

Table 34: Competitions, playing structure and club tennis playing status

	Agree			Neither agree nor disagree			Disagree			N	p-value	Direction of association ^1
	Retained %	Dropout %	n	Retained %	Dropout %	n	Retained %	Dropout %	n			
Duration of competition is too long	55.0	45.0	20	84.4	15.6	32	82.6	17.4	46	98	0.025	-
Days of competition are suitable	84.8	15.2	66	71.4	28.6	21	40.0	60.0	10	97	0.005	+
Timing of the competition on the weekends are convenient	85.5	14.5	69	80.0	20.0	15	30.8	69.2	13	97	0.000	+
Timing of the competition during the week days are convenient	76.9	23.1	52	83.9	16.1	31	64.3	35.7	14	97	0.347	NS
Membership cost is high	68.6	31.4	35	90.2	10.0	40	66.7	33.3	21	96	0.039	-
Participation in tournaments is expensive	78.3	21.7	46	84.8	15.2	33	61.1	38.9	18	97	0.151	NS
Cost of equipment is expensive	84.0	16.0	50	81.5	18.5	27	55.0	45.0	20	97	0.027	+
Tennis coaching is expensive	80.4	19.6	51	86.2	13.8	29	52.9	47.1	17	97	0.025	+
Distance from home to club is convenient	81.7	18.3	60	73.7	26.3	19	66.7	33.3	18	97	0.376	NS

^1 NS Not significant, + positive association, - negative association, +/- more complex association

4.2.19. Health and well being

The study investigated the self-perceived health and well-being of the survey participants by using the validated measurement tool, paediatric quality of life inventory (PedsQL™) 4.0 Generic Core Scales (Varni, 2017). Independent t-test was performed to compare the health outcome of retained and dropout players. The summary of results given in Table 35 shows that there was no significant difference between the retained players and dropout players in the indicative figures of all different dimensions of health and wellbeing. This suggests that retention in playing club tennis does not significantly associate with a higher level of overall health and wellbeing of the participant.

Table 35: Independent t-test comparing health and wellbeing scores of retained and dropout players

	Retention		Dropout		df	t-test	p-value*
	Mean	Standard deviation	Mean	Standard deviation			
Physical functioning	87.3	15.6	89.1	12.30	98	0.479	0.633
Emotional functioning	74.9	23.5	70.2	30.6	100	0.780	0.437
Social functioning	83.9	18.7	79.6	25.9	100	0.897	0.372
School functioning	77.15	19.6	77.83	24.1	100	0.137	0.891
Overall psycho-social functioning	77.67	20.13	75.87	23.9	101	0.361	0.719
Overall health score	82.33	14.94	83.69	15.49	98	0.376	0.708

*Level of Significance: $p \leq 0.05$

4.2.20. Summary of the online survey result

Figure 23 shows a summary of the determinants that have a significant association with retention of children and adolescents in club tennis which are listed below.

- Demographic factors such as region (residing in a metropolitan area) and family composition (family with both parents)
- Participation in outside school activities such as competitive and organised sport and physical activities and reading

- Spending two hours or less in screen time on weekdays and weekends
- Regular physical activity with more than one hour per day
- Participation in multiple competitive and non-competitive sporting activities
- Membership in multiple tennis clubs
- Intrapersonal socioecological factors such as enjoyment/fun, skills in tennis / general sports, self-efficacy and positive outcomes such as fitness and learning new skills
- Interpersonal socioecological factors such as influence of role models, family support and coaching
- Factors associated with coaching, such as friendliness of coach, confidence gained from coaching and group coaching
- Environmental factors such as convenient location of the tennis court, friendly club environment, good quality and affordable club facilities.
- Organisational and policy factors: Positive health and safety policies at the club, playing with other players of similar standards, convenient play schedule (days and time),

Figure 24 shows the summary of the determinants that have significant association with dropout of children and adolescents from club tennis:

- Involvement in leisure activities outside school hours such as talking/texting on phone and social networking
- Intrapersonal socioecological factors such as lack of sports skills and lack of self-efficacy and confidence in playing tennis in front of others
- Intrapersonal socioecological factor: Negative parental behaviour (parents comparing children's tennis skills with that of others)
- Organisational factors such as duration of the competition and high membership cost.

Figure 23: Overview of the survey findings: Retention

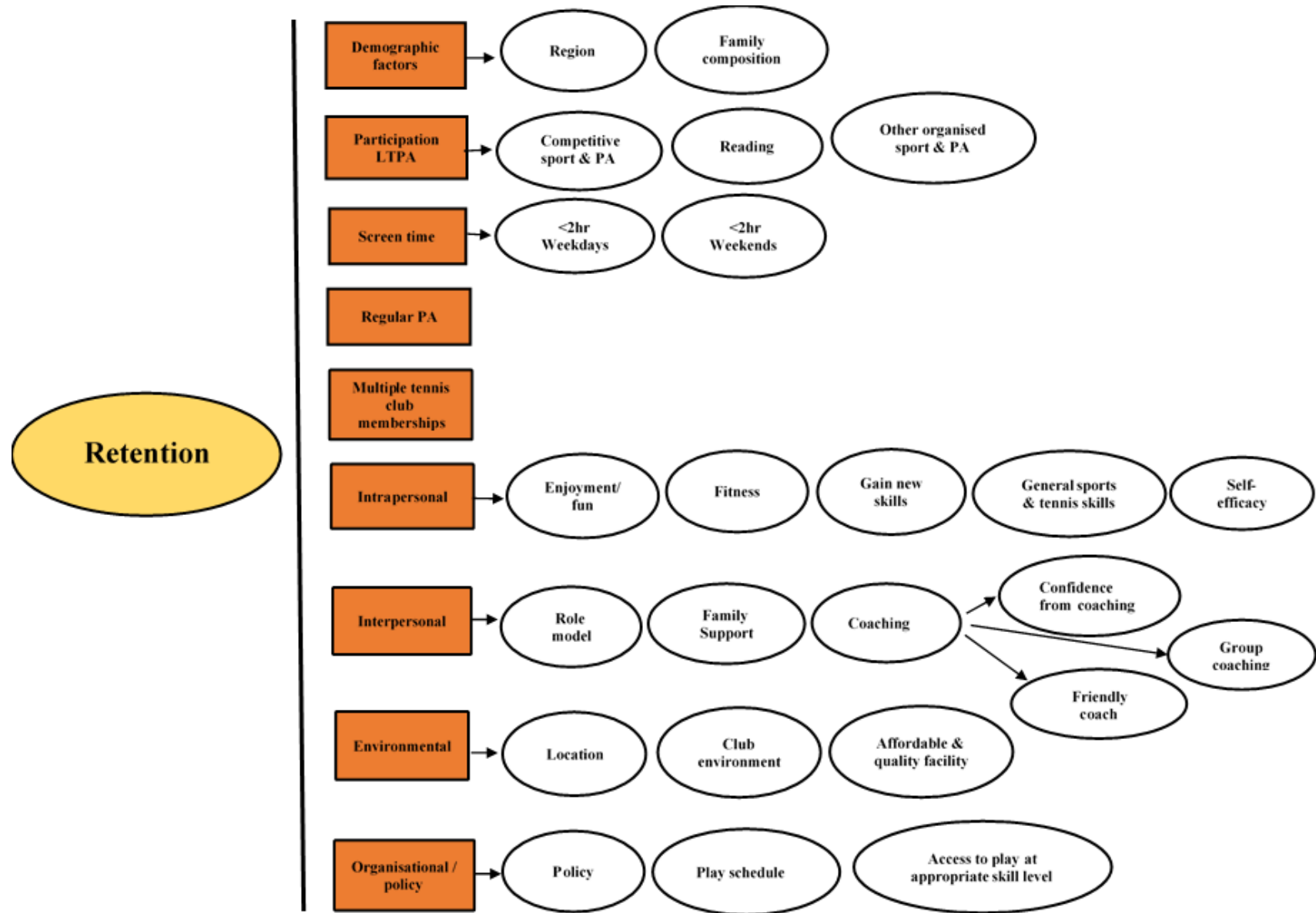
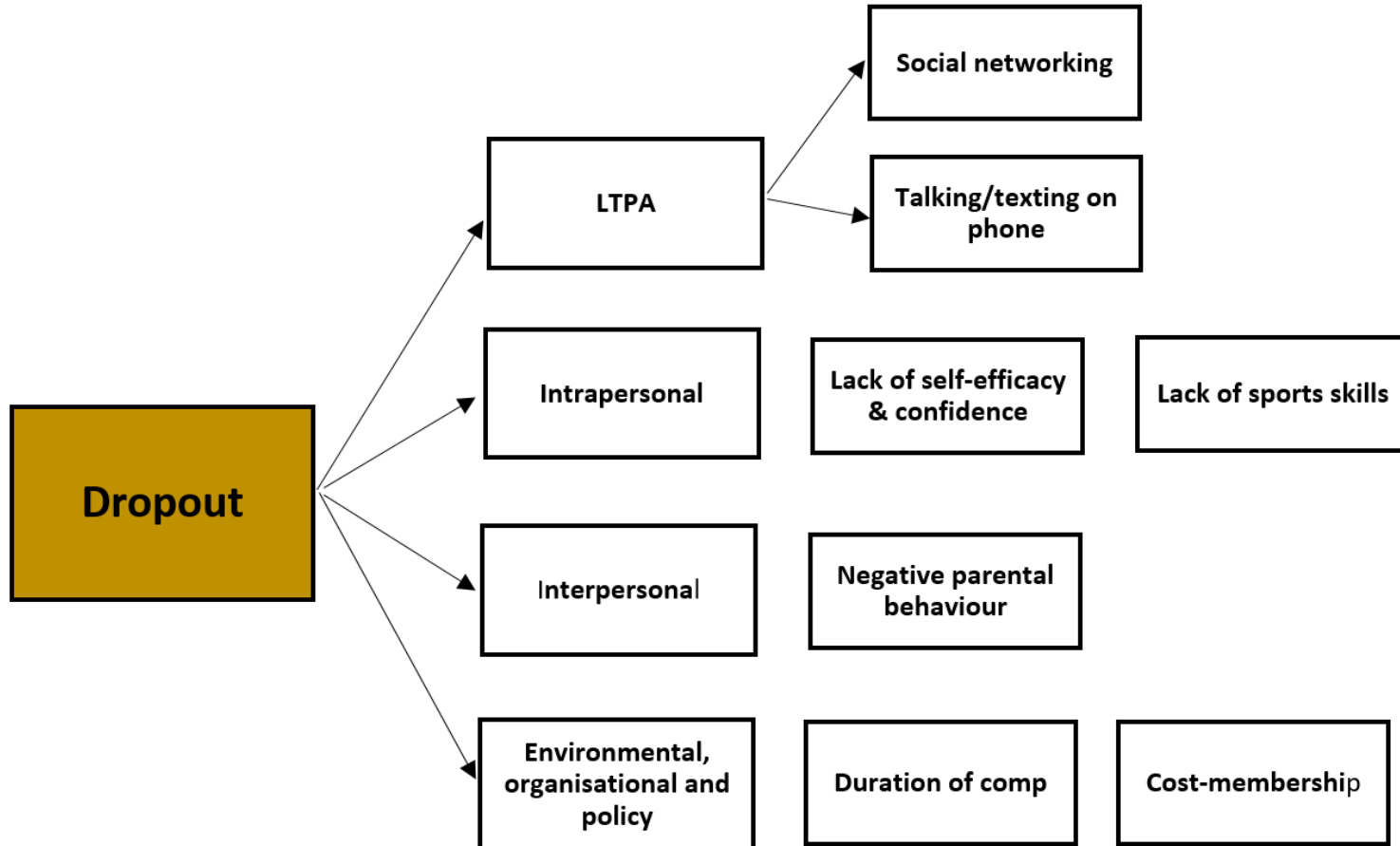


Figure 24: Overview of the survey findings: Dropout



4.3. Study 3: Qualitative study - determinants of retention and dropout

Several significant factors that influence retention and dropout across the socio-ecological model identified in Study 2 provided the information for the line of questioning in this study (Study 3). Results of Study 2 revealed the following motivating factors to retain players at each level of the socio-ecological model:

- Intrapersonal factors: enjoyment in playing tennis and competency (in both general sporting skills and tennis skills), benefits of playing tennis (fitness and gaining new skills) and self-efficacy
- Interpersonal factors: influence of role models, family support such as emotional support from parents, the family's involvement in playing tennis and influence of coaching that involves positive coaching experience.
- Organisational and environmental factors: Accessible location of the tennis club, club environment, club facilities, play structure and convenient play schedule.

Study 3 was designed to explore some of the key factors further in detail to understand how they influence a player's decision to continue (retained) or stop (drop out) playing club tennis. Thematic analysis of the transcribed data from 23 interviews (eight players, seven parents and eight coaches) are presented in two sections: 4.3.1. Playing and coaching demographics and background, and 4.3.2. Socio-ecological factors influencing retention of club tennis players which is divided into four sub-sections: intrapersonal factors, interpersonal factors, environmental factors and organisational factors.

4.3.1. Playing and coaching demographics and background

Players who participated in the semi-structured interview were asked about their tennis playing experience and parents of players were asked about their children's tennis playing experience. Demographic and background information were generated through

asking probing questions related to their playing experience (e.g., *How long have you been playing club tennis for? When did you start playing club tennis?*).

4.3.1.1. Players

Eight club tennis players (seven current players and one dropout player) and seven parents of players were interviewed (Table 36). Out of the seven parents interviewed, four (Jai, Derik, Natalia and Anna) were parents of interviewed players (Aiden, Trixie, Levis and Henry) who were chosen to obtain a different perspective on the children’s playing experience. The other three parents provided a proxy report on their child’s playing experience (Alice, Teresa and Stacy). Hence, data about 11 players were collected.

Table 36: Players’ club tennis playing background

Participants	Age	Sex	Region	Playing years	Current playing level	*Playing pathway
Hannah (Player)	12	Female	Metro	4	Junior	Parents
Jewel (Player)	13	Female	Metro	3	Junior	Parents
Alice (Proxy- parent)	14	Female	Non-metro	6	Junior	Tennis 4Teens
Levis (Player)	14	Male	Non-metro	6	Junior & Senior	Coach
Natalia (Parent- Levis)						
Henry (Player)	14	Male	Non-metro	8	Junior	Hotshot program
Anna (Parent-Henry)						
John (Player)	15	Male	Non-metro	5	Senior	Parents
Teresa (Proxy- parent)	15	Male	Non-metro	>10 years	Senior	Hotshot program
Aiden (Player)	17	Male	Metro	3	Junior	Hotshot program
Jai (Parent-Aiden)					(Drop-out)	
Stacy (Proxy- parent)	17	Female	Non-metro	>7 years	Senior	Parent
Trixie (Player)	18	Female	Non-metro	>10 years	Senior	Hotshot program
Derik (Parent-Trixie)						
Olivia (Player)	19	Female	Metro	1	Senior	Coach

* Playing pathway describes how player started playing club tennis initially.

All 11 players were aged between 12 and 17 years. There were five male players (n=5 out of 11); six female players (n=6 out of 11); four metropolitan players (n=4 out of 11) and seven non-metropolitan players (n=7 out of 11). The majority of parents interviewed were female (n=5 out of 7) and from non-metropolitan region (n=6 out of 7).

All coaches interviewed were male and six out of eight coaches (n=6 out of 8) were from non-metropolitan region.

Seven players (n=7 out of 11) had club tennis playing experience of between 5-10 years; whilst the other players had an average playing experience of up to three years. Regarding the tennis formats played, three quarters of the players interviewed said they played both singles and doubles (n=6). A young adult player (18 years) was currently only playing doubles in the women's competition and had dropped out of the singles format (i.e., Trixie); whilst another player in late adolescence had completely dropped out of club tennis at the time of the interview (i.e., Aiden). Therefore, most of the themes identified in this study relate to retention rather than dropout but where applicable the factor influencing the dropout player is explained.

Six players were playing at the junior level and they were aged between 12-17 years. One junior player aged 14 also played in the senior competitions along with five other players aged 15 - 19 years. Senior players generally had a greater number of years playing tennis than junior players with the exception of a 19-year-old female who had only played tennis for one year.

Playing pathway refers to how the players started playing tennis initially and how their development has been facilitated. Modified programs such as Hot Shots and Tennis4Teens were mentioned as the initial playing pathway for nearly half of the players (n=5 out of 11). For the rest, club tennis was introduced by parents (n=4 out of 11) and coaches (n=2 out of 11).

4.3.1.2. Coaches

Coaches reflected on their coaching experience and discussed the number of years that they had been involved with coaching tennis, the age groups they coached and the

reasons why they enjoyed coaching tennis. Most coaches who participated in this study were highly experienced with more than 10 years' experience in tennis coaching (n=7 out of 8; Table 37). For instance, coach Desmond commented *"I've probably been coaching since I was 19, so that's 45 years"*. All of the coaches had experience in coaching a wide variety of age groups with different skills and had implemented a wide range of tennis programs implemented from grassroots to elite level. All the coaches involved in the study were engaged in the coaching of children and adolescents up to the age of 17 years. Five of the coaches (n=5 out of 8) stated that they coached both children and adults.

Table 37: Background information- coaches

Coaching experience		Total No
Number of years in coaching	0-4 years	0
	5-10 years	1
	More than 10 years	7
Coaching age groups	Children and adolescents (up to 17 years)	8
	Adults	5
Key motivating factor in coaching	Children's enjoyment	2
	Children's progress and achievement	4
	Connection with players	2
	Variety in the age group	1

Half of the coaches who participated in the study (n=4) stated that seeing children's progress and achievement in tennis was the greatest enjoyment/rewarding factor in coaching. Children's enjoyment, coaching players in a variety of age groups and having a connection with the players were the other major enjoyment factors mentioned during the interview by coaches who were engaged in coaching children.

4.3.2. Socio-ecological factors influencing retention of club tennis players

Transcribed data from 23 interviews (eight players, seven parents and eight coaches) was analysed thematically. Altogether, 19 major themes and 16 subthemes emerged from the coding which was based on the socioecological model. The coding structure was detailed schematically in chapter 3 (see Figure12, Figure 13, Figure 14).

The following section is the summary of the major themes and subthemes for each domain identified from the thematic analysis of the transcribed data of the qualitative study. The section provides the summary of references for each theme. Quotations are identified with a pseudonym and the role of the participant from the target population. In addition, summary tables are provided (Tables 38, 39, 40 and 41) along with diagram to schematically illustrate the relationship between the major domain (Retention) and identified themes (Figures 25, 26, 27 and 28).

4.3.2.1. Intrapersonal

The intrapersonal domain of the socio-ecological model is comprised of individual characteristics such as confidence, enjoyment, personal attitudes and values, competency, and self-concept (Eime, Casey, Harvey, Sawyer, et al., 2015). Table 38 identifies the intrapersonal concepts that arose from the interviews with the participants and the sub-themes related to: aspiration, competency, enjoyment, feeling of success, passion, sportsmanship, playing other sports and self-efficacy.

Table 38: Major themes and sub-themes identified based on the intrapersonal factors

Major themes	Sub themes	*References				Quotes
		Players	Parents	Coaches	Total	
Aspiration		6	3	2	11	<i>"He's, well, what do you want to be when you grow up, and it's still a professional tennis player. So yeah, he's right into it" (Natalia, Parent)</i>
Competency		4	7	8	19	<i>"I think competency is a really big important factor in having fun in tennis". (Stanley, Coach)</i>
	Being Challenged	8	6	4	18	<i>"Sometimes for particularly playing at the senior level it's better a match that you don't win, that you are challenged and your skills are really put to the test". (Natalia, Parent)</i> <i>"Some kids thrive on that challenge. Others, when they are challenged too much, they lose interest". (Jose, Coach)</i>
	Competitive spirit	7	4	4	15	<i>"If you lose, it means that you still need to improve and then if you play that same person again and you do better, it proves to yourself that what you're doing is actually working and you are getting better". (Levis, Player)</i>
Enjoyment		7	7	7	21	<i>"What I find coaching all these kids all these years, the more their skills increase, the more serious they tend to get and that enjoyment kind of goes". (Jose, Coach)</i>
	Competitiveness of tennis	6	4	1	11	<i>"I like it because it's a competitive sport". (Jewel, Player)</i>
	Nature of the sport	4	2	2	8	<i>"I think possibly because it was a solo sport. It wasn't necessarily a team sport and it was something that he could work at his own level". (Anna, Parent)</i>
	Playing with friends and socialisation	7	7	5	19	<i>"A lot of them don't mind what standard they're playing as long as they're playing with their friends". (Natalia, Parent)</i>
Feeling of success		6	5	1	12	<i>"if she was losing all the time, then definitely I'd say she would - there's no way she'd keep playing". (Stacy, Parent)</i>

Major themes	Sub themes	*References				Quotes
		Players	Parents	Coaches	Total	
Passion		6	3	3	12	<i>"I've got some kids, like last week, 14-year-olds who their competency level is not that great, but they still actually enjoy it. They're into tennis. I think those kids are probably - there's less of those kids now than there was". (Patrick, Coach)</i>
Self-efficacy		6	2	3	11	<i>"A coach can create confidence in you and it's great in practice, but if it doesn't transfer to matches, then that's just - it's a fake confidence". (Alex, Coach)</i>
Sportsmanship		3	3	1	7	<i>"We probably tried to teach the boys it's about – well it is about having, you know, go there and have some fun and just relax. Do your best whatever that might be". (Teresa, Parent)</i>
Playing other sport		6	7	2	15	<i>I haven't been - I haven't had training or coaching sessions for a couple of years because we couldn't afford them so the - I just think what helps me is just playing a wide range of sports and just being powerful in my thoughts helps. (Trixie, Player)</i>

*References are the number of participants in each group responded for a specific theme.

The major sub-themes emerged from the interviews that relate to the intrapersonal domain are discussed in the sections below.

(a) Aspiration:

Becoming a professional tennis player is the underlying objective for several young players to continue playing club tennis, reflected in comments made by multiple players on their aspiration in playing club tennis. For instance, one player commented *“I did have a goal for myself when I - very early on playing tennis, was to make it to the pro circuit.”* (Levis, player); and another stated; *“I want to become a professional tennis player”* (Jewel, player). Parents seem to share and encourage such aspirations.

“He’s got a big picture goal of [being a] professional tennis player. “I am a bit more [realistic] ...but I would like to see where he can take it [tennis] if he puts effort in that he thinks he needs” (Natalia, Parent).

Coaches reflected that becoming a professional tennis player was difficult to achieve for most children but having high aspirations was important to help facilitate enjoyment and motivation to play particularly during childhood and early adolescence. For example, a coach commented.

“Some parents will say, do you realise that my son or daughter, this is the thing that they love most of all, they want to be a tennis player. Do you know what? They’re absolutely hopeless. They’ve got no hope of being a real tennis player, but they just love doing it” (Desmond, coach).

Coaches and players further discussed the importance of aspirations. One coach felt that players who did not have these aspirations at a young age influenced drop out and this was evident for one tennis player who had dropped out of tennis during late adolescence:

“I didn’t really want to become a really good tennis player, because at that time (Childhood) I didn’t have that mindset. But whenever I remember our trainers

whenever we did something, like we achieve something, they used to give us rewards and stuff. That was one thing that motivated me.” (Aiden, player- dropout).

Alternatively, some players who had aspirations for greatness during childhood, reported that they were able to redirect this passion to continue playing tennis for enjoyment “*When I was a kid, I always wanted to be a professional but I think now I just... my dream for tennis is just to keep playing and enjoy it*” (Trixie, player). One coach explained that most players, and especially girls, give up pursuing the challenge to reach an elite level by late adolescence. “*Actually, girls are smarter though, they realise they're not going to make a champion [earlier than boys]. Boys, no matter what they're like, they'll think, I'm still [going to be] really good. They'll keep going. It's an odd one, that one*” (Desmond, coach).

(b) Competency

Players’ competency in playing tennis was identified as one of the strong motivational factors for players to continue playing club tennis. The study identified a couple of factors that are linked to the theme competency such as the importance of being challenged and the competitive spirit of the players.

Difficulty in gaining competency in a complex sport like tennis arose as an issue in retaining players in club tennis during the interviews. A player commented “*You need to have a lot of speed, stamina, strength, and aim. You need to put that altogether [and], then you will get better*” (Aiden, player- dropout). Agreeing with this opinion, one of the coaches observed that complexity of the sport was a challenge for many children who start playing in their early years and it was described as a reason for players dropping out from the sport. For example, in the excerpt below a coach discussed the importance of competency for motivation to play tennis and felt that the skills to play a sport like tennis was different to sports like soccer:

“I think what’s happened is, they’re pushing kids younger to do the sport. Those kids that are younger that are doing the sport [they say] ‘can’t do it’ so therefore they have that ‘can’t do’ mentality and they’re, ‘Mum I can’t do this’, ‘I don’t want to do this’. Because for some of the kids it might be embarrassing. Especially if they’re doing an activity that they can’t do. Where football training, just say if they’re playing soccer, it’s - the skill required to kick a soccer ball or make contact with a soccer ball is a lot less difficult than trying to hit a moving tennis ball that’s moving away from you” (Jack, Coach).

The quote above also suggests that children and adolescence compare their performance (or ability) to a particular standard (or image) of ‘playing tennis’ and when this standard is not met, they dismiss the activity (*‘I can’t do it’*) rather than reflecting on their performance and seeking to build upon their skills in playing tennis. Overwhelming coaches agreed that a lack of competency can affect young players’ motivation and enjoyment in tennis. Children who cannot improve in their skills are unlikely to be motivated to continue playing the sport and so it is a major determining factor for retention. For example, the following coaches commented:

I think competency is a really big important factor in having fun in tennis (Stanley, coach).

I find that the kids that aren’t improving are the first ones to quit. If you are really bad at something, the odds are you won’t go back to it (Alex, coach).

Most kids... probably get upset at themselves that they’re not doing well...they feel like they have a lot of pressure on them (Sam, coach).

However, one coach felt that competency had a greater influence on children playing in local competitions than playing club tennis as it is not competitive like competitions and also children have opportunity to play with players of different skill levels:

I think competency level - once they get into club tennis and they're playing, competency level to me doesn't have a big factor because there's a big range of kids

that can play. I think competency level does have its barriers for the getting into competition. A lot of kids will drop out because they're not competent and then they won't play a club competition (Patrick, coach).

(c) Being challenged

Being challenged gives the players the opportunity to evaluate their skills and ability and helps them to work on their strengths and weaknesses. For several players the opportunity to challenge themselves in a competition brought excitement and motivation to continue playing and they saw it as an opportunity to help them to improve on their own performance. For instance, the following players and a parent commented:

When I play someone who's better than me, I play better and I like that because it shows me what I can actually do (Levis, player).

Playing people who are older; they have more practice and knowledge, then you allow you to expand your knowledge as well (Henry, player).

The winning is not the motivation. To have the appropriate challenge. Sometimes for particularly the seniors it's better a match that you don't win, that you are challenged and your skills are really put to the test... (Natalia, Parent).

Two coaches recognised that players with higher skills can easily become discouraged from playing tennis if they are not adequately challenged when playing and competing in tennis. Consequently, these coaches consciously provided such players with exposure to higher levels of play at other clubs and in senior level competitions.

I've got about three kids... who instead of playing at our club where their teammates haven't been strong enough, they've gone to other clubs that are close by. They've been happy to do that. But their tennis would have - I think if they would have stayed at our club, they probably would have given tennis away (Daniel, coach).

We've got a couple of younger guys doing night comp. But weekend comp, try and get them into a senior competition of some sort at an age where that will make them continue. Otherwise, they'll just drop out (Desmond, coach).

A player and a coach reflected that at times this strategy can be counter-productive as only some kids thrive on such challenge and “*others, when they are challenged too much, they lose interest*” (Jose, coach). The male player who had dropped out reflected on a negative experience he had when he played with an older and more skilled player who was also from the opposite sex.

I remember one time there was another girl, she was older. It was girl and boys [unclear]. She was older, I imagine she was two years older or one year older, but she was definitely older than me. She absolutely beat me really hard. But they didn't have enough people, so they had to put in other older people to verse...My mind back then, yeah, I didn't like it (Aiden, player-dropout).

(d) Competitive spirit

The theme competitive spirit primarily emerged from interview discussions with players about what motivates them to play and continuing playing tennis. Players discussed the concept of a competitive spirit in terms of competing to do their best and challenge themselves rather than focusing exclusively on the win or loss. Hannah, a player stated “*I just like to try and make the competitions and all that; whether I win or lose I just try*”. Competitiveness is important for players to manage their nerves, deal with stress and play confidently by overcoming the setbacks and setting realistic goals. Committed young people find tough competition as a motivating factor in developing their own sporting ability and described the importance of knowing how far they progressed in mastering the sport. For instance, the following player commented:

If you lose, it means that you still need to improve and then if you play that same person again and you do better, it proves to yourself that what you're doing is actually working and you are getting better (Levis, player).

Competitions are based on the logic that one must play better to beat others. To be competitive one has to have belief in their own ability as Olivia, a player, commented,

I know that he or she is a really good player. It's not only that, I don't make up my mind at all I'm going to lose or anything. I just want to be like, no, I can do this. I can win it. If they can, then why can't I? So yeah, that motivation I keep it to myself (Olivia, player).

Competitions are always tough and for being competitive in the sport players have to develop the mindset of taking every experience as a learning opportunity and move on. “*I don't get upset because I know that we are all learning from here*” (Olivia, Player).

When children get older, greater demands are placed on them in terms of having sufficient physical and mental skills to handle competition. Players who have the opportunity to develop competitive spirit by late adolescence are able to acquire the coping mechanisms to handle winning and losing, which help their longer-term retention in the game. A player commented, “*As I got older, I was able to build a mentality and push through, and find other ways to motivate me to play*” (Trixie, player). This mindset is a key attribute needed for players to improve their skills and find enjoyment and fun in playing club tennis. Reflecting on this, a parent commented, “*I think if they didn't like that competitiveness they perhaps wouldn't play. They don't mind losing if it was a good game. If they played well, it was a good game*” (Teresa, parent).

Children were conscious that being competitive means “*you have to try hard and all of that*” (Jewel, Player) for success. It was mentioned that the good work ethics are an important attribute for perseverance in the game and children who take every opportunity as a learning experience get something out of every playing opportunity. Desmond, a coach reflected on it:

Those kids have got good work ethic. They want to get the most out of what they do. They're always, if it's rained out, or something like that, they'll always do a make-up lesson (Desmond, coach).

(e) Enjoyment

Enjoyment was an important concept in players decision to continue playing tennis and was strongly linked with skills or competency in the sport, along with strategies from parents and coaches that support skill development in a ‘fun’ way and built confidence in playing club competitions. The study identified three main aspects that contributed to the enjoyment of players in playing club tennis such as competitiveness of the sport, nature of the sport and playing with friends and socialisation.

Players expressed their positive feelings and talked about the fun and enjoyment in playing club tennis. Jewel, a player commented that *“I play tennis because I really love playing it. It's a really good sport and I just have a lot of fun when I play”*. When children love the sport that they are engaged in, they have fun and obviously they continue playing. *“I've been continuing tennis for like [these many years]. I haven't stopped really, so I guess I just wanted to keep going because I was enjoying it a lot”* (Hannah, Player).

A significant contributor to the fun and enjoyment from club-sports is that it provides opportunities for learning and developing players’ skills. Discussions with young players reveal the importance of learning and mastering skills in playing the sport. However, one player discussed this concept further, explaining that enjoyment can be influenced by competency as those that are ‘good at it’ are more likely to enjoy the sport. This player further clarified that even those with less skills/competency can enjoy playing but these individuals need a level of self-awareness and acceptance of their skills and performance to continue enjoying the sport. For example, the player commented:

If you enjoyed it and you're pretty good at it, you'll always want to, but it's also about where you put your mind to it. If you say to yourself, okay, I'm not very good, but I enjoy the sport, that's good. So, it depends. You've got to say where you're at and if

you enjoy it. So, it's got to be the enjoyment. You've got to like the sport (John, Player).

Similar opinions were shared by parents who also felt that children have to love the sport to enjoy playing it and playing without enjoying would be worthless. As a parent commented,

My daughter, who I started off with her having, playing tennis, she didn't like it, so you can't keep pushing a child - as I discovered - into something they don't want. If they're not, if they don't enjoy it, they don't love it, they turn up and it's a waste of time" (Anna, Parent).

While stressing the importance of having fun in playing club-sport, parents see playing club-sport as a good leisure activity and believe it is more meaningful when their children play it to enjoy and relax. At the same time, some parents commented that the high intensity of competitiveness in club competitions can be stressful for their children which impacts their level of enjoyment and motivation to continue playing the sport. A parent discussed how they tried to support their children manage competitive environments in which skill and performance were on display to a wider audience. She commented: "*We probably tried to teach the boys it's about ... go there and have some fun and just relax. Do your best whatever that might be*" (Teresa, parent).

Developing skills for club competitions was also an important element that coaches focused on to help children face challenges in playing competitive sport. This was important because the competitiveness of the sport and difficulty in mastering skills influenced some players' decision to continue playing. Coaches highlighted the importance of teaching skills in a fun way to help children achieve confidence in the sport and maintain a level of enjoyment and was especially important for retaining children in tennis. For instance, a coach reflected:

It's the number 1 priority by a long shot. They've got to have fun and they've got to have a laugh... playing should be fun, as well as competitive and all those sorts of things, but if it's not fun, a lot of people will stop doing it (Daniel, coach).

Echoing a similar sentiment, another coach pointed out that coaching sessions should be fun for players and stressed the importance of understanding the fun promoting factors in coaching. For children in their early playing years fun and enjoyment play a crucial role in choosing and playing a specific sport. The coach is a key contributor in ensuring a positive learning experience and how coaches structure the learning environment is important in creating enjoyment. Failure in promoting enjoyment and fun in playing the sport is an indication of ineffectiveness of the coaching strategy. As a coach commented:

Our number one priority is for them to come away with a smile on their face. If we can't achieve that, then it's gotten a bit too serious so we have to change the way that we coach that particular child (Jose, coach)

The level of enjoyment or the “fun factor” for each player can vary and is influenced by their skills and playing level. Coaches therefore, had an important role to help players continually improve their skills to sustain enjoyment and progress players in their tennis journey. Coaches discussed how challenging is the task of balancing skill development and fun to sustain enjoyment and participation. Most importantly, was the need for players to enjoy developing their skills in tennis and be realistic in their expectations.

If you're not good at something, you'll never enjoy doing it. There are so many different factors that contribute to players [firstly] wanting to play and then continuing to play. So look, enjoyment is a ... big part of it but ... if you don't improve, you don't enjoy it, right? So, I think there's a bit of a catch-22... they need to improve but they need to have fun. They need to enjoy improving as well (Alex, coach)

Some people with really good ability are almost too much of a perfectionist. It will frustrate them so much that they can't get this absolute perfect serve that landed on the line, or something like that. Whereas the kid with less ability's happy to serve the

ball in the square. So, yeah, it's a funny thing with tennis that way. Keeping them going is a really hard thing to nail down what keeps people going (Desmond, Coach)

However, coaches observed that players' motivation shifted as they improved in their tennis skills, from 'enjoyment' to a focus on performance outcomes such as ranking points:

Enjoyment is not an important factor for players when they achieve skills and taking the sport seriously, and the problem with a lot of kids is the enjoyment factor, they don't understand that and they're worried too much about the outcome, rankings, stuff like that (Peter, coach).

The more their skills increase, the more serious they tend to get and that enjoyment kind of goes and this is due to the pressure for players to perform well – (Jose, coach).

(f) Competitiveness of the sport

The competitiveness of the sport was another factor influencing players' decisions to continue playing tennis and was closely linked with enjoyment and fun. Players with more skills experienced fun when competing in club competitions because it provided an opportunity to challenge themselves against others. For example, one player stated that *"I'd say I probably more enjoy the harder competition side of it, which sometimes that is in the local tennis"* (Levis, player). For players, like Levis, who was playing club tennis both in junior and senior level, the competitiveness of competitions was a driving force and this was particularly among children who have a fair amount of competency in playing tennis. Levis' parent commented: *"I can see for other children it's different but for Levis it's the competition that keeps him playing"* (Natalia, parent). Another parent highlighted the importance of the closeness of the competition stating *"they don't mind losing if it was a good game. If they played well, it was a good game"* (Teresa, Parent). This highlights the importance of clubs matching skill level with an appropriate level of competition.

On the other hand, competitiveness of the sport can create a lot of pressure for some players which affected their level of enjoyment. For example, a player commented:

“Playing competitions (I am) are nervous because I don't know who they [opponent] are, and different people from different height and how they will serve” (Olivia, player). Another player, who had dropped out of tennis [Aiden] commented that *“I like more training than competitions because competitions put a lot of pressures on me”* (Aiden, past player). This highlights the importance of clubs allowing children and adolescents the flexibility to train with others in the club but not commit to club competitions. However, some coaches were focused on getting players into competitions. For example, a coach stated:

Although, the big problem with tennis is that it's an individual sport. Team sports are a lot more fun for kids. So, as soon as I can get them into competition, as soon as they're good enough to play competition, I'll try and do that... But once they start playing competition, they really get hooked on it. They love it. (Desmond, Coach)

A parent also identified that players not only felt pressure to perform in terms of playing tennis but they also had to referee their own matches which added to the pressure to maintain fair play. In addition, some spectating parents further added to the pressure and competitive social environment, which can contribute to negative experiences for their child or their child's opponent. A parent commented:

They get really upset when you've got kids that cheat... where you referee yourself, especially as juniors ...you've got kids who are super competitive or you've got parents... I can say from my perspective that I hate having parents that are so overbearing and hanging off the fence (Teresa, parent).

(g) Nature of the sport

Children enjoy a sport for different reasons. Playing an individual sport like tennis requires more stamina and skills that appeal some children: *“I just really like a lot of racquet sports, because I got to hit stuff, so probably when I was really, really young... I always loved hitting stuff”* (John, Player). When children get older the sports that provide

more challenges and test their ability and stamina will be more appealing for such players, as a player commented: *“It made me really interested in it because the way you play tennis and how you change to shift ways and everything, there is a formation that really interested me a lot”* (Olivia, player).

Also, the independent nature of individual sports like tennis attracts people who like the freedom to practice and perform their skills and ability and take the ownership of their success solely. As Henry, a player commented *“I’ve tried other sports and I kind of picked tennis because I have to depend on myself, more than others, when playing”*.

Parents shared a similar opinion while discussing their children’s choice of playing tennis. By highlighting the aspect of tennis being an individual, non-contact sport, Anna, a parent commented that: *“It was something that he chose ...possibly because it was a solo sport. It wasn't necessarily a team sport and it was something that he could work at his own level”* (Anna, parent).

(h) Playing with friends and socialisation

Playing with friends is seen as a major attraction and enjoyment factor for several youngsters in playing club tennis. Social influences are particularly important during childhood and adolescence. Friends are a primary point of reference in deciding children’s sport participation behaviour as John, a player commented: *“Well, I like the [sport] but I also like playing with friends and [friends]- is a big factor”*. Players find tennis provides an opportunity to hang out with their friends and have fun while working hard and competing together against others. For example, Henry, a player said: *“I mainly enjoy it when there’s friends around as well. I’ve managed to get a lot of my school mates to come along and join me while playing”*. Friends was also a motive for re-engaging with tennis

after dropping out: *“If I ever play tennis again, it will most likely be with my friends”* (Aiden, past player).

Parents shared a similar view and discussed how children enjoy playing with their friends and playing club-sport give children opportunity to make new friends. Some of the best outcomes of playing club-sport are tied to the social relationships that develop when playing sports. As a parent commented about her child’s sport participation: *“She does have friends playing tennis and she's also made new friends from playing tennis as well”* (Alice, Parent). Other parents further elaborated stating that friendship and the social side of tennis was more important than progressing in tennis, commenting:

She’s happy playing where she's playing, I don’t think she wants to try and play at any higher level at the moment. She's more enjoying the social side of it now (Derik, Parent)

Some want to just play with their friends. Particularly girls, they are just happy to be playing with their friends. A lot of them don't mind what standard they're playing as long as they're playing with their friends. (Natalia, Parent)

They've been playing together for a long time ... if we were to sort of split them up and say oh, no well you've got to play in a different team or whatever, I'm pretty sure they would definitely consider not playing (Stacy, parent).

Coaches also highlighted the advantage of keeping friends together and one coach noted that several youngsters play tennis because their friends play *“If you have one friend in a group of say 10 kids and that one friend decides to do tennis, you find you might get six of those kids doing tennis”* (Jack, Coach). When children start to play a sport only because their friends play it and not because they enjoy it, they drop out from sport if their friends quit. *“They might like to do the activity because their friends are doing the activity but they don’t realise that they enjoy it. But then their friends stop, so they decide to stop”* (Jack, Coach). Many coaches recognised this as an issue and found it important to promote

social skills in children while they are in club-sport. Social connection among children is important and creating opportunity for players to develop friendship is a good strategy to tackle this challenge to retain players.

Sometimes you want kids to meet other kids and get out of their comfort zone. So you can't really always give the kids what they want. In some situations, like you can't really tell them, oh, you can be with your friends the whole time. You need to let them make new friends, meet new people so then they can enjoy the other sport as well.
(Sam, Coach)

Many coaches recognise that higher levels of peer support and quality friendships are linked to higher ratings of sport enjoyment, commitment and continued sport participation and the often develop various strategies to use mateships for improving children's interest and performance. As Jack, a coach commented:

What I try and do is in the coaching is get kids that aren't friends at the start. Maybe to - teeing them up a lot and even get them to stay back and have a little hit together or do something together or - just so they get to know each other at coaching. So, therefore they have a buddy as well. So, if their good friend drops off, they're like, well I've got my other buddy there, I'm going to continue playing the sport

While recognising the strong impact of friendship in children's participation, coaches feel that allowing children to interact only in their comfort group can be a challenge in their continued participation by making children feel lost in the absence of their friends. Strategies for creating opportunity to bring children out of their comfort group and making them capable of interacting and confident in making friendship with people outside their friends' group are important. This will maintain the motivation and enjoyment for players to continue playing even when their friends drop out.

I work out who the strong connection friendship groups are and then I try and split them up in the sense of pairing other kids - so they're not always just pairing with their buddy. So then they have another friend to work with. What I try and do is in

the coaching is get kids that aren't friends at the start... teaming them up a lot and even get them to stay back and have a little hit together ... So, therefore they have a buddy as well. So, if their good friend drops off, they're like, well I've got my other buddy there, I'm going to continue playing the sport (Jack, coach).

However, one coach felt that friendship is not a major influence for players at a more advanced level. Once the players acquire their skills and become confident, they get out of their comfort circle and find enjoyment in looking for more challenges. Improving their competency and their mastery in the sport is more meaningful for them. As a coach commented: *"They like to play in teams with their friends, but when they get to a certain level, skill wise, they're happy enough to go to other clubs and play with other people to continue with their skills"* (Daniel, coach).

The value of social connection that children gain through playing club tennis is well understood by parents who realise that their children's elite sport ambitions are difficult to achieve but see that working for the higher goals will help their children to achieve lot of other life skills. They acknowledge the exposure and opportunities that can be gained by their children along with developing friendship through playing club competitions. One of the parents highlighted how it motivates their children's continued participation.

He's got a big picture goal of professional tennis player... But I would like to see where he can take it if he puts effort in that he thinks he needs... at the very least it's giving him social skills, some great opportunities, meeting other people. (Natalia, Parent)

Agreeing with parents' opinion, coaches identified that playing club-sport provide opportunities to foster children's overall development. Coaches believe that tennis coaching is also an avenue to develop values, character and social skillsets in children. The sport environment is an appropriate place to learn life skills that children may transfer to their sport and other areas of life, as a coach reflected on how playing club tennis promotes

social skills that enhance enjoyment in players: *“I think their social life is more important to them than their skills ... So, I tend to encourage their social life and try and teach them as many skills as I can”* (Daniel, Coach).

(i) Sportsmanship

Most players seemed to understand the essence of sportsmanship. For many of them even though winning was important, it was not always the most important aspect of playing tennis. As a player commented, *“No matter how good you might play; you're still always going to lose sometimes”* (John, player). Some players were able to reflect on their performance, respect opponents and continued to enjoy the activity for its own sake (i.e. sportsmanship) regardless of the outcome. For example, one player commented:

I've lost competitions now and then, but I've never gotten frustrated or I've never known anyone who's gotten frustrated. I think as long as you try your best and get a good time out of it (Henry, Player).

Parents reflected that they had deliberately nurtured qualities of sportsmanship in their children by role modelling the behaviour. For example, a parent reflected: *“Even if I've been beaten - I used to get beaten really badly, but if you know you've played really well, yes, fine they were a better player, that doesn't worry me and that's I think what my kids have been the same too”* (Stacy, Parent). Further, another parent explained how they deliberately attempt to teach positive traits by considering their children's sports participation as an avenue for character building. Natalia, a parent, commented on how her son took the initiative to help his friends to improve their tennis skills, following her advice: *“Well, and that's probably more my directive that he's playing junior tennis to help bring others up to the standard that he's at”* (Natalia, parent).

Parents and coaches also recognised that sportsmanship is an important life-skill and children needed to be appropriately supported in developing this quality. The type of

‘support’ was not overtly elaborated on, although it was implicit that this support has to be provided within the social environment of playing tennis.

Support is more needed around [the child] being able to win graciously, to be able to lose graciously, to be supportive of your partner, to always be trying your best, good manners and all of those sorts of things ... They're all life skills... (Teresa, Parent).

It's an individual sport, so you don't really have much around you, except for yourself on the tennis court most of the time. So you need to have a really good mindset, learn how to control your anger and your emotions and everything on court as well. Because otherwise it really affects the other people around you. (Sam, Coach).

(j) Passion

Throughout the interviews, participants reflected on how their passion towards tennis provided them the enjoyment and motivation to continue playing. John, a player, commented: “*for me, the best thing about playing tennis is playing tennis*” and Levis, also a player said: “*I don't know how to explain it, I just enjoy it; being on the court, just playing it just makes me happy*”. Olivia is a player who dropped out from club tennis due to school work but later restarted playing. She believed that players with passion for tennis will be more dedicated to persist and continue playing in the face of different barriers and commented:

People like me who are really dedicated, who are really passionate... we still come back unless we are having something which is really bad or something like that, but we still come (back).

When children play different sports, they derive different types and levels of enjoyment from each of them. But when they have to decide to continue with a single sport, they are inclined to choose a sport that they love to play and in which they are happy to invest their time and energy on a regular basis. Agreeing with this, a parent observed that

children choose to continue playing a sport that they love: *“I’ve tried to encourage him to do other sports but for some reason he loves tennis”* (Anna, Parent). Parents believed that rather than pushing them in to it, children’s self-developed passion for the sport was important to harness to support them to continue playing. *“He came to the sport because he liked the sport, not so much because there were particular people there that dragged him along.”* (Natalia, parent). Parents seemed happy about their children’s passion for tennis as a great option for keeping them active and healthy, and actively encouraged it. One parent commented:

It's a bit hard to drag a teenager out of bed, but...it's amazing what the love of the game does ...It will be the only thing he will get out of bed for...It's great that he has a passion for something else that is healthy and gets him away from the PlayStation or the TV screen (Anna, parent).

Coaches consider passion as a major driver for young players to continue playing tennis. One coach reflected that *“As a player myself and now a coach - I mean, you play because you love the sport”* (Jack, Coach). Passion is a key determinant in learning skills and providing motivation to improve performance despite adversities, especially for players with lower competency:

Some kids I coach ... they lose so many matches, amazing. One of the guys has been playing for about five years of competition... lose nearly every week. He still loves to - he improved a lot. He's gone up through a few sections in grades, but he just loves doing it (Desmond, coach).

(k) Feeling of success

Feeling of success creates pleasure and satisfaction in players and hence it is an important motivational factor to continue playing. Although winning is not the sole purpose of participation in sport, winning has a big part in creating the feeling of success and enhancing motivation of players to continue playing the sport. A player stated: *“Yes I used*

to win matches, as I said, that motivation and everything kept me (playing) like that” (Olivia, player). Lack of success can affect children’s desire to continue playing a sport, especially for children whose motives for participation is to compete and win. Desmond, a coach observed that *“Some kids... can't take it, losing the matches and (for them) that's frustrating”*.

Agreeing that winning is an important motivating factor to continue playing club tennis, another coach pointed out that children who continually fail to win matches lose their confidence and the feeling of incompetence discourages them to continue in the sport:

“For children, they lose their confidence because they start to lose matches. Then they lose interest in the sport. Then they’ll find an excuse, I don’t want to go to training, I don’t want to go play that match, my tummy hurts and then you’ll see them not coming back. So, winning is a big contributor” (Jose, Coach).

A similar opinion was expressed by a parent *“If she was losing all the time, then definitely ... there's no way she'd keep playing”* (Stacy, parent) and player also commented *“the feeling of failure, I didn’t enjoy”* (Trixie, player). Low performance at the competition can be a reason for children’s dropout from the sport. Jai, the parent of a dropped-out player, reflected: *“Yeah, I think he, he didn’t win any, I think ... Yeah, sometimes ... I felt like that”* (i.e. losing matches could be a reason for his child dropping out from playing club tennis).

A coach had the perception that feelings of success vary with individuals’ ability and aspiration and possibly, with age. Younger players feel success in a new skill they developed, like getting a ‘serve in’ or a ‘rally going’ rather than in winning a game. For example, one coach commented:

Even if they haven't got any ability in the first place, if they can just get their serve and just start a rally and they have one good rally and it's like wow, I'm a professional now. They remember the good rallies, they don't remember the bad ones (Desmond, Coach).

A player who had been retained long term in the sport (e.g., eight years) provided greater insight into ‘feelings of success’ defining success in broader terms than ‘winning’ to focuses on ‘personal best’ performances and/or ‘mastering’ a new skill. For instance, the player said:

Winning helps everyone a lot or just makes you to - not winning altogether, but just doing your best and getting far in a competition. I'd say another thing would be is when you're at training and you finally, I wouldn't say master something, but you understand what you're doing, it can help a lot (Henry, player).

(I) Playing multiple sports

Most of the players interviewed said they were playing multiple sports, *like playing a winter sport such as footy and playing tennis in summer* (John, player). Children involved in sports with different rules and practices have an advantage of having an ability to translate skills and techniques acquired from one sport to another, while continuing to develop and build upon pre-existing skill sets. For example, Trixie, a player, thought that playing cricket gave her more mental and physical strength in playing tennis competitions.

I think my playing cricket, I have to be really mentally strong ... when I make it onto the court for tennis, even if it's with a fun - just with the women's competition and I get stressed out, I'm able to remind myself that it's just a game and it's going to be fine. So that helps and then it also helps playing another sport that I'm able to be physically active when I'm not playing tennis

When children develop their skills across different sports and activities, they are likely to find that their overall performance in all sports increases. John, a player commented: “*Whenever you train for footy, it obviously does help when you're on the tennis court*”. Several players did more than one sport because they wanted to develop strength and different skills. Olivia, a player believed that *running from one place to another* while playing badminton give her more stamina and “*and it really helped*” her in playing club

tennis. One parent felt that encouraging children to participate in multiple sports has an advantage for them in playing club tennis by *improving hand-eye co-ordination* (Derik, parent).

The only drawback of playing multiple sports that was identified by a parent of a player had dropped out of tennis was that when a child succeeds more in one sport, they find it more enjoyable and prefer to continue playing that sport. The parent of the dropped-out player reflected that his son chose to stop playing tennis due to his interest and competitiveness in playing another sport: *“Because he got a lot of interest in playing chess, because he started to win.”* (Jai, parent). However, Stanley, a coach felt that playing multiple sports will help children to choose the sport suited for their skills and commented, *“Some kids might have tried other sports and not been very good so then they're giving tennis a go. Whereas they might get success out of simply just hitting the ball over the net once”*.

(m) Self-efficacy

Responses from players who participated in the study indicated that playing well enhanced their self-efficacy. As a player reflected: *“I consider I am doing really well.... pretty well compared to any person who, like my friend who started at the same time as me”* (Olivia, Player). Relating to this John, another player commented: *“If you're playing well, that's obviously going to make you more confident ... well, that's always going to make you either want to get better or keep going”*. Confidence from experience results in a degree of persistence in players when facing a difficult task. As Trixie, a player who playing club tennis for many years, commented: *“Being able to play singles allows me to have my individual confidence and it empowers me to keep playing”* (Trixie, player).

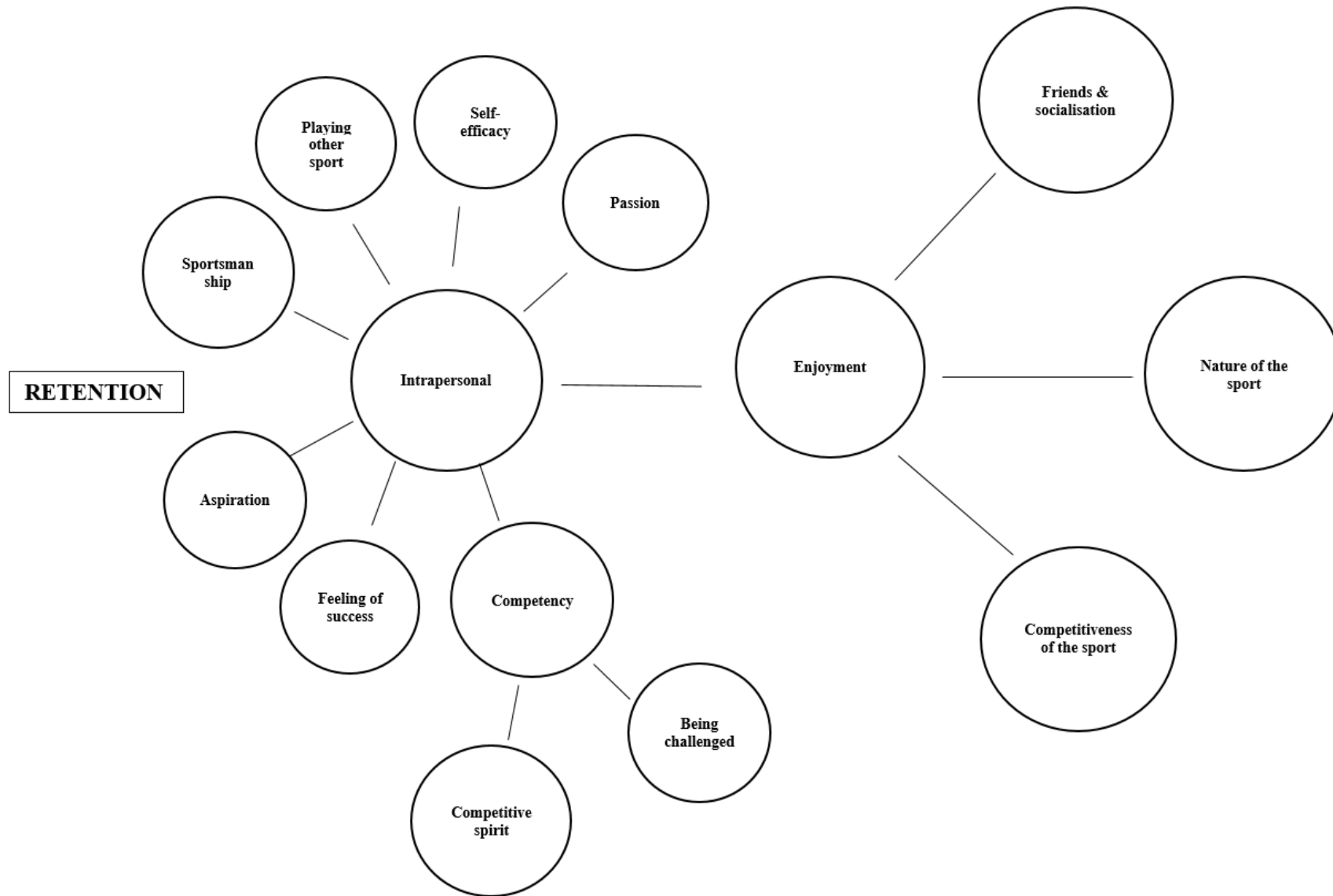
Self-efficacy makes young players able to take the challenges in the path towards performing well. One of the players expressed awareness about this: *“For increase in confidence, I think it's just all of them together; spending more time on court, more time practising; time off the court practising”* (Levis, player). This quote indicates that players who play/train more gain more confidence as they likely improve their skills with practise.

Coaches stated that they try and nurture player’s self-efficacy to unlock their full potential with different coaching strategies. Boosting players’ confidence through emphasising on positive traits and giving positive feedback help the players to convince themselves on their ability to perform a specific task. This will reflect in players’ approach to the game and their performance. As a coach reflected, *“I focus on things that they're not doing well and things that they're doing well. I tell them that ... they're playing well and doing their best and trying hard and all those sorts of things”* (Daniel, coach). However, a coach observed that if players cannot adapt and successfully make use of their practise then it will not have any impact in their self-efficacy: *“A coach can create confidence in you and it's great in practise, but if it doesn't transfer to matches, then that's just - it's a fake confidence”* (Alex, coach).

Pressure of playing competitions would be physically and moreover, psychologically challenging for many young players. It is important for players to maintain good mental balance to successfully perform and increase their self-belief. Recognising the importance of having a good mindset in children to increase their confidence in continuing playing an individual sport like tennis, a coach commented:

“Basically, just having a good mindset. That's basically one of the main things that you need to have when you're playing tennis and important for children to increase their confidence in playing tennis” (Sam, coach).

Figure 25: Schematic representation of intrapersonal factors identified in the qualitative study



4.3.2.2. Interpersonal factors

The interpersonal domain of the socio-ecological model deals with the social connection and interaction of an individual with other people such as family, friends and coaches that can influence their behaviour (Vella et al., 2014). Table 39 (following pages) shows the interpersonal concepts that arose from the interviews with the participants and these were related to role models, friends' support/influence, family and parental support and coaching. The details are presented below.

Table 39: Major themes and sub-themes identified based on the interpersonal factors

Major themes	Sub themes	References				Quote
		Players	Parents	Coaches	Total	
Role models		5	1	1	7	<i>“Yeah, I watch the tennis players and that’s what made me want to play”. (Jewel, Player)</i>
Friends support/influence		6	2	6	14	<i>“if their friends aren’t then progressing through to seniors, then I guess then they’re not either. So, they’re sort of then finding other things to do”. (Stacy, Parent)</i>
Family/parental support		8	5	8	21	<i>“Because if your parents or your family aren’t supporting you through tennis and you’re not really winning, that’s obviously going to lose all your confidence” (John, Player)</i>
	Parents’ support- interest and involvement in club tennis	8	7	4	19	<i>“if the parents aren’t out there playing, then I don’t think the kids are going to be around the tennis club” (Patrick, coach)</i>
	Parent’s support- volunteering in club administration	0	3	0	3	<i>“Tennis is very much around who you know. So, if your parents are involved – look, actually lots of junior sports are like this. If your parents are involved then the pathway for your children is a little bit easier than if you don’t”. (Teresa, Parent)</i>
	Parent’s support- Transport, financial & finding playing opportunities	5	5	4	14	<i>I’ve got one or two parents down here who love taking their kids down to the Australian Open and the Kooyong Classic. They’re the kids that are improving fairly quickly (Daniel, Coach)</i>

Major themes	Sub themes	References				Quote
		Players	Parents	Coaches	Total	
Coaching	Parent's sporting behaviour	0	1	5	6	<i>I hate is having parents that are so overbearing and hanging off the fence. It's like, just let the kids play [laughs]. Let them enjoy, you know you're sucking the life out of them because you're putting so much pressure on them. Then those kids get the feeling of they've got to perform, they've got to perform" (Teresa, Parent).</i>
	Sibling's involvement	6	4	0	10	<i>"Started seeing my sister play tennis and then as I obviously - as time passed, as I grew older, obviously I started enjoying it more" (Hannah, Player).</i>
			6	7	21	<i>"I think ...coaching helps manage the pressure more so, because he's helped me improve and he's told me what I personally need to improve on and how I can improve on this" (Levis, Player).</i>
	Coaching strategy		1	8	9	<i>"We do some really good drills which, one, is about competition. So, there's a competition-based side of it. But one, there's a really high-energy atmosphere around the drill as well. So, when the kids then become into competition, they're used to that high atmosphere, high intensity level" (Jack, Coach).</i>

**References are the number of participants in each group responded for a specific theme*

(a) Role models

Influence of role models was found to be a significant factor that motivates children to play tennis. This is reflected on the comment of Jewel (player) about how she started playing tennis: *“I watch the tennis players and that's what made me want to play”*. Another player mentioned that the inspiration in playing club tennis and aspiration in continuing playing the sport was gained from watching major tennis events. *“I always used to see the Australian Open and everything of the tennis. This is where I got interested in it”* (Olivia, Player).

In the opinion of one of the parents, providing the opportunity to watch tournaments and sporting events will help children to learn more about the game, including strategies, rules and skills. Anna, a parent, felt that opportunity for her children to watch their favourite players in action is a great motivation: *“We go to the Australia Open every year and I'd say that is a huge influence as well, is their idols... particularly that age group, they're a little bit star struck by what they see with players”*.

One of the coaches felt that media coverage for tennis is inadequate compared to other sports and suggested that the opportunity to watch more tennis would result in children developing admiration towards star players which can enhance their motivation in playing tennis.

The biggest influence we have is that the tennis on TV, it's only for two weeks of the year ... So, if you ask a kid, who's their favourite tennis player, they wouldn't know. But if you ask a kid, who's their favourite football teams and their favourite football player, they'll tell you (Jack, coach).

(b) Friends' support and influence

Players considered that support by friends was important for direction and motivation in playing tennis and for emotional backing whenever they needed. As Olivia, a player

commented, *“They will always encourage me... if I do this one mistake, they will try to teach me how to do that properly”* (Olivia, Player), Most of the players highlighted the positive influence of friends in their participation in club tennis and in improving their tennis skills. For John, a player, friends’ support was important for practising his skills outside of his coaching lessons. He commented, *“I have one day a week of coaching and then the other days I just do just a few drills and helping your skills with a friend or something like that”* (John, player).

Conversely, friends can often negatively influence players in terms of focusing on improving performance. Players found that presence of friends affect the seriousness of their training. Olivia, a player, felt that presence of friends affected her focus on practising skills because interacting with friends leads to distraction. She commented, *“If they're not there with you, you can focus more on your work ... because I think sometimes my concentration diverts ... because I'm quite a talkative person so I talk with them a lot”* (Olivia, Player).

Friends can make an impression in children’s minds regarding their dedication and approach to playing club tennis which can impact negatively or positively. A parent noted that the friend’s performance, attitudes and skills have a great influence in the motivation and performance of children: *“If their friends aren't then progressing through to seniors, then I guess then they're not either. So, they're sort of then finding other things to do”* (Stacy, Parent). Similar emotion was expressed by a coach who observed that players are influenced very much by the attitude and interest of people closest to them; especially friends.

It just depends on what people you have around you. If you have good attitudes, then that’s a very good, positive outcome. Like say if people are playing tennis and they’re encouraging you to keep playing, that’s very good. If you have friends that tell you,

that's a waste of your time, there's no point, then you're not really having a good mindset. So you need to have positive people around you (Sam, Coach).

Alex, another coach, observed that *"The young ones play because their friends play"*. Influence of friends was strongest during mid-adolescence when it was noted that players within the adolescent age bracket tended to stop playing because their friends stopped playing. One exception to this were adolescent players with a high level of skills. For example, a coach explained: *"There aren't many kids, at any club really, that are playing at 15, 16 [years of age] unless they're at that higher level because they've still got a purpose"* (Jose, coach).

(c) Family/Parent support

Parent support is the most discussed "support" factor influenced children's continued participation in club tennis in this study. Parent support was conceptualised in several ways. The theme of parental support in this study is presented from the scale of support from simple such as support by watching their children play and providing emotional support (e.g. showing belief in their children's ability, encouragement) to more complex or intensive support such as parents interest and involvement in playing club tennis, volunteering in club administration, role modelling, providing transport and financing children's participation and finding opportunities for children to improve their playing skills. Details presented below.

Players who were interviewed confirmed that family environment were very important for their confidence and continued club tennis participation. *"If your parents or your family aren't supporting you through tennis and you're not really winning, that's obviously going to lose all your confidence"* (John, Player). A similar view was expressed by Levis, another player: *"I think it's quite important because if I didn't have support from my family, I probably wouldn't be able to do what I can do with my tennis"*.

Parents can positively influence their child's sporting development through appropriate moral support that will promote the ability to regulate and respond adaptively to emotions. Two players in the interview felt that the emotional support from their family by watching them play and supporting whenever needed was important for them to continue in club tennis. Jewel a player reflected that *"They cheer me on and when I'm not really happy, they support me. When I'm sometimes not happy and frustrated, they support me"* (Jewel, Player).

For many parents, the main objective for supporting their children playing club tennis was getting a level of physical activity for their children to maintain good health and wellbeing: *"Parents wanted me to do that because they were saying that you need to have an extracurricular so that you can study better"* (Olivia, Player).

Coaches emphasised the importance of family's and parents' influence on young players' motivation to continue playing club tennis. One coach commented, *"family is the ones that see you more often than any tennis coach. If your family aren't supportive and they're the ones that spend most time with you, you become a product of your environment"* (Alex, coach). There was also the observation that children from single parent families are disadvantaged and may miss opportunities: *"where the parents are fighting with each other over the kids and all this sort of stuff. The kids won't or can't play comp because of that complication"* (Daniel, Coach).

Coaches observed parent support was crucial for tennis being an individual sport, whereby players must find motivation to improve themselves to achieve their personal goals rather than being carried by the team's momentum to get there: *"it's a tough sport because it's very individual, so you need to have that support from your family, encouraging that you can keep going"* (Sam, Coach). A player also confirmed how

important his parents support and belief in his ability was in his motivation to continue playing tennis: “*just belief in me and their (parents’) support*” (Levis, player). Coaches also discussed parental support in terms of providing emotional support and helping to develop resilience and skills to teach their child how to accept defeat and learn from the experience. A coach commented:

They just basically have to be understanding and accept losing. Losing is learning. If they look at it as learning rather than losing, then parent and child can then work together. Otherwise, they’re always working against each other and you’ll find that child won’t stay in the sport and the parent won’t enjoy taking that child to the sport (Jose, Coach)

(d) Parents’ support-interest and involvement in club tennis

Parents who played the sport themselves influenced their child’s motivation to play club tennis, as a parent commented: “*they didn’t have to play but we - my husband and I - always played so they just joined in*” (Teresa, Parent). Players reflected that their parents’ interest in tennis and readiness to join them on court were an important motivating factor. “*My whole family’s been around tennis at one point in their life, they’re really supportive of me*” (John, Player). When a sport is introduced by their family, children get the opportunity to try it in an informal setting and more opportunities to practise outside traditional programs/training in a more relaxed environment. This makes the sport more enjoyable for them and they would want to continue playing it. For example, Levis, a player said that he started playing tennis because his mother played the sport: “*I think it was because my mum had played and because I was just enjoying being on the court*”. Parents even watching the children play and cheering for them makes a big difference.

Coaches also agreed that if parents have interest in tennis, children are much more likely to play the sport and continue for longer. Alex, a coach felt that “*The young ones play because their parents push them into it.*” Patrick, another coach, observed that parent’s

lack of interest in playing club tennis may affect kids' motivation to participate: *"If the parents aren't out there playing, then I don't think the kids are going to be around the tennis club"*.

(e) Parents' support- volunteering in club administration

Parents' involvement in club activities gives them the opportunity to influence decision-making at the club. Many parents believed that it was important to get their children adequate support for their progress in the sport. For instance, one parent reflected that her involvement at the club was helpful for her children in accessing opportunities to play in the desired levels and skills that influenced their continued participation.

My boys have been very lucky with – and part of this is my doing. Tennis is very much around who you know. So, if your parents are involved – look, actually lots of junior sports are like this. If your parents are involved then the pathway for your children is a little bit easier than if you don't. I'm one of those people to put my hand up to be on the committees... it does mean that I have been able to say, hey my son needs to play A-grade, is there any chance that there's a spot in your team? (Teresa, Parent).

Sports clubs have the responsibility of providing a positive playing experience and equal opportunity for players to progress and move to higher levels. However, the above quote indicates that children's prospects to "move up" can be dependent on their family's or parents' influence in the club. Teresa, the parent who made the observation, also admitted that it is unfair for those players who do not get opportunities because they don't have anyone to recommend them, even though they have good skills.

(f) Parents' support- financial, transport and finding playing opportunities

Perhaps the most significant input by an average parent in their children's involvement in club-sports is dropping them off and picking them back from the sporting venue and paying the cost of membership, coaching and equipment. Parents

overwhelmingly agreed to this when asked about their main contribution: *“Probably driving him there and back for his matches and paying for his lessons”* (Anna, Parent).

Players felt that their parents’ financial support was crucial for their participation and progress in the sport. Levis, a player, felt that support from parents for transportation and finance were important for his club tennis participation and for extending his skills through playing tournaments: *“...because without support, I wouldn't be able to get to tennis on the weekend and I wouldn't be able to play in the tournaments that I play in”*.

However, parents were also aware of the competitiveness of playing tennis as a club-sport and the importance of acquiring higher skills to continue playing. One of the parents said that they were keen to give their child the opportunity to play tournaments which they felt will provide him more exposure and challenges to improve his skills:

My husband and I follow his tennis and support his tennis and take him to tennis tournaments... Because as a junior he's not getting competition with those his own age here, so by going and playing a tournament - there's some in Ballarat or Bendigo or Melbourne - then he's getting to play against kids his own age and realising that he's not the best in his age group. There's other people out there (Natalia, Parent).

Parent support was emphasized by coaches where they discussed how parents supported their child play tennis in a variety of ways – from providing a wide exposure to tennis events and playing tournaments, explaining how important parent support was when playing a primarily ‘individual’ sport like tennis, and how parent support could help to develop resilience and skills to learn from matches. A coach commented:

I've got one or two parents down here who love taking their kids down to the Australian Open and the Kooyong Classic. They're the kids that are improving fairly quickly, and they're the ones that have got the high skills, because their parents - and the parents will take them to little tournaments, and all those sorts of things (Daniel, Coach).

One coach felt that parents' laziness and lack of interest in providing support to children in their sport participation dampen children's progress and motivation to play.

I had twins come for two years and every time they came along to the tennis, they borrowed a racquet. Two years they came along, they just improved their tennis, but they just never, ever bought a racquet and they just stopped. It was just crazy. So, they couldn't practice. They didn't ever practice. So, you just don't know what parents are thinking with their children (Patrick, Coach).

(g) Parental sporting behaviour

At the same time, some types of parental support were negative; particularly when parents became over-involved in their child's performance. Too much emphasis by some parents on their children's performance can mount pressure, affect enjoyment and create a negative environment which affects a child's mindset and behaviour. It can lead to bad sportsmanship, loss of enjoyment and dropout. For example, a parent commented:

(what) I hate is having parents that are so overbearing and hanging off the fence. It's like, just let the kids play [laughs]. Let them enjoy, you know you're sucking the life out of them because you're putting so much pressure on them. Then those kids get the feeling of they've got to perform, they've got to perform (Teresa, Parent).

Coaches agreed that parental pressure on performance was a major challenge to maintaining children's motivation in tennis: "There's some parents that are quite pushy and then you can see that the kids don't enjoy it" (Stanley, Coach). Parents with high expectation about their children "groom their mind that they're going to be a champion tennis player and they're not worried about anything else" (Desmond, Coach). They want their children to play to win rather than have fun and enjoyment. However, another coach believed that along with enjoyment children need a certain level of pressure to make them work harder on their skills and perform well and he commented, "A balance of nice parent and a pushy parent will be ideal for motivating children in continue playing sport" (Alex, Coach).

Coaches stressed the importance of parents collaborating with coaches and children to improve their child's tennis skills. A coach commented, *"You've got to have the parent working together with the child and the coach - be on the same page - so that everyone improves"* (Jose, Coach). At the same time unnecessary parental involvement will affect children's coaching experience. Once the children are entrusted to them, coaches are responsible for their progress and performance and think that parents have to trust them by acknowledging their proficiency in training their children. Parents' role is supporting rather than interfering:

You know that your child has a coach, the coach knows what he's doing, so you've got to basically let that go. Because, basically, the coach knows what he's doing, and he knows what he needs to do for the child (Sam, Coach).

Linking to this, another coach commented that parents letting children make their own decision will promote more enjoyment. By giving children the ownership of their sport participation, learning and enjoyment they will have the freedom to play the sport in the way they like and enjoy it rather than playing for parent's satisfaction. Regarding this Stanley, a coach commented: *"I think a parent that lets their kids make the decision of when they play and they're there to support them on that decision"* (Stanley, coach).

(h) Sibling's involvement

Players interviewed believed that siblings' involvement had been a big inspiration and motivation for them to try out and keep playing club tennis. Hannah, a player, talked about how she started playing club tennis after *"seeing my sister play tennis and then as I obviously - as time passed, as I grew older, obviously I started enjoying it more"*. Watching older siblings play tennis provide the opportunity for younger siblings to get to know about the structure and rules of the sport and develop the confidence to try it. A parent agreed

with this sentiment explaining that when siblings play the same sport, they help and support one another which provide motivation to practise skills and continue playing.

(i) Coaching

Coaches are responsible for creating an appropriate learning environment that motivates children. Players felt that coaching help them to acquire and improve tennis skills, manage the pressure of competition and iron out mistakes. Levis, a player, commented: *“I think ...coaching helps manage the pressure more so, because he's helped me improve and he's told me what I personally need to improve on and how I can improve on this”*.

All players interviewed during the study said they enjoyed coaching sessions, and felt that coaching was important for them in continuing playing the sport. When coaching sessions were aligned with players' needs, they felt more confident in their participation and it motivated them to continue. Olivia, a player, thinks that coaching helped her to rectify her shortcomings, improve her skills and perform well in competitions:

It prepares me for what's coming up for me and they will focus on the things that I'm really lacking on. They don't want to see me lacking on the things that can defeat me really easily. Yeah, and they will teach me that on and on again until and unless I get there, like I get the thing of it

In a club setting, coaches have to cater for the needs of players at different skill levels and with varying interests. They need to create a climate focusing on skill development and motivation, at the same time assuring that the coaching environment accommodates the diverse motives of children they coach. The feeling of progress is a key motivator to continue, as a player commented, *“I'd say I'd learn something about every week, something new or improve something new. We have a schedule we work off, so we'll learn something different every week”* (Henry, Player).

Parents also felt that coaches have an important role in improving children's skills and confidence in playing tennis, and they are a big influence in players' motivation to play competitions. Derik, a parent commented, *"I think the coaching probably helped her play competition, gave her the confidence to be able to do things, play shots and also to beat some, a level of competitiveness"*.

The role of coaches in children's lives often go beyond sports training. While emphasising the influence of coaches on children's sporting life, another parent believed that coaches can be more effective than parents in mentoring adolescents by providing support and advice as they are in a closer position to recognise and comprehend players' emotions.

Because there's a coach that has often been in that situation before to say, this is okay, this is how I felt in this situation, think of the bigger picture. So just that advice that's not parental advice because you can say the same thing as a tennis coach does and they don't listen until the coach says it (Stacy, Parent).

A positive relationship that develops trust and understanding between coaches and players was found as a determinant of continuing sport participation. A player commented, *"One of my coaches always brought almonds to the training sessions ... and I always used to steal them and he always used to bring extra for me. So ... if I did have a good training session, I knew afterwards I would get some almonds"* (Trixie, Player). At the same time, lack of proper interaction and lack feedback from coaches were mentioned by a couple of players as negative aspects. Reflecting on his experience in coaching, a past player commented that he hardly received any feedback from his coach after competitions: *"There's no emotion, it was like they just kept watching, they didn't say anything"* (Aiden, dropped out player). Another player who appreciates the support from her coaches, said that the attention she received during training sessions had been inadequate: *"The coaches,*

they're meant to help you and I think when I was doing my training sessions, I probably didn't really see that" (Trixie, player). One of the parents mentioned that some coaches in club were indifferent in performing their role and believes that clubs should put more effort in motivating players to reduce dropout of players: *"Coaches are actually, they are doing I think their business"* (Jai, Parent).

Coaches who participated in the study expressed the opinion that motivation, positive attitude and dedication are important for coaches to perform their job well. For example, a coach commented,

Basically, make sure that your energy stays up as a coach. It can be a bit difficult if you're trying to do something and someone can't do that skill, but you've got to keep the energy up and stay positive the whole time. Not go quiet as a coach if that makes sense (Stanley, Coach.)

Another coach felt that coaches have to work towards making the coaching experience enjoyable for children through providing opportunities to involve in different learning activities.

It just depends on how you portray yourself, or the tennis court itself. Because if you portray yourself as in like, oh, just going to the tennis court, like as a coach, and you don't give a hundred per cent energy, and you're just there because you just want the money or whatever, that's not something you should be doing. You need to go on the court, get the kids involved in different activities, start them off with the basic skills and just make them enjoy their time there (Sam, Coach).

Coaches also stressed the importance of maintaining good connection with their players and felt that players are *"more likely to stay on if they've got a coach that they get along well with"* (Desmond, Coach). Most of the coaches believed that creating a mutual understanding and positive rapport between coaches and players would be helpful for

enhancing players' aptitude and realising their sporting goals. The following observations by Stanley, a coach exemplify this:

I think it's really important to identify what each kid views as success and go on that, rather than as a coach, I'd love all the kids to be able to rally, play competition, but that's not realistic. So being able to identify and understand each kid's goals and what they want to achieve and really helping them with - saying you don't have to be Roger Federer to play this game. As long as you're on court and you're having fun that's a win for us (Stanley, Coach).

Another coach felt that knowing players individually is important in developing learning strategy to deliver programs that meet their specific needs:

You've got to know your student. Some kids thrive on that challenge. Others, when they are challenged too much, they lose interest. You've got to know your student. Sometimes it's better not to keep them in the group but to keep them more on an individual basis. We can build up their confidence a little bit and then maybe re-introduce them into a group or to a competition level. But if it means you've got to keep them on their own for a little bit longer or take them out of comp, then that's what you have to do (Jose, Coach).

Coaches recognised various issues related to quality of coaching, such as shortfall in standards, competency in coaching techniques and accountability. For instance, a coach commented: *"These days the level of tennis coach doesn't need to be that high...you just have to run programs, so yeah, that's it. It's just again a changing environment...Most of the coaches that are out there, they're only after their own self-interest"* (Patrick, coach). Another coach felt that many coaches nowadays are not skilled to meet the challenge of achieving high competency in players and at the same time incorporate enjoyment in their coaching to ensure children's continued participation.

These days there's a lot of coaches out there that struggle to do one or the other or struggle to do both: create good players and create enjoyment..... I think there needs

to be accountability on coaches, which there isn't. I think there needs to be accountability on clubs, which there isn't (Alex, Coach).

(j) Coaching Strategy

Coaches considered that their biggest strategy is knowing how to improve a player and motivate them for lifelong participation: *“I mean as a coach that's got to be your number one priority, that's your job. You get paid to improve a player. Yeah, we want them to enjoy the game, but they don't enjoy it if they can't do it” (Alex, Coach).* However, how coaches structure the learning environment is an important factor influencing children's learning and interest.

Considering fun as the major determinant of children's club tennis participation, coaches overwhelmingly highlighted the importance of incorporating fun in coaching and considered it *“as the number one priority by a long shot” (Daniel, Coach)* to motivate children. For instance, a coach commented, *“we've got to make it more exciting for them as well so that they have a good first experience and they will come back... (Sam, Coach).*

Coaches believed that making it fun to learn tennis skills is important to impart confidence in young players who are in their early playing years: *“most kids ... don't know how to play and they don't really enjoy it because they probably get upset at themselves that they're not doing well... They feel like they have a lot of pressure on them”.* Teaching young children tennis skills is challenging due to the complexity of the techniques and coaches believe that appropriate coaching strategies are important. Teaching tennis skills in a fun way through drills and games is a popular strategy to introduce new skills and to motivate children to continue playing the sport. A coach commented,

There are some challenges keeping them motivated when you're doing techniques and stuff... So really try and make sure that they've got the technique right through more drills, or we go into games. So that kind of thing; keeping them engaged during

that is challenging. Keeping them engaged during a game isn't that bad (Stanley, Coach).

A similar opinion was echoed by another coach:

You can teach a lot of the skills and have a lot of fun at the same time... I do a lot of things where they're having a lot of fun, and they're developing their tennis skills, but they don't know they are, so it's in a hidden way (Daniel, Coach).

Jack, a coach, pointed out the importance of giving children learning experience to develop their skills in taking challenges when playing competitions:

We do some really good drills which, one, is about competition. So, there's a competition-based side of it. But one, there's a really high-energy atmosphere around the drill as well. So, when the kids then become into competition, they're used to that high atmosphere, high intensity level (Jack, Coach).

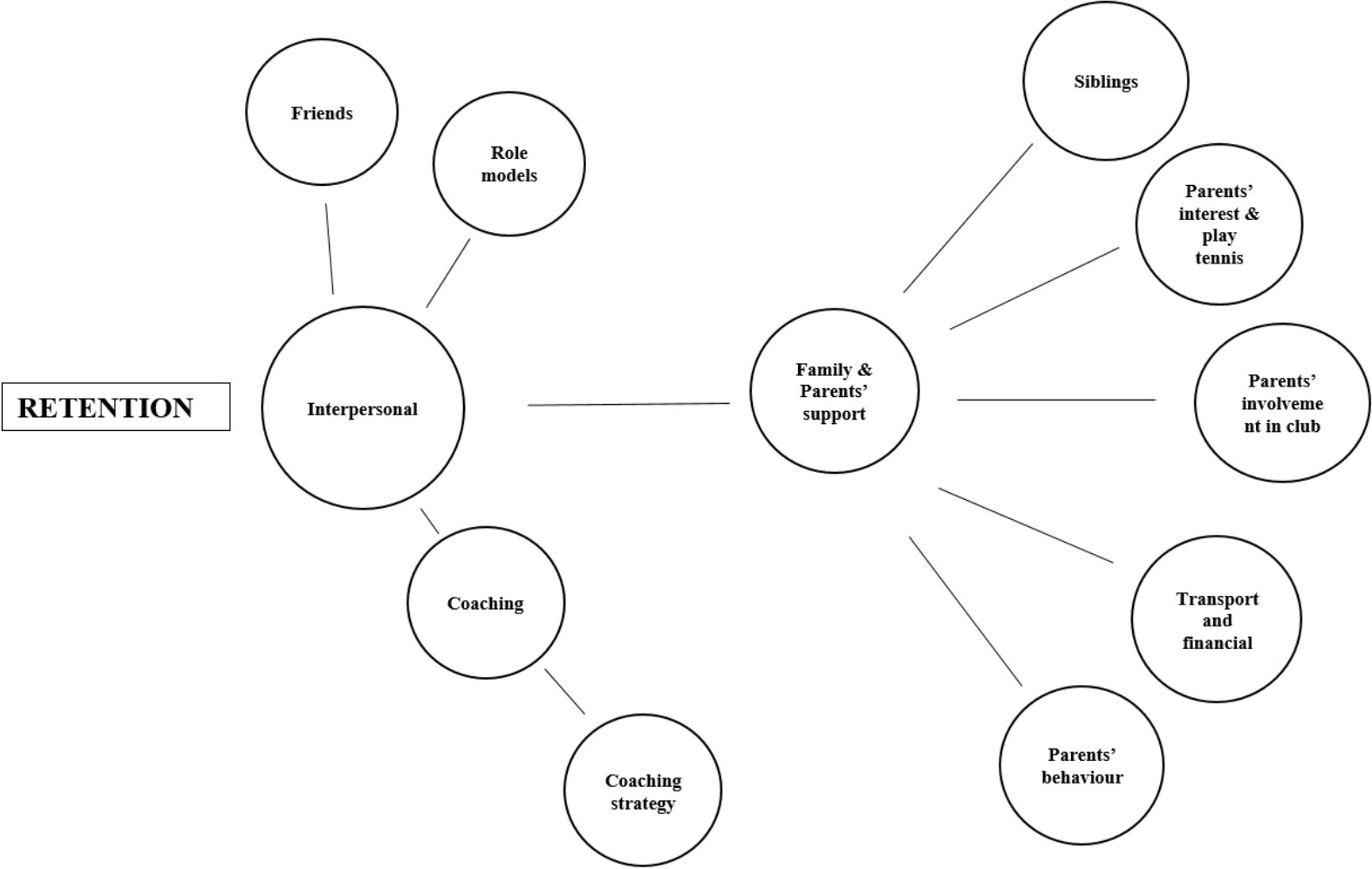
Parents appreciated how coaches had motivated their child to keep enjoying tennis by using *"kids' games that incorporate skills in tennis but in a fun way. So, with that sometimes the kids don't even realise they're working on an action that is required for tennis, but they're doing it in a different way"* (Anna, Parent). Children with lower skill levels are prone to dropout, mainly due to lack of confidence and low interest in attending training where they lag behind. Some coaches shared their strategies to impart enjoyment and motivation for continued participation in such children. Grouping them with their close friends was a motivation for their participation: *"What I try and do is have them in a group scenario together, those kids, and just have lots of fun with them. So, when they're enjoying their lessons, they'll want to come back. Yeah. So, I think having those kids together"* (Jack, Coach). Another coach felt that free and positive interaction with children is vital to develop interest in the sport. Treating children in a way that they feel like they are cared, valued and appreciated is important to develop confidence and motivation in their learning process:

It's the way you treat them on the court and the way you make the session feel for them. I think it's the old saying of, people don't care how much you know until they know how much you care. I think it's important to make them feel like they're appreciated and they're valued. No matter how you make that happen, whether it's talking about their favourite TV show with them or whether it's talking about their favourite game they play or asking about school or work or whatever they're in. I think there are so many ways to make people enjoy your company as well as the game's company (Alex, Coach).

Children get frustrated when they fail to perform up to expectations, and those who cannot handle their frustration may no longer enjoy the sport and drop out. Coaches felt that instead of getting frustrated, players need to be taught to take each match as a learning experience. Sam, a coach commented, *"The advice I give them [players] is, you don't want to get angry at yourself because it's a learning experience, every single match is a learning experience"*. Similarly, another coach felt that, players should focus on their effort in trying their best in playing competition rather than winning or losing:

I say to them that, if you go out to the tennis court and you lose, the score doesn't reflect as long as you give a 100 per cent. So as long as you went out that court and you gave 100 per cent effort then ... scores shouldn't reflect on you either being a winner or a loser. Just that sometimes... the other person is better than you on that day. So, it shouldn't really reflect on their attitude. So long as they've given a 100 per cent then that's fine (Stanley, Coach).

Figure 26: Schematic representation of interpersonal factors identified in the qualitative study



4.3.2.3. Environmental factors

The location of the tennis club, distance to travel, club environment related factors such as cost for participation, club facility and supportive club atmosphere were the important environmental factors that players discussed in the interview (Table 40; following page) as influencing their continued participation in club tennis. The details are below.

Table 40: Major themes and sub-themes identified based on the environmental factors

Major themes	Sub themes	References				Quotes
		Players	Parents	Coaches	Total	
Distance and location		6	1	0	7	<i>"I'd say the environment around the court is actually very good because there's a lot of - we've got - there's a lake nearby where you can just go and enjoy lunch and stuff. You've got the beach next door as well"(Henry, Player).</i>
	Travel	5	5	5	15	<i>"I think it is in positive way, because it exposes him to playing against other clubs and other children, so he's not caught in his small little fishbowl. Yes, so he, and when he - because they can only grade themselves on what's immediately with them at the time when they're training, and by being exposed to all these other clubs it is a confidence booster if he wins against them" (Anna, Parent)</i>
Club environment	Cost	7	5	8	20	<i>The courts are all locked up and they have to pay ... \$20 to play a game... which is a lot of money for a teenager. That's a lot of money for an hour's play" (Anna, parent).</i>
	Facility	7	7	7	21	<i>"if you're at a higher level of competition or you're actually pretty consistent and you play tennis at a higher level, the facilities and the club and the courts and all that will play a big factor, because if you're playing at a - if you're paying good money and you're at a higher level, you obviously want to have that enjoyment of the good clubhouse, the good courts..."(John, Player)</i>
	Supportive	7	6	5	18	<i>"I think it's more enjoyable because I'm doing something with the people that mean something to me and if I mess up, I know that they don't think any less of me, they still think the same. I think that motivates me". (Trixie, Player).</i> <i>"You get 50 per cent of those committee members that are just on a bit of an ego trip. Just to say, oh, I'm on the committee of the club, or I'm on the board of a club. They're not doing anything. They don't care..." (Desmond, coach).</i>

**References are the number of participants in each group responded for a specific theme*

(a) Distance and location

For most of the players, proximity of the tennis club and courts was a significant factor that influenced participation and retention in club tennis. This is reflected in the remark of a player: *“I wanted to participate because there were so many tennis clubs and it's one of the closest ones near me..., so I was like, okay yeah, maybe I should join it”* (Olivia, Player). Agreeing with players’ comments, a parent felt that children tend to play a sport that is available closer to them: *“... a lot of players - you know, play sport of where your club - where the courts are closest to you”* (Stacy, Parent).

(b) Travel

Travelling to courts for practice and to venues for competition was not mentioned as a major issue by players. They generally had the opinion that the distances they had to travel were not excessive and that the travel was an enjoyable opportunity to socialise with teammates and friends. This is reflected in the following comment: *“Yeah, it was enjoyable because they were - especially when there was [matches] out of town, we would carpool and then we would stop and get lunch together as a team but the time went quickly”* (Trixie, Player). According to Levis (a player) travelling to different clubs gave him the opportunity to understand and admire his parents’ dedication that helped him to continue playing the sport. He commented: *“travelling is enjoyable because it means that I see - in a way, it gives me more respect for what my parents are doing for me”*.

Resonating with children’s opinion, parents did not find travelling as an issue because the distance to travel was not large. One parent felt that her child *actually enjoyed the travelling because that gave her time to socialise* (Alice, Parent). Another parent believed that travelling to different clubs is worthwhile as it provides more exposure and opportunity

for children to test their ability against players from other clubs which improves their skills and confidence.

I think it is in positive way, because it exposes him to playing against other clubs and other children, so he's not caught in his small little fishbowl. Yes, so he, and when he - because they can only grade themselves on what's immediately with them at the time when they're training, and by being exposed to all these other clubs it is a confidence booster if he wins against them (Anna, Parent).

Coaches also felt that travelling the distance was not an issue. One coach commented: “Local competition they’re playing within a region. So, they're at most traveling 15, 20 minutes, so it’s not a huge problem” (Alex, Coach). However, coaches believed that it might be an issue for parents, not for children. Even though the travelling distance is not long, for some parents it is not meaningful to spend time in their weekend to travel around for their children’s sport participation.

No more than 20 to 25 minutes' drive on a Sunday. Some of them just pull them out, they go, oh, no, it's too far, that's our only day we get off. The parents are just too lazy to drive them. They only have to drive maybe once a season, because you can get other - like four of them can go with one parent. But some of them just have to be there when their child's playing. The parents get sick of it, not the children (Desmond, coach).

A coach highlighted that many clubs developed strategies to limit the need for parents to travel by changing the team structure and implementing carpooling.

Carpooling's one and what we do is we - so the team of fours in Geelong we put five or six in the team so then we rotate it, so then they all play the same amount of away games to try and limit their travel. That's another thing - that's a strategy that we've - that I've taken on to try and limit the amount of - because Lara is a bit out of Geelong so there's a lot of travel involved for those kids. So we try and circulate it I guess (Stanley, Coach).

(c) Club environment

Interviewees discussed a range of factors related to the club environment that were important in their decision to continue playing club tennis. These factors are discussed below and were related to cost for participation, club facility and supportive club atmosphere.

(d) Cost for participation

Overall, interviewees described the cost of playing club tennis as a comparable to any other sport one might play. For instance, a player remarked *“I’d say racquet cost is pretty easy and training sessions are pretty cheap thanks to my coach... Membership is about average and any competition about average”* (Henry, player). Although some interviewees observed that some club membership fees were *“pretty expensive...\$230 a year...for juniors...and we used to have a big drop-off when they get to 18... you’d lose all the ones [who go to] Uni and ... they couldn’t afford the fees”* (Desmond, Coach).

A key issue related to cost was the cost to access tennis courts outside of club/coaching times for children/youth to practise. One parent felt that cost for children to use the courts for practise was unreasonable: *The courts are all locked up and they have to pay ... \$20 to play a game... which is a lot of money for a teenager. That’s a lot of money for an hour’s play”* (Anna, parent).

Coaches noted that this was particularly a barrier for retaining children in competitive club tennis as some families could not afford the cost associated with court hire which was required for participants to practise their skills and improve their competency.

Cost is number one reason to quit. Especially the kids we’re dealing with that want to play the game at a good level, you need to put hours on the court. Hours on the court costs a lot of money and a lot of money is not something that everybody has (Mark, coach).

(e) Club facility

The club facilities were discussed by interviewees as a factor influencing motivation to continue playing tennis. Club facilities were conceptualised as the condition of courts and the quality of programs and services offered by clubs. The condition of courts seemed to be more important for retaining children player higher levels of competition. A player commented:

If you're just playing to have a bit of fun and you're not very good, that probably won't be such a big factor, but if you're at a higher level of competition or you're actually pretty consistent ... the facilities and the club and the courts and all that will play a big factor ... if you're paying good money and you're at a higher level, you obviously want to have ... good clubhouse, the good courts ... and also the friendliness (John, player).

Acknowledging the importance of having adequate facilities in motivating children to play and progress, one parent suggested the option of combining smaller tennis clubs to pool the resources and provide better facilities for players, although this might mean some players would need to travel further distances to access the tennis complex compared to their local club courts.

If we were able to pool all the resources and create a big tennis complex and a big club house and everything played at the same venue and all your volunteers were at the same place, I think that would really help (Natalia, parent).

In contrast, most coaches considered that facilities at the club were adequate and it was only a minor factor influencing player's motivation to continue playing club tennis:

I think the facilities is not even an issue... I think there is a lot of wasted money on facilities where they don't get utilised (Patrick, Coach);

I think it might have an effect in getting new kids in, but not so much retaining the ones that are there I think – (Stanley, Coach);

Yes, it's nice to have nice facilities, but if you haven't, I think that's [just] a minor factor – (Daniel, Coach).

One of the coaches stressed the importance of implementing a new and different approach in organising programs at the club to make club tennis more attractive, interesting and motivating to continue: *“The tennis club needs to provide different types of events, different types of weekly things, monthly things, and just get away from the same old thing that they've been doing for the last 40 years, which is Saturday morning competition. The clubs that actually do that sort of thing are quite viable and the environment is quite vibrant”* (Patrick, Coach).

(f) Supportive club atmosphere

Players appreciated a welcoming atmosphere at their clubs, and spoke about how the feeling of safety and security at the club motivates them to go and play. This is reflected in the following comments: *“It's somewhere where I'm happy to go to, no matter what time it is”* (Trixie, player); *“If you're at a club and they're not very friendly or you're not enjoying it, that will play a big factor”* (John, Player).

A player highlighted the importance of friendly and non-judgemental behaviour from club personnel and how it contributed to their enjoyment and imparted confidence and motivation to continue playing the sport at the club. This same player also noted *“equal opportunities for both genders”* and as a female player, appreciated the gender equality at the club.

I think it's more enjoyable because I'm doing something with the people that mean something to me and if I mess up, I know that they don't think any less of me, they still think the same. I think that motivates me (Trixie, Player).

They accept both females and males and they have equal opportunities for both genders (Trixie, Player).

On the other hand, another player observed that some people misused their influence on the club administration for their own interests “*I’d say there are a couple of people who try using the club for their own personal gain*” (Henry, player). Aligning to this, a coach observed that the behaviour, attitude and lack of commitment of some volunteers influenced club environment and affected retention of players:

You get 50 per cent of those committee members that are just on a bit of an ego trip. Just to say, oh, I’m on the committee of the club, or I’m on the board of a club. They’re not doing anything. They don’t care... (Desmond, coach).

Likewise, a parent pointed out that among some club decision makers (e.g., committee members) there was a reluctance to make changes to encourage greater inclusiveness and this tended to impact young players within the club:

I think that they could be a bit more welcoming... I get the feeling that ... they treat it like it’s their own personal tennis court and they don’t really want, you know, other people playing on it ... I think it’s because ... the people that are on the committee are very old, so there’s some views that are just a bit old (Anna, Parent).

A coach also noted the limited diversity of their club in terms of inclusion of people with a disability or individuals from low incomes but that was changing somewhat:

We’ve actually got a girl that’s just started in one of our teams last week who’s in a wheelchair. So, it’s just been a new thing that they’re allowing ... If we have people from the country, we might do a scholarship for them... got provision for six scholarships for those kids (Desmond, Coach).

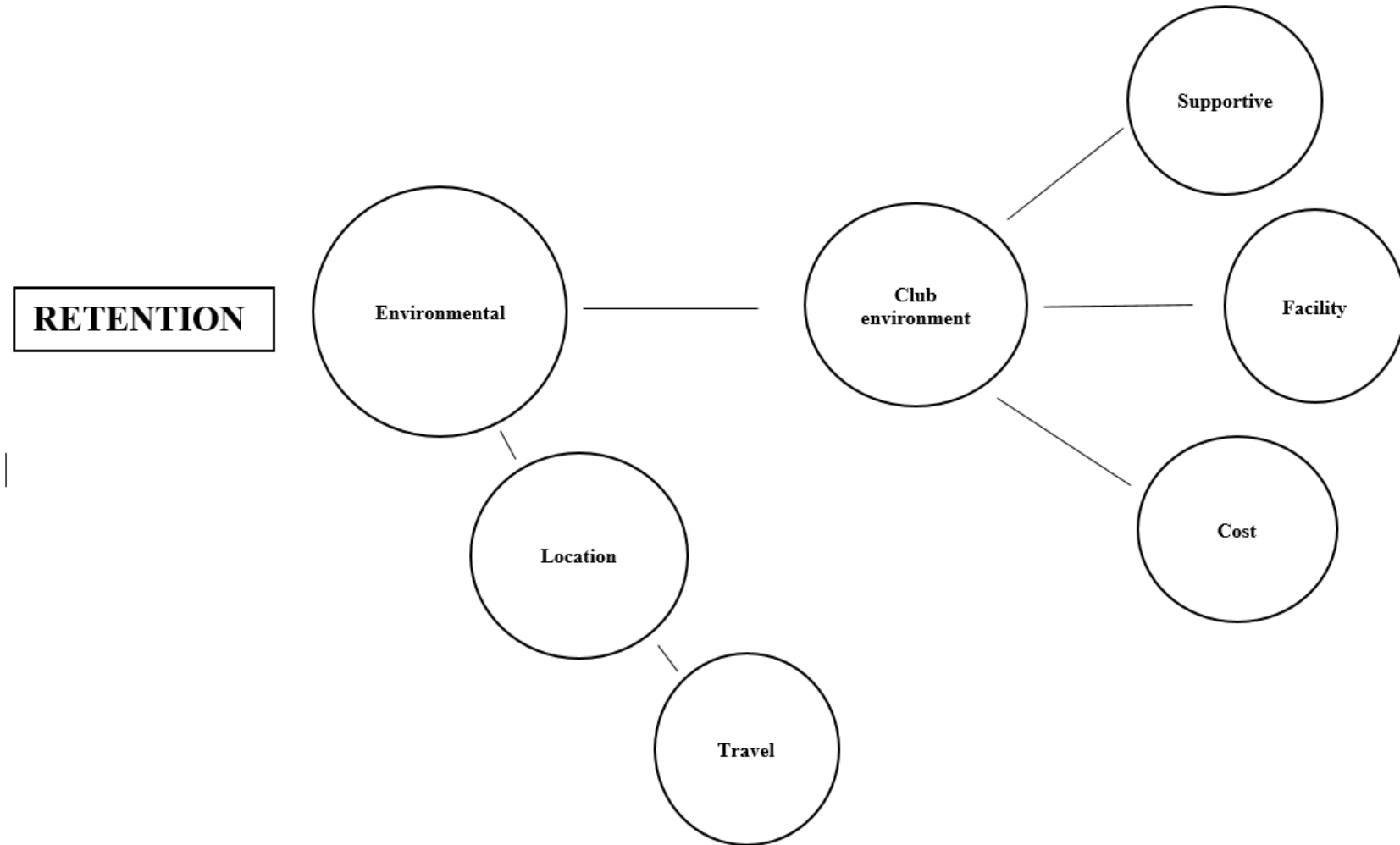
Another parent touched upon the lack of initiative at the club level to upskill young players, which is important for their motivation to continue playing:

In my team for a very long time I was the only adult and I had all juniors for the purpose of trying to upskill them and give them a pathway into the senior ranks. Unfortunately, not everybody’s like that. They’re not interested in developing young people which is a real shame (Teresa, parent).

Coaches highlighted the importance of good leadership in running the club. One of the coaches commented that difficulty in getting committed volunteers was an issue:

Some of these people have been in it for 25 years and ...if they stopped, no one's going to take over from them. On the other side of the coin is just people are very reluctant to put their hand up these days. They're very time poor. They'll give a hand but they're not prepared to actually drive the whole program or the whole club or the comp (Peter, coach).

Figure 27: Schematic representation of environmental factors identified in the qualitative study



4.3.2.4. Organisational factors

The organisational domain of the socio-ecological model is covered with the rules, regulation and policies of local, state and federal governments as well as informal institutions such as schools and community sporting clubs (Sallis et al., 2006; Tehrani, 2016; Vella et al., 2014). Organisational concepts identified from the interviews include the role of school, club administrative factors such as play schedule, play structure, right opportunity for players to improve and advance and club policies (Table 41; following page). They are discussed below in detail.

(a) School

A player spoke about how playing tennis at school motivated her to enrol and continue playing tennis at the tennis club. *“I did tennis lessons, little, little tennis lessons at school, that was really how I started”* (Hannah, player). Another player, however, felt that exposure to tennis in schools was limited due to the lack of tennis courts, commenting: *“If more schools have tennis courts and stuff, instead of basketball courts, more kids will play tennis”* (Aiden, past player).

Similarly, a parent felt that children needed tennis facilities close to home and at school explaining that: *“I believe ... [children] should have a club near their [home] and they should [have] courts at the school level”* (Jai, parent). Agreeing with the parent’s comment, Patrick, a coach found that *“early exposure of tennis is important for children to continue playing in their adolescent years”*.

Table 41: Major themes and sub-themes identified based on the organisational factors

Major themes	Sub themes	References				Quote
		Players	Parents	Coaches	Total	
School		4	2	3	9	<i>“Yeah, if more schools have tennis courts and stuff, instead of basketball courts, more kids will play tennis”. (Aiden, dropped out player)</i>
Play schedule		6	6	6	18	<i>I don't think it affects the kids. I think it might affect the parents because they're the ones driving them (Stanley, Coach)</i>
Play structure/format		5	6	7	18	<i>“If your grading system's really, really good and you're quite equal throughout the whole say, sections - I mean, I'm a big believer that, if you're in the right grade, you should win some, you should lose some. That means you're in the right grade for your ability. If you're winning matches and then also losing some matches”.(Jack, Coach)</i>
	Access to play at the right skill level	8	7	4	19	<i>“If a competent child is playing with a non-competent child, both are not going to have fun, so they both could potentially drop out”(Stacy, Parent)</i>
Opportunity to improve and advance		5	7	8	20	<i>“If they see specific people have special kind of problem, they will pull them aside, they will try to teach them this specific thing and they will put them in then with the group again to see if they've improved or not. So yeah, this kind of strategy is really good” (Olivia, Player).</i>
						<i>“Well, I think he can only play at the level he's got other kids around him at, so that might be just a restriction... There's no point pushing up those other people who want to just be in their A grade team every week ... that's not what they want” (Anna, parent).</i>
Policies		2	4	4	10	<i>“I'd say the only policy I'm not a big fan of is, if you are a child or below the age of 16 or 18... you're not allowed a key card to the courts” (Henry, Player).</i>

*References are the number of participants in each group responded for a specific theme

As competency is a major motivation for continued participation, children get the opportunity to acquire adequate competency in playing tennis by their adolescent years if they are introduced to tennis in the early years:

Once they get to secondary school, if they haven't had the exposure to tennis and they don't have the skills, I don't think they're going to take it up. It needs to be introduced at that lower level and then they continue to play through their secondary school years (Patrick, a coach).

Coaches observed that school-club partnerships are vital to enhance continued sport participation into adulthood. Strong partnerships between schools and community sport clubs can act as a pathway for children's participation in competitive organized sports and continued participation in the sport through community sport clubs. A coach commented:

We do coach at primary schools and then when that child ... gets a little bit too good for that school environment, we invite them to come to the club and then our aim is to get them to play comp (Jose, Coach)

(b) Play schedule

There were a few issues identified by parents relating to the play schedule which included the playing season and clashes with other sports. One parent stated that 'winter' was off-season for tennis and as such there was less interest from children to play:

It is a struggle to get up... last winter he decided not to do it for that reason, ... winter competition wasn't taken as seriously as summer. Sometimes they turn up and not the whole team of the other club would turn up and it was very frustrating (Natalia, parent)

Another parent said that clashes in the timing of different sports that children played forced them to choose between sports, leading to tennis being dropped. "Well, she stopped playing junior tennis because it interfered with her cricket on Saturday morning" (Derik, parent).

Only one player found the schedule inconvenient commenting “I think the only thing I don’t enjoy is probably having to wake up at seven in the morning on the weekend. Other than that, once I’ve pretty much woken up, I’m in a good mood” (Henry, player). Two coaches felt that the schedule and in particular the early start times was more of an influential factor for parent’s motivation to drive their children than for players specifically.

I don't think it affects the kids. I think it might affect the parents because they're the ones driving them [early in the morning to play] (Jack, Coach)

It might be a factor with some of the parents...[who] won't get up early Saturday morning to take their kids to sport in the summertime, but ... they'll get up early Saturday morning in the winter to take their kids to football, or netball (Daniel, Coach).

The duration of the match and competition was not identified as an issue for players motivation to continue playing club tennis. However, one parent stated that children (and subsequently parents) often need to ‘give up the whole morning’ to play their matches, commenting:

You can rock up for your first set at nine and then your next one might not be till 10:30 ... So, yeah, sometimes you'll finish at 10:30, other days you don't finish till 12... people just don't want to give up a whole morning anymore (Teresa, Parent).

A coach found that duration was not a specific issue for the children, but it was a factor that affected parents’ motivation to bring their children to play:

I think ... their day is so busy - they are in a hurry to go from here to go to there and if they've got more than one child - that's what makes it tough for that particular parent (Jose, coach).

Another coach explained that within his association the duration of the matches was different for different formats to reduce the time commitment from families:

In our association it's an hour and a half and the kids are pretty much finished. The senior competition's a little bit longer - where it's a few hours. ... They want a shorter competition as well, so I think time is a very valuable factor (Jack, Coach)

(c) Play structure

In setting up the play structure for club-level competition, tennis clubs categorise players into age groups and skill levels to form evenly matched teams that play against one another. There can be different grades of competition as well. A well-formed play structure ensures that there is no huge mismatch in age and skills between those who compete on the court. The opportunity to play against opponents who are at similar skill level as themselves is a motivating factor for a player to continue playing club tennis. John, a player highlighted how the play structure of club tennis allowed players of different skill levels to enjoy playing tennis.

The good thing about club tennis is there's levels, so if you're not very good, but you still want to play, there's that level down - like, near the bottom... because everyone wants to play tennis and sometimes it's not enjoyable when you're playing someone that's way better than you (John, player).

Parents observed the influence of grading in their children's motivation to play tennis and anticipated that improper grading and play format may affect their children's opportunity to play at their skill level and hence their motivation. One parent commented "I suppose if you were pushed to play in a grade where it wasn't your level ... and if you were pushed to play in a higher grade and were just getting thumped every single time you go out on the court, well of course, that's not going to be enjoyable" (Stacy, Parent). Another parent stressed the importance of changes in the play format to improve club tennis participation "I think there could be work done on the formats as well ... there's a lot of people resistant to change who can't see that numbers are declining and that we need to

change things... both our junior and senior competition could be worked better to keep people in the game” (Natalia, Parent).

Coaches shared a similar view with parents on the play structure and the influence of grading of players based on their skill levels in their motivation for playing club tennis. However, one coach remarked about the adequacy of club play structure in motivating players and stressed the importance of introducing a play structure which is more competitive in order to encourage and motivate more children to participate and continue playing.

I think the biggest concern with kids playing local comp is the fact that it doesn't help your ranking, it doesn't help anything when you're in a world where everybody compares on social media to one another, everyone's comparing rankings these days ... So, if you want kids to be able to play local competition, you've got to put something on the line for them (Alex, Coach).

(d) Access to play in the right skill level

Opportunity to play at the right skill level was important for players to enjoy their game and improve their skill. One player reflected on issues related to not being able to play in the appropriate skill level:

When you're playing people either a bit better than you or at the same skill level, it gives you things to improve on ...If you were playing a match against someone who was either way worse than you or way better than you, it doesn't ... you don't really get something out of it... A lot of the times there can be pressure for some people, because they're not playing the people at their level (John, player).

Parents were also conscious about the need for children to be playing at the right skill level to improve their skills and enjoyment and observed that playing at the wrong skill level can demotivate children in playing club tennis: “*There's nothing worse than playing against ... a 17-year-old who is so much more advanced in their skill than your child; it*

would destroy their confidence” (Derik, Parent); “People at your level or basic level, then you're going to enjoy it. But if you're not, then yeah, you're probably not going to keep playing” (Stacy, parent). Sharing parents’ concern, Patrick, a coach, felt that “If a competent child is playing with a non-competent child, both are not going to have fun, so they both could potentially drop out”.

Parents from non-metro areas expressed their frustration with low membership numbers at the local tennis club which limited their children’s opportunities to play against others who are at skill level similar to themselves, which could impact their progress and enjoyment.

It's really hard because there aren't a lot of girls playing tennis that they have to fill teams. I think often they're below her standard and that makes her game drop as well because she's better playing against someone of a higher standard (Alice, Parent).

We're in a small town so I guess they group them as well as they can... it's not like a major city where you've got so many children that you can really ... group the strong ones together (Anna, Parent).

Expressing similar sentiments, coaches remarked that the low number of young players is a handicap for clubs in providing players the opportunity to play at their appropriate skill level. Patrick, a coach commented: “There's not as many kids out there obviously playing tennis, so sometimes it is difficult”. The same coach felt disappointed with lack of initiative between clubs to collaborate with each other to improve the situation. “they probably need to merge a little bit and work together, but ... they're reluctant to do that.”

(e) Right opportunity to improve and advance

Opportunities to challenge themselves, to improve and to progress to the next level are vital to keep young players motivated and retained in club tennis. Players felt that the

support they were getting from coaches at the club was a key motivator to keep playing the sport. A player commented that the strategy of giving individual attention to each player in their club was helpful:

If they see specific people have special kind of problem, they will pull them aside, they will try to teach them this specific thing and they will put them in then with the group again to see if they've improved or not. So yeah, this kind of strategy is really good (Olivia, Player).

However, the opportunity to advance to higher skill levels is less in smaller clubs mostly in the non-metropolitan region. John, a player, felt the disadvantaged due to the limited opportunity when playing in smaller clubs with a low number of members which affected players' motivation:

If you just are a little small club that could play a factor, because you won't have those (opportunities), but especially for the big clubs that a lot of people are at, it is - plays a big factor, so it is good (John, player).

Mirroring a similar view, a parent from the non-metro area felt that shortage of opportunities available in their club was a challenge for her children to progress to higher levels:

Well, I think he can only play at the level he's got other kids around him at, so that might be just a restriction... There's no point pushing up those other people who want to just be in their A grade team every week... that's not what they want (Anna, parent).

Some of the coaches reiterated the disparity in opportunities available for players in non-metropolitan regions compared to metropolitan regions, leading to adverse impact on retention of players in those areas:

I think metro's pretty well sorted, but in the country, I think there needs to be something looked at because there's a hell of a lot of really talented country players that ... get to a certain level which is pretty high and then they struggle to take the

next step because they don't have that [opportunity], if that makes sense (Stanley, Coach).

From a regional perspective, the [example] that I can give you is one of the boys ... at 16 he is the best kid in Ballarat ... he can go and practise but he's not going to get better at the game because there's no one pushing him... Melbourne kids have no problem because there's lots of academies, there's lots of squads ... a lot more coaches and stuff like that (Patrick, Coach).

Highlighting the limit in opportunity, a parent touched upon favouritism at the club and absence of proper assessment of players, denying some of them opportunities to improve and progress and thereby demotivating them from continuing. The difficulty for children to get opportunity to advance without someone to advocate for them at the club was pointed out:

I know other families who are not 'tennisy' families, so they've got a really good kid, but they don't know anybody to be able to ask or how to get him into that side. So there are lots of kids that don't progress into senior ranks purely because they're not part of the in-crowd, or their family are not part of the in-crowd or they don't know the right people. It's a bit sad. (Tulsa, parent).

However, many coaches expressed positive opinion about programs implemented at clubs and felt that these programs provide ample opportunities for children to practise their skills and advance:

The programs that we have at the moment, there's definitely opportunities for developing skills... we've got programs where kids can come down, have a hit with each other, just because those that they'll want to play competition; they've got coaching as well on the side. It's definitely worth it (Sam, coach)

The club is trying to put on more of the small, little, different types of competitions, that sort of thing expands on the number of days we do for competition level” (Patrick, Coach).

(f) Club policies

Players, parents and coaches were critical about club policies that deny children access to tennis courts to practise, even when the courts are not being used by the club or private bookings. They felt that this policy restricted young players' opportunity to practise their skills and likely worked against retaining the child long term. For example, comments included:

I'd say the only policy I'm not a big fan of is, if you are a child or below the age of 16 or 18... you're not allowed a key card to the courts (Henry, Player).

The only policy I think that they have ... is not to allow access - you pay your membership to the club, but you're not allowed, your child is not allowed to have the access to a key to get onto the court...only if the parents pay membership then you can get an access card ... so it makes it very difficult for him to practise (Natalia, Parent).

I know that they need to make money, but there should be some sort of availability for kids to be able to play tennis ... not without having to pay, but they've, they pay a club membership. (Anna, Parent).

They could be doing a lot more to provide junior pathway to being a better player... if the kid's parents are not part of the family membership... he can't get a card so that he can go to access or ... play whenever he likes. So, those kids are being discriminated against (Daniel, Coach)

A lot of clubs are not really interested in that. I mean, the older members of the club want the courts and they're got more rights than the kids to use the courts (Desmond, Coach).

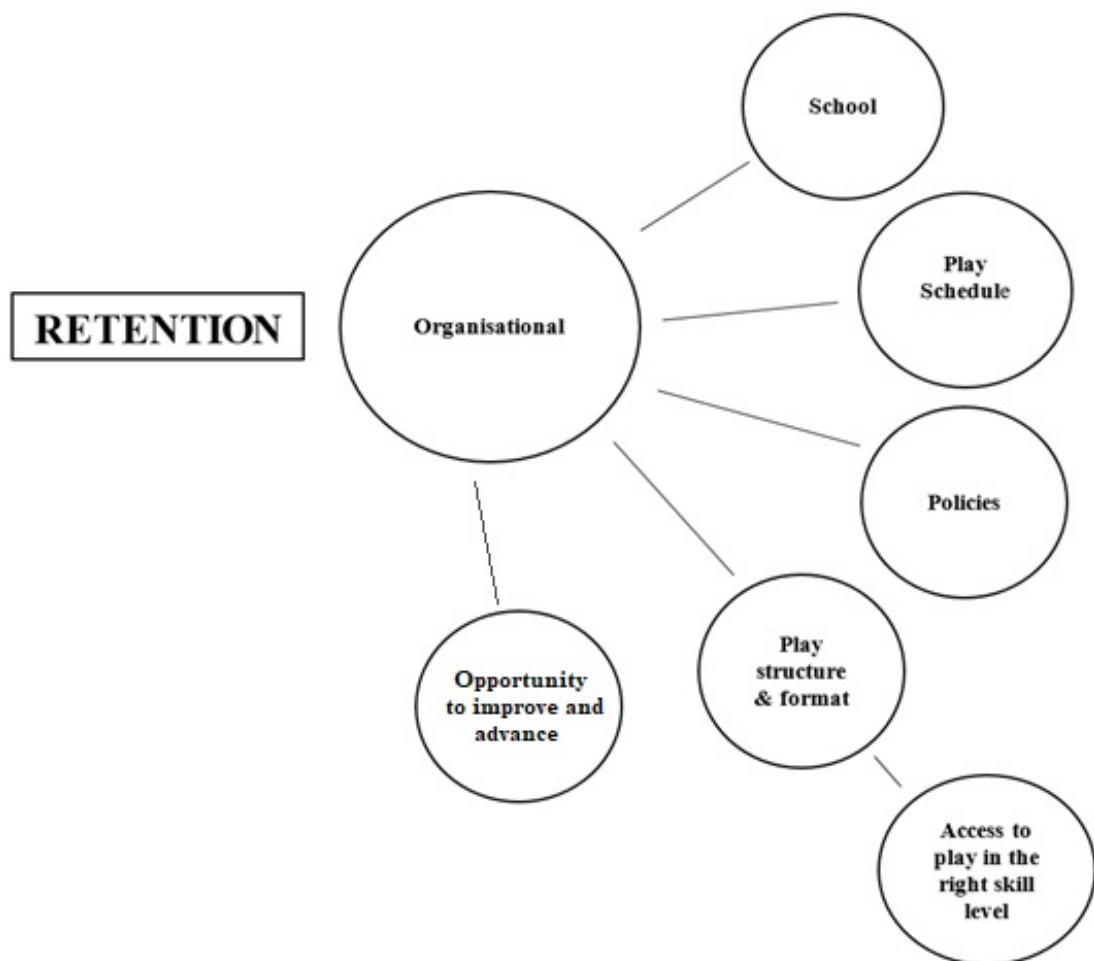
One of the coaches suggested that a court-booking system can ensure better access to club courts for young players by preventing others occupying courts for too long:

They brought out a new system where you have to book a court. That's something that needs to be going around, because otherwise ... [people] stay on the court for

too long, you don't have a court to play on. So if kids have that opportunity, I'm sure they'll definitely come down more often (Sam, Coach).

Schematic representation of the organisation and policy related factors that emerged from the qualitative study as influencing retention is shown below (Figure 28).

Figure 28: Schematic representation of organisational factors from the qualitative study



4.4. Summary of results

Quantitative analysis of census data on tennis club membership of children and adolescents aged from 10 to 18 years in Victoria for two successive years (Study 1) revealed that male participants aged 11 years who lived in the metropolitan region in a suburb with a high socio-economic status (SES) index had the highest percentage of retention in club tennis.

Quantitative analysis of data from online survey targeting child and adolescent participants of club-based tennis (Study 2) showed that living in a metropolitan region and being part of a family with two parents had significant positive association to retention in club tennis. Recreational and physical activity habits such as regular physical activity of more than one hour per day, participation in multiple competitive and non-competitive sporting activities, participation in organised sport conducted outside-of-school, and being a member of multiple tennis clubs positively associated with retention. Regarding non-sporting activities at leisure time, reading had a positive association with retention whereas excessive screen time inhibited retention.

Further understanding from the qualitative study (Study 3) is that intrapersonal factors such as high aspiration in tennis, competency, enjoyment, feeling of success, passion, self-efficacy and sportsmanship lead to retention in club-tennis. Interpersonal factors like support and influence of parents, positive coaching, positive influence of friends and having role models in tennis also encourage retention. Distance to travel to tennis club and adverse club environment were found as environment-related factors that affected retention. Organisational factors that influence retention include club policies, convenient play schedule, play structure and format and fair opportunity for all players to improve and

advance. Availability of tennis facilities at schools was also seen as an influence in shaping the mindset of children and adolescents towards continuing in club-based tennis.

Results of the three studies are further analysed discussed in the next chapter with the help of the selected behaviour theories (Fun Integration Theory and Leisure Constraint Theory) to reach reasonable conclusions that lead to useful practical applications.

5. Discussion

This program of research sought to examine the rates of retention and dropout of children and adolescents playing club tennis in Victoria and the major determinants that influence children and adolescents' continued participation (i.e., retention) or their dropout. The research included three studies that provided the trend of retention and dropout in club tennis during the study period, identified the key determinants that specifically influence retention and dropout and established how these determinants individually and collectively influence players' decision to continue or to dropout. The key findings from this program of research are discussed in this chapter.

The initial part of the discussion summarises the rates of retention and dropout for children and adolescents playing club tennis in Victoria, based on statistical analysis of available data on registered tennis club players. Further, the major determinants that were identified as having a significant influence on retention and dropout are discussed on the basis of analysis of data from the web-based survey (quantitative data) and interviews (qualitative data). The socio-ecological model which is a multi-layered framework that describes the influence of various factors on an individual's specific behaviour (Ding, 2013; Sallis et al., 2008) underpinned the research design. In the context of the study, the specific behaviour is continuing to play club tennis. The factors that influence the behaviour are the identified determinants structured within different domains of the socio-ecological model. The program of research also used behavioural theories such as Fun Integration Theory (FIT) and Leisure Constraint Theory (LCT) to explore and explain players' behaviours that are associated with participation in tennis.

5.1. Rates of retention and dropout

The initial quantitative study revealed that over a successive two-year period only just over half (54%) of the players belonging to the studied age group were retained in club

tennis. There were significant demographic differences between the retained players and dropout players. Retention and dropout trends significantly differed according to participants' gender, age, location of residence and socio-economic status. Nearly half (46%) of all child and adolescent players dropped out in the second year. Retention in tennis was highest among children aged 10 to 13 years, and dropout rates progressively increased during 14 to 18 years of age.

Male participants aged 11 years who lived in the metropolitan region and in a suburb with a high socio-economic status (SES) had the highest probability to be retained in club tennis. Similar trend for retention and dropout in terms of sex, age, region and socio-economic status have been observed in other club-based sport studies as well (Baron-Thiene, 2015; Eime, Casey, Harvey, Sawyer et al., 2015; Enoksen et al., 2011). However, many of the earlier studies were cross-sectional. Being unique by focusing on a specific popular and gender-neutral sport, this study provides the comparison of retention and dropout for children and adolescents playing tennis at the community level across a continuous age profile and imparts new insight into their retention in the sport. The findings of this study indicate that strategies to increase retention of children and adolescents in a sport like tennis need to focus on constraints faced by specific sub-groups such as female players, those who live in non-metropolitan areas and those from socio-economically disadvantaged localities or families.

5.2. Determinants of retention

The quantitative survey examined demographic variables and health behaviours (e.g., participation in physical activities, screen-time) of children and adolescents along with a broad range of determinants across the socio-ecological framework with the objective of understanding the determinants of retention in club tennis. The qualitative study was then designed to explore significant determinants in more depth to better understand the

complexity of their influence on retention. It is important to acknowledge the low response rate from players who dropped out of club tennis (survey: $n = 23$ out of 103; 22.3%, and interviews: $n = 1$ out of 23; 4.0%) which made the focus and findings of the study more inclined to understanding the factors that influence retention.

The results of the quantitative study showed that living in a metropolitan region and being part of a family with two parents were found to have significant association with retention of children and adolescents in club tennis. Physical activity is known to associate with socio-economic status and rurality (Eime, Charity, Harvey, & Payne, 2015; Stalsberg et al., 2018). Other research studies that provide a comparison of retention of players between metropolitan and non-metropolitan regions indicate mixed results. For example, Eime et al (2018a) observed that in the case of a female-dominated club-sport in Victoria, more players from metropolitan regions (66%) were retained and transitioned from a modified sport program to club-level competition compared to non-metropolitan regions (52%); and a higher proportion of non-metropolitan participants discontinued (40%) compared to metropolitan participants (31%). At the same time, examining collective retention rates for nine popular sports in Victoria, Eime, Charity, Fowlie, et al. (2020) reported that participants in non-metropolitan areas generally showed higher retention than those in metropolitan areas. These previous results indicate that lower retention rates in non-metropolitan region observed in the case of children and adolescents playing club tennis in Victoria cannot be generalised. It is important to study the retention rates for specific sports and for specific subdomains to ensure that strategies to improve retention are directed to where they are needed most. In the case of club-based tennis, strategies are required to improve retention among children and adolescents specifically in non-metropolitan regions.

The influence of family emerged as a significant factor that determined retention of children and adolescents in tennis. There are multiple facets for the influence of family, like the home environment that shapes healthy PA habits and parents being willing and able to afford the cost and time required for children to continue training and playing the sport (Bramlett et al., 2007; Park et al., 2020). Further, family structure (e.g., single-parent / two-parents) and socio-economic status determine the level of support in terms of time, effort and money that parents can dedicate towards children's participation and coaching in tennis and hence they form an important determinant that influence retention. There are related findings from other studies that highlight the influence of family in children's sport participation and success. Ruseski et al. (2011) reported that family structure influences the availability of resources such as time and money towards children's sport participation. McMillian et al. (2016) found that children from reconstituted or single-parent families experience a high degree of disadvantage while participating in organised sport. There is also research evidence that linked high SES of parents with higher possibility for children specialising in one sport (Post et al., 2018).

Even though playing tennis at club level can be expensive due to the cumulative cost of membership, equipment and coaching, the participants of the study did not highlight cost as a significant factor that impacted their choice to continue playing the sport. As this study is skewed more towards responses from retained players, further evidence is needed to identify how the cost of participation influences dropout and whether strategies aimed at making club tennis participation more affordable will result in higher retention of players from some of the domains that currently experience a high degree of dropout.

Positive health benefits of regular participation in club-based sport are well established (Bidzan-Bluma et al., 2018; Drake et al., 2012; Eime, Young, Harvey, et al., 2013; Ekland, 2004; Geidne et al., 2013; Seabra et al., 2016). The research study

investigated whether there was significant difference in health and wellbeing between retained and dropout players and did not find any. This outcome could be due to several factors; e.g., dropout from club tennis does not necessarily mean dropout from club-sports, as this often happens due to players' preference for another sport and skewness of the survey data heavily towards retained players did not result in a fair comparison.

Children and adolescents were found to be significantly more likely to continue in club tennis when they habitually engaged in healthy behaviours that include (1) one hour or more of regular physical activity for more than four days a week; (2) active leisure-time involving other competitive and organised sports (such as soccer, competitive swimming, competitive cycling); (3) other physical activities outside school hours (such as jogging / running and scooter / skateboarding), and (4) two hours or less of screen time on both weekdays and weekends. According to this program of research, a moderate amount of screen-time that does not exceed recommended levels does not necessarily affect children's continued sport participation. As the data and responses that lead to this study's findings are skewed more towards retained players, further investigation among dropped out players is required to explore the influence of passive recreation in leading to discontinuation of participation in sports. There is research evidence that healthy physical activity behaviours in childhood promote physical fitness and motor ability which motivate sport participation (Côté et al., 2014; Fransen et al., 2018; Gardner et al., 2016; White et al., 2009). Children entering adolescence are particularly vulnerable to declining levels of physical activity and it is increasingly important to promote physical activity at this juncture via strategies for their retention in sport participation. Additionally, Sáez et al. (2021) observed that excessive regular involvement in non-physical leisure time activities leads to dropout from sport-based physical activities which must be read in conjunction with the fact that screen-based activities have become increasingly popular as leisure-time activities among children

and adolescents. Significantly negative association of screen-based activities with children's sport participation is well established (García-Hermoso et al., 2020; O'Brien et al., 2018; Man et al., 2014; Yu et al., 2015).

5.2.1. Determinants of playing tennis: a socio-ecological perspective

The quantitative survey of the program of research identified that intrapersonal factors such as enjoyment in playing tennis, competency (encompassing players' general sporting skills and tennis skills), benefits of playing tennis (fitness and gaining new skills) and self-efficacy had a significant association with retention. Improved fitness and general sporting skills and sport-specific skills and competency in tennis gained through practise lead to increased enjoyment in playing sports in general as well as developing the passion to play tennis as a competitive sport. Achieving competency in playing a sport has been established as a major motivational factor for children and adolescents to continue playing a sport in many studies (Allender et al., 2006; Barnett et al., 2013; Casper et al., 2011; Crane et al., 2015; Humbert et al., 2006; Somerset et al., 2018; Wagnsson et al., 2013; Wetton et al., 2013). As an individual sport with a reasonable degree of complexity in techniques, tennis needs a degree of persistence to master the skills. Jõesaar et al. (2011) observed that perceived competence related positively to athletes' intrinsic motivation which in turn predicted their persistence. High self-efficacy motivates players towards more rigorous pursuit of challenges, and makes them overcome negative effects of occasional failures, ultimately improving performance (McAuley et al., 2000). Many studies have confirmed that enhanced self-efficacy enhances motivation in sport participation by increasing confidence and enabling the player to perform better compared to individuals with low self-efficacy (Jerome et al., 2013; McAuley et al., 2011; Moritz et al., 2000; Tirmzai et al., 2020).

In the context of interpersonal determinants, the quantitative survey identified that emotional support (such as positive parental behaviour and encouragement) and involvement of the family (more specifically, parents) of young players in the sport are the major motivational factors of retention. The significance of parents' support in promoting children's positive sporting experience is consistent with those of previous studies (Rodrigues et al., 2018; Walters et al., 2011; Wilk et al., 2018) confirming their validity in the specific case of children and adolescents playing community level tennis. Other studies have found that influence of encouragement and reinforcement from parents enhanced children's enjoyment from their sporting experience (Fraser-Thomas et al., 2008; Knight et al., 2016; Teques, 2013; Visek et al., 2015; Wolfenden et al., 2005). Although some previous studies outline different forms of parental support that encourage children's sport participation, especially in tennis (Gould et al., 2008; Knight et al., 2010; 2013; 2014; 2016). However, most of these studies focused on elite athletes and players of higher ability rather than the community level players.

Apart from family, the quantitative studies identified that the role of the coach is a significant interpersonal factor that influence children's participation in tennis. Coaching is a major contributing factor that enhance competency and self-efficacy for players. This finding aligns with many studies that highlighted the role of coaches in developing confidence in children to continue participation in sports (Biddle et al., 2001; Kao et al., 2017; Lim et al., 2014; Weinberg et al., 2001; Weiss, 2015). Findings also show that the influence of role models (such as celebrity players) is an interpersonal determinant for retention in club tennis for children and adolescents. Similar findings that highlight the influence of role models in motivating children towards sport participation can be found in the studies of other researchers (De Croock et al., 2012; Meier, 2015; Mutter et al., 2014; Payne et al., 2003).

Analysing the environmental factors, the quantitative study identified that easy access of tennis clubs (location) is a motivational factor that appears to have significant positive influence on retention of players, both in the metropolitan and non-metropolitan regions. The need to travel can be a barrier for continued participation for children who depend on parents or others for transport. This observation is consistent with other studies that identified the positive influence of availability and accessibility of sports infrastructure on sports participation (Deelen et al., 2016; Giles-Corti, et al., 2005; Sallis et al., 2006). This influence is known to differ between types of sport, age groups and gender of participants (Eime, Charity, Harvey, & Payne, 2015; Hallmann et al., 2012; Karusisi, et al., 2013; Ley, 2020; Limstrand et al., 2008; Wicker et al., 2009). Karusisi et al. (2013) found that spatial accessibility of facilities did not influence the participation in racket sports, team sports or workouts in gyms, but it did associate with swimming and aquatic sports. Deelen et al. (2016) observed that the distance to indoor sport facilities and swimming pools is a major constraint in sport participation of adults in the Netherlands. The same research group observed that for young participants aged 13-21 years, environmental determinants hardly contributed to prediction of dropout, and that tennis players who had to travel significant distances to a tennis club to play had a lower possibility to drop out (Deelen et al., 2018). Relating to this, Reimers et al. (2014) found that proximity of sports facilities enhanced participation in the case of adolescent girls from rural areas but it did not significantly influence participation of adolescent boys. Proximity of tennis courts or indoor pools did not seem to influence participation for either gender, and the study concluded that strong preferences usually outweigh constraints of accessibility.

Exploring the factors related to playing environment, the survey identified that elements such as supportive, fair and friendly club environment, affordable and good club facilities and appropriate policies on health and safety (being smoke-free, injury

prevention) are important in promoting retention of players in club tennis. This aligns with Casey et al. (2017) and Eime et al. (2008) who found that a healthy, inclusive and welcoming environment at the sports club combined with positive health promotion policies reduces the barriers to sport participation. Other relevant observations from past studies are that increased accessibility and availability of sport and leisure facilities promote sport participation (Eime, Charity, Harvey, & Payne, 2015; Eime, Casey, Harvey, Sawyer, et al., 2015; Eime, Harvey, Charity, Casey, et al., 2017; Sallis et al., 2012). Sports participation increases when the participants get opportunities to engage in settings that are suitable to achieve their motivation and goals (Deelen et al., 2018).

Relating to the factors associated with organisational elements, findings of the survey indicate that play structure that provides opportunity to play in an appropriate skill level and convenient play schedule (which includes days and times that are suitable) has significant association with retention. The results show consistency with the findings of other studies that time constraint is a major barrier of sport participation in all contexts (Armentrout et al., 2011; Ruseski et al., 2011; Somerset et al., 2018) especially for children and adolescents as their sport participation most likely depends on their parents' support. Proper grading of players, which comes under another organisational factor namely club play structure, was identified as a significant motivating factor for retention through providing the opportunity for players to be grouped with those of similar skill and ability. There is evidence that well graded competitions motivate players of both higher and lower skills towards more involvement in sport (Hastie et al., 2017).

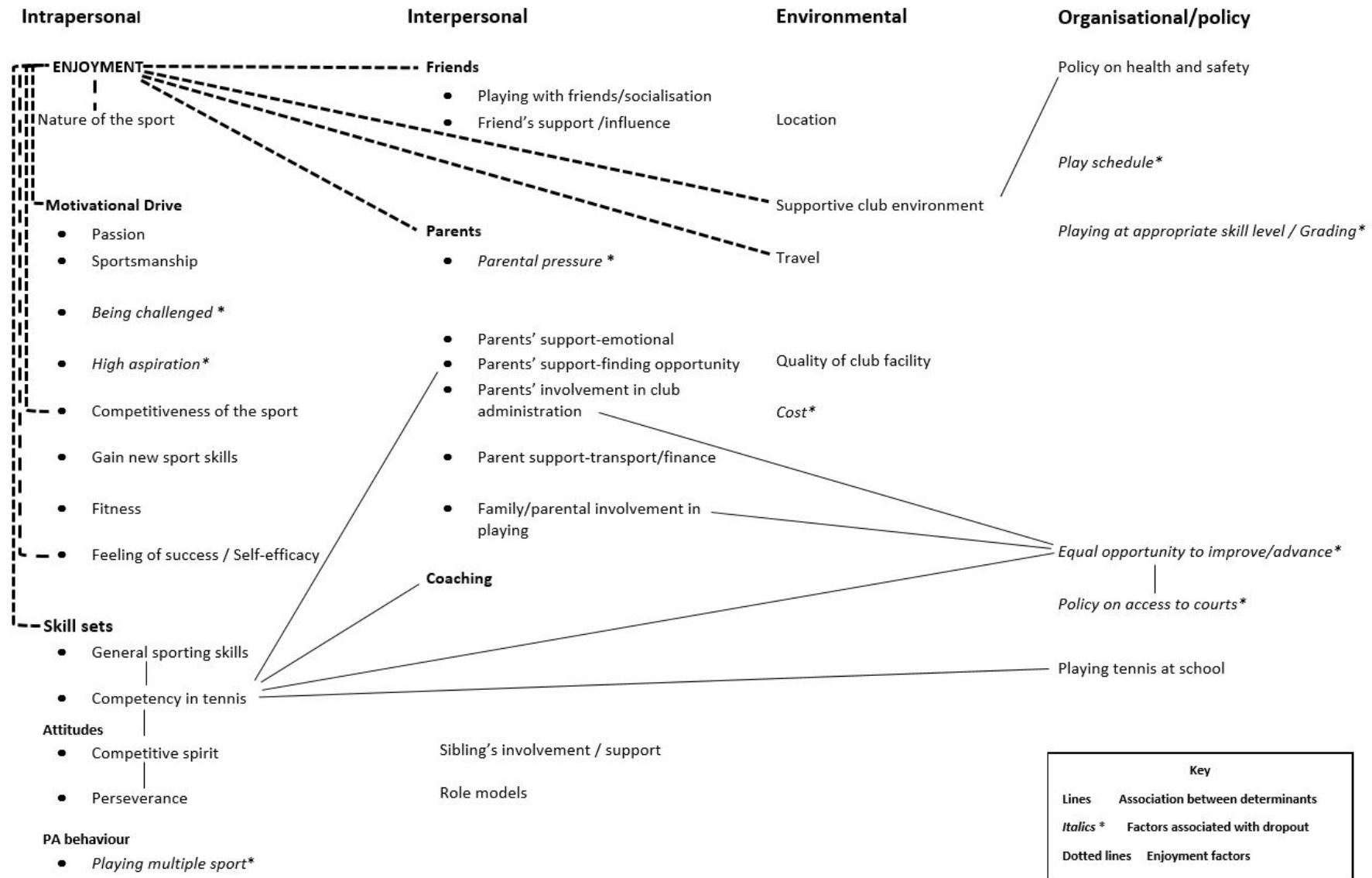
5.2.2. Interaction of determinants

Having identified several interconnected as well as apparently independent factors that demonstrates significant association with the retention of children and adolescents in club tennis, the qualitative study of this program of research explored the complex

interaction of the key determinants of retention that were identified from the survey. The socio-ecological framework was used to further investigate how they lead a player towards the choice to continue playing or to drop out. The determinants structured across the socio-ecological framework clarifies their multi-layered interplay in influencing young players' participation and retention in club tennis.

Figure 29 provides an overview of key determinants of retention in club tennis across each domain identified from both quantitative survey and qualitative interviews of this program of research. The figure also illustrates how the determinants of each domain of the socio-ecological model interact and influence decisions to continue playing tennis as well as throws light on the complex association of the determinants of retention. For instance, the figure shows how participants enjoyed playing tennis and were motivated to continue playing tennis when they were able to play with friends, improve their competency through quality coaching, and had a supportive club environment as well as receiving parental support such as positive feedback and encouragement.

Figure 29: Mapping of determinants into socio-ecological framework



The socio-ecological model structure is used in Figure 29 to highlight the identified determinants of retention in club tennis into four different domains. Intrapersonal factors such as fun and enjoyment in playing tennis, perseverance (the will and desire to continue), competency (relating players' general sporting skills and tennis skills), self-efficacy (belief in themselves, both on and off the court) and the sense of fulfilment in attaining the benefits of playing tennis (includes fitness, gaining new skills) form the primary layer of determinants that directly influence the player's decision to continue or drop out. All other determinant domains (i.e., interpersonal, environmental and organisational / policy) either enhance or diminish one or more of the intrapersonal determinants and thereby influence retention or dropout. Interpersonal factors include social support (i.e., from family and coach) and influence of role models. Environmental and organisational / policy factors consisted of club environment (such as friendly and supportive clubs, affordable and quality club facilities, location), accommodative play structure and schedule, and positive club policies.

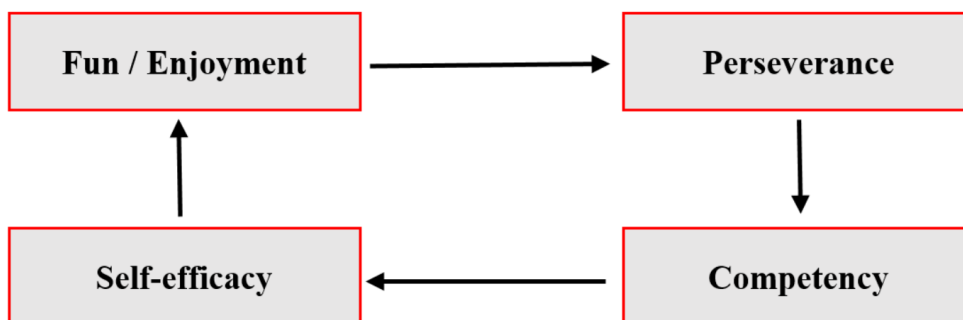
The intrapersonal factors enjoyment, perseverance, competency and self-efficacy of players can be seen to have significant and direct association with retention. Out of these, fun / enjoyment is the key determining factor for continuing playing club tennis, supporting the notion that that young people drop out when they no longer experience sports as being fun (Butcher, et al., 2002; Côté et al., 2002; Franzén et al., 2004). According to outcome from this program of research, children and adolescents are generally motivated by the sense of fulfilment in attaining the benefits of playing tennis (includes fun, fitness, gaining new skills) when they start playing club tennis. Improved fitness, general sporting skills and sport-specific skills add to competency, motivate to practise more and result in increased enjoyment from playing the sport. Fun and enjoyment from playing lead to

perseverance. As an individual sport with a reasonable degree of complexity in techniques, tennis needs a degree of persistence to master the skills.

There are several studies that validate the concept of interaction of intrapersonal determinants. For example, Jõesaar et al. (2011) observed that perceived competency related positively to athletes' intrinsic motivation, which, in turn, predicted their persistence. Similarly, several studies confirm that enhanced self-efficacy enhances motivation in sport participation by increasing confidence and enabling the player to perform better compared to individuals with low self-efficacy (McAuley et al., 2001; Moritz et al., 2000; Samson et al., 2011). High self-efficacy motivates players towards more rigorous pursuit of challenges, and makes them overcome negative effects of occasional failures (McAuley et al., 2000).

Once established at an earlier age within the mind of a player, the continuous feedback loop of intrapersonal determinants (Figure 30) often results in developing a life-long passion to play tennis at a social and competitive setting. Hence, strategies aimed at improving retention of children and adolescents in club tennis may target to enhance any of these four factors through direct or indirect intervention.

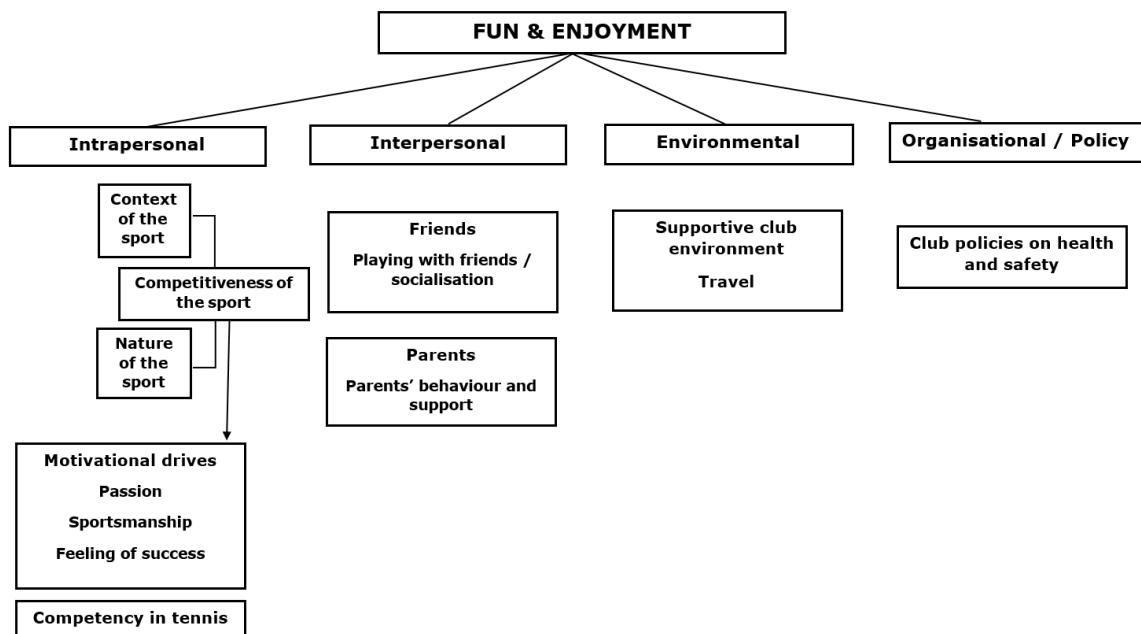
Figure 30: The feedback loop of intrapersonal determinants enhancing retention



5.2.3. Enjoyment and competency as key determinants of retention

Many studies have identified that fun and enjoyment are the reasons for playing sports (Gardner, Magee, & Vella, 2017; Light et al., 2010, 2013; Skille et al., 2011). Children experience enjoyment in different ways when they play sports (Visek et al., 2015). Figure 31 summarises how the determinants identified in the program of research lead to fun and enjoyment for players.

Figure 31: Factors connected to fun & enjoyment in playing club tennis



Competency in playing a sport is a major motivational factor for children and adolescents to continue playing (Allender et al., 2006; Barnett et al., 2013; Casper et al., 2011; Crane et al., 2015; Humbert et al., 2006; Somerset et al., 2018; Wagnsson et al., 2013; Wetton et al., 2013). This program of research extends the findings further, through the linking of enjoyment with competency. Investigating the determinants identified in the quantitative data analysis and survey through targeted qualitative interviews, it emerged that the two intrapersonal determinants ‘enjoyment’ and ‘competency’ are the two core

determinants that directly influence the players' decisions to continue to play the sport or to drop out, and that these two core determinants are strongly associated with each other.

Concepts of Fun Integration Theory (FIT) were applied to analyse and interpret the interaction of the socio-ecological determinants leading to generation of enjoyment within the minds of children and adolescents when they play community level competitive tennis at a tennis club. As a behaviour theory, FIT assists to explain how different socio-ecological elements impact on players enjoyment status (Vissek et al., 2015). Discourses related to enjoyment factors that promote tennis participation and retention are explained in Table 42.

Table 42: Discourses on enjoyment factors that promote tennis participation and retention

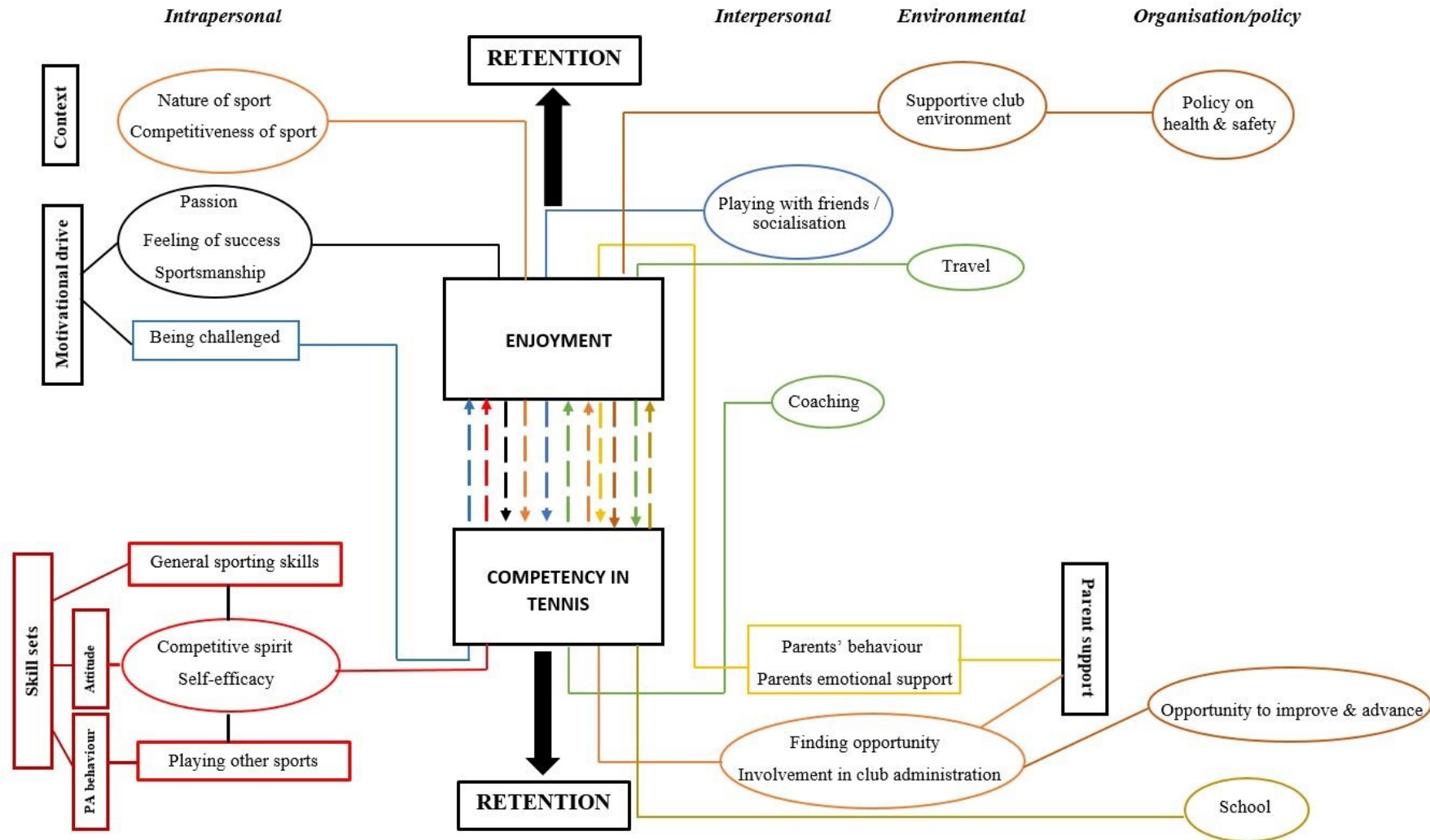
Socio-ecological domain	Socio-ecological determinants associated with tennis participation and retention	Related fun factors of Fun Integration Theory
<i>Intrapersonal</i>	<u>Direct association to enjoyment:</u>	
	Context of the sport Enjoy fundamental aspects of tennis (e.g., racquet sport, individual sport) Enjoy competitiveness of tennis	Learning and improving Trying hard
	Motivational factors Passion to sport Sportsmanship Feeling of success	Learning and improving Positive team dynamics Mental Bonuses Games Game time support
	<u>Association to enjoyment via competency:</u> Motivational factors Being challenged	Learning and improving
<i>Interpersonal</i>	Skill set that supports tennis participation General sporting skills Attitudes, beliefs, behaviours Self-efficacy Competitive spirit/attitude to succeed Physical activity behaviour Playing other sports	Trying hard Positive team dynamics Learning and improving Practice
	<u>Social aspects: Direct association to enjoyment:</u> Playing with friends and opportunities to socialise Parents' support (positive behaviour, emotional support)	Positive team dynamics Team friendship Team rituals Game time support Swag

Socio-ecological domain	Socio-ecological determinants associated with tennis participation and retention	Related fun factors of Fun Integration Theory
Environmental	<u>Association to enjoyment via competency:</u> Quality coaching to support skill development balanced with fun Parents' support (Skill development)	Positive coaching Game time support Swag
	<u>Supportive club environment: Direct association to enjoyment:</u> Friendly, non-judgmental; Inclusive Positive club policy on health and safety associated to enjoyment through supportive club environment Travel with friends to play	Positive team dynamics Mental Bonuses Games Practice Team friends Team rituals Game time support Team rituals Swag
Organisational/policy	<u>Association to enjoyment via competency:</u> Opportunity to improve and advance with competency	Positive team dynamics Positive coaching Learning and improving Games Practice
	Introducing tennis through schools	Positive coaching Practice

Using FIT, the pathways for different socio-ecological determinants to enhance motivation to retention in club tennis through their direct or indirect association with enjoyment / fun are outlined (see table 42). While influence of enjoyment / fun in the promotion of retention in club-based sport participation is well recognised, there are few studies that have tried to understand the variability of enjoyment factors across the socio-ecological framework, focusing on a specific sport. The findings of this study contribute to the theoretical development of fun integration in promoting retention in club-based community sports.

Figure 32 shows the interconnection of enjoyment and competency in promoting retention. It depicts the direct or indirect interconnections of the different socio-ecological elements to promote enjoyment and retention.

Figure 32: Association of socio-ecological determinants in promoting retention



(Note: different colours in this figure identify the direction of association of different elements to retention)

As shown in Figure 32, some of the socio-ecological elements directly associate with enjoyment that promote retention. At same time some other factors associate with enjoyment through promoting competency in tennis and motivate retention. For instance, when elements such as nature of sport (i.e., individual/team) and competitiveness of the sport promote enjoyment they lead to motivation in children and youth to play the sport more frequently which improves their competency and further motivates them to continue playing. Similarly achieving competency in tennis directly associates with skill-related factors such as general sporting skill, players' attitudes and mindsets such as competitive spirit and self-efficacy, and physical activity behaviour such as playing other sports. Competency in playing a sport promotes enjoyment in playing that sport and motivates to continue playing. Factors such as coaching help to increase tennis skills and directly associate with competency and indirectly associate with enjoyment (as competency promotes enjoyment) and motivate retention. Similarly, this program of research found that players' opportunity to improve and advance associates with their parents' involvement in the club administration which thereby indirectly enhance enjoyment through competency.

The findings from this program of research highlight that player must enjoy the fundamental aspects of tennis (e.g., racquet sport, individual sport) in order to enjoy playing tennis. Tennis is also a complex sport needing a minimum competency to be enjoyed; therefore, playing ability needs to be carefully challenged via an appropriate level of competition to maintain enjoyment. Developing skills, competency and enjoyment are the major reasons for sport participation and continuity of participation evidenced in many studies (Crane et al., 2015; Fransen et al., 2018; Gardner, Vella, & Magee, 2017; Gardner, Magee, & Vella, 2017; Light et al., 2013; Somerset et al., 2018). Motivational drivers such as passion towards the sport and sporting success can further promote the enjoyment in trying hard and improving skills (Curren et al., 2011; Hodgins et al., 2002; Korte et al.,

2008; Vallerand et al., 2008; 2020) and are key determinants in developing skills and providing motivation to improve performance despite adversities. This program of research identified that these motivational factors and another key factor namely positive sportsmanship (the role of which as a motivational factor has hardly been studied) are associated in promoting enjoyment. Sportsmanship describes an individual's behaviour during sport. Vallerand et al. (1996) defined it as 'respect for rules and officials, social conventions and opponents, as well as one's full commitment to the sport and the relative absence of a negative approach toward sport participation'. People who play a range of sports generally get familiar with following a diverse set of rules and tend to have a positive approach towards sport participation.

Regarding the elements related to competency that were identified as positively associated with retention in club tennis were general sporting skills, proficiency in tennis and self-efficacy. The interviews also revealed that feeling competent at their level of competition is important for players to enjoy '*being challenged*' and to stimulate their *competitive spirit*, resulting in the required motivation to continue playing. This reiterates that young people are unlikely to enjoy a sport, feel its meaningfulness and continue playing it unless they see themselves as improving in it (Visek et al., 2015). Even though participation in club competitions is not mandatory for playing at a community tennis club, players who choose to play competition are more likely to be retained as players. Club competitions are important for players to learn new skills, be challenged and improve. For example, Green (2006) and Fraser-Thomas et al. (2008) reported that children who are not willing to compete cannot advance in sport and fail to attain the enjoyment from learning and improving their skills (which could be a reason for a high number of children dropping out. In this context, the outcome of this program of research indicates playing multiple sports or previous participation in other sports are advantageous for young players to

develop their sports skills and overall physical literacy (Westerbeek et al., 2021). Further, techniques acquired from other sports can improve competency and promote enjoyment. Several studies (e.g., DiFiori et al., 2014; Feeley et al., 2016; Gallant et al., 2017) identified that playing other sports helps to promote continued sports participation.

Many studies have highlighted the influence of parents and coaches as positive social aspects in children's and adolescent's motivation in continued sport participation (Basterfield et al., 2016; Elliott et al., 2013; Kao et al., 2017; Lim et al., 2014; May, 2020; Strandbu et al., 2020; Weinberg et al., 2001; Weiss, 2015). Further, this research found that the network of social aspects like parental support (e.g., emotional support, transport and financial support, parents' interest and involvement in the sport and club administration) and good coaching associated positively with developing competency and enjoyment for young players. Positive parental involvement promotes a child's enjoyment of sport (Fredricks et al., 2004; Sánchez-Miguel et al., 2013, Visek et al., 2015). This program of research reported significant direct influence of positive parental behaviour related to emotional support, as well as the influence of perceived encouragement and reinforcement from parents which has been documented in previous studies (Bremer, et al., 2012; Fraser-Thomas et al., 2009; Knight et al., 2016; Teques, 2013; Visek et al., 2015; Wuerth, et al., 2004). This program of research found that parental support enhances children's enjoyment by working on developing skills and resilience, providing guidance in coping with losing and learning from mistakes. This may be even more important in a sport like tennis, which is primarily an individual sport. In this study, developing competency was strongly linked with enjoyment and relied on parental support to sustain enjoyment via improving skills. An interested parent is the key for a child's regular and continued physical activity (Henriksen et al., 2016) and this research indicates that parental support extends beyond growing up in a family with an affinity for sports (Strandbu et al., 2020). Parents' financial

support (e.g., payment of costs such as club fees, purchasing sport equipment, attending competitions, attending tennis events) and commitment to their child's sporting activities (e.g., time to provide transport, volunteer involvement at children's tennis clubs, providing wider exposure to tennis events and tournaments (Elliott et al., 2013; Rodrigues et al., 2018; Sánchez-Miguel et al., 2013; Wilk et al., 2018) are important factors. This study builds knowledge on the importance of the motives for parents' interest and involvement in children's sport participation can vary. For instance, while 'sporty and active' parents who play the sport themselves impart significant early influence in developing interest in the sport and can act as a role model for their children in many aspects like being active and enjoying the sport (Elliott et al., 2013; Turman, 2007). 'Achievement-focused' parents can impart motivation as well as create unwanted pressure. This program of research recognises that the role of both 'sporty and active' and 'achievement focused' parents are important in developing competence that leads to enjoyment and increased retention.

This program of research also identified coaching as a source of building confidence for young players to play competitive tennis and the importance of the coaching philosophy that underpinned the structure of a positive learning environment and increased the likelihood of retaining players in club-based sport. The coaching philosophy perceived to provide a positive learning environment included: (1) coaches establishing a positive connection with players which enhances their enjoyment and promotes other positive outcomes such as extra effort in training and (2) working on each player's skills and weaknesses and providing constructive and encouraging feedback. Importantly, this program of research reinforced that coaches' emotional support helps to create positive mindsets (Côté et al., 2007) and is a major motivational factor for children and adolescents to continue playing. Good coaches achieve this by treating children in a way that they feel cared, valued and appreciated. By imparting confidence and motivation, coaches can

mentor adolescents by providing support and advice even on issues that are outside of sport, as they are in a closer position to recognise and comprehend players' emotions. This extends the findings of others (Conroy et al., 2007; Côté et al., 2009; Kao et al., 2017) that have observed the competency of coaches is positively associated with players' trust in them.

While addressing enjoyment and competency as major determinants in retention of players in club tennis at the intrapersonal level, this program of research identified factors in the environment and organisation/policy domains which are directly and indirectly linked with enjoyment and competency but were not as widely discussed or emphasised. For instance, this program of research identified that travel to distant venues to play competitions is an opportunity for social interaction that adds to the 'fun' factor, with parent-organised 'car-pooling' common for such trips. The need for such travel was not found as a deterrent for retention. Travel to different clubs was associated with improving competency, through providing the opportunity for players to test their ability against different sets of players in a different and unfamiliar environment. Such improvement in confidence and competency are indirectly linked to enjoyment.

Similarly, a supportive club environment (i.e., friendly, inclusive, and non-judgemental) and re-assuring policies on health and safety at the club are directly linked to enjoyment. While discussing about the club environment, this program of research found that the perspective on a supportive and welcoming club environment that promote enjoyment varied between parents, coaches and players and highlights importance of good club leadership to fulfil the different expectations. For instance, parents were focused on governance issues reporting that clubs needed administrators with progressive views to create a supportive club environment. Coaches were focused on inclusion, especially for players from socio-economically disadvantaged background whilst players identified the

importance of club behaviours that support feelings of acceptance, non-judgemental approach by club personnel and gender equality in playing opportunities at the club. The findings of this program of research extend the existing knowledge that supportive club environments positively influence sport participation. and that welcoming factors were the most positive influences on players' decision to participate in club-based sports. Previous studies (Casey et al., 2017, Eime et al., 2008, Sharp, 2001) focused only on perceptions of players; the views of parents and coaches provide a wider vision on how this is conceptualised.

At the organisational and policy level, factors promoting retention were indirectly linked with enjoyment, via developing competency was the exposure of tennis programs or curriculum in schools. Several studies have established the positive association of access to sports facilities with children's participation in physical activity (Davison, et al., 2006; Lee et al., 2016; Limstrand et al., 2008; Somerset, et al., 2018). Availability of adequate tennis facilities and/or modified equipment in schools provides the opportunity for children to try the sport in their early years and re-confirms the importance of school-sport partnerships (ASC, 2017; Eime & Payne, 2009).

This program of research revealed that continuing playing tennis at tennis clubs after early exposure to tennis through schools helps to acquire adequate competency and interest by early adolescent years, which indirectly links to enjoyment. Further, this research found that the opportunity for players to challenge themselves with guidance and support and a positive atmosphere to improve are motivating factors vital to keep players interested and retained in club tennis. These factors positively associate with promoting enjoyment via improving competency and thereby promote retention. Club facilities are recognised as a motivator for retention (Eime, Charity, Harvey, & Payne, 2015; 2017; Sallis et al., 2012). This program of research conceptualised that along with good tennis courts and club

amenities, the quality of programs offered by clubs are also a part of facilities offered by clubs that promote retention of players in club tennis.

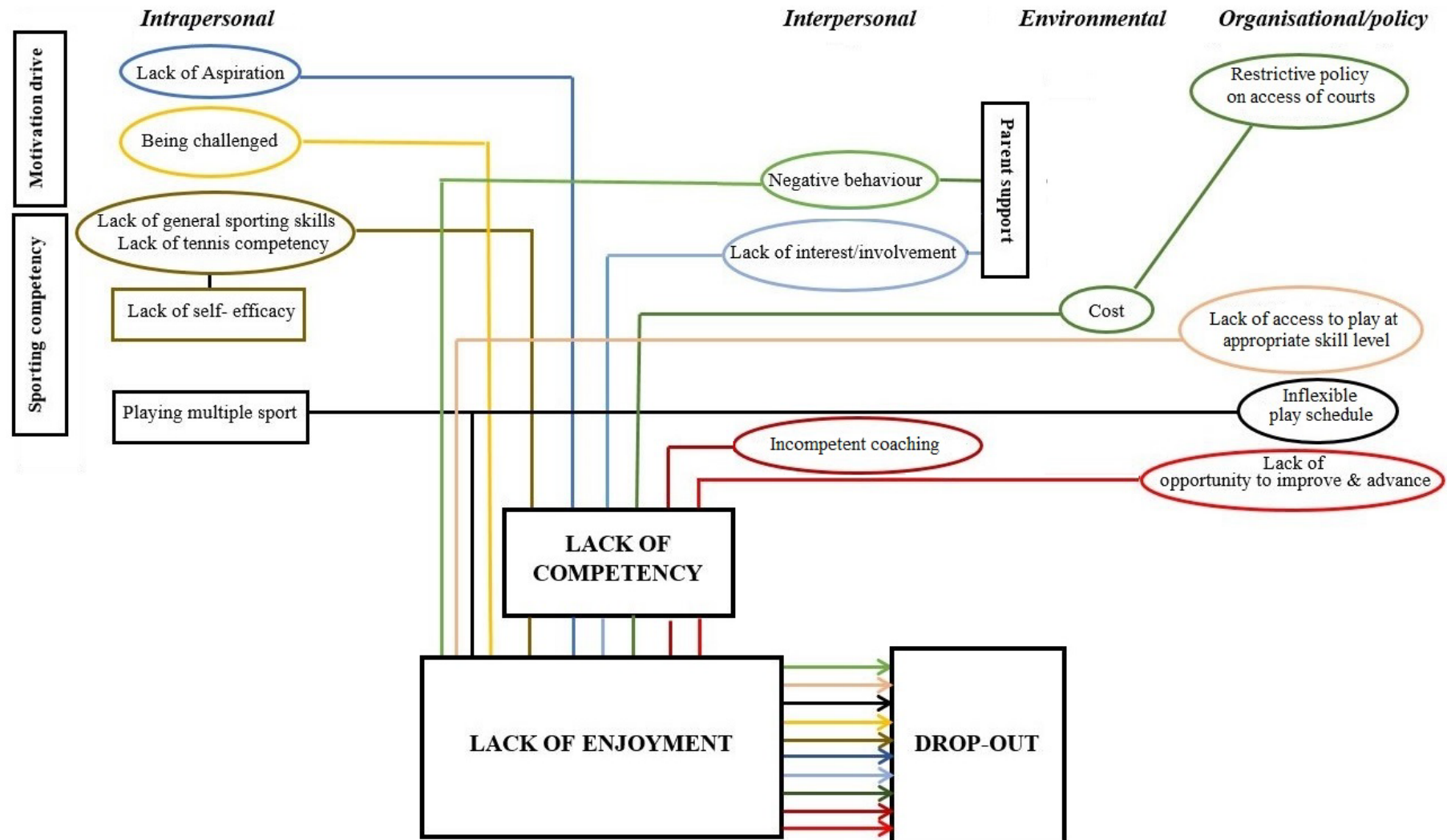
5.3. Determinants of dropout

This program of research used Leisure Constraint Theory (LCT) to explain how the constraints influence children and adolescents in their club tennis participation. This research identified some factors belonging to different socio-ecological domains that, by acting in combination or independently, can create aversion in players' mind and dampen their motivation to continue. Figure 33 depicts how these factors act as constraints on competency and enjoyment and contribute to dropout.

Addressing these constraints is important for curbing dropout. For instance, as enjoyment is a major determinant in retention of children in club tennis, lack of competency directly affects enjoyment in playing the sport and leads to drop out. Poor coaching can lead to a lack of competency, and thereby affects enjoyment and is associated with dropout. Similarly, cost for club membership, court access/hire and coaching acts as a structural constraint that indirectly acts as a barrier to participation and enjoyment of the sport.

This program of research also found that some factors of different socio-ecological domains, while promoting retention, can directly or indirectly create constraints in players' motivation to continue playing club tennis. For example, 'being challenged' is a factor that is identified as motivational for retention; it is also identified as a constraint for players with limited tennis skills to enjoy playing club tennis. Similarly, 'playing other sports' is identified as a determinant for retention in this program of research; however, it also can act as a constraint when the play schedule of other sports clash with that of club tennis, forcing children to choose one sport over the other.

Figure 33: Association of socio-ecological determinants in leading to dropout



(Note: different colours in this figure identify the direction of association of different elements to dropout)

Figure 33 indicates that by acting in combination or independently, some factors of different domains can constrain players' motivation to retain. For example, lack of competency directly affects enjoyment in playing the sport; lack of self-efficacy can prevent achieving competency (and vice versa), and thereby affect enjoyment. Intrapersonal constraints include low perceptions of physical competence, being challenged, lack of aspiration, and playing multiple sport. All of these are identified as affecting retention.

Many studies show that lack of sporting skills is one of the primary constraints of continued sport participation for children and adolescents (Allender et al., 2006; Casper et al., 2011; Crane et al., 2015; Humbert et al., 2006; Somerset et al., 2018; Wagnsson et al., 2013). Two studies (Barnett et al., 2013 and Wetton et al., 2013; both mostly based on school sport rather than structured sport like club-based sport) found that children who felt that they were not good at sports were less likely to participate.

Players need challenges and the excitement of being challenged through competitions is a motivation to improve and continue playing. The findings of this program of research shows that players who play club tennis and have higher goals and usually see competition as something that provides a challenge. Progressively better success in club competitions is the confirmation of improvement they need in their advance towards their goals. However, for players who have already attained higher skills than most others they play against, lack of challenge at club level is a constraint that can easily deter them (Monteiro et al., 2017).

The interviews with players indicated that the challenge of club competitions is a motivation for players to improve and to be retained, and being challenged is important for developing competence. At the same time, the program of research also reveals that coaches

and clubs need to have great insight into each player's ability in order to challenge them to the right extent and appropriately match players in competition so that they can enjoy their playing experience. Too much challenge, bring a constraint on motivation, have led players to drop out. Relating to this, Carlman et al. (2013) revealed that athletes with low levels of perceived physical competency dropped out at a higher rate due to too much pressure.

The interviews found that lack of higher tennis aspiration is a reason for dropout in young players. Players with higher ambition continue playing club tennis and desire to move through the developmental pathway and sometimes with aspirations to be a professional. Despite most of the times these aspirations are not realistic, this program of research found that it is important for young players to have higher aspiration to maintain the motivation to play and enjoy the experience.

While playing multiple sport is found as a determinant for retention, this program of research also found it as a determinant for dropout when it results in a conflict with the play schedule of club competitions and coaching. Clashes of schedule between sports can act as a constraint for players who are forced to drop out from a sport to play another. Furthermore, studies show that parents fear that their children may fall behind other participants if they do not consistently play one sport (Morris, 2014; O'Sullivan, 2014).

While discussing about the interpersonal constraints, negative parental behaviours such as too much pressure or too little interest affect children's performance and enjoyment, as established in previous studies (Bonavolontà et al., 2021; Gould et al., 2008; Knight et al., 2010; Sagar et al., 2010; Sánchez-Miguel et al., 2013). However, in a study by Amado et al (2015), the right degree of parental pressure emerged as a strong positive predictor of intrinsic motivation and negative predictor of demotivation. Elliott et al. (2013) found that coercive parental behaviours were crucial in promoting perseverance. This program of

research found that coercion may not necessarily be a negative aspect of sport parenting, but rather, at moderate levels, it encourages children to be physically active. Based on the level of acceptable parental pressure that promote motivation than demotivation, this program of research suggests that a balance of 'nice' parent and 'pushy' parent seems to be the right combination for motivating children to continue playing.

This research also identified that players who have their parents involved in club administration often getting more opportunities is not unusual. Other players see this as denial of equal opportunity for them to develop and advance. Favouritism at the club organisation indirectly affects enjoyment of players through denied opportunity to improve and advance their skills. As a complex sport like tennis, competency of coaches raised as a constraint for retaining players. Coaches should possess the knowledge and experience to create enjoyment at the same time promote skills in players to promote retention. Poor coaching which doesn't make it enjoyable for the players nor provide skill development is a challenge to retaining players.

Cost of court hire was mentioned as a structural constraint that is affecting the ability of young players to practice for longer hours and thereby developing competence. This is mainly connected to clubs' policy on granting the use of its facilities. Most clubs do not allow children free-of-cost access of courts when they are not in use. On top of membership fee, they charge a rather high court hire fee from players to use the courts outside of routine hours. This is seen as a barrier for retaining children in tennis as some families cannot afford the extra cost for players to practise their skills and improve their competency.

Even though for most participants tennis clubs do not provide a pathway to the heights of elite sports, it can act as a talent-pool from which the best young talents can be spotted at an early age to be groomed to the elite level (Fraser-Thomas et al., 2008; Green, 2006). Opportunity for players to play against opponents who are similar in skill level is an

important factor in enjoying the sport and building competency. Children from smaller tennis clubs in regional areas often have a limited number of players. Therefore, talented youngsters at such tennis clubs are disadvantaged with lack of opportunity to play against others of similar skill levels and hence are constrained in terms of enjoying the sport, getting motivated to continue playing and thereby attaining their full potential.

5.4. New knowledge from the research

The study provided deeper understanding about the determinants of retention and dropout for children and adolescents generally for club-sport, and specifically for club tennis in Victoria. Mixed-methods explanatory sequential research design was used to identify the broader factors. The key issues emerged from analysis of secondary data in Study 1 and survey data in Study 2 were explored in depth using qualitative interviews in Study 3. The holistic approach adopted in this program of research that used the socio-ecological model as the overarching model and applied the behavioural theories Fun Integration Theory (FIT) and Leisure Constraint Theory (LCT) to map the pathways of interaction of determinants that lead either to adequate motivation to be retained or to a level of deterrence that cause dropout is novel.

This program of research highlighted the two intrapersonal determinants ‘enjoyment’ and ‘competency’ as ‘core’ determinants that directly influence the young players’ choice to be retained or to drop out from playing club tennis. Many studies have listed these two determinants, as well as several of the other socio-ecological factors identified in this study, as influencing retention and dropout from playing a sport. The research program created further new knowledge by generating a clear picture of how each individual socio-ecological element contributes to retention through promoting enjoyment or competency. Mapping of the interaction or interdependency of these elements in leading to retention

(Figure 32) or to dropout (Figure 33) while presenting enjoyment and competency as core elements determining retention is unique. The maps explain how all other socio-ecological elements enhance or diminish either of the ‘core’ determinants directly or indirectly and thereby influence retention or dropout. Knowledge of this interconnectivity highlights the importance of a holistic approach in sport retention studies and provides theoretical backing for developing strategies to improve children’s and adolescents’ retention in club-based tennis.

Summarising this chapter, the analysis and interpretation of results from the mixed method studies resulted in the creation of indicative maps of the multi-layered association of socio-ecological factors leading to retention and dropout. ‘Enjoyment’ and ‘competency’ were identified as primary determinants of retention of children and adolescents in club-based tennis. Pathways of influence of several other socio-ecological determinants to either enhance or diminish these two primary determinants were established.

At the same time, it is to be stated that the research methodology, data and its analysis had some limitations. While several of them have already been discussed earlier in the report, the following chapter consolidates some key limitations of the research study.

6. Limitation

This research program was designed to focus on a single sport (i.e., tennis) within a single state (Victoria) and carried with it the related limitations. The findings of the study are based on tennis, and many of them may be interpreted as true in the case of club-based sports in general; more so for similar individual sports and racquet sports. However, no other similar sport shares the same popularity and availability of infrastructure at community level in Australia as tennis. The studied population represented only those players who registered as members at tennis clubs affiliated to Tennis Victoria and played tennis regularly; it excluded players involved in casual tennis and social tennis. The census data used for quantitative analysis was sourced from the electronic database of membership from all registered tennis clubs in Victoria for two successive years. Cleaning of raw data eliminated all samples that did not include one or more of required fields, therefore an unknown number of registered players were missed from the final sample set.

The lower-than-expected response for the invitation to participate in the quantitative survey restricted the sample size for that study. In the case of retained players, participants for the online survey were recruited through tennis clubs. Recruiting dropout players proved difficult, which may have caused skewness of data towards retained players. A high level of enjoyment and intention to continue were reported in the results as the sample consisted of a much higher proportion of regular participants compared to dropouts. This disproportion was repeated in the qualitative study which may have hampered a clearer insight on the studied problem from the perspective of dropped out players and restricted the portrayal of a complete picture of the underlying reasons of attrition. Though not uncommon in research data collection, such issues create a possible bias due to variation in the tennis playing experience and perspective of retained players from dropped-out players. The low response from dropouts have limited the intended outcome of identifying the

constraints experienced by child and adolescent athletes and intervening with strategies that are able to prevent excessive dropout. This may be addressed with further research that include more players who dropped out from the sport. Similarly, the disproportionate number of participants from the metropolitan region compared to those from regional areas may have affected getting conclusive evidence on how 'region' as a factor influenced other determinants of retention. Some parents and players who participated in the qualitative study were from the same family. Therefore, there is some possibility of bias in some of their responses despite interviewing parents and players separately and using different prompts to get their specific views. The researcher tried to get individuals from different families, however had difficulties in recruiting study participants.

7. Conclusion and recommendations

In alignment with the global trends, participation in club-based sport in Australia has steadily declined over recent years with the sharpest drop off during late childhood and adolescence (Sport Australia, 2019). This causes concern, as broad-based sports participation is the foundation on which children and youth are introduced to sport, and elite athletes are identified and developed (Green, 2005). Specifically, community sports clubs play a major role in facilitating sport participation of children and adolescents which keep them physically active and promote overall health and wellbeing in their journey to adulthood. Therefore, dropout from club-based sports in late childhood and adolescence is a concern (Crane et al, 2015; Deelen et al., 2018; Eime et al., 2019). Dropout from a specific organised sport such as tennis may not necessarily lead to physical inactivity. However, excessive dropout is a major concern for sports management and organisations that deliver sport such as tennis clubs, as well as state and national sporting organisations.

This program of research investigated the retention and dropout of children and adolescents playing community club tennis. Using a mixed method design the study identified significant demographic differences between the retained and dropout players. Club tennis retention is influenced by a number of determinants across different socio-ecological domains such as enjoyment, competency, coaching, support by family and friends, influence of role models, convenient location of tennis club, supportive club environment, affordable and quality club facilities, play structure and play schedule. Furtherer, this program of research highlighted the two intrapersonal determinants, ‘enjoyment’ and ‘competency’, as ‘core’ determinants that directly influence the players’ choice to be retained or to drop out from playing club tennis. All other socio-ecological determinants either enhance or diminish these core determinants and thereby indirectly influence retention or dropout. Many of these determinants are connected and do not work

in isolation. The outcome of this study provided insight on the importance of a holistic approach by sports' governing organisations like Tennis Australia in developing strategies for preventing the decline in participation among children and adolescents. Prospective areas for further investigation were identified.

From this program of research there are some recommendations relevant to increasing participation and retention in club-based tennis that may be applicable to sport in general. Primarily, promotion of *fun / enjoyment* must be prioritised in delivering club programs, coaching and competition. In the new and evolving spectrum of leisure-time activities that offer wider choices, sports clubs need to have an understanding of the fun factors for different age, gender, skill levels and playing aspirations. Ensuring players are enjoying the sport will increase retention of children and adolescents. Seeking periodic feedback from players will assist to find out their expectations out of the game to meet different desires of fun and to deliver accordingly. The highly competitive nature of traditional delivery of club-based sports in Australia does not seem to be appealing to a wide population within the cohort who may not enjoy the pressure of competition. In light of the finding of this study that feeling competent is important for motivation to continue participating in club tennis and nearly half of participants in the studied cohort drop out each year, the *play structure and format* currently followed at most tennis clubs may not be making less skilled players feel comfortable.

Coaches play a major role in building competency and self-efficacy of young tennis players as they continue playing, which consequently enhances the fun and enjoyment they derive from the sport and leads to higher retention. This program of research found that promoting enjoyment (for all ages, genders and skills) along with teaching tennis skills can be a challenge for coaches. Improving the *quality of coaching* through more opportunities and accessibility for professional development is important to maximize their positive

impact on young players, through being mindful on enhancing players' perceptions of competence, ensuring positive social influence, and making practice sessions and games fun and enjoyable. Coaching practices in which coaches are able to promote enjoyment at the same time meet the needs and expectations regarding skill-improvement may be lacking. Good quality coaching that is more widely accessible and affordable is important in sustaining children's interest and passion of the game. Coaches should also work with clubs to ensure that players do not start playing competition until they have a certain level of competency to be able to play competition and enjoy playing.

7.1. Practical implications

Club tennis participation is influenced by number of factors across multiple levels. To provide a positive tennis-playing experience, club administrators must have an understanding of how the multi-layered motivational factors work in unison and effectively enhance the fun, enjoyment and competency specifically for children and adolescents in the club setting.

A player's decision to continue or discontinue is triggered by multiple factors that are interlinked. Findings of this program of research throw light on the importance of a holistic approach in developing retention strategies, through tweaking the multiple layers of influencing factors. Emphasising on the provision of a positive playing experience, tennis clubs must recognise the importance of coaching and the role of family as the primary social institutions that shapes physical activity behaviour and should include these in developing retention strategies.

7.2. Further research

Efficient and viable community sporting clubs form the foundation of the strategy for achieving the current sport policy objective of building a more active Australia. In order to

retain more youth in sport, sports club have to recognize the various aspects that play a part in individuals sport participation in a broader spectrum. As identified from this program of research, there are several areas with knowledge-gap where future research can be recommended. Firstly, parental behaviour was emphasized as a determinant influencing players' retention or dropout from club tennis. While this program of research suggests that a balance of 'nice' parent and 'pushy' parent could be the right combination for motivating children to continue playing, it is important to have further knowledge on the appropriate balance in parental behaviour that would promote retention. This would be helpful in educating parents about their positive role in leading to the best environment in which children and adolescent players can thrive.

Secondly, importance of welcoming and inclusive club environment is a positive influence in club-based sport retention. While some sporting organisations have implemented inclusive sport frameworks for accommodating children with different needs (e.g., disability), not all club-based sports have such frameworks. Strategies developed for increasing participation numbers may not work well for motivating players to be retained in sport. More research is required to investigate how retention in the sport can be improved through promoting inclusiveness. Research in this area will assist sporting organisations to develop strategies for attracting and retaining young players of diverse backgrounds and needs.

Finally, limited number of enrolments in smaller tennis clubs was found as a challenge for retaining young players, as it limits players' opportunity to improve skills and enjoy playing the sport as well as constrains the ability of clubs to maintain the expected standard of facilities. Further research is needed to consider strategies such as *pooling of resources and memberships* of clubs that are too small to be independently viable, as an option to increase retention.

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Appendix 1

Tennis Australia Agreement

TENNIS AUSTRALIA COLLABORATIVE RESEARCH AGREEMENT



PARTIES:

Federation University Australia, ABN 51 818 692 256 of University Drive, Mt Helen, Victoria 3350 (**'the University'**)

Tennis Australia Limited, ABN 61 006 281 125 of Melbourne Park, Olympic Boulevard, Melbourne, Victoria, 3000 (**'TA'**)

Ambili UNNI of 9 Pioneer Court, Horsham, Victoria 3400 (**'the Student'**)

RECITALS:

- A. TA is the governing the body of the sport of tennis in Australia.
- B. The Student is a doctoral candidate enrolled at the University.
- C. TA agrees to provide the Student with support and access to its organisation for the purposes of assisting the Student with their thesis at the University relating to a multifactorial, domestic analysis of the retention of Australian tennis club based players in organised competition (**'Thesis'**) on the terms and conditions of this Agreement.
- D. In consideration of the mutual promises contained in this Agreement and for other good and valuable consideration, the sufficiency of which is acknowledged by all of the parties, the parties agree to the following terms and conditions.

IT IS AGREED:

- 1. **Term**
 - 1.1 This Agreement will commence on the date that the last party signs it, and continue for a period of 3.5 years or until the Student submits their Thesis for examination, whichever is the shorter period (**'Term'**).
- 2. **TA's obligations**
 - 2.1 TA will provide the Student with the support detailed in Annexure B.
- 3. **Student obligations**
 - 3.1 The Student must:
 - (a) obtain a satisfactory current national police records check, or a Working With Children Check (as advised by TA), and provide evidence of the relevant check(s) to TA;
 - (b) sign and return the Member Protection Declaration attached at Annexure A;
 - (c) participate in regular telephone conferences and meetings with the University supervisors and TA's nominated supervisor(s) (including each Party's Contract Manager pursuant to clause 4) to report on progress;
 - (d) comply with all lawful directions given by the University in relation to access to and use of the University premises and participation in University activities, including directions in relation to research activities;
 - (e) comply with all of the University's rules and procedures, including procedures relating to the completion of progress reports;
 - (f) comply with and be bound by TA's policies and procedures including but not limited to TA's Member Protection Policy and Tennis Anti-Corruption Program; and
 - (g) not to do anything or make any statement either orally or in writing which is likely to cause detriment, damage, injury or loss to TA, its Member Associations, or its affiliates or generally bring TA's business into ridicule or disrepute.
- 4. **Contract Manager**
 - 4.1 Each Party must assign an individual to be its authorised representative in respect of this Agreement (**'Contract Manager'**). In the case of the Student, the Student is the Contract Manager.
 - 4.2 The Contract Manager will be responsible on behalf of the party appointment them for the day to day administration of this Agreement and will regularly liaise with the other parties in respect of the administration of this Agreement. A party must notify the other parties immediately should its Contract Manager be removed or replaced together with the contact details of its new Contract Manager or of any change to its Contract Manager's contact details.
 - 4.3 The Contract Manager must be available and able to be contacted during normal business hours.
 - 4.4 Each party will be responsible for the acts, omissions and faults of its Contract Manager. Any direction, instruction, notice, approval or other communication made or given to a Contract Manager will be deemed to have been made or given to the party appointing that person.
- 5. **Confidential Information**
 - 5.1 The Student and the University must keep confidential and not disclose any trade secrets or any other confidential information of TA that they acquire from TA under or in connection with this Agreement, including but not limited to any athlete information, information which is by its nature confidential, is designated by TA as confidential or a party knows or ought to know is confidential and includes without limitation all business information, documents, records, reports, technical information, athlete performance data and statistical data (**'TA Confidential Information'**), without the prior written consent of TA.
 - 5.2 Subject to clause 5.1, the Student may disclose TA Confidential Information to the University supervising the Student for the sole purpose of the Student preparing the Thesis (prior to its submission in accordance with clause 9). The Student must not disclose any TA Confidential Information to any third party in connection with the sole purpose of preparing the Thesis except

with the prior written consent of TA and provided that the third party executes a written undertaking in a form approved by TA that the third party will keep the TA Confidential Information confidential.

5.3 The Student and the University each acknowledge and agree that they must not use the TA Confidential Information for any other purpose other than the express purpose set out in this Agreement.

5.4 This clause 5 survives the termination or expiry of this Agreement.

6. Intellectual Property

6.1 In this Agreement "Intellectual Property" includes without limitation copyright, trade names, registered and unregistered trade marks, logos, inventions, trade secrets, know-how designs, images, proprietary information, databases and any other rights resulting from intellectual activity in respect of any information, process, work, material or method.

6.2 All Intellectual Property that is discovered, developed or has otherwise come into existence as a result of, for the purpose of, or in connection with the Thesis or otherwise in connection with this Agreement ('Developed Intellectual Property') will vest in the Student. The Student grants to TA a perpetual, non-exclusive, royalty-free, irrevocable, world-wide licence to use and reproduce the Developed Intellectual Property for the internal purpose of informing its programs as well as athlete and coach development. .

6.3 Copyright to the Thesis is owned by the Student. The University will procure that the Student grants to TA a perpetual, non-exclusive, royalty-free, transferable, world-wide license to use and reproduce the Thesis and all Intellectual Property contained therein (including copyright in the Thesis) in order for TA to effect its license rights under clause 6.2.

6.4 The ownership of pre-existing Intellectual Property that is owned by or licensed to a party independently of this Agreement without being in breach of any of its obligations to a third party remains with the party that introduces it to the Thesis ("Background Intellectual Property"). If the Background Intellectual Property is incorporated into the Developed Intellectual Property, the Student and the University each grant to TA a non-exclusive, transferable, perpetual, irrevocable, world-wide, royalty-free licence including the right to sub-licence, to use, copy, modify, reproduce, publish, adapt, distribute and otherwise exploit such Background Intellectual Property.

6.5 This clause 6 survives the termination or expiry of this Agreement.

7. Warranties

7.1 Each party warrants that it is entitled to use its Background Intellectual Property and has the ability to allow the other parties to use it in accordance with this Agreement and that it is not in any breach or alleged breach of the intellectual property rights of any other person.

7.2 The Student warrants that no conflict of interest exists or is anticipated relevant to his or her completion of the Thesis.

7.3 The Student warrants that the Thesis and TA's use of the Thesis within and outside Australia in accordance with this Agreement, will not infringe the Intellectual Property Rights of any person.

7.4 This clause 7 survives the termination or expiry of this Agreement.

8. Publications

8.1 Subject to this clause 8 and clauses 5 and 9, all parties have the right to publish the research outcomes and scholarly or academic articles relating to the Thesis (following the completion, submission and assessment of the Thesis in accordance with this Agreement), including conference publications and agree that they will acknowledge the intellectual input, as relevant, of TA, the University and the Student.

8.2 Prior to publishing any material relating to this Agreement and/or the Thesis, the University and/or the Student will provide a copy of all proposed materials to be used, published or adapted ('Published'), together with details of how, when and to whom it is proposed to be Published, for the other parties' consideration at least 30 days prior to the proposed submission date for Publication ('Approval Period');

8.3 If, during the Approval Period TA reasonably requests that the material not be Published or submitted for Publication in the form provided, it will notify the other parties to that effect, giving reasons and, if applicable, suggest alterations to the proposed material so that it can be submitted for Publication.

8.4 TA can provide comments regarding the proposed Publication to the Student and the University and the University and the Student must consider all such comments.

8.5 The University and/or the Student must not publish the proposed material except with the prior written consent of TA.

8.6 Unless TA provides a notice to the University and the Student that it consents to the Publication, TA is deemed to not have consented to the Publication. TA will use its best endeavours to respond within 30 days of its receipt of a proposed Publication.

9. Thesis

9.1 The Student must provide a copy of the Thesis to TA for to review before submitting it to the University examiner.

9.2 As soon as is reasonably practical after receipt of the Thesis and in any event within 6 weeks of its receipt of the Thesis, TA, acting reasonably, must determine whether it contains any of TA's Confidential Information and if so TA must either:

(a) notify the Student that the Thesis contains TA's Confidential Information and that TA does not consent to examination or publication of the Thesis unless and until suitable safeguards are put in place to protect that Confidential Information (the suitability of safeguards to be determined by TA, in its absolute discretion, acting reasonably); or

(b) confirm in writing that the Thesis does not contain its Confidential Information or, in the event that the Thesis does contain TA's Confidential Information, consent to the submission and publication of the Thesis.

9.3 If TA gives notification under clause 9.2(a), then the Thesis cannot be submitted for examination or publication until TA's Confidential Information is either removed, or safeguarded in accordance with clause 9.2(a).

9.4 If TA gives notification under clause 9.2(b), then the Thesis can be submitted to the examiner immediately.

9.5 Where TA fails to make a determination under clause 9.2 within 6 weeks of receipt of the Thesis, TA will be deemed to have consented to the submission (or any other form of publication) of the Thesis in accordance with clause 9.2(b).

10. Termination

10.1 This Agreement may be terminated by any Party with immediate effect by notice in writing to the other Parties if:

- (a) any Party is in breach of the Agreement and such breach has not been rectified within 14 days of receipt by that Party of a written notice requiring it to do so (such notice must be copied to all Parties);
- (b) the Student withdraws from enrolment or the Student's candidacy at the University; or
- (c) the University terminates the Student's enrolment or Student's candidacy.

11. Survival

There shall survive the expiry or termination of this Agreement any term of this Agreement which in order to give effect to its provisions needs to survive the said expiry or termination.

12. Relationship

Nothing in this Agreement is intended to create a relationship of employment, partnership, joint venture or agency between any or all of the University, TA and the Student, and nothing in this Agreement will be deemed to have created any such relationship.

13. Inconsistency

In the event of any inconsistency, this Agreement prevails over any other representation or agreement entered between any of the Parties in relation to the subject matter of this Agreement.

14. Variation

This Agreement may be varied at any time by written agreement of the Parties.

15. Applicable law

This Agreement is governed by the laws in force in Victoria and the parties submit to the exclusive jurisdiction of its courts.

16. Counterparts

This Agreement may be executed in any number of counterparts and by the Parties on separate counterparts. Each counterpart constitutes an original of this agreement, and all those counterparts together constitute one agreement.

17. Representations

Each Party to this Agreement agrees not to hold itself out or represent itself or any of its services or products as being approved, recommended or in any other way endorsed by any other Party to this Agreement, unless otherwise agreed in writing.

18. Dispute Resolution

If any dispute or difference arises under this Agreement and the parties are unable to resolve that dispute or difference within 14 days, then the dispute or difference must be referred to mediation by a mediator appointed by the Australian Commercial Disputes Centre ('ACDC'). Except as otherwise provided by the terms of this Agreement, the rules of the ACDC will apply to the mediation. The mediator's costs will be shared equally by the parties. This clause will not affect any party's rights to terminate this Agreement in accordance with clause 10, or to seek interlocutory relief in a court of competent jurisdiction.

19. Limitation of Liability

19.1 Under no circumstances will TA be liable to any other party for special incidental, or indirect damages or for any economic consequential damages or lost profits, business, revenue, goodwill or anticipated savings.

19.2 Under no circumstances will the University be liable to any other party for special incidental, or indirect damages or for any economic consequential damages or lost profits, business, revenue, goodwill or anticipated savings.

20. Privacy

20.1 Each party agrees, in respect of any personal information obtained in connection with this Agreement, to comply with the Privacy Act 1988, any other applicable legislation regarding privacy and TA's privacy policy. A copy of the privacy policy can be found at: <http://www.tennis.com.au/privacy>. Each party agrees not to use any personal information obtained in connection with this Agreement for any purpose other than the purposes of this Agreement.

21. No Waiver

No failure to exercise or delay in exercising any right, power or remedy by a party operates as a waiver. A single or partial exercise of any right, power or remedy does not preclude any other or further exercise of that or any other right, power or remedy. A waiver is not valid or binding on the party granting that waiver unless made in writing.

22. Severance

Any provision of this Agreement which is void or unenforceable in Victoria may be severed from this Agreement without affecting the enforceability of other provisions.

23. Entire Agreement

This Agreement constitutes the entire agreement between the parties about its subject matter and supersedes all prior representations, agreements, statements and understandings, whether verbal or in writing.

24. Assignment

The University and the Student shall not, without the prior written approval of Tennis Australia and except on such terms and conditions as are determined in writing by Tennis Australia, assign all or any part of its right, title and interest in the Agreement to any entity.


25. Notices

25.1 Any notices required to be given under this Agreement shall be deemed to have been given if delivered by any means listed in this clause to the address of each party as set out in this Agreement.

25.2 A facsimile letter is deemed received upon receipt of a facsimile transmission report evidencing that the facsimile letter was sent in its entirety to the facsimile number of the recipient. A posted letter is deemed received on the third day after posting. A hand delivered letter is deemed received on the day of delivery.

Executed as an Agreement

Signed by an authorised representative
on behalf of **FEDERATION UNIVERSITY
AUSTRALIA** ABN: 51 818 692 256




Authorised Representative
JOHN BLAIR
CHIEF OPERATING OFFICER
Name & Title
27/02/17
Date

Authorised Representative

Name & Title

Date

Signed by an authorised representative
on behalf of **TENNIS AUSTRALIA LIMITED**
ABN: 61 006 281 125




Authorised Representative
DARREN PEARCE
C.O.O.
Name & Title
27/10/2017
Date

Authorised Representative

Name & Title

Date

Signed by **Ambili UNNI**



Signature
09/03/2017
Date

Appendix 2 Ethics Approval: Study 1

Principal Researcher:	Dr Rochelle Eime
Other/Student Researcher/s:	Dr Jack Harvey Ms Melanie Charity Dr Neroli Sawyer Dr Helen Thompson Mr Paul Feely
School/Section:	SHSP
Project Number:	C13-007
Project Title:	Sport and Recreation Spatial project
For the period:	04/08/2016 to 30/12/2023

Quote the Project No. C13-007 in all correspondence regarding this application.

Amendment Detail Summary: Request to add player name (given name(s) and family name) to the information currently collected (UI, gender, DoB, Address) for each registered SSA member. Note: All Reporting is still at the Sport Identifier level.

Please note: Ethics Approval is contingent upon the submission of annual Progress reports and a Final report upon completion of the project. It is the responsibility of researchers to make a note of the following dates and submit these reports in a timely manner, as reminders may not be sent out. Failure to submit reports will result in your ethics approval lapsing.

REPORTS TO HREC:

An annual report for this project must be submitted to the Ethics Officer on:

22 July 2017
22 July 2018
22 July 2019
22 July 2020
22 July 2021
22 July 2022
22 July 2023

A final report for this project must be submitted to the Ethics Officer on:

30 January 2024

These report forms can be found at:

<http://federation.edu.au/research-and-innovation/research-support/ethics/human-ethics/human-ethics3>

Irene Hall

Ethics Officer

16 November 2022

Please see attached 'Conditions of Approval'.

Office Use Only					
RM	Sig Dates	Shared Drv:	Matrix	Notes:	

CONDITIONS OF APPROVAL

1. The project must be conducted in accordance with the approved application, including any conditions and amendments that have been approved. You must comply with all of the conditions imposed by the HREC, and any subsequent conditions that the HREC may require.
2. You must report immediately anything which might affect ethical acceptance of your project, including:
 - Adverse effects on participants;
 - Significant unforeseen events;
 - Other matters that might affect continued ethical acceptability of the project.
3. Where approval has been given subject to the submission of copies of documents such as letters of support or approvals from third parties, these must be provided to the Ethics Office before the research may commence at each relevant location.
4. Proposed changes or amendments to the research must be applied for, using a 'Request for Amendments' form, and approved by the HREC before these may be implemented.
5. If an extension is required beyond the approved end date of the project, a 'Request for Extension' should be submitted, allowing sufficient time for its consideration by the committee. Extensions cannot be granted retrospectively.
6. If changes are to be made to the project's personnel, a 'Changes to Personnel' form should be submitted for approval.
7. An 'Annual Report' must be provided by the due date specified each year for the project to have continuing approval.
8. A 'Final Report' must be provided at the conclusion of the project.
9. If, for any reason, the project does not proceed or is discontinued, you must advise the committee in writing, using a 'Final Report' form.
10. You must advise the HREC immediately, in writing, if any complaint is made about the conduct of the project.
11. You must notify the Ethics Office of any changes in contact details including address, phone number and email address.
12. The HREC may conduct random audits and / or require additional reports concerning the research project.

Failure to comply with the *National Statement on Ethical Conduct in Human Research* (2007) and with the conditions of approval will result in suspension or withdrawal of approval.

Appendix 3 Ethics Approval: Study 2

Principal Researcher:	Associate Professor Rochelle Eime	
Other/Student Researcher/s:	Dr Meghan Casey Dr Jack Harvey Ms Melanie Charity	Dr Machar Reid Ms Ambili Unni
School/Section:	Faculty of Health Sciences	
Project Number:	A18-028	
Project Title:	Participation and drop-out of children and adolescents in club-based community tennis.	
For the period:	26/04/2018 to 28/12/2019	

Quote the Project No: A18-028 in all correspondence regarding this application.

Approval has been granted to undertake this project in accordance with the proposal submitted for the period listed above.

Please note: It is the responsibility of the Principal Researcher to ensure the Ethics Office is contacted immediately regarding any proposed change or any serious or unexpected adverse effect on participants during the life of this project.

In Addition: Maintaining Ethics Approval is contingent upon adherence to all Standard Conditions of Approval as listed on the final page of this notification

COMPLIANCE REPORTING DATES TO HREC:

Annual project report:

26 April 2019

Final project report:

28 January 2020

The combined annual/final report template is available at:

<http://federation.edu.au/research-and-innovation/research-support/ethics/human-ethics/human-ethics3>

Fiona Koop
Ethics Officer

26 April 2018

Please note the standard conditions of approval on Page 2:

STANDARD CONDITIONS OF APPROVAL

1. Conduct the project strictly in accordance with the proposal submitted and granted ethics approval, including any amendments made to the proposal required by the HREC.
2. Advise (email: research.ethics@federation.edu.au) immediately of any complaints or other issues in relation to the project which may warrant review of the ethical approval of the project.
3. Where approval has been given subject to the submission of copies of documents such as letters of support or approvals from third parties, these are to be provided to the Ethics Office prior to research commencing at each relevant location.
4. Submission for approval of amendments to the approved project before implementing such changes. A combined amendment template covering the following is available on the HRE website:
<http://federation.edu.au/research/research-support/ethics/human-ethics/human-ethics3>
 - Request for Amendments
 - Request for Extension. Note: Extensions cannot be granted retrospectively.
 - Changes to Personnel
5. Annual Progress reports on the anniversary of the approval date and a Final report within a month of completion of the project are to be submitted by the due date each year for the project to have continuing approval.
6. If, for any reason, the project does not proceed or is discontinued, advise the committee by completing the Final report form.
7. Notify the Ethics Office of any changes in contact details including address, phone number and email address for any member of the research team.
8. The HREC may conduct random audits and / or require additional reports concerning the research project as part of the requirements for monitoring, as set out in the National statement on Ethical Conduct in Human Research.

Failure to comply with the *National Statement on Ethical Conduct in Human Research* (2007) and with the conditions of approval will result in suspension or withdrawal of approval.

Amendment Approval

Human Research Ethics Committee

Principal Researcher:	Associate Professor Rochelle Eime	
Other/Student Researcher/s:	Dr Meghan Casey Dr Jack Harvey Ms Melanie Charity	Dr Machar Reid Ms Ambili Unni
School/Section:	Faculty of Health Sciences	
Project Number:	A18-028	
Project Title:	Participation and drop-out of children and adolescents in club-based community tennis.	
For the period:	01/03/2019 to 28/12/2019	

Quote the Project No. A18-028 in all correspondence regarding this application.

Amendment Summary: More recruitment methods have been added to the project through social media and direct invitations.

Extension: N/A

Personnel: N/A

Please note: Approval has been granted to undertake this project in accordance with the proposal and amendments submitted for the period listed above. Ongoing ethics approval is contingent upon adherence to the Standard Conditions of Approval on Page 2 of this notification.

COMPLIANCE REPORTING TO HREC:

Annual project report:

26 April 2019

Final project report:

28 January 2020

The combined Annual/Final report template can be found at:

<http://federation.edu.au/research/support-for-current-students-and-staff/ethics/human-ethics/human-ethics3>

Fiona Koop

Coordinator Research Ethics

1 March 2019

Please note the standard conditions of approval on Page 2:

STANDARD CONDITIONS OF APPROVAL

1. Conduct the project strictly in accordance with the proposal submitted and granted ethics approval, including any amendments made to the proposal required by the HREC.
2. Advise (email: research.ethics@federation.edu.au) immediately of any complaints or other issues in relation to the project which may warrant review of the ethical approval of the project.
3. Where approval has been given subject to the submission of copies of documents such as letters of support or approvals from third parties, these are to be provided to the Ethics Officer prior to research commencing at each relevant location.
4. Make submission for approval of amendments to the approved project before implementing such changes. A combined Amendment request template is available for the following:
 - Request for Amendments
 - Request for Extension. Note: Extensions cannot be granted retrospectively.
 - Changes to Personnel
5. Annual Progress reports on the anniversary of the approval date and a Final report within a month of completion of the project are to be submitted to the Ethics Officer by the due date each year for the project to have continuing approval.
6. If, for any reason, the project does not proceed or is discontinued, advise the committee by completing a Final report form.
7. Notify the Ethics Officer of any changes in contact details including address, phone number and email address for any member of the research team.
8. The HREC may conduct random audits and / or require additional reports concerning the research project.

Failure to comply with the *National Statement on Ethical Conduct in Human Research (2007)* and with the conditions of approval can result in suspension or withdrawal of approval.

Appendix 4 Web-based Survey Questionnaire

Survey of Participation and Dropout of Children and Adolescents in Club-based Community Tennis

There are 59 questions in this survey

Description of the study

The Faculty of Health and Life Sciences, Federation University Australia invites you to participate in an online survey on club-based community tennis participation. This is part of a doctoral research project by Ambili Unni.

What is the study about?

Many children and adolescents participate in club-based tennis. Whilst some of them continue their participation over several years, some drop-out or stop playing. This research aims to identify the factors that influence children and adolescents (10-18 years) in making the choice to continue or stop playing club-based tennis and the overall general health of both current and past players.

The survey will ask you a few questions about yourself and about the reasons why you choose to either continue or stop playing club-based tennis.

Why is the study relevant?

The potential benefits from club-sports participation in health and wellbeing are widely accepted. Tennis is a popular club-sport in Australia. Identifying the factors that encourage and discourage children and adolescents to participate in club-based tennis will help in developing strategies and programs that assist young people to continue playing tennis.

Benefits of participation in this study?

As a participant, you will not gain any direct benefit, but your answers will help us learn more about issues that lead to dropping out from club tennis participation. The knowledge generated will assist in shaping sports policies and programs.

As a current or former participant in club- based tennis, your opinions matter. As the summary of the outcome of this study will be accessible for Tennis Australia, the time you spend doing the survey will contribute to research that aims at identifying strategies to promote the sport through local communities throughout Australia.

How will be the information be used?

The information collected will be summarised in relevant publications and/or presentations. For instance, it may be used for report of the outcome of the study will be provided to Tennis Australia.

What are the possible risks of participating in this project?

There are no foreseeable risks involved in participating in this study. Participants will remain anonymous and will not provide their names and only aggregated results will be presented. The data will be kept within password protected computers accessible only to the named researchers. Data will be stored for five years and then securely destroyed.

Your participation in this study is entirely voluntary and will not affect your registration or membership with Tennis Australia. Answering all the questions is important for the quality of data for the study; however, you are also free not to answer any questions that you do not wish to answer for any reason.

What will happen to the information that you provide through the survey?

Participants will remain anonymous and will not provide their names, and no one will know whether or not you are a participant in the study. The survey answers will be sent to a link at Lime Survey, where data will be stored in a password protected electronic format. The survey responses will be accessible only to the researcher. The data collected through Lime Survey will be kept confidential, therefore, your responses will remain anonymous. If you experience any distress during the study, you are encouraged to contact a counselling support service such as Life Line on 1311 14.

If you have any questions, or you would like further information regarding the project titled (Retention and dropout in children and adolescents in club-based community tennis participation), please contact the Principal Researcher, Associate Professor,

Dr Rochelle Eime of the School of Health and Life Sciences on r.eime@federation.edu.au or Phone (03) 5327 9687

Should you have any concerns about the ethical conduct of this research project, please contact the Federation University Ethics Officers, Research Services, Federation University Australia, P O Box 663 Mt Helen Vic 3353 or Northways Rd, Churchill Vic 3842. Telephone: (03) 5327 9765, (03) 5122 6446

Email: research.ethics@federation.edu.au

CRICOS Provider Number 00103D

Consent

***We understand that this email address might belong to an adult used on behalf of a child or children who play tennis, or it may be an adolescent's own email.**

- If you are younger than 13 years, you may NOT take part in this survey by yourself. However, a parent or caregiver may complete the survey for you or with you.***
- If you are aged 13-17 years, you may take part in the survey by yourself, but you must also get a parent or caregiver to click on the relevant box to show that they consent to you taking part in the survey.***
- If you are 18 years or older, you may take part in this survey after clicking the relevant box.***

If you have read the above information and is happy to take part in this research, Please click the relevant consent box below.

Please choose the appropriate response for each item:

- Child with adult (10-12 years) Adolescent (13-17 years) without adult
- Adult (18 years and above)

Parent consent

***if you are aged 13-17 years and completing this survey by yourself, you must get a parent or caregiver to click on the box below to express their consent to you taking part in the survey.**

Only answer this question if the following conditions are met:

(We understand that this email address might belong to an adult used on behalf of a child or children who play tennis, or it may be an adolescent's own email. If you are younger than 13 years, you may NOT take part in this survey by yourself. However, a

parent or caregiver may complete the survey for you or with you. If you are aged 13- 17 years, you may take part in the survey by yourself, but you must also get a parent or caregiver to click on the relevant box to show that they consent to you taking part in the survey. If you are 18 years or older, you may take part in this survey after clicking the relevant box. If you have read the above information and is happy to take part in this research, Please click the relevant consent box below.

I have read the above information and I give my parental/caregiver consent

A: BACKGROUND INFORMATION

Please provide some basic information about you by answering the following set of questions

1. * Age

Your answer must be between 9 and 22

Only an integer value may be entered in this field. Please write your answer here:

2. * Sex

Please select one answer: Male Female Other

3. * Home Post Code

Your answer must be between 1000 and 9999 Only an integer value may be entered in this field.

Please write your answer here:

4. Family Composition: Which of the following best describes who you live with?

Please choose **only one** of the following:

- Two parents/caregivers
- Two parents/caregivers, and brothers and/or sisters
- One parent/caregiver, no brothers or sisters
- One parent/caregiver, and brothers and/or sisters
- Brothers and/or sisters only
- Other family members
- Friends of the family
- Other

5. Occupational status?

Please choose **all** that apply:

- Full time student
- Part-time student
- Working full-time
- Working casual
- Neither studying nor working
- Other

B. LEISURE TIME ACTIVITY

The following questions are to understand your preferences and choice of various LEISURE TIME ACTIVITIES. Please select the answer that is applicable to you for each activity.

1. In general, how much do you like participating in each of the following types of activities outside school hours? (*Select one per line*)

Please choose the appropriate response for each item:

Don't know/never tried Hate it Dislike it Don't care Like it Love it

- Competitive sport or physical activity (e.g. basketball, netball, etc.)
- Organised but non-competitive sport or physical activity (e.g., aerobics, Zumba, etc.)
- Non-organised physical activity (e.g., walking, jogging etc.) Talking on the phone, chatting, texting, skype, facetime etc.
- Watching TV, movies on TV or iPad/tablet Playing electronic games (e.g. internet games, iPad/tablet games, play station, Xbox etc.)
- Surfing the internet (searching for information, downloading music and videos)
- Social networking (Facebook, Twitter, Instagram, blogging, Snapchat, etc.)
- Playing with toys/cards/ board games
- Listening to music
- Reading
- Art and craft
- Sitting and talking face-to-face

2. **On average how much time on a WEEKDAY do you spend on screen-based leisure activities (such as watching television, videos, computer for entertainment, iPod/pad, smartphone, tablet, etc.) social networking (Facebook, twitter, skype, etc.) (Select one)**

Please choose the appropriate response for each item:

None	Less than 1 hour	1 hour to less than 2hours	2 hours to less than 3 hours	3 hours to less than 4 hours	Less than 5 hours	Over 5 hours
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. **On average how much time on a WEEKEND DAY do you spend on screen-based leisure activities (such as watching television, videos, computer for entertainment, iPod/pad, smartphone, tablet, etc.) social networking (Facebook, twitter, skype, etc.) (select one)**

Please choose the appropriate response for each item:

None	Less than 1 hour	1 hour to less than 2hours	2 hours to less than 3 hours	3 hours to less than 4 hours	Less than 5 hours	Over 5 hours
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. **Think about a SPORT or PHYSICAL ACTIVITY that is either MODERATE (e.g. brisk walking, bike riding, dancing) or VIGOROUS (e.g. activities that make you “huff and puff” like netball, soccer, running, swimming, tennis).**

On how many of the past 7 days did you participate in MODERATE or VIGOROUS sport or physical activity for a total of 1 hour or more per day? (select one)

Please choose the appropriate response for each item:

No Days	1 Day	2 Days	3 Days	4 Days	5 Days	6 Days	7 Days
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. **Think about SPORTS you have participated in within the PAST 12 MONTHS.**

For each type of SPORT listed, Indicate whether you have participated in the PAST 12 MONTHS and if you have, indicate all the places where you do it. (For each type of sport, select all that apply).

	Do not participate	At school	At local sports club or centre	Other venues -such as home, street, parks, gym
Athletics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Australian Rules Football	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Basketball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Gymnastics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hockey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Golf	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Netball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soccer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Swimming (Competitive)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tennis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cricket	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Squash	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cycling (Competitive)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Think about PHYSICAL ACTIVITIES you have participated in within the PAST 12 MONTHS.

For each type of PHYSICAL ACTIVITY listed, Indicate whether you have participated in within the PAST 12 MONTHS and if you have, indicate all the places where you do it. (For each type of physical activity, select all that apply).

	Do not participate	At school	At local sports club or centre	Other venues -such as home, street, parks, Gym
Dancing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Horse riding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jogging/Running	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Karate/Martial arts/Judo/Self defence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scooter/Skateboarding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stationary exercises(cycle, treadmill)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Surfing/Boogie boarding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cycling				
Swimming (recreational)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gym/Weights/Circuit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
training/Pilate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aerobics/Yoga	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C. TENNIS PLAYING HISTORY

The questions in this section are about your participation in tennis as a player

7. * What is your current tennis playing status?

Please choose **only one** of the following

- I am currently a registered member for 2018-19
- I am not yet registered but I intend to register for 2018-19
- I will not be registered for 2018-19 but I still play tennis
- I do not currently play tennis

1. At what age did you start playing tennis?

Your answer must be between 3 and 18. Only an integer value may be entered in this field.

Please write your answer here: Years

2. For how many years have you played tennis as a tennis club member?

Your answer must be between 0 and 15.

Only an integer value may be entered in this field.

Please write your answer here: Years

3. Have you *ever* played at more than one tennis club or centre?

Please choose **only one** of the following:

- Yes
- No

4. Have you ever participated in ANY of the program(s) or competition (s) listed here?

Select all that apply.

Please choose the appropriate response for each item:

- | | |
|------------------------------|--------------------------|
| Weekday competition- Senior | <input type="checkbox"/> |
| Weekday competition - Junior | <input type="checkbox"/> |
| Weekend competition- Senior | <input type="checkbox"/> |
| Weekend competition- Junior | <input type="checkbox"/> |
| Fast4 | <input type="checkbox"/> |
| Hot Shots | <input type="checkbox"/> |
| Casual court bookings | <input type="checkbox"/> |
| Coaching | <input type="checkbox"/> |
| Cardio-tennis | <input type="checkbox"/> |
| Tournaments | <input type="checkbox"/> |

5. What competition age level(s) are you playing THIS YEAR? Select any which apply

Only answer this question if conditions are met:

Please choose the appropriate response for each item:

- | | |
|----------------------------------|--------------------------|
| Junior 10 & under (or Under 11s) | <input type="checkbox"/> |
| Junior 11 & under (or Under 12s) | <input type="checkbox"/> |
| Junior 12 & under (or Under 13s) | <input type="checkbox"/> |
| Junior 13 & under (or Under 14s) | <input type="checkbox"/> |
| Junior 14 & under (or Under 15s) | <input type="checkbox"/> |
| Junior 15 & under (or Under 16s) | <input type="checkbox"/> |
| Junior 16 & under (or Under 17s) | <input type="checkbox"/> |
| Junior 17 & under (or Under 18s) | <input type="checkbox"/> |
| Junior 18 & under (or Under 19s) | <input type="checkbox"/> |
| Adult (18+)/Open | <input type="checkbox"/> |

6. What competition format(s) are you playing THIS YEAR?

Only answer this question if conditions are met:

Please choose **all** that apply:

- | | |
|---------------|--------------------------|
| Singles | <input type="checkbox"/> |
| Doubles | <input type="checkbox"/> |
| Mixed doubles | <input type="checkbox"/> |

**7. In what level(s)/ grade(s)/ section(s) of tennis are you playing THIS YEAR?
Select any which apply.**

Only answer this question if conditions are met:

Please choose the appropriate response for each item:

- | | |
|---------------------|--------------------------|
| Section 1/A | <input type="checkbox"/> |
| Section 1/A reserve | <input type="checkbox"/> |
| Section 2/B | <input type="checkbox"/> |
| Section 2/B reserve | <input type="checkbox"/> |
| Section 3/C | <input type="checkbox"/> |
| Section 3/C reserve | <input type="checkbox"/> |
| Section 4/D | <input type="checkbox"/> |
| Section 4/D reserve | <input type="checkbox"/> |
| Section 5/E | <input type="checkbox"/> |
| Section 5/E reserve | <input type="checkbox"/> |
| Section 6/F | <input type="checkbox"/> |
| Section 6/F reserve | <input type="checkbox"/> |
| Section 7/G | <input type="checkbox"/> |
| Section 7/G reserve | <input type="checkbox"/> |
| Section 8/H | <input type="checkbox"/> |
| Section 8/H reserve | <input type="checkbox"/> |

D. INFLUENCES ON PARTICIPATION

Think about your Reasons for Playing Tennis.

1. The following set of statements is about possible reasons that you may play tennis. Please indicate how much you Agree or Disagree with each statement.

Only answer this question if conditions are met:

Please choose the appropriate response for each item:

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
I enjoy playing competitive sports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do very well at all kinds of sports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not feel that I am very athletic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I enjoy playing individual sports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I enjoy playing team sports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I play sport for social reasons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I play sport because it is fun	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am very embarrassed about the way I look while I play sports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents get frustrated if I do not win sporting competitions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Playing tennis helps me to keep fit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I generally win most tennis matches	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not enjoy playing tennis with boys	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not enjoy playing tennis with girls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am not confident in playing tennis in front of others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am not very good at playing tennis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I play/played tennis because it is fun	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that compared to other sports, tennis is a hard sport to play	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that I am better than most others my age at tennis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have friends that play tennis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel discouraged when my opponents cheat in tennis competitions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am a fan of a famous tennis player and want to play like him/her	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I don't/didn't have any friends in my tennis team	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Playing tennis gives/gave me a break from my study/work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Playing tennis helps/helped me gain new sports skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tennis is my favourite sport	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents play/played tennis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My family encourage/encouraged me to play tennis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My family play/played tennis with me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My family watch/watched me playing tennis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My siblings play /played tennis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents compare my tennis skills with that of others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My friends ask me to play tennis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Have you ever had tennis coaching?

Please choose **only one** of the following

Yes, now	<input type="checkbox"/>
Yes, in the past but not now	<input type="checkbox"/>
No, never	<input type="checkbox"/>

3. Indicate the type of coaching you have had, and how many years?

Only answer this question if conditions are met:

Please write your answer(s) here:

Individual	<input type="checkbox"/>
Group	<input type="checkbox"/>
Both	<input type="checkbox"/>

4. Please indicate how much you agree or disagree with each of the following statements about coaching.

If you have had different coaching experiences with more than one coach, pick the response which best fits your experiences.

Only answer this question if conditions are met:

Please choose the appropriate response for each item:

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
The coach encourages me regardless of my low performances in competitions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that the selection for my competition/team is done fairly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I always receive appropriate feedback that helps me to improve	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The coach is friendly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The coach puts pressure on me to win	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Confidence gained from coaching makes me want to play competitive tennis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Now think about tennis club competitions

This question is about factors that might influence you to keep playing club tennis. Please indicate how important each factor is for you.

Please choose the appropriate response for each item:

	Not Important	Somewhat important	Very important
Availability of tennis courts near to my home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Knowing someone at a club or centre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having affordable facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to players of similar standard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to players of similar gender	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friendliness of coach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Having healthy eating options in the canteen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A friendly atmosphere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are people who make me feel included	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having good quality facilities/ courts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are injury prevention strategies in place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Good umpiring and score keeping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Being smoke-free	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is someone I can talk to if I feel that I am being bullied, teased or not included	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are strict rules about running social events	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The day/time of competition/practice sessions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Now think again about tennis club competitions

Please indicate how much do you Agree or Disagree with each of the following statements.

Please choose the appropriate response for each item

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Duration of competition is too long	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Days of competition are suitable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timing of the competition on the weekends are convenient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timing of the competition during the week days are convenient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Membership cost is high	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participation in tournaments is expensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost of equipment is expensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tennis coaching is expensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distance from home to club is convenient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

E. HEALTH OUTCOME

The following questions are to evaluate your state of wellbeing, by understanding how much each of the problems listed here influences you in your daily activities.

IN THE PAST MONTH, how much of a problem has each of the following been for you about your health and daily activities...?

Please choose the appropriate response for each item:

	Never	Almost never	Sometimes	Often	Almost Always
It is hard for me to walk more than one block	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is hard for me to run	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is hard for me to do sports activity or exercise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is hard for me to lift something heavy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is hard for me to take a bath or shower by myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is hard for me to do chores around the house	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I hurt or ache	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have low energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IN THE PAST MONTH, how much of a problem has each of the following been for you about your feelings...?

Please choose the appropriate response for each item:

	Never	Almost never	Sometimes	Often	Almost Always
I feel afraid or scared	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel sad or blue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel angry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have trouble sleeping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I worry about what will happen to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IN THE PAST MONTH, how much of a problem has each of the following been for you about how you get along with others ...?

Please choose the appropriate response for each item:

	Never	Almost never	Sometimes	Often	Almost Always
I have trouble getting along with other kids	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other kids do not want to be my friend	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other kids tease me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I cannot do things that other kids my age can do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

It is hard to keep up when I play with other kids

IN THE PAST MONTH, how much of a problem has each of the following been for you in school...?

Please choose the appropriate response for each item:

	Never	Almost never	Sometimes	Often	Almost Always
It is hard to pay attention in class	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I forget things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have trouble keeping up with my school work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I miss school because of not feeling well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I miss school to go to the doctor or hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

F. WILLINGNESS IN FUTURE PARTICIPATION IN THIS STUDY

Your feedback in this online survey is helpful in understanding the factors that influence participation in club-based

tennis. The next part of the study will involve contacting selected participants of this survey to get more specific information and opinions.

Are you happy to be contacted through E-mail for a personal conversation regarding your participation/non-participation in club-based community tennis?

Please choose **only one** of the following:

Yes
No

If Yes, Please provide your e-mail address

Only answer this question if conditions are met:

Please write your answer here:

All Done!

Thank you for taking part in this survey.

Appendix 5
Plain Language Statement

SCHOOL OF: Health Sciences and Psychology

FACULTY: Health Sciences

PROJECT TITLE:	RETENTION AND DROPOUT OF CHILDREN AND ADOLESCENTS IN CLUB-BASED COMMUNITY TENNIS PARTICIPATION
PRINCIPAL RESEARCHER:	ASSOCIATE PROFESSOR, ROCHELLE EIME
OTHER/STUDENT RESEARCHERS:	Dr. MEGAN CASEY (ASSOCIATE SUPERVISOR) Dr. JACK HARVEY Ms. MELAINE CHARITY Dr. MACHAR REID Ms. AMBILI N. UNNI (PhD STUDENT)

Invitation

The Faculty of Health Sciences, Federation University invites you to participate in an online survey on club- based community tennis participation. This is part of a doctoral research project by **Ambili Unni**.

Participants contact details are obtained from the registered players' database provided by Tennis Australia for the period of 2015/16 and 2016/17. Registered players with relevant background information (age, gender and post code) and e-mail address have been invited to participate in the survey. The survey should take approximately 15-20 minutes to complete. The following information sheet has been prepared to assist you in deciding whether to participate in this study.

What is the study about?

Many children and adolescents participate in club-based tennis. Whilst some of them continue their participation over several years, some drop out or stop playing. This research aims to identify the factors that influence children and adolescents (10-18 years) in making the choice to continue or stop playing club-based tennis and the overall general health of both current and past players.

If you are willing to join in this study, you will be invited to participate in an on-line survey. The survey will ask you a few questions about yourself and about the reasons why you choose to either continue or stop playing club-based tennis.

Why is the study relevant?

The potential benefits from club-sports participation in health and wellbeing are widely accepted. Tennis is a popular club-sport in Australia. Identifying the factors that encourage and discourage children and adolescents to participate in club-based tennis will help to developing strategies and programs that assist young people to continue playing tennis.

Benefit of participation?

As a participant, you will not gain any direct material benefit, but your responses will help us learn more about issues that lead to dropping out from club tennis participation. The knowledge generated will assist in shaping sport policies and programs.

As a current or former participant in club-based tennis, your opinions matter. As the summary of the outcome of this study will be accessible for Tennis Australia, the time you dedicate for the survey will contribute to research that aims at identify strategies to promote the sport through local communities throughout Australia.

How will be the information be used?

The information collected will be summarised in relevant publications and/or presentations. For instance, it may be used for presentation at an industry forum or published as academic publication/media release in print or in electronic format. A summarised report of the outcome of the study will be provided to Tennis Australia.

What are the possible risks of participating in this project?

There are no foreseeable risks involved in participating in this study. Participants will remain anonymous and will not provide their names and only aggregated results will be presented. The data will be kept within password protected computers accessible only to the named researchers. Data will be stored for five years and then securely destroyed.

Your participation in this study is entirely voluntary and will not affect your registration or membership with Tennis Australia. Participants answering all the questions is

important for the quality of data for the study; however, you are also free to decline to answer any questions that you do not wish to answer for any reason.

What will happen to the information that you provide through the survey?

Participants will remain anonymous and will not provide their names, and no one will know whether or not you are a participant in the study. The survey answers will be sent to a link at Lime Survey, where data will be stored in a password protected electronic format. The survey responses will be accessible only to the researcher. The data collected through Lime Survey will be kept confidential, therefore, your responses will remain anonymous. If you experience any distress during the study, you are encouraged to contact a counselling support service such as Life Line on 1311 14.

ELECTRONIC AGREEMENT

Please select your choice below. You may print a copy of this consent form for your records. Clicking on the “Agree” button indicates that

- you have read the above information, and
 - you voluntarily agree to participate in this study
- Agree
- Disagree

If you have any questions, or you would like further information regarding the project titled (Retention and dropout in children and adolescents in club-based community tennis participation), please contact the Principal Researcher, *Associate Professor, Dr. Rochelle Eime of the School of Health Sciences and Psychology* on r.eime@federation.edu.au or **Phone (03) 5327 9687**

Should you (i.e. the participant) have any concerns about the ethical conduct of this research project, please contact the Federation University Ethics Officers, Research Services, Federation University Australia,

P O Box 663 Mt Helen Vic 3353 or Northways Rd, Churchill Vic 3842.

Telephone: (03) 5327 9765, (03) 5122 6446

Email: research.ethics@federation.edu.au

CRICOS Provider Number 00103D

Appendix 6 Invitation for participation

Pre-notification email (direct from TA)

Participation and drop-out of children and adolescents in club-based community tennis

Dear Tennis participant (Past or Present),

Tennis Australia has invited researchers from Federation University to conduct a study on the experience of children and adolescents in club-based community tennis. The research outcome is expected to produce valuable information to assist Tennis Australia to develop strategies to retain and attract more players to club-based community tennis.

On behalf of the research team, Tennis Australia will be contacting registered tennis players (past and present) and inviting them to take part in an online survey. The survey will collect information from individual players regarding their reasons to continue or not continue playing club-based community tennis and their overall general health. We hope you will contribute to the study.

Your personal details (e.g. name, address) are not collected, meaning that your responses are anonymous and will remain confidential. You may choose to skip questions that you do not wish to answer and you may opt out at any point in the survey.

The information collected will be summarised in relevant reports, publications and/ or presentations.

This message is just to let you know that in the next few days you will receive an invitation email with a link to the online survey.

We understand that this email address might belong to an adult tennis player, or be an adult email used on behalf of a child or children who play tennis, or maybe both, or it

may be an adolescent's own email. When you click on the survey link, you will be asked questions to clarify this.

If you have registered more than one email address with Tennis Australia, the invitation email will be sent to all your email addresses but please complete the survey only once per child.

It will take around 15- 20 minutes to complete. If you are interrupted, you will be able to save and exit the survey and come back to continue from where you were.

If you have any questions about this survey, please contact the leader of the research team:

Associate Professor, Rochelle Eime
School of Health and Lifesciences

Federation University
E mail: r.eime@federation.edu.au
Phone (03) 5327 9687

Regards,

Tennis Australia

Appendix 7

Invitation for survey

Subject: An online survey on participation and drop-out of children and adolescents in club-based community tennis

Dear Tennis participant (Past or Present)

As you were informed a few days ago, Tennis Australia has invited researchers from Federation University, Australia to conduct a study on the experience of children and adolescents in playing club-based community tennis. The research outcome is expected to produce valuable information to assist Tennis Australia to develop strategies to maximise participation in club-based tennis.

The survey will collect information from current and past players regarding their reasons to continue or stop playing tennis as a club member. We hope you will contribute to the study.

Your personal details (e.g. name, address) are not collected, meaning that your responses are anonymous and will remain confidential. You may choose to skip questions that you do not wish to answer and you may opt out at any point in the survey. The information collected will be summarised in relevant reports, publications and/ or presentations.

Our intention is to collect information from club tennis participants during 2015-2017 who were between 10 and 18 years of age during participation. However, we understand that this email address may belong to a parent / guardian. When you click on the survey link below, you will be asked questions to clarify this.

If you are younger than 18 years, you may take part in this survey after getting consent from your parent or caregiver. If you are younger than 13 years, you may NOT take part in this survey by yourself. However, a parent or caregiver may complete the survey for you or with you.

If there has been more than one participant within the 10-18 years' age group who registered with the same e-mail address, the survey should be completed by **only one player per email address** – preferably the **oldest one**.

If you have registered more than one email address with Tennis Australia, this invitation email has been sent to all of your email addresses, but of course we only want you to complete the survey once per child.

It will take around 15-20 minutes to complete the survey. You will also be able to save and exit the survey if needed.

Please click on the following link to commence the survey.

<link>

If you have any questions about this survey, please contact the leader of the research team, Associate Professor, Rochelle Eime

E mail: r.eime@federation.edu.au

Phone (03) 5327 9687

Regards,

Tennis Australia

Appendix 8

Reminder email

Subject: Reminder about the online survey on Participation and drop-out of children and adolescents in club-based community tennis

Dear Tennis Participant (Past or present)

Two weeks ago, you were invited to participate in an online survey being conducted by researchers from Federation University- Australia in the Faculty of Health, as a part of the study to understand the experiences of children and adolescents participate in club-based community tennis.

The survey will collect information from current and past tennis players regarding their reasons to continue or stop playing tennis and their overall general health.

Your personal details (e.g. name, address) are not collected, meaning that your responses are anonymous and will remain confidential. You may choose to skip questions that you do not wish to answer and you may opt out at any point in the survey.

The information collected will be summarised in relevant reports, publications and/ or presentations.

If you are younger than 18 years, you may take part in this survey after getting consent from your parent or caregiver. If you are younger than 13 years, you may NOT take part in this survey by yourself. However, a parent or caregiver may complete the survey for you or with you.

The survey should be completed by **only one player per email address** – preferably the **oldest** person covered by the email address.

If you have registered more than one email address with Tennis Australia (Victoria), the invitation email has been sent to all of your email addresses, but of course we only want you to complete the survey once.

It will take around 15-20 minutes to complete the survey. If you are interrupted, you will be able to save and exit the survey and come back to where you were.

Please click on the following link to start the survey

<link>

If you have any questions about this survey, please contact the leader of the research team, **Associate Professor, Rochelle Eime.**

E mail: r.eime@federation.edu.au ,

Phone (03) 5327 9687

Regards,

Tennis Australia

Appendix 9
Qualitative study: Ethics Approval

Principal Researcher:	Associate Professor Rochelle Eime
Co-Researcher/s:	Dr Meghan Casey, Dr Machar Reid, Ms Ambili Unni
School/Section:	School of Health & Life Sciences
Project Number:	A19-136
Project Title:	Retention and dropout of children and adolescents in club-based community tennis participation
For the period:	20/12/2019 to 31/03/2020

Quote the Project No: A19-136 in all correspondence regarding this application.

Approval has been granted to undertake this project in accordance with the proposal submitted for the period listed above.

Please note: It is the responsibility of the Principal Researcher to ensure the Ethics Office is contacted immediately regarding any proposed change or any serious or unexpected adverse effect on participants during the life of this project.

In Addition: Maintaining Ethics Approval is contingent upon adherence to all Standard Conditions of Approval as listed on the final page of this notification

COMPLIANCE REPORTING DATES TO HREC:

Final project report:

30 April 2020

The combined annual/final report template is available at:

<https://federation.edu.au/research/support-for-students-and-staff/ethics/human-ethics/human-ethics3>

Fiona Koop

Coordinator, Research Ethics

20 December 2019

Please note the standard conditions of approval on Page 2:

STANDARD CONDITIONS OF APPROVAL

1. Conduct the project strictly in accordance with the proposal submitted and granted ethics approval, including any amendments made to the proposal required by the HREC.
2. Advise (email: research.ethics@federation.edu.au) immediately of any complaints or other issues in relation to the project which may warrant review of the ethical approval of the project.
3. Where approval has been given subject to the submission of copies of documents such as letters of support or approvals from third parties, these are to be provided to the Ethics Officer prior to research commencing at each relevant location.

Submission for approval of amendments to the approved project before implementing such changes. A combined amendment template covering the following is available on the HRE website:

<https://federation.edu.au/research/support-for-students-and-staff/ethics/human-ethics/human-ethics3>

- Request for Amendments
 - Request for Extension. Note: Extensions cannot be granted retrospectively.
 - Changes to Personnel
4. Annual Progress reports on the anniversary of the approval date and a Final report within a month of completion of the project are to be submitted by the due date each year for the project to have continuing approval.

5. If, for any reason, the project does not proceed or is discontinued, advise the committee by completing the Final report form.
6. Notify the Ethics Coordinator of any changes in contact details including address, phone number and email address for any member of the research team.
7. The HREC may conduct random audits and / or require additional reports concerning the research project as part of the requirements for monitoring, as set out in the National statement on Ethical Conduct in Human Research.

Failure to comply with the *National Statement on Ethical Conduct in Human Research* 2007 (Updated 2018) and with the conditions of approval will result in suspension or withdrawal of approval.

Appendix 10
Qualitative study: Plain Language Statement: Parents

SCHOOL OF HEALTH AND LIFE SCIENCES

PROJECT TITLE:	Retention and Dropout of Children and Adolescents in Club-based Community Tennis Participation
PRINCIPAL RESEARCHER:	Associate Professor Rochelle Eime
OTHER/STUDENT RESEARCHERS:	Dr Megan Casey (Associate Supervisor) Dr Machar Reid Ms. Ambili N. Unni (PhD Student)

Invitation

You are invited to participate in an interview on club-based community tennis participation as part of a research study by Ambili Unni in the School of Health and Life Sciences at Federation University Australia.

Your selection to participate in this study is because your child participated in an earlier phase of the study by completing an online survey about their tennis playing experience. This survey identified factors (tennis competency, enjoyment, support, play structure and club environment) that influence children's and adolescents' continued tennis participation. We would now like to explore these in more detail through interviews with players, parents and coaches.

The interview will be set up and carried out after obtaining consent from the participants. Individual interviews will be approximately 30 minutes long either face-to face or through telephone.

Your participation in the interview is voluntary and you will have the choice to stop at any stage. You may choose not to answer any particular question that you do not want to. The interview will be audio-recorded and transcribed for research purpose; however, you will be kept anonymous.

The following information sheet has been prepared to assist you in deciding whether to participate in this interview.

What is the study about?

Many children and adolescents participate in club-based tennis. Whilst some of them continue their participation over several years, some drop out or stop playing. Previous phase of this study identified some major factors that influence the decision of children and adolescents (aged between 9-18 years) (such as tennis skills/ competency, enjoyment, support, play structure and club environment) to continue or dropout from playing club tennis. Based on these findings, this interview is designed to further investigate how these factors influence players in making the choice to continue or drop-out of playing club-based tennis. This phase of the study will include players who participated in the online survey as well as parents and coaches.

Why is the study relevant?

There are a variety of health and wellbeing benefits of participation in sport. Tennis is a popular club-sport in Australia. Identifying factors that influence people continuing or dropping out of tennis can assist in the development of strategies to improve retention in tennis.

Benefit of participation?

Your participation is important in shaping sport strategies to keep people playing tennis.

As a participant, you will receive a \$20 sports gift voucher as an appreciation of your contribution in this study.

How will be the information be used?

The information collected will be presented in research reports, publications and presentations including to Tennis Australia as well as the research student's PhD thesis. Your personal details will be anonymous and your results will be de-identified and aggregated for reporting purposes.

What are the possible risks of participating in this project?

There are no serious risks involved in participating in this study. Your participation in this interview is voluntary. You will have the choice to stop at any stage and withdraw your consent to participate at any time during the study in which occasion your participation in the research study will immediately cease and information/data obtained from it will not be used. You are also not obligated to answer all questions if you do not want to.

The interview will be audio recorded and transcribed for research purposes. Only a small number of people will be interviewed and their anonymity beyond the interviewer will be maintained. Participants will be provided with a pseudonym (used in all reporting of the data) for maintaining anonymity of their participation. The data that is collected will remain confidential, subject to legal limitations, and be de-identified for analysis. The transcribed data will be kept within password protected computers accessible only to the named researchers. The research team has expertise in designing and conducting similar interviews without causing any distress to the participants. If you experience any distress during the study, you are encouraged to contact a counselling support service such as Life Line on 1311 14.

What will happen to the information that you provide through the interview?

The knowledge generated from the information will be documented as research reports and publications. The recorded and transcribed data will be stored for five years and then securely destroyed.

ELECTRONIC AGREEMENT

Please complete this section and **send back this form via reply email** to the researcher to confirm that you have read the information and are willing to participate in the interview.

Please tick the “Agree” button that indicates that you have read the above information.

I have read the above information

Agree

• Please tick one of the boxes to choose your preferred method interview

Face to face interview

Telephone interview

Preferred contact telephone number:

Signature:

If you have any questions, or you would like further information regarding the project titled (Retention and dropout in children and adolescents in club-based community tennis participation), please contact the Principal Researcher, **Associate Professor Dr Rochelle Eime of the School of Health and Lifesciences** on r.eime@federation.edu.au or **Phone (03) 5327 9687**

Should you (i.e. the participant) have any concerns about the ethical conduct of this research project, please contact the Federation University Coordinator Research Ethics, Research Services, Federation University Australia,

P O Box 663 Mt Helen Vic 3353

Telephone: (03) 5327 9765

Email: research.ethics@federation.edu.au

CRICOS Provider Number 00103D

Appendix 11

Qualitative study: Plain Language Statement: Players

SCHOOL OF HEALTH AND LIFE SCIENCES

PROJECT TITLE:	Retention and Dropout of Children and Adolescents in Club-based Community Tennis Participation
PRINCIPAL RESEARCHER:	Associate Professor Rochelle Eime
OTHER/STUDENT RESEARCHERS:	Dr Megan Casey (Associate Supervisor) Dr Machar Reid Ms. Ambili N. Unni (PhD Student)

Invitation

You are invited to participate in an interview on club-based community tennis participation as part of a research study by Ambili Unni, School of Health and Life Sciences at Federation University Australia.

Your selection to participate in this study follows your participation in an earlier phase of the study, when you completed an online survey about your tennis playing experience. This survey found out that factors such as tennis skills and competency, level of fun, support and club environment have a great deal of influence in the continued tennis participation of children and adolescents. We would now like to explore the influence of these factors in more detail by asking you a few more questions.

The interview will be planned and carried out after you confirm your agreement to participate. Permission from a parent or guardian is required for participants who are under 18 years of age. Young children who are less than 13 years of age will be interviewed only in the presence of a parent or an accompanying adult. The interview will be either face-to face or through telephone and will be approximately 30 minutes long.

You can choose not to participate the interview at all, and even after you start you will have the choice to stop at any stage. You may choose not to answer any question that you do not want to. The interview will be audio-recorded and then put into written form for the purpose of research; however your name or details will not appear anywhere.

The following information is to assist you in deciding whether to participate in this interview.

What is the study about?

Many children start playing club-based tennis at an early age. Some of them continue their participation for several years, whereas a lot of them drop out after playing only for a short while. This research study so far found out that some major factors that influence the decision of young people (aged between 9-18 years) to continue playing or not are related to their tennis playing skills and competency, the enjoyment and fun that they get from playing, support that they get from parents and coaches, the way in which tennis clubs conduct the game and competitions, and the facilities and environment that tennis clubs offer to them.

Based on these findings, the interview will explore how these factors influenced you as a player in making the choice to continue playing club-based tennis or to drop out.

Those interviewed for the study will include selected players who participated in the online survey, some of their parents and coaches.

Why is the study important?

Regular and continued participation in any competitive sport will result in a lot of benefits in health and wellbeing. Tennis is a popular club-sport in Australia. Identifying how the various factors influence young people in continuing or dropping out will help to reduce drop-out rates and keep more children in the game.

What is the benefit you get if you choose to participate in the interview?

Your opinion as a player is important in helping to keep more young people playing tennis.

As a participant, you will receive \$20 sports gift voucher as an appreciation of your contribution in this study.

How will be the information be used?

The information collected will be used for the research student's PhD thesis and shared with others as research reports, publications and academic presentations. Your name or personal details will not be appearing anywhere in the publications and nobody will be able to know your identity from the answers you provide.

What are the possible risks of participating in this project?

There are no serious risks involved in participating in this study. Your participation in this interview is voluntary. You will have the choice to stop at any stage and withdraw your consent to participate at any time during the study in which occasion your participation in the research study will immediately stop and information obtained from it will not be used. You can also choose not to answer any question if you do not want to.

The interview will be audio recorded and later put into written form for research purposes. Only a small number of people will be interviewed and their identity will not be known to anyone other than the interviewer. To ensure this the answers will be recorded with a false name for the participant which will be used in all records and reports later on.

The research team has expertise in designing and conducting similar interviews without causing any distress to the participants. If you experience any distress or discomfort during the interview, you are encouraged to contact a counselling support service such as Life Line on 1311 14 or Kids Helpline on 1800 55 1800.

What will happen to the information that you provide through the interview?

The audio-recording and transcript of the interview will be safely locked up in password protected computers at the University, accessible only to the named researchers. The collected data will remain confidential subject to legal limitations. The data will be stored for five years and then securely destroyed.

ELECTRONIC AGREEMENT

Please complete this section and **send back this form via reply email** to the researcher to confirm that you have read the information and are willing to participate in the interview.

Please tick the “Agree” button that indicates that you have read the above information.

I have read the above information

Agree

If you are younger than 18 years, you may take part in this interview after getting consent from your parent or caregiver.

• Please tick one of the boxes to choose your preferred method interview

Face to face interview

Telephone interview

Preferred contact telephone number:

Signature:

If you have any questions, or you would like further information regarding the project titled (Retention and dropout in children and adolescents in club-based community tennis participation), please contact the Principal Researcher, **Associate Professor Dr Rochelle Eime of the School of Health and Lifesciences** on r.eime@federation.edu.au or **Phone (03) 5327 9687**

Should you (i.e. the participant) have any concerns about the ethical conduct of this research project, please contact the Federation University Coordinator Research Ethics, Research Services, Federation University Australia,

P O Box 663 Mt Helen Vic 3353

Telephone: (03) 5327 9765

Email: research.ethics@federation.edu.au

CRICOS Provider Number 00103D

- I am free to withdraw my consent at any time during the study in which event my participation in the research study will immediately cease and information/data obtained from it will not be used.

Appendix 12

Qualitative study: Plain Language Statement: Coaches

SCHOOL OF HEALTH AND LIFE SCIENCES

PROJECT TITLE:	Retention and Dropout of Children and Adolescents in Club-based Community Tennis Participation
PRINCIPAL RESEARCHER:	Associate Professor Rochelle Eime
OTHER/STUDENT RESEARCHERS:	Dr Megan Casey (Associate Supervisor)
	Dr Machar Reid
	Ms. Ambili N. Unni (PhD Student)

Invitation

You are invited to participate in an interview on club-based community tennis participation as part of a research study by Ambili Unni in the School of Health and Life Sciences at Federation University Australia. The invitation to participate in this study is based on a list of coaches provided by Tennis Australia.

The proposed interview is based on the findings in the previous phase of the study, an online survey of children and adolescents registered with different tennis clubs in Victoria. The survey identified several factors (tennis competency, enjoyment, parental support, play structure and club environment) that influence children's and adolescents' continued tennis participation. We would now like to explore these in more detail through interviews with players, parents and coaches.

The interview will be set up and carried out after obtaining consent from the participants. Individual interviews will be approximately 30 minutes long; either face-to face or through telephone.

Your participation in the interview is voluntary and you will have the choice to stop at any stage. You may choose not to answer any particular question that you do not want to. The interview will be audio-recorded and transcribed for research purpose; however, you will be kept anonymous.

The following information sheet has been prepared to assist you in deciding whether to participate in this interview.

What is the study about?

Many children and adolescents participate in club-based tennis. Whilst some of them continue their participation over several years, some drop out or stop playing. Previous phase of this study

identified some major factors that influence the decision of children and adolescents (aged between 9-18 years) (such as tennis skills/ competency, enjoyment, support, play structure and club environment) to continue or dropout from playing club tennis. Based on these findings, this interview is designed to further investigate how these factors influence players in making the choice to continue or drop-out of playing club-based tennis. This phase of the study will include players who participated in the online survey as well as parents and coaches.

Why is the study relevant?

There are a variety of health and wellbeing benefits of participation in sport. Tennis is a popular club-sport in Australia. Identifying factors that influence people continuing or dropping out of tennis can assist in the development of strategies to improve retention in tennis.

Benefit of participation?

Your participation is important in shaping sport strategies to keep people playing tennis.

As a participant, you will receive a \$20 sports gift voucher as an appreciation of your contribution in this study.

How will be the information be used?

The information collected will be presented in research reports, publications and presentations including to Tennis Australia as well as the research student's PhD thesis. Your personal details will be anonymous and your results will be de-identified and aggregated for reporting purposes.

What are the possible risks of participating in this project?

There are no serious risks involved in participating in this study. Your participation in this interview is voluntary. You will have the choice to stop at any stage and withdraw your consent to participate at any time during the study in which event your participation in the research study will immediately cease and information/data obtained from it will not be used. You are also not obligated to answer all questions if you do not want to.

The interview will be audio recorded and transcribed for research purposes. Only a small number of people will be interviewed and their anonymity beyond the interviewer will be maintained. Participants will be provided with a pseudonym (used in all reporting of the data) for maintaining anonymity of their participation. The data that is collected will remain confidential, subject to legal limitations, and be de-identified for analysis. The transcribed data will be kept within password protected computers accessible only to the named researchers. The research team has expertise in designing and conducting similar interviews without causing any distress to the participants. If you experience any distress during the study, you are encouraged to contact a counselling support service such as Life Line on 1311 14.

What will happen to the information that you provide through the interview?

The knowledge generated from the information will be documented as research reports and publications. The recorded and transcribed data will be stored for five years and then securely destroyed.

ELECTRONIC AGREEMENT

Please complete this section and **send back this form via reply email** to the researcher to confirm that you have read the information and are willing to participate in the interview.

Please tick the “Agree” button that indicates that you have read the above information.

I have read the above information

Agree

• Please tick one of the boxes to choose your preferred method interview

Face to face interview

Telephone interview

Preferred contact telephone number:

Signature:

If you have any questions, or you would like further information regarding the project titled (Retention and dropout in children and adolescents in club-based community tennis participation), please contact the Principal Researcher, **Associate Professor Dr Rochelle Eime of the School of Health and Lifesciences** on r.eime@federation.edu.au or **Phone (03) 5327 9687**

Should you (i.e. the participant) have any concerns about the ethical conduct of this research project, please contact the Federation University Coordinator Research Ethics, Research Services, Federation University Australia,

P O Box 663 Mt Helen Vic 3353

Telephone: (03) 5327 9765

Email: research.ethics@federation.edu.au

CRICOS Provider Number 00103D

Appendix 13

Invitation to participate in qualitative study (Study 3)

Hello,

A few months back you (or your child) completed an online survey about your tennis playing experience. At the time you expressed interest to participate in a further phase of the research and provided this email address to contact you.

We would now like to invite you (or your child) to participate in a short interview to understand further about some of the factors (tennis competency, enjoyment, parental support) that we identified influencing children and adolescent's continued tennis participation.

I am sending this email to confirm your willingness for an interview, either over the phone or face to face. This will take approximately 30 minutes of your time.

As a token of appreciation, each participant who complete the interview will receive a \$20 Rebel sports gift voucher.

If you are 18 years or over, you can choose to participate in the study yourself

If you are in the 13 to 17 years age group you can participate with the consent of your parent/guardian

Parents of children younger than 13 years can participate on behalf of their children.

The questions in the interview will be purely on factors that might have motivated you or discouraged you (or your child) in playing tennis at club level. Your responses will be transcribed under a pseudonym and after this your responses will not lead to your identity being revealed.

Please respond YES to this email to reconfirm your interest to participate.

Your contribution will be valuable in helping to develop strategies that support more children playing tennis.

Regards,

Ambili N. Unni

a.unni@federation.edu.au

Appendix 14
Qualitative study: Consent form



PROJECT TITLE:	Retention and dropout of children and adolescents in club-based community tennis participation
RESEARCHERS:	Associate Professor Rochelle Eime, Dr Meghan Casey, Dr Machar Reid, Ms. Ambili Unni

Consent – Please complete the following information:

I _____ of _____
_____ hereby consent to participate as a subject in the above research study.

The research program in which I am being asked to participate has been explained fully to me, verbally and in writing, and any matters on which I have sought information have been answered to my satisfaction.

I understand that: all information I provide (including questionnaires) will be treated with the strictest confidence and data will be stored separately from any listing that includes my name and address.

- Aggregated results will be used for research purposes and may be reported in scientific and academic journals.
- I am free to withdraw my consent at any time during the study in which event my participation in the research study will immediately cease and information/data obtained from it will not be used.
- I understand the exception to this is if I withdraw after information has been aggregated - it is unable to be individually identified - so from this point it is not possible to withdraw my information/data, although I may still withdraw my consent to participate.
- I agree to my interview being audio-recorded.

SIGNATURE: _____

DATE: _____.

Please, tick '✓' ONE of the relevant boxes below.

I am aged 18 years or more

I am aged 9-17 years

If you are aged 13-17 years, you must get a parent or caregiver's consent to taking part in the interview.

Consent of Parent/Guardian:

As parent/legal guardian, _____, of
_____ (address) I give permission to the
research team to approach my child _____ (name of the
child) and ask if he/she wishes to participate in your project.

SIGNATURE: _____

DATE: _____

Appendix 15

Qualitative study: Questionnaire

Retention and dropout of children and adolescents in club-based community tennis participation

Study 3 - Qualitative analysis

Interview questions

A. Players

Greeting and Ice breaking questions; briefing about the study

Before getting started, did you receive the PLIS? Do you have any questions? Remember your participation in this interview is voluntary, it will be tape recorded however your name will remain anonymous. You can choose not to answer any question if you are not comfortable, or stop the interview at any stage if you wish.

Are you happy to proceed?

In the previous stage of the study, we found a few key factors that are influencing players in choosing to continue playing club tennis or not. I would like to discuss these with you and get your view on how those factors impacted you and others in continuing to playing tennis or not.

1. Background

- a) **To start, tell me a bit about your experience of playing tennis - from how you got started to now.**

Prompts:

- How long have you been playing? From what age?
- Types of membership/ clubs / level of competition/enjoyment levels

2. Competency/ enjoyment

- a) **It is most enjoyable when you get the opportunity to play against opponents who challenge you, but still you can win...**

Has it been always possible for you? Why?

Prompts:

- How would you describe your tennis skills compared to others the same age?
- What has helped most in terms of increasing your confidence to play tennis?

- b) **Thinking about your club tennis playing experience, what is the most fun part? What made it fun? Why? What did you enjoy least? Why?**

3. Support

- a) **How important is it to have support from people like Parents / other family members /coach/ teammates or friends to continue playing tennis?**

How do any of these people....

- Support you to play tennis? AND/OR
- Discourage you or impact on your enjoyment from playing tennis?

- b) **Have you had any tennis coaching before?**

- c) **How helpful was the tennis coaching you received in terms of improving your tennis skills?**

Do you enjoy your training sessions with a coach? Why?

4. Play structure/ club environment

- a) **Now I want you to think about the play structure and club environment and how this impacts on your decision to play tennis.**

Firstly, the play structure.....and by play structure I mean things also including schedule. like the time and length of competition, singles/doubles and play formats, and travel to and from tennis

- **How does the play structure impact your decision to continue playing tennis? Has it ever impacted your enjoyment or motivation?**

Secondly, the club environment...and by club environment, is things like... Expenses- Cost of membership? Equipment and clothing? Coaching? Adequate equipment/club facilities? Training facilities? Enough support staff? Friendliness at the club? Administrators/other players/coach? Safe environment? Opportunities to increase skills and confidence? Available tennis programs?

- **How does the club environment impact your decision to continue playing tennis? Has it ever impacted your enjoyment or motivation?**

- b) **Do you have any other reasons, we have not discussed, for continuing participation in club tennis? Or perhaps reasons why you think people drop-out of playing community club-based tennis?**

B. Coaches

Greeting and Ice breaking questions; briefing about the study

Before getting started, did you receive the PLIS? Do you have any questions? Remember your participation in this interview is voluntary, it will be tape recorded however your name will remain anonymous. You can choose not to answer any question if you are not comfortable, or stop the interview at any stage if you wish.

Are you happy to proceed?

In the previous stage of the study, we found a few key factors that are influencing players in choosing to continue playing club tennis or not. I would like to discuss these with you and get your view on how those factors impacted children and adolescents in continuing to playing tennis or not.

1. Background

a) Can you tell me a bit about yourself and your tennis coaching experience?

- How long have you been involved with tennis coaching? Coaching in multiple clubs? Age groups coaches?
- What do you enjoy most about coaching tennis, particularly children and adolescents?
- What are some of the challenging aspect of coaching children and adolescents? Why?

2. Competency / enjoyment

a) From your coaching experience, how important are tennis skills/ competency in children's and adolescents' decision to keep playing tennis?

- How important is competency or tennis specific skills in getting the players to enjoy their playing experience? How do you think this relates to people decision to continue to play club-based tennis or not?
- What aspects are most important for increasing their confidence to play tennis?
E.g. confidence to play competition? Winning matches? Attending training session? Playing under pressure? Learning new techniques?

b) How important is enjoyment as a key factor for players in continue playing club tennis? Why? Can you explain?

c) What strategies or steps can improve the level of enjoyment of those players who have relatively lower skills/ competency?

3. Support

a) From your experience, how important is the support for players from their family and friends in their motivation to continue playing? What types of support do you think are most important for children to continue to play tennis?

b) As a coach, what do you think is the right balance between parental supports without being a 'pushy' parent in club-based community tennis?

4. Play structure/ club environment

- a) Now I want you to think about the play structure and club environment and how this impacts on children's and adolescents' decision to play tennis.**

Firstly, the play structure.....and by play structure I mean things also including schedule, like the time and length of competition, singles/doubles and play formats, and travel to and from tennis

- ***How do these things impact on children's and adolescents' decision to play tennis?***

Club environment is things like... Cost of membership, equipment and clothing? Need to travel long distances? Adequate equipment/facilities/ safety? Friendliness at the club? Amount of on-court time? Opportunities to move up competition levels?

- **How does the club environment impact on children and adolescents' decision to continue to play tennis, or not?**
- a) Do you think the current club-tennis environment is motivating enough to keep players in the game?**
- Do you think the existing programs and services at the club level are adequate for promoting enjoyment of the sport and resulting in skill development?
 - Do you think the existing club policies and playing structure are helpful for young players to improve and move up to the elite level?
- What can be improved?**
- b) How can we link the key influencing factors of retention in club tennis such as competency, support, club environment, etc. into an effective strategy? Would you like to share your opinion?**

C. Parents

Greeting and Ice breaking questions; briefing about the study

Before getting started, did you receive the PLIS? Do you have any questions? Remember your participation in this interview is voluntary, it will be tape recorded however your name will remain anonymous. You can choose not to answer any question if you are not comfortable, or stop the interview at any stage if you wish.

Are you happy to proceed?

In the previous stage of the study, we found a few key factors that are influencing players in choosing to continue playing club tennis or not. I would like to discuss these with you and get your view on how those factors impacted your child/children in continuing to playing tennis or not.

1. Background

- a) Can you tell me about your child/ children's tennis playing experience?**

Prompts:

- How long have they been playing club tennis? From what age?
- Types of membership/ clubs / level of competition/, enjoyment levels or what is the main thing they enjoy?

2. Competency/ enjoyment

- a) **It is most enjoyable when you get the opportunity to play against opponents who challenge you, but still you can win...**

Has it been always possible in your child/children's case? Why?

Prompts

- How would you describe your child's tennis skills compared to others the same age?
- What has helped most in terms of increasing your child's confidence to play tennis?

- b) **Thinking about your child's club tennis playing experience, what is the most fun part for him/ her? What made it fun? Why? What did your child enjoy least? Why?**

- c) **How important is enjoyment as a key factor for your child/ children in continue playing club tennis?**

3. Support

- a) **How important for your child/ children to have support from people like family members /coach/ teammates or friends to continue playing tennis?**

How do any of these people....

- Support your child/ children to keep playing tennis? AND/OR
- Discourage your child/ children or impact on their enjoyment from playing tennis?

- b) **What types of support do you think are most important for your child to continue to play tennis?**

4. Play structure/ club environment

- c) **Thinking about the play structure and club environment, how do these impact on your child/children's decision to play tennis.**

Firstly, the play structure.....and by play structure I mean things also including schedule, like the time and length of competition, singles/doubles and play formats, and travel to and from tennis

Can these have a significant impact on your child's decision to continue playing tennis?

Club environment is things like... Cost of membership? Equipment and clothing? Need to travel long distances? Adequate equipment/facilities/ safety? Friendliness at the club? Inadequate on-court time? Opportunities to move up in skill level? Can these have a significant impact on children's and adolescents' decision to discontinue tennis?

How does the club environment impact on children and adolescents' decision to continue to play tennis, or not?

d) Do you think the current club-tennis environment is motivating enough to keep players in the game?

- Do you think the existing programs and services at the club level are adequate for promoting enjoyment of the sport and resulting in skill development?
 - Do you think the existing club policies and playing structure are helpful for young players to improve and move up to the elite level?

 - **What can be improved?**
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