



Role of local club in developing value chain of high performance national tennis athlete

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ABSTRACT

This paper discusses the role of local clubs in developing high performance junior athletes as a critical part of the national value chain to produce national athletes. Local clubs serve as entry points for kids and their parents into the world of tennis. Local club is a hub that connects three main actors involved in the development of kids into tennis players: (i) Coach, (ii) Athlete, and (iii) Parents, regarded as grass root athlete development. This paper identifies the typical tennis player pathway in Indonesia. Value chain of local club and its relation with other regional, national, and global stakeholders' value chain in developing national athletes are presented. Benchmark of journey from grassroots player to high performance/elite players and structure of value chain in established countries are discussed. It is concluded that local clubs are playing a significant role in creating a massive pool of talent and developing grass-roots players into high performance/elite national tennis athletes. Strong collaboration between stakeholders and completing structure the value chain are important to develop country performance in sustainable way.

Key words: local club, value chain, national high performance athlete, sustainability.

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INTRODUCTION

Tennis is a sport with a longstanding history in Indonesia. Tennis has been continuously contributing medals for Indonesia in South East Asia Games and Asian Games. Indonesia tennis proudly produced multiple girls junior grand slam champions. In professional tennis, the highest rank of Indonesia singles players was 19 and there are numbers of Indonesia players in top 100 WTA/ATP rank in both singles and doubles category in the last few decades.

Producing high performing tennis players is a long and complex journey. Gerdin et al (2020) explain finding and describing optimal path to elite athlete performance has been a challenge for researchers. For most athletes this process starts from early kids. In most cases, parents introduce tennis to their kids and register them to local clubs. In this case, local clubs serve as entry points for kids and their parents into the world of tennis.

Local clubs play an important role to transform grass root sport into high performance sport level. A study on funding grassroots sports in the EU conducted by Eurostrategies, Amyos, CDES, and Deutsche Sporthochschule Koln (2011) defines sport clubs as being at the core of the sport system. Beyond offering sport activities and sport related services (training, coaching, practice time, competitions, etc.) at affordable prices in a variety of disciplines, and for diversified groups of population, sport clubs aim to transmit values such as tolerance and fair play, equal participation of girls/women and boys/men, and the creation of a sense of community and conviviality.

This paper concerns with the importance of local clubs in developing high performance tennis junior athletes and as a critical part of the overall value chain for producing national athletes. Tennis club is basically doing a transformation process from kids into tennis players. In the process of knowledge and skill transformation, Dorri et al. (2012) provide review on value chain of higher education sector. Rathee and Rajain (2013) examine the number of models of service value chain in higher education. Bornermann and Wiedenhofer (2014) implement value chain perspective to analyze the concept of intellectual capital to assess intangible resources of educational process. Specific in the sport industry, Woratschek et al. (2020) propose sport value framework that can be applied for sport management analysis. Value chain approach has been applied by Serano et al (2018) to systematically analyze the soccer industry in Brazil.

Operation of tennis club in some countries have been discussed in some previous publications. Pluim et al. (2014) identify factors contributes in developing healthy tennis club in Netherland. Panjasilpa (2018) proposes business management model for tennis training center in Thailand. Gerdin et al. (2020) explore practices of coaches of tennis club in Sweden.

Contribution of this paper is directed into proposing value chain of tennis club and how it interacts with value chain from other stakeholders involved in development of tennis athletes. We present situation in Indonesia and benchmark with practice in other countries. This paper is organized as follows, in section two, we discuss the grass root of junior tennis development and identify typical tennis player

pathways in Indonesia. Subsequently, we discussed the value chain of local clubs and interaction between the clubs' value chain of stakeholders involved in the development of national tennis athletes.

GRASS ROOT OF JUNIOR TENNIS DEVELOPMENT

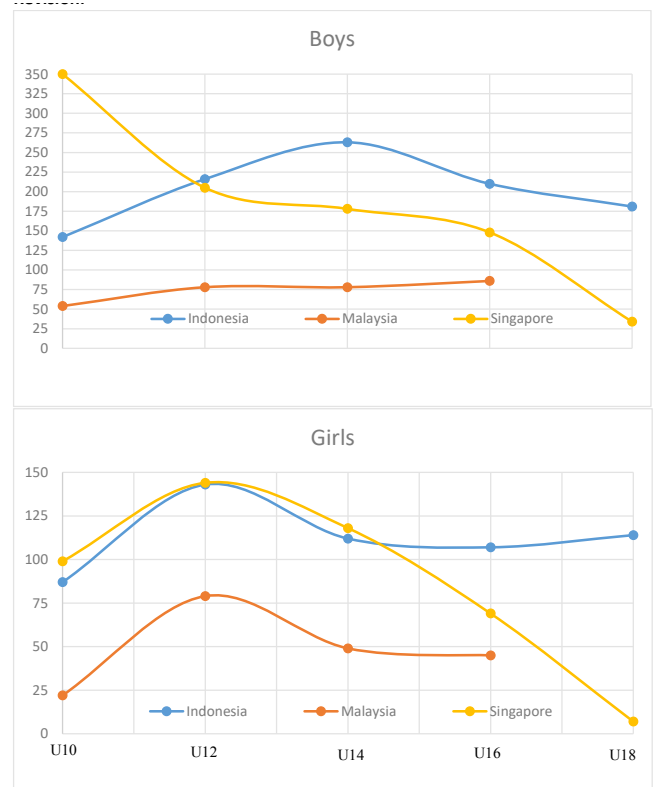
Athletes, coaches, and parents are the main actors of junior athlete development and considered as the athletic triangle. Kiraly and Gal (2011) describe that in Great Britain the number of sport participants is considered important to improve sport culture and a key starting point to develop a long term plan of national athlete development. Indonesia is the large archipelago and fourth most populous country in the world. In 2021, data from the BPS – Statistics of Indonesia (2022) showed that Indonesia has more than 272 million population. Among the population, more than 44 million are between the ages of 5 to 14 and more than 66 million are between the ages of 5 to 19, with a relatively balanced proportion of boys and girls. This number can be seen as a comparative advantage to develop a pool of grass roots tennis players.

Figure 1 depicts the number of nationally ranked junior tennis players in Indonesia and other South East Asia Countries for each age group. As expected, the number of junior players in Indonesia is relatively leading in South East Asia due to the biggest population in the region. However, the number is much less compared to the USA as one of leading country in tennis.

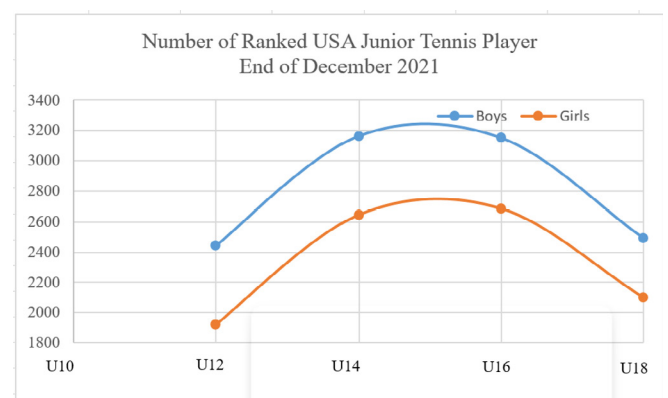
Subsequently, Figure 2 shows number of ranked pro and junior players, number of coaches, number of tennis players, and population of selected countries in North America, Europe, Oceania, Asia, and South East Asia. The USA significantly leads the number of ranked junior and pro players both in male and female compared to other countries. Asia countries have significant numbers in both junior and pro level, especially in female categories. Despite having a big population, the number of ranked athletes, tennis players, and tennis coaches in Indonesia are small compared to other countries. This figure indicates development of grass roots tennis in Indonesia is one fundamental concern that need to be handled for improving and sustaining performance of Indonesian tennis athletes at international level. If we compare to badminton, as one sport in Indonesia that has world class international performance, article in New York Times (2020) estimates there are more than three million people in Indonesia play badminton.

Cortela et al (2019) explain some challenges for grassroots tennis development in Brazil. There are two categories of challenges: (i) coach and (ii) getting kids into tennis. In the coach category, Cortela et al (2019) describe the problems are number of coaches, quality of coaches who involve in early tennis development, and income for coaches who work at beginner level. In the second category, Cortela et al (2019) explain that the problems of getting kids into tennis are tennis is an expensive sport, the load of school is taking up a child's time, and changes in recent lifestyles that impact motoric performance.

Numerous studies have been showing that parents are playing critical role in the development of young athlete and studied it from many different perspectives (Domingues & Goncalves (2013), Sanches-Olivia et al (2015), Strandbu et al (2017), Lisinskiene et al (2019), Sampol et al (2019)). Parents are providing resources, playing numerous roles, and taking important decisions while interacting with young athletes and coaches during the journey, that affect performance of the athlete. Therefore, knowledge of parents and how coaches/ tennis clubs can collaborate with parents are important in developing junior athletes.

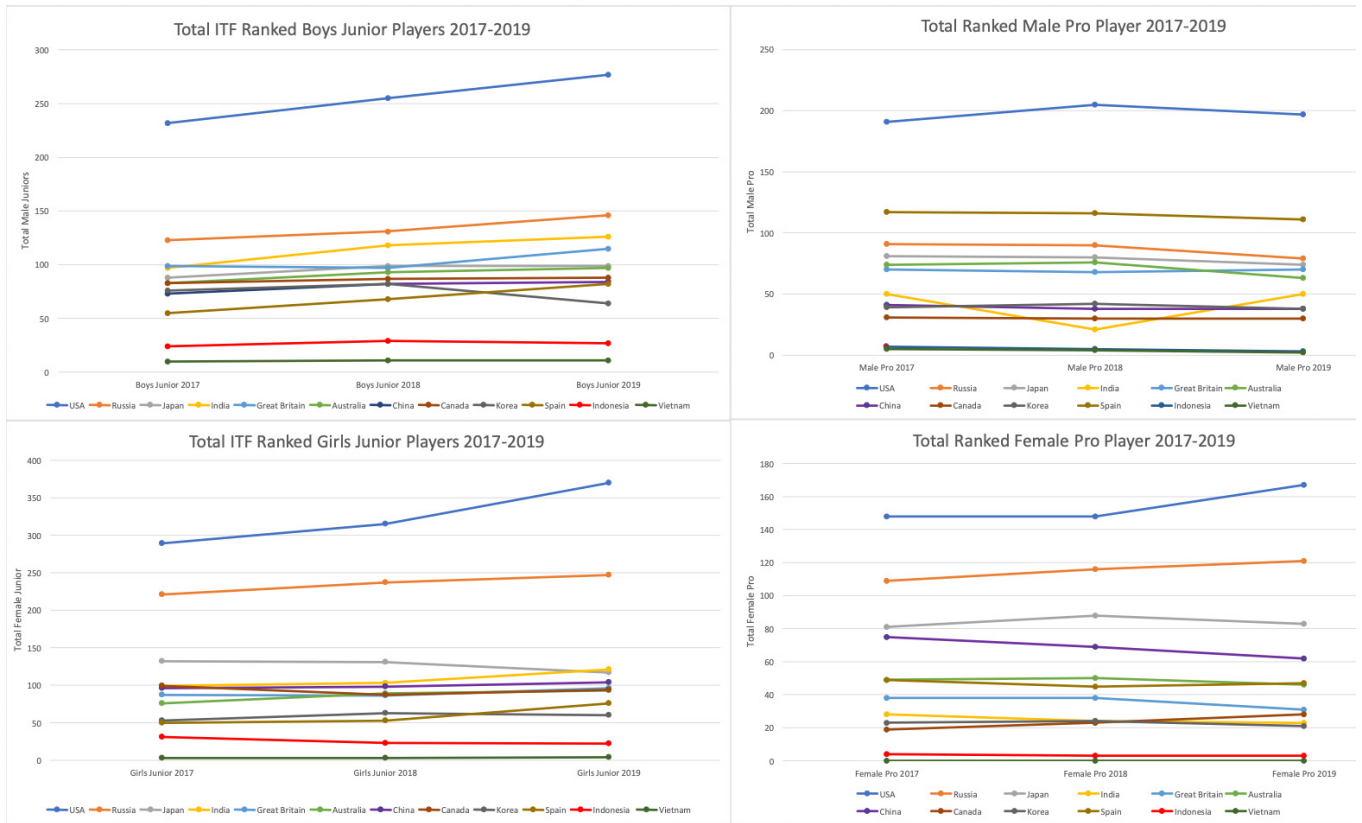


(a) Indonesia (June 2022), Malaysia (April 2022), and Singapore (June 2022).

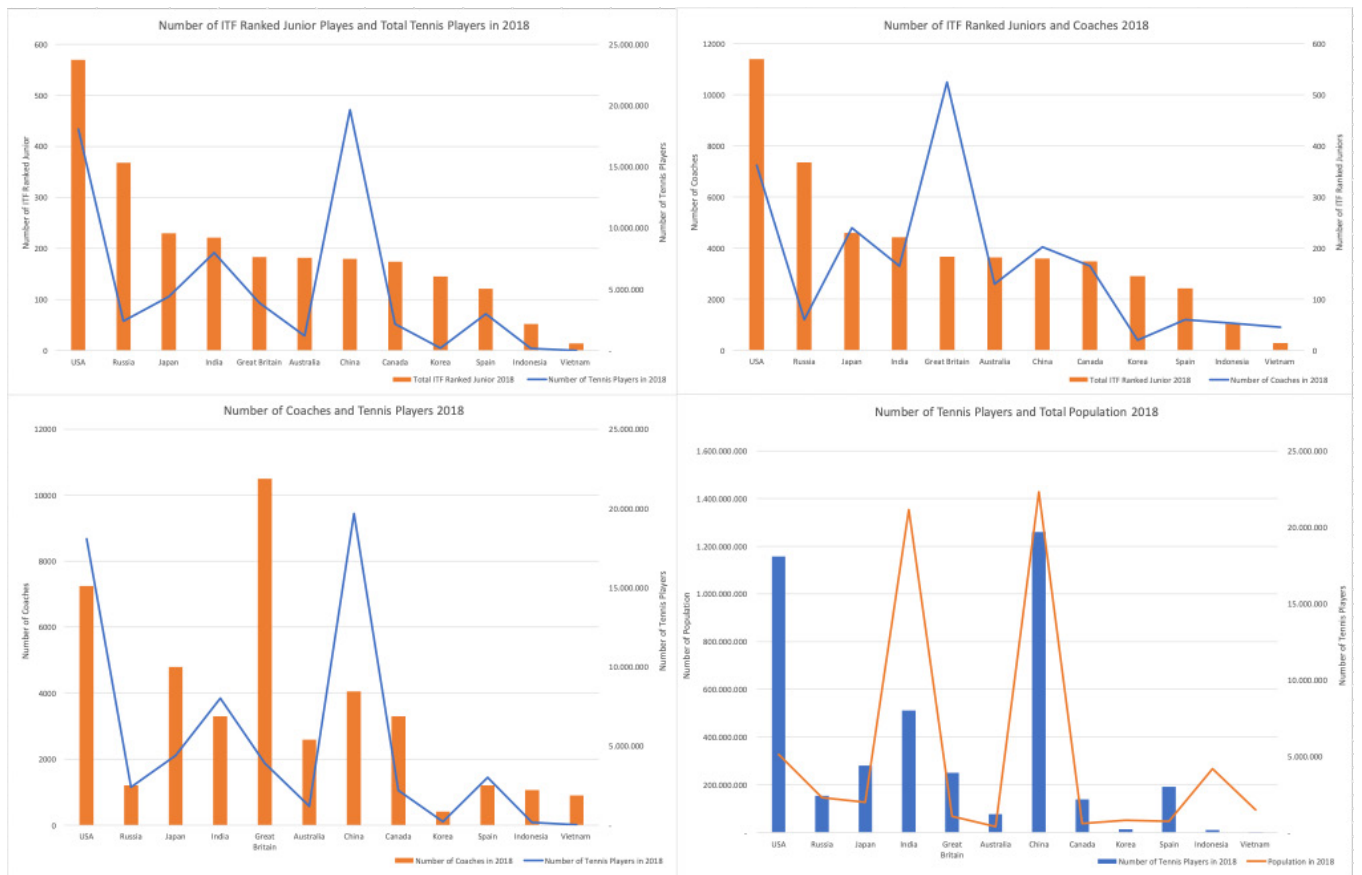


(b) USA (December 2021).

Figure 1. Number of Ranked Tennis Junior Player (a) Indonesia and Some South East Asia Countries and (b) USA. Source: Website of each country tennis association (Pelti (2022), Singapore Tennis Association (2022), Lawn Tennis Association of Malaysia (2022), USTA (2022)).



(a) Number of ITF Ranked Junior and Pro Players 2017-2019.



(b) Population, Number of Tennis Players, Number of Coaches, and Number of ITF Ranked Player.

Figure 2. Number of Population, Tennis Player, Coaches, and Ranked Players. Source: International Tennis Federation (2021).

PLAYER PATHWAY

Figure 3 presents the typical pathway of tennis players in Indonesia. The journey normally starts with parents introducing tennis to their children and registering them to a local tennis club to play tennis regularly under guidance of club coaches. This is providing a base of grassroots tennis development. The initial objective of parents can be varied, i.e. to give access for kids to play and have fun while engaging with motoric activities, to learn fundamental moving skill and play sport, to have structured training in tennis, to start a journey as a competitive junior player, etc. After some periods of training, usually kids start to play junior tournaments. For junior athlete in Indonesia, the tournament can be started from an internal club tournament, then growing into local/national weekend tournament, UTR tournament, and full week national junior tournament. Further, junior athletes who are qualified and supported with resources will play in international ATF and ITF junior tournaments. Competitive junior players may be selected to play and represent their city/municipality/province in regional student multi event competition, province multi event competition, or national multi event competition. Regional terms in this paper refer to city/municipality/province in Indonesia. National level junior players have the opportunity to be selected as junior national athletes and represent Indonesia in junior international competition. The higher the level of competition that junior players are playing, the higher demand for training, the more commitment of lifestyle, time and resource required, and, the

more number and level of tournament that the junior player needs to participate to keep them growing. All of this requires significant commitment of resources that normally need to be provided by parents.

Figure 1 shows the typical concave pattern of the number of junior tennis players, the number will grow and peak in the mid age group then will decrease in the older age group. Deelen et al (2018) studied the determinant of youth dropout from football and tennis based on the survey and data in the Netherlands. Their study reported that in tennis, dropout rates for girls and boys aged 13–21 were both 28%, whereas the annual drop-in rate was 11% in 2015/ 2016. Deelen et al. (2018) using time use factor, environment factor, motivational factor, and cofounders to find determinants of dropout. The result from Deelen et al. (2018) are tennis players who changed schools or participated in two sports at the same time had a higher probability of dropping out. Gerdin et al. (2020) mention issues about competition versus economy and their study reports a downward trend of the number of junior players in Sweden who are actively playing interclub competition and tournaments.

As seen in Figure 3, junior tennis players are normally student-athletes, they need to spend time and resources for their education and school activities. It is common that high quality education in high school may provide students a better opportunity to be accepted in highly reputable universities. Thus, after graduation it will further provide

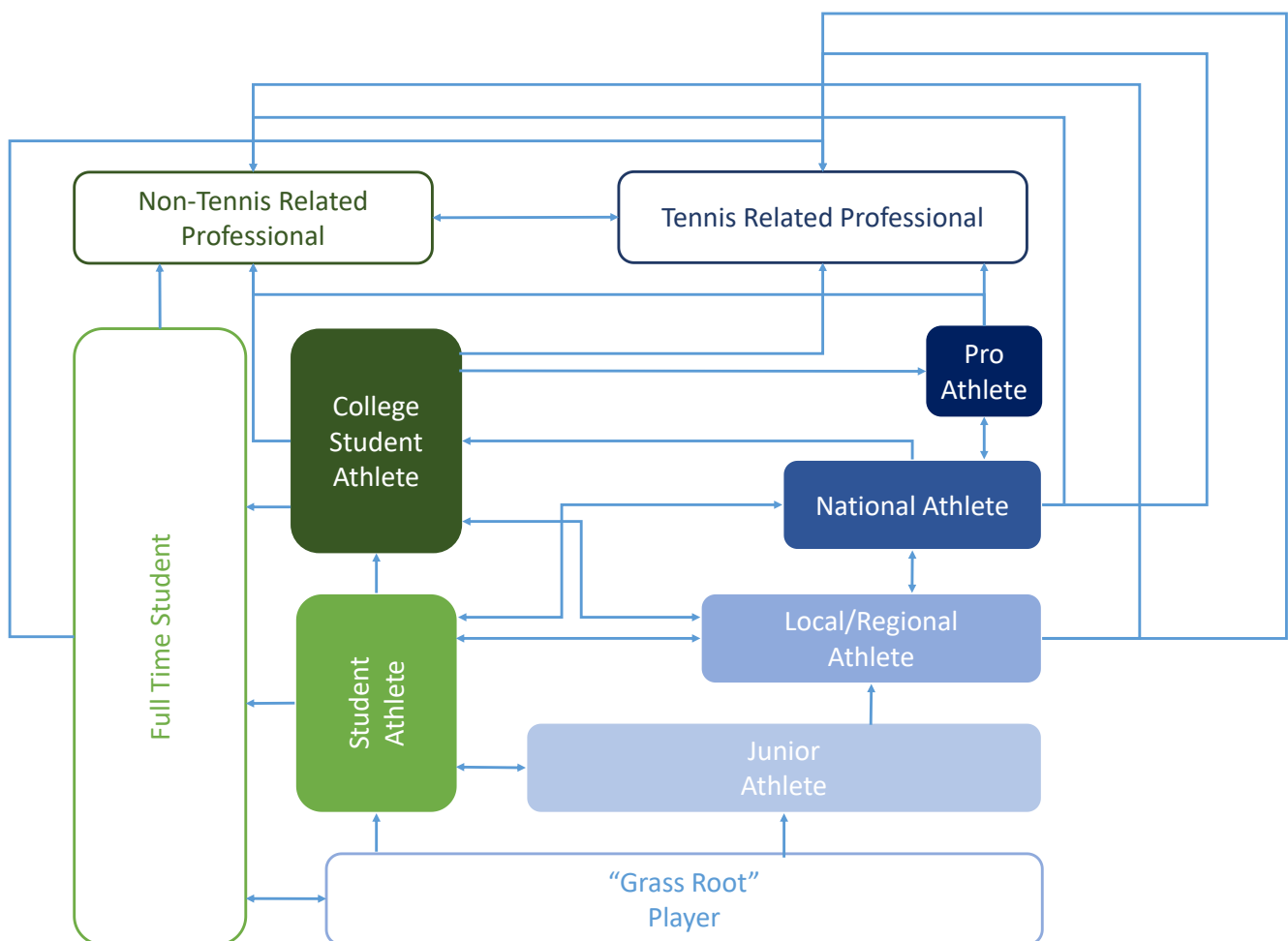


Figure 3. Typical Tennis Player Pathway in Indonesia.

them an opportunity to have a better competitive position in the job market to sustain a better future. On the other hand, competition to be accepted in highly reputable universities is hard and demands significant study hours. Dealing with challenging competitive situations in both tennis and academics is not easy and creates pressure for both junior athletes and parents.

This classic sport-academic dilemma has been studied in multi sports and in many countries. Christensen and Sorensen (2014) study sport and academic dilemma of young Danish footballers. Yamamoto (2016) investigates how Japanese university students manage their academic and sport performance. Yamamoto (2016) reported that over 60% of participants of this study thought doing both club activities and study is difficult. Further, 90% of participants of this study thought university study would help their future. Yamamoto (2016) concluded three suggestions: (i) ensuring enough financial support for university athletes, (ii) promoting peer learning, and (iii) collaborative work between university lecturers and sport club coaches.

The USA has NCAA and NAIA system that facilitate student-athletes not only to train and compete but also to have access to good quality higher education. NCAA fact sheet (2020) report from all sports under NCAA, there are more 7.2 million high school student-athletes and 499,000 (7%) moving from high school into NCAA student athletes. Percentage of transition from the NCAA into major professional athletes is 2%. These numbers indicate the importance of having a good education for student-athletes. Good quality education is critical since the majority of the student-athletes may not have the opportunity to continue their career as professional athletes and they need to be competitive for pursuing non-athlete careers in the professional world. Further, pro athletes need to have knowledge and skill to prepare themselves for life after an athlete career. There have been some Indonesian junior tennis athletes that accept scholarships to compete in the NCAA and pursue their university degree in the USA.

Singapore in 2004 established Singapore Sports School that offer secondary and post-secondary program that facilitate student-athlete with an integrated academic and sport program (Singapore Sports School, 2022).

Another challenge in the pathway is transition from junior to senior athlete. This process is very complex. Bane et al (2016) reported that winners of single girls French Open champion between 1980 -200 are peaked at rank 1 – 55 WTA ranking. 100%, 90%, and 62% of them are achieving WTA Top 100, 50, and 10, respectively. In the boys category Bane et al. (2016) showed that 1980-2000 French Open single boys winners peaked at ATP rank 1-92, 100% of them peaked at ATP top 100 and 81% reached ATP top 50. In other sport, Hollings et al (2014) provide study on New Zealand track and field elite junior and their transition to senior athlete. Hollings et al (2014) identify three factors of success of transition from elite junior into senior athlete: (i) a significant commitment to a clearly defined and realistic goal, (ii) achieved early international success at the senior grade, and (iii) had a single dominant identity and key strength. The athletes who did not go on to be a senior international athlete were characterized as having: (i) competing demands and tensions in their social, academic/career lives, and (ii) a lack of progression.

VALUE CHAIN OF LOCAL CLUB AND TENNIS ATHLETE DEVELOPMENT

Section 2 and Section 3 provide two main important roles of the tennis club. First, local clubs serve as entry points for kids and their parents into the world of tennis. Local club is a hub that connects three main actors involved in the development of kids into tennis players: (a) Coach, (b) Athlete, and (c) Parents and (ii). Second, local club is critical to support development of grassroots player, into junior player, and prepare transition into senior player. In Figure 4, we identify activity in the value chain of local clubs in conducting the above role.



Figure 4. Value chain of local club.

Tennis clubs usually have several levels of class starting from introducing kids to have fun with sport, munchkin tennis, U10 tennis (red, orange, and green ball), recreational tennis, junior tennis, high performance tennis, etc. Each of the classes require different resources of training. Some clubs have all the levels of class while others may specialize on one or two levels of classes.

In the inbound logistic process the main activity of the tennis club is recruitment of students and athletes. Number of students/athletes in each level and vision of the club will define the requirement of a tennis coach and trainer, tennis court, and other training facilities. Number of qualified coaches for each level/class and access to the tennis court is critical for a tennis club. It will define club capacity for accepting students/athletes. Tennis clubs need to continuously develop the quality of their coaches and through practical experience, education/training, and certification process.

Most of the tennis clubs in Indonesia do not have their own tennis court. The clubs rent the court or collaborate with third parties to have access to the tennis court. In recent years in Indonesia, especially in big cities, due to scarcity of land and competition between business sectors, there are more and more tennis courts converted into other economic activities. Report by the Japan Tennis Association (2013) explains that in Japan the number of tennis courts in 2012 decreased 28.6% from 2008.

In Brazil, Cortela et al (2019) describe number of coaches, quality of coaches who involve in early tennis development, and income for coaches who work at beginner level are issues that need to be considered in developing grassroots tennis. Study in Sweden by Gerdin et al (2020), explain, it is believed by coaches who became respondents, that it is not easy to hire a full time coach and majority of the coaches work on part time basis. Another issue reported in Gerdin et al (2020) study is unclear job description and division responsibility for coaches. Some coaches spend a lot of time doing a wide variety of tasks and administrative tasks.

If we take a look at Figure 4, there are many activities in the value chain that can be categorized as club management and administrative work (administration, human resource, procurement, promotion/branding, marketing, external relation, etc.). These activities can be classified as non-technical tennis related activities. However, these activities are important to run the club effectively and efficiently for sustaining sport and business performance of the club. Complexity of these activities may vary depending on the size and scale of the club. All of these activities can be difficult to handle by coaches. Tennis clubs need support from people who are qualified in this field. Panjasilpa (2018) explains the business management model framework of tennis training centers in Thailand. In the framework corporate image, quality of services, and marketing mix is going to determine satisfaction and further loyalty.

Tennis club is part of the national ecosystem, consisting of many stakeholders, in developing national tennis athletes. Brouwers et al. (2015) examine stakeholders and elite development pathway in tennis by conducting semi-structured in depth interviews with 18 international tennis experts from 10 countries (Europe and USA). Their study identifies four development processes specific for development of elite tennis players: (i) attraction and retention, (ii) talent identification and selection, (iii) talent development, and (iv) nurturing. These four stages of the process involve many

stakeholders: National Tennis Association (NTA), local clubs, coaches, private academies, and third party organizations. Brouwers et al. (2015) study revealed that the National Tennis Associations, coaches, and clubs emerged as the stakeholders that were consistently involved throughout all four development processes.

In Figure 5, we try to identify how the value chain of a tennis club in Indonesia interacts with other local/regional, national, and global stakeholders' value chain in developing high performance/elite national tennis athletes. Collaboration between all stakeholders are required to produce high performance national tennis athletes in a sustainable way.

National and Regional Government set the policy and allocate national and regional budget for sport development. National Tennis Federation is the heart of the overall value chain and tennis development ecosystem. The National Tennis Federation designs a national system and manages collaboration with government institutions, international tennis federation, tennis clubs, private institutions, and other institutions to develop a country's tennis performance. Sport development require big amount of resources and collaboration among stakeholders is one critical factor. Support from national and regional government institutions and collaboration with private sector are crucial in developing national sport performance.

Serano et al. (2018) shows private and industrial sectors are important components of soccer development in Brazil. Public-private scheme in development of sports have been proposed by Gobikas and Cingiene (2021) and Fang et al. (2020). Private sectors can support construction of sports infrastructure, promotion health and sports to society promotion, athlete development, sponsorship for tournaments and sport events, sport scholarship and development award, support for sport equipment and training facilities etc. that are going to accelerate improvement of country sport performance.

Resources for tennis junior athlete development in Indonesia are mostly coming from their parents, especially in the early years of their journey. Parents need to provide an environment that is supportive and conducive for junior athletes to grow. Parents are going to cover the cost of a junior athlete's formal education. During the tennis journey, parents need to cover the cost of training, equipment, nutrition, tournaments, national and international travel, and other tennis related expenses of the junior athlete. In Indonesia, cost of tennis training in a good tennis club can easily exceed the tuition fee of top universities. According to World Bank (2022), GDP per capita of Indonesia is USD 4,291.8 and GDP per capita PPP is USD 12,904.3 in 2021. This numbers are relatively small if we compare it with the ideal number required to fund development of junior tennis athletes. For majority of family in Indonesia, tennis journey of a junior athlete consumes significant family resources. Crespo and Miley (2004) explain estimated annual tournament cost for high performance junior player age 12-13, 14-15, 15-17, 17-18, and 19+, who are chasing performance in international level, are USD 7,000, USD10,000, USD 15,000, USD 20,000, and USD 25,000, respectively. This cost for chasing international performance is very high and out of reach for majority of the family. Developing junior athletes requires strong parents and family commitment. The cost of tennis training, tournament, and equipment potentially become constraint for kids to jump in into tennis and for junior player to keep training and compete. Parents may direct their kids to switch into other sports which demand less resources. From national

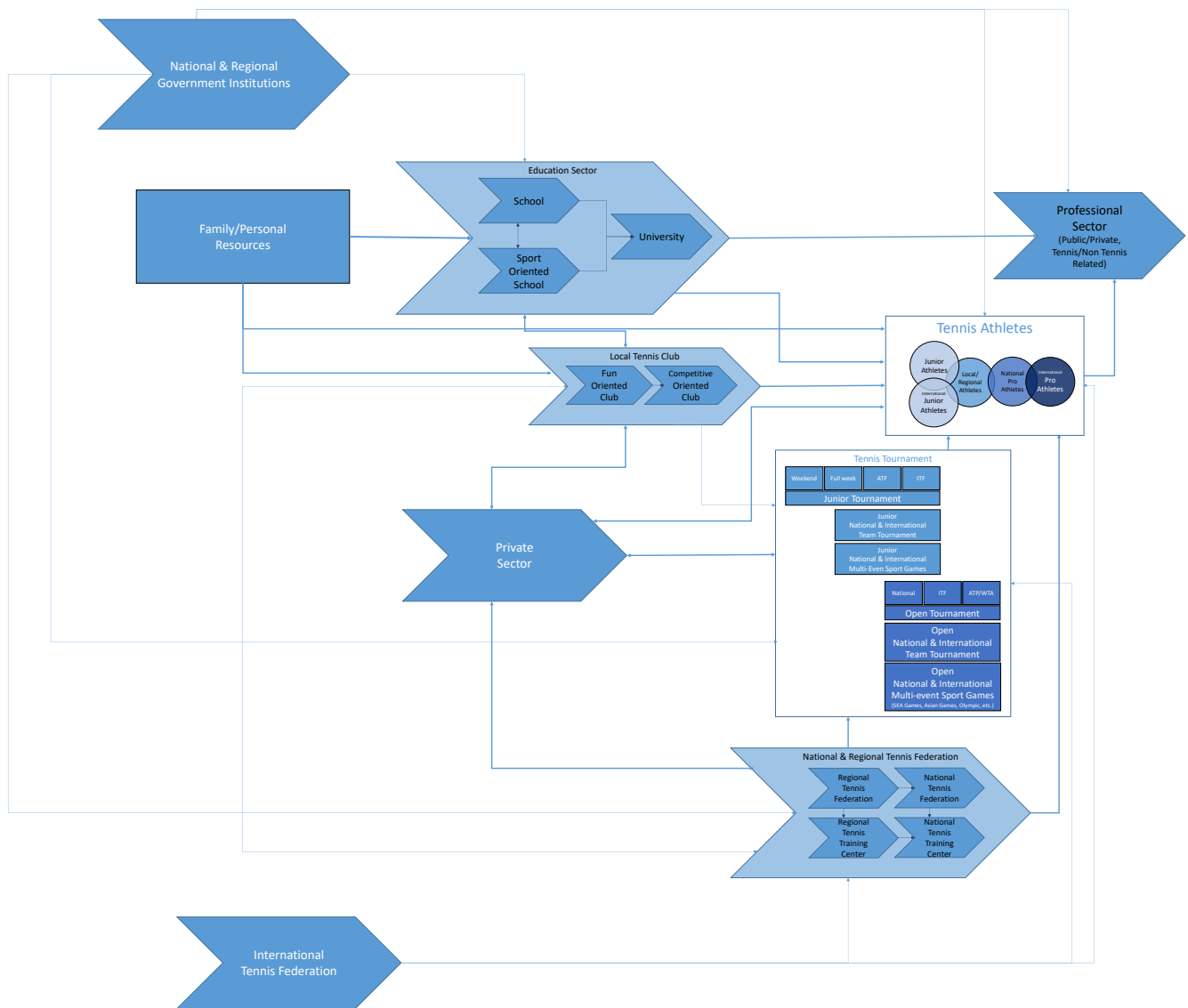


Figure 5. Value Chain Structure of Tennis Player Development.

perspective it limit number of prospective talents who in the future may contribute into performance of Indonesian tennis in international level.

Formal education sector is an important part of the overall value chain structure. Education sector cannot be neglected and must be integrated in designing the overall ecosystem for developing high performance tennis athletes. In addition to high quality training, junior athlete need to have access to high quality education. It can provide them good opportunity to be accepted in reputable school/university for preparing their future life. Indonesia in 1977 developed the first sport oriented high school in Jakarta, the school facilitate student athlete with formal education and training program. Today there are some sport oriented high schools located in Java, Sumatera, and Kalimantan.

Phenomena of junior athlete dropout from sport and classic academic-sport dilemma have been discussed in the previous section. Parents and the junior athlete are concerned about their future life, especially when the athlete is at the latter stage of junior career. Moreover, competition for top universities in Indonesia is severe and creates additional

pressure for student-athletes. Integration of high quality education as part of the junior athlete development system is a challenge that needs to be solved.

Tennis athletes are required to compete in national and international tournaments. Tennis clubs may be able to organize some tournaments, but it may limited to certain level and held in specific location. Structured national and international level tournaments that cover all levels of athletes and spread all across the country are going to support athletes to grow and improve their level of performance. International tournaments in Indonesia can help local junior and pro athletes to compete at an international level and open their access to higher level tournaments globally.

Some countries, for example USA (USTA, 2022), Great Britain (LTA, 2022), Canada (Tennis Canada, 2022), etc., develop national training centers and regional training centers managed by their National Tennis Federation to facilitate high performance/elite tennis development programs for their talented junior and pro tennis athletes. From the previous discussion – due to the high requirement of resources--parents, athletes, and tennis clubs may have limitations to

acquire necessary resources for developing performance of tennis athletes. Required resources can be: high quality coach, training program, competitive training/hitting partner, tennis court and training facilities, national/international tournaments traveling and accommodation, diet and nutrition program, tennis award/scholarship, coach development and training, parents education, and other services i.e. relation with sponsors, relation with schools and universities, tournament management, etc.

National training center and regional training centers may have facilities of tennis courts with different surfaces, state of the art training facilities, tennis school and academy for different level of athletes, highly reputable coaches in the country, advanced training method and technology, accommodation for athletes, training/education/certification program for athletes/coaches/parents, formal education services by collaborate with schools/universities, and other services required by athletes to improve their performance. The facilities are mainly intended to facilitate top level junior and pro athletes in the country/region. National and regional tennis center may grant different levels of scholarship and award scheme for prospective regional and national talented juniors and selected pro athletes to train there as part of national tennis development program and to tour for competing in some national/international tournaments. Many current professional ATP/WTA athletes are products of the national training centers of their respective country.

Developing national and regional training centers is one alternative solution that can continuously support junior and pro athletes with resources and facilities which are difficult to acquire by themselves. It can support potential talents from all economics background to have elite level training and competing in high level. Junior and pro athletes can continuously improve their tennis performance and reach their full potential without constrained by access to valuable resources. It can help tennis to spread and reach wider audience all across the country, thus increase the pool of national tennis talent. Transition from national to international performance in both junior and pro level and transition from junior to pro level are among critical links in the overall value chain. National training center can support athletes in these transition period and avoid broken link in the value chain. National training center and regional training centers are serving as take-off platform before high performing national athlete can be dependent for flying into professional competition.

For every athlete in any level, transition from athlete life into non-athlete life is one thing that is going to happen. Athlete365 (2022) explore importance of preparing life post athlete career for athlete. In designing system for high performance athlete development, how to manage athletes' life in post of their athlete career is one issue that need to be taken into consideration.

CONCLUDING REMARKS

Local club is playing a significant role in creating a massive pool of talent, developing from grass roots into junior athlete, and further preparing transition of junior athlete into senior athlete. This paper identifies figures of grass roots, number of coaches, number of ranked junior, and pro tennis data in Indonesia and compares those data with other countries in different regions in the world. It can be concluded that, although lead in South East Asia due to having the biggest

population, the number of tennis players, ranked ITF junior, and ranked pro tennis athletes in Indonesia are small compared to other tennis performing countries.

This paper identifies the typical player pathway and value chain of local clubs in developing tennis players. There are some non-technical activities that are important in managing the tennis club to assure performance of the tennis club in business and in tennis. This paper defines the structure of the overall value chain of national tennis athlete development. Developing strong collaboration between all stakeholders, completing the structure of the value chain to avoid broken links, and considering the whole cycle of athletes' life are important for producing high performing national tennis athletes in a sustainable way.

Further research can be directed into deeper data analysis and model development from the proposed value chain structure for deeper understanding on how interaction between entities in the overall value chain can improve development of high performing national junior and pro tennis athletes.

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