

Punching above their weight? Examining Player Development Pathways in Belgian Football: A Retrospective Analysis

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Introduction

Over the past two decades, a substantial body of research has sought to advance the development of knowledge around elite football players. Spanning a broad range of perspectives that include technical (e.g., Andrzejewski et al 2014; Jamil et al, 2020), physiological (e.g., Delecroix et al, 2018), psychological (e.g., Mills et al., 2012; Butt & Mills, 2023), and environmental (e.g., Mills, Butt & Maynard, 2023), the goal of such research is focused on answering one fundamental question: How might we optimise player development pathways to produce footballers that successfully develop to, and excel at, the elite level of the game? In further response to this question, there has been a trend in recent years for research to examine the talent pathways within what has been described by many researchers (e.g., Littlewood et al, 2011; Velema, 2018) as the ‘Big 5’ European football leagues (i.e., England, Spain, Germany, France, Italy) due to financial; and on-field success. Research has also included the Netherlands amongst these main leagues (e.g., Bullough and Coleman, 2019).

While this line of research has helped build a better understanding of the processes and player outputs generated in professional football at the highest level of the game, an area that has received comparatively less attention are the other significant European leagues that comprise the second tier of professional football (i.e., Austria, Belgium, Czech Republic, Denmark, Greece, Poland, Portugal, Scotland, Switzerland, and Turkey). This paucity of research represents a gap in existing knowledge as scant information exists *vis-à-vis* the role that professional clubs within these second tier leagues play in shaping young talent via their player development pathways. Clubs in these leagues have fewer comparative resources and fewer opportunities to compete in Europe’s elite competitions yet operate under the same regulations as those with more significant development infrastructures. As a consequence, it is important for the national associations in these countries to have a clear view on the pathways in place, and the outputs associated with those pathways. This will allow them to better shape their development strategies and align them with the overarching club and league strategies. More specifically, the countries outside the ‘Big 5’ are often considered as development countries for teams in the ‘Big 5’ (Van Looveren et al, 2019). This substantial difference in

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player career evolutions advocates for a more detailed analysis of the player pathways in non-Big 5 leagues.

One such league operating outside the ‘Big 5’ is the Belgian professional league. Officially named the Jupiler Pro League, it represents the highest level of elite football competition in Belgium. While Belgium has a relatively modest population of approximately 11 million compared to near neighbours France and Germany, it has, in recent decades, established a notable track record of producing players who successfully develop and compete at the highest levels of the world game. This is reflected in the FIFA ranking of the men’s national team, which after achieving the number one spot in 2015, has seen Belgium consistently in the top four ranked nations since.

While Belgium has yet to validate this ranking with success in a major tournament, their continued ability to produce world-class players for the national team outperforms many larger football associations who find themselves with greater talent pools and resources. Given that the top league in Belgium is considered a ‘minor’ one in terms of the quality of its professional clubs, and their limited access to elite club competitions, it brings to the fore the intriguing question of how their talent pathways are structured. In short, what is Belgium’s blueprint for successful player development? While a comprehensive answer to this question would undoubtedly be complex and multifactorial (e.g., coaching, sociocultural influence), a key part of the puzzle might relate to better understanding the talent pathways that Belgian players take to the elite level. This would include where players are produced, the type of players being produced, where they make their first senior elite level appearance and, the specific pathway or trajectory that they take into the professional game. It is anticipated that such insights would be of strategic importance to the Royal Belgium Football Association (RBFA) by unearthing actionable recommendations that can feed into strategic planning with a view to safeguarding these productive talent pathways for future generations. Furthermore, it is contended that such information might offer other associations valuable insight into how their pathways compare. This paper aims to fill a critical gap in the literature by examining the player development pathways in Belgian football, compared with other ‘minor’ leagues. It aims to provide preliminary insight into how a ‘second tier’ league contributes to the broader landscape of elite player development outside of the well-established Big 5’. It is anticipated such information would help to develop a more robust and comprehensive understanding of European football's player market and continues the analysis enabling broader discussions around player development pathways.

In the context of the present study, the term "player development" refers to the systematic progression of players through various stages along the developmental pathway where the ability to perform consistently at higher levels of competition is displayed. A key aspect of effective player development centres on receiving sufficient exposure to playing opportunities. Guided by this aspect, player development in the present study is operationalized through "minutes played," which serves as a proxy measure for a player's growth and progression. Previous research (e.g. Richardson et al, 2013) has established that actual playing time is a reliable indicator of development, as it captures the real-world opportunities for players to showcase and hone their talent. Minutes played reflect the degree to which a player is trusted and relied upon by coaches, offering insight into their role within the team and their experience in high-pressure, competitive environments. Thus, by examining minutes played, the study quantifies the practical exposure, experience, and career progression of players across various leagues, which directly links to their developmental trajectory. Against this backdrop, the purpose of this paper is twofold: (i) retrospectively examine the player development pathways of all professional Belgian players over the past decade and (ii) quantify the opportunities (using minutes played) and pathways in the 15 minor European leagues outside the Big 5 for comparative analysis from different player development systems.

Literature review

Player development in European football

In the context of European football, player development involves the structured and systematic progression of young players through various stages along their developmental pathway. This pathway encompasses not only the technical, tactical, and physical growth of the player but also their mental, emotional and social adaptation to the professional environment. Key features of effective player development include successful transitions from youth academies to senior teams, adequate exposure to playing opportunities, and the development of key psychological characteristics required to 'make it' at the highest-level professional football (Mills et al., 2012).

The effectiveness of player development pathways in Europe has been widely researched, particularly regarding the importance of early engagement in football. Supporting the rationale for the present study, investigations such as Ford (2012) emphasize that players who progress to professional levels typically accumulate significantly more practice and

playing experience during their childhood and adolescence than those who do not. Research also suggests that the transition from youth to senior teams has become increasingly difficult. For example, Carpels et al. (2021) has shown a decline in the proportion of club-trained players (CTPs) in senior squads across Europe, coupled with a growing reliance on expatriate players. This suggests potential inefficiencies in youth development systems, even though fielding more homegrown players has been positively linked to better league performance.

Environmental factors at key stages are also considered to play a pivotal role in shaping effective player development pathways (Mills et al., 2014). Critical periods such as the transitions between the ages of 15-16 and 17-18 are particularly challenging, as developmental opportunities tend to decrease as players age (Gesbert et al., 2016). Additionally, organizational shortcomings, such as a lack of communication between youth academies and senior teams, further hinder player progression (Relvas et al, 2010). Biases related to the date and place of birth, where players born earlier in the year or closer to development centers are more likely to be selected, also skew opportunities (Finnegan et al., 2017).

A holistic ecological approach to talent identification and development in elite youth football has also been put forward which is suggested to facilitate dual purposes of a professional academy: nurturing players for the first team and developing talent for potential transfers to other clubs (Reeves, 2012). However, challenges persist, particularly in countries like England, where young professionals report concerns about the structure of under-21 leagues, the adequacy of educational welfare, and inconsistencies in the identification of player attributes (Webb, 2018). Addressing these challenges would appear vital for optimizing player development pathways and ensuring the successful transition of young talent to the professional level.

Against this developmental landscape, Belgium's sustained long-term success in developing players who compete at the highest level presents something of an anomaly. As previously mentioned, despite having a smaller talent pool and fewer resources compared to larger footballing nations, Belgium has consistently produced world-class players who regularly compete in Europe's top leagues and major international football competitions. This success raises important questions about the effectiveness of their player development pathways and offers a valuable case study for understanding how smaller football nations can outperform expectations in talent development.

The Red Devils: A brief history

The Belgium national football team (known as the Red Devils) is a longstanding member of the international football community, playing their first game in 1904 and competing in the inaugural World Cup in 1930. Directed by RBFA, the national team have had strong performances on the international scale with six consecutive World Cup appearances from 1982-2002 including a fourth-place finish in Mexico 1986. The national team has also seen periods where international competitions were sparse, with representation at only one (as host) of the seven European championships (from 1988-2012) and missing out on the 2006 and 2010 World Cups. In the period in the mid-2000s where the men's team did not qualify, the green shoots of optimism were beginning to show as the under-21 side got to the semi-finals of their 2007 European competition. Since missing World Cup 2010, Belgium have consistently been one of the top ranked football nations in the world and finished third in the 2018 FIFA World Cup.

The domestic league context

The Jupiler Pro League is a 16-team competition with two teams entering the UEFA Champions League qualifying rounds along with two qualifying stage positions in UEFA's other competitions (i.e., Europa League and Conference League). The league has been in operation since 1895–96 as a round-robin tournament with seven participating teams, namely: Antwerp FC, FC Brugeois, FC Liégeois, RC de Bruxelles, Léopold Club de Bruxelles, SC de Bruxelles, and Union d'Ixelles. At the beginning of the 2009–10 season, the format of the league was significantly changed with playoffs being introduced after the regular season. The point system in the championship playoff is the same as during the regular season, except each team starts with half of the points they won in the regular season, rounded up to the nearest integer. The top six teams from the regular season enter the championship playoff, with the team that placed first winning the championship of Belgium. Each team plays their opponents twice and the teams are ranked by points, as is the case for the regular season. Since the inception of the competition, there have been 16 different winners with Anderlecht being the most successful team having come out as winners on 34 different occasions. The Belgian League was ranked 8th in Europe according to the UEFA coefficient rankings in 2023 (UEFA, 2023).

Previous research has suggested that Belgium is the leading exporter of 'minor' players in Europe (Poli et al., 2016). Vermeire et al, (2022) discuss this as an issue for nations like

Belgium, where youth player migration patterns have changed with a greater presence of overseas talent into Europe's domestic leagues, and the impact this has on playing opportunities for locally trained domestic players. This issue has been examined in the 'Big 5' leagues by other authors (Littlewood et al, 2011; Bullough and Coleman, 2019). Conversely, where inward migration into the 'Big 5' leagues has squeezed playing opportunities for locally trained players in the clubs most likely to compete in the Champions League, for smaller nations such as Belgium, there is a double opportunity. Specifically, this includes (i) facilitating opportunities in their own domestic league, and (ii) exporting players into other leagues. Berlischi et al, (2013) outlined that national teams that developed a higher share of professionals active in other professional leagues had a stronger performance in international tournaments, therefore for nations with a smaller or less prominent domestic league (i.e., those outside the 'Big 5'), there is an important developmental benefit of having players migrating to other leagues. In turn, the regulation changes outlined above, and economic conditions of European football had changed the strategies employed by the most powerful clubs and leagues around their recruitment and indeed their loan policies (Van Looveren et al, 2019). Over the past 10 seasons, players from over 100 different nationalities have played in the Belgian Pro League. Migration patterns into Belgium changed post-Bosman as Dejonghe (2006) highlighted, showing that the number of Dutch players in Belgium decreased from 1998 to 2006, whereas the number of Belgian players playing in the Netherlands rose from two in 1996 to 35 in 2006.

Belgian football has not been without its issues in the last two decades. Indeed, Özaydin and Donduran (2019) state that the revenue distribution in Belgian football is unequal although this is not unique for Belgian clubs, and is prevalent across European football (Bullough, 2018). The top clubs generate significant financial resources due to their success in domestic and European competitions, commercial deals, fan expenditure and media rights (Plumley et al., 2019). This wealth disparity can lead to a lack of competitiveness in leagues and hinder the financial stability of smaller clubs. Moreover, van Ours (2020) outlined that there are infrastructure issues in Belgium compared to other European leagues around stadium capacity and attendance and many Belgian stadiums lack the modern facilities found in larger European leagues. Stadium capacities and average attendances are also significantly lower in Belgium compared to the Big 5 leagues. Wang et al (2015), state that the largest club stadium in the Belgium is Club Brugge's Jan Breydel Stadium at approximately 29,000. In comparison, the largest stadium in the Netherlands (Ajax) has a capacity of approximately 56,000 and has three other stadiums with greater capacity than the largest in Belgium (Feyenoord, PSV Eindhoven,

and FC Twente). Financial mismanagement had also been a problem in some Belgian clubs in previous decades, with examples of clubs accumulating debt, failing to pay player wages, or facing bankruptcy have occurred (Dejonghe, 2006).

Method

Player data were aggregated across ten seasons (2013/14 to 2022/23) and from the five biggest European leagues (English, French, German, Italian, and Spanish leagues) alongside ten other predominant European leagues (Austrian, Czech, Danish, Greek, Netherlands, Polish, Portuguese, Scottish, Swiss and Turkish). The variables collected were player name, nationality, team played for, league played in, season played in, appearances, minutes, age, and position. Additionally, for the Belgian players in the sample, information regarding the youth academies they attended was obtained. These variables were then categorised into sub-groups and aggregated for analysis to enable us to quantify the associated outputs to clubs, nationalities, academy attended etc. The database was created by extracting the player and playing data for each club and cross-referencing this with existing football data websites.

There have been different measurements employed by studies in this area to evaluate elite player opportunity and they have evolved from quantifying the nationalities of the starting eleven and squad composition, the number of appearances made, and where they were made, and minutes played (Gratton and Solberg, 2007; McGovern, 2002; Bullough and Mills, 2014; Bullough et al., 2016, Balassiano et al, 2021). Minutes played are the most accurate measure for player opportunity rather than team/squad composition or appearances and allows the quantification of playing data from the database. This approach is consistent with the methods employed in previous studies that have discussed player opportunity. The measure ‘minutes played’ relates directly to real-world opportunities and allows us to aggregate and analyse the exposure and experience of players in the professional system. Using descriptive analysis effectively addresses the research objectives. The data does not quantify time spent in each academy (some players may be in the same academy from the earliest point they can join, which also varies by national association, and some may join as a scholar at 16 years old), and some players switch academies at some point during their development. There is no way of determining which part of the developmental pathway process was the most important therefore there is no weighting (e.g., by years spent in an academy) applied, and both/all clubs are credited with facilitating that players’ development. This approach is consistent with other analysis done on player development pathways.

Sample

This sample timeframe covers ten seasons, although the 2019-20 season was, for some leagues, incomplete following the COVID-19 pandemic outbreak in 2020. Within the database there are 21,969 players from 123 nationalities, generating 1.26m appearances and 87.5m minutes of play. In Belgium's elite league, 111 nations were represented.

For the Belgian transition analysis, across the 10 seasons, 25 clubs have competed in Belgium's elite league, nine of which have played in all ten seasons (Anderlecht, Charleroi, Club Brugge, Genk, Gent, Kortrijk, Oostende, Standard Liege, Zulte Waregem). In addition, Club Brugge have qualified for the UEFA Champions League seven times in the sample period, Anderlecht four times, Standard Liege, Gent, and Genk twice each and Zulte Waregem once, although only Club Brugge (5), Anderlecht (3), Genk and Gent (1 each) have made it into the group stages. There are 720 Belgian players in the database (i.e. played in one of the 15 European Leagues in the sample since 2013-14), 471 of which have played in the Belgian league at least once in the last ten seasons, and 109 who have played in one of the 'Big 5' leagues. The average debut age is 20.7 years, with 345 players making their senior debut in one of the 15 European leagues as a teenager. These 25 clubs are divided into three categories based on the number of seasons spent in the top league in the sample period, with nine clubs in category 1 as "ever-present", seven clubs in category 2 with 6-9 seasons (the majority) and nine in category 3 with a minority of seasons (1-5). The categorisation of clubs allows the analysis to understand the type of clubs where players develop. The analysis also accounts for Belgian clubs outside of the top league (category 4), and clubs from outside Belgian system (category 5).

Results

The results are presented in the order of 'macro' to 'micro', with the overall sample headline findings reported first, followed by the Belgian players and league more specifically, and finishing with the Belgian academy analysis. The first point is to quantify the ten-year playing statistics across the different sub-groups (overall, in their own domestic league, in the Big 5 leagues, and in the other ten leagues) to understand which nations are generating the most output, and where that output is generated – see Table 1.

Table 1 Ten-year playing statistics by nation – here

Figure 1 presents the minutes played by nationality, and groups the Big 5 leagues separately.

Figure 1 Aggregated minutes played by nationality (2013-2023) – here

Figure 1 outlines that, of all 15 nations included in the sample, Spanish players recorded the greatest volume of minutes, and the minutes recorded by Spanish players in La Liga alone was larger than the output from all other nations' minutes combined except Netherlands and France. The outputs from the Big 5 leagues are similar to previous studies where Spain and France were the dominant two nations in terms of player development and playing time (Bullough and Coleman, 2019). Of the nation's outside the Big 5, Czech players recorded the most minutes in their own league (3,555,018), and Portuguese players the most minutes in the Big 5 leagues (754,184) followed by players from Netherlands (680,929) and Belgium (616,454). As a proportion of minutes played, Figure 2 provides the comparison from the 15 nations.

Figure 2 Proportion of minutes played by nationality 2013-14 to 2022-23 - here

Figure 2 shows that five nations recorded more than 80% of their minutes played in their own domestic league (Turkey, Italy, Scotland, Czech Republic, and Poland), compared to two nations where this figure was under 65% (Portugal and France). Switzerland (23%) and Belgium (22%) recorded the highest proportion of minutes from their players in the Big 5 leagues (outside the five nations that host those leagues). France, Germany, and England have the highest proportion of minutes played in the other 10 leagues, however for England, 83% of these minutes were generated in the Scottish Premier League. Following the presentation of the macro level data, the results now look at the Belgian league in more detail.

Nationalities within Belgian Pro League

The data outlines that in the two seasons preceding Belgium's third place finish in the 2018 World Cup, and the season after (2018-19), were three of the four instances where Belgian players recorded the highest number of minutes played by in the 'Big 5' leagues. This coincided

with a reduction in the volume of minutes played in the Belgian Pro League, and the other 10 European leagues.

Figure 3 Minutes played by Belgian players 2013-14 to 2022-23 - here

The Belgian Pro League recorded 5.76m minutes of play from 2013-14 to 2022-23, with Belgian players accounting for 2.10m (36%), with 2013-14 the highest proportion (45%) and three seasons (16-17, 17-18 and 18-19) recording the lowest (32%). With the majority of minutes played in the Belgian league being generated by non-Belgians, it is interesting to track the nationalities, with bordering countries (France and Netherlands) first and third, with Senegal second, making up the top 3. In the top ten, three are European (France, Netherlands, and Serbia), five are African (Senegal, Congo DR, Ghana, Ivory Coast and Cameroon) and one Asian (Japan). This is different to the Big 5 leagues, where Brazilian and Argentinian players are the most prominent nationalities migrating in.

The protection of home-grown opportunities

One of the primary aims stated by UEFA in the home-grown legislation was the protection of playing opportunities for local players. It is clear from the data that, across European football, some nations have a greater proportion of inward migration than others – see Table 2.

Table 2 Playing data in domestic league by those eligible to play for the national team - here

Firstly, only six of the fifteen leagues have a majority of appearances or minutes played in their domestic league by players eligible for their national team. This suggests that the element of the home-grown rule which stipulated an aim ‘to protect opportunities for local players’ has resulted in different outcomes in each country. Some of these data are impacted by successful outward migration, for example players from arguably weaker leagues, moving to stronger leagues, which for nations such as Belgium is an important target. Part is cultural (such as language, geography etc.) and some movement is about the opportunities available to play in UEFA’s European competitions. The volume of South American, African and the

increasing migration of elite Asian players to the European leagues shows these leagues remain the destination of choice due the economic power they hold.

The Belgium academy development system in focus

For many professional clubs in Belgium, their remit aims to produce Belgian players, to sell on into the European leagues and clubs with the most resources as this income enables clubs to remain financially stable. This process benefits the Belgian system as outward migration creates more opportunities for Belgian players to get their chance to play in the Pro League, boost the overall number of professionals and create competition for national team places.

Overall, 109 of the 720 Belgian players in the sample have played in the Big 5 leagues, with a further 96 playing in Eredivisie in Netherlands (to make 215). With over 100 Belgian players plying their trade across the top 5 leagues of Europe, the Belgian national team find themselves with a significant pool of players to choose from with experience of the elite leagues. The movement pattern of Belgian players is predominantly upwards, i.e. a greater proportion of players recording minutes and appearances in the Big 5 leagues rather than to the ‘weaker’ European leagues. In the 2022 World Cup, 19 of the 26 man squad played in one of the ‘Big 5’ leagues, with 5 playing in Belgium and 2 in Turkey. Of the seven players outside the Big 5, five players had played in the ‘Big 5’ leagues previously (Batshuayi, Mertens, Alderweireld, Vertonghen and Mignolet) only Hans Vanaken (Club Brugges) and Zeno Debast (Anderlecht and aged only 19) had not played in one of the Big 5 leagues.

With 720 Belgian players in the system, it is possible to track where they developed through the academy system and then quantify the outputs by academy and by position. Table 3 outlines the players produced by the different teams, and club ‘type’ from the categories outlined in the method section, and Table 4 summaries this by club ‘type’. This analysis is important to a national association to understand which of their clubs produce, and which play emerging talent.

Table 3 All players, appearances, and minutes by academy graduates - [here](#)

Table 4 Most prominent academies by club type - [here](#)

Anderlecht are the club credited with producing the most Belgian professional players to have played in one of the 15 leading European leagues (2013-2023). Anderlecht, as the most prominent Belgian team for providing pathways to the first team for young academy players, is one of the 19 municipalities of the Brussels-Capital Region, which has the largest population. The most credited academies in Belgium were Anderlecht (111), Standard Liege (84), Club Brugge (73), Genk (61), and Gent (37), all of which are “ever-present” clubs in the sample. This suggests that the development pathways in Belgium lean towards those bigger clubs consistently in the top league. Finally, the positions played by Belgian players in the sample gives an insight into the ‘type’ of player being developed.

Table 5 Position played by Belgian players - here

Of the 720 players, 9% are goalkeepers, 31% defensive positions, 39% midfield and 20% in attacking positions, which reflects a relatively equal and proportionate spread of positions. The average appearances per player are consistent for goalkeeper, defence and midfield, and there is a small drop off for players operating in forward positions. This is not a trend that is unique in Belgium as shown in other nations such as the English system (Balassiano et al, 2021). Producing attacking minded players who can make the difference at the elite level is the most challenging position. This is an area the Belgium system has done well, with the national squad has featured many top-class attack-minded players since 2013.

Discussion

Of the top 25 Belgian players generating the most minutes in the sample, some are household names with domestic and European championships titles to their name, playing for the most successful clubs in Europe (e.g. Thibaut Courtois #2 on the list, Kevin de Bruyne #11, and Eden Hazard #25). Other players in the top 25 list are players that have played their entire career outside the Big 5, e.g. Hans Vanaken and Brandon Mechele both with over 300 appearances for Club Brugge, and Sammy Bossut, with 18 seasons at Zulte Waregem. Whether large numbers of the best players leaving the Belgium league is positive (to open up opportunities for others) or negative (weakens the domestic system) is debatable. As Goossens (2018) discusses, player drain has been one of the reasons why the Belgian Pro League has suffered as the gap in quality between the top teams and the rest of the league can be substantial. With talented young players not competing against the very best players, there can be pressure

to move early on in their career. Previous studies have shown that some of the Big 5 leagues do not face the same substantial player drain as is found in Belgium (Bullough and Coleman, 2019). These results show that the volumes generated by those five nations is substantial, although the majority of Italians play in Italy (87% of all minutes), and Spain and France outperform the other nations in terms of volume. The emergence of the Saudi Pro League is a new and different threat to player migration in world football (Macedo, 2022). However, the Belgian Pro League has seen a number of former internationals return to the league in the last 3 seasons, namely Jan Vertonghen and Toby Alderweireld. This migration back to the Belgian Pro League is an important aspect of the player development environment, where experienced professionals return back to Belgium after completing stints abroad. This should be an area the Belgian Football Association look to exploit via coaching/mentoring and using their top talent to support the next generation. Using mentoring, they could assist in nurturing young players and providing the best advice and information for them to progress within their careers.

Eligibility for the national team

Within the English Premier League and the Belgian Pro League, fewer than 40% of appearances were made by players who are eligible to represent England or Belgium respectively at international level. This is in stark contrast to the Czech league for example, where over 75% of appearances and minutes played in that league are by players from the Czech Republic. It is worth noting that proportion of local players playing in each league does not present the full picture of the player ‘pool’ and the volume of players a national team can choose from. For Belgium in the ten-year time period, 109 Belgian players competed in one the Big 5 leagues. Having players consistently appearing in the top 5 European leagues, and in turn accessing greater opportunities to play in UEFA competitions (as more places are awarded to those leagues) is a benefit for smaller nations. When we break the data down by the ‘type’ of club players play for, there is a group of clubs which have dominated European football in the last two decades, for example, the previously known G-14 clubs or from previous studies, the clubs most frequently appearing in the UEFA Champions League during the timeframe (Bullough, 2018). Belgium’s players generate the sixth highest number of minutes representing the G-14 clubs, behind only Dutch, Portuguese, and Croatian players from European nations, and fifth for clubs most prevalent in the UCL. This adds further evidence to the quality of the appearances being made by a proportion of Belgian professionals.

Belgian clubs developing talent

The data in Table 4 suggests that the development pathways in Belgium lean towards those bigger clubs who are consistently in the top league and entering European competitions. Mechelen (34) are the best performing academy of the teams to have spent time out of the top league. Of the six clubs producing the most players, only Standard Liege is located in the Southern, Wallonia region, the other 5 teams are situated in the Northern and predominantly Dutch speaking part of Belgium. Furthermore, with only one club producing Belgian players in the capital and largest city, Brussels, Anderlecht. Previous studies have alluded to issues such as inequalities in youth development, where not all young players in the country have equal access to the same coaching and opportunities (Awuh and Spijkers, 2019). Additionally, geographical disparities also contribute to inequalities in youth development. As (Schynck and Willem, 2018) state the concentration of elite clubs and football infrastructure in certain regions, particularly Brussels and Flanders, means that young players from other areas, such as Wallonia, may face greater challenges in accessing quality coaching and development programs. Standard Liege is one of few Wallonia based clubs to produce high numbers of players regularly. Ryom et al (2020) discuss how Genk provide a very suitable learning environment for young players but this is not always easy to replicate all over the country in smaller clubs with lower budgets. A challenge for the Royal Belgian Football Association is how to ensure as many Belgian players come through the system as they have in recent years.

As outlined earlier, six Belgian clubs have played in the Champions' League group stage since 2013-14 (Club Brugge 7, Anderlecht 4, Standard Liege 2, Gent 2, Genk 2, Zulte Waregem 1), and only Zulte Waregem are not amongst the most prominent for player development in the sample. One of the primary factors contributing to these inequalities is the disparity in resources among football clubs. Bullough (2018) quantified the number of entries and prize money from Champions League qualification (2003-2017), and the 13 entries by Belgian clubs generated £150m of revenue, with Anderlecht (£70m) accounting for almost half of that. When compared to individual clubs such as Real Madrid, Barcelona, Bayern Munich, and Chelsea who all received in excess of £0.5bn in the same period, the market conditions are not equal. PSV Eindhoven (a prominent producer of Belgian players – see Table 3) received £178m, more than all Belgian clubs combined. As such, clubs like Anderlecht, Club Brugge (£29m) and Gent (£28m) have an opportunity to attract and produce players regularly as they are more likely to have well-funded youth academies with state-of-the-art facilities, coaching staff, and support structures. Smaller clubs may struggle to provide the same level of resources,

which may result in a difference in the access to coaching, high-level competition, modern training facilities (Standaert et al, 2006).

It is interesting to note the volume and location of the non-Belgium club academies that are playing a role in developing elite Belgian players. As Belgium is located in Western Europe and sharing a land border with two nations hosting one of the 'Big 5' leagues (Germany and France), plus Netherlands (referred to as part of the 'Big 6'), the options available for players is broader than for some nations. Luxembourg also borders Belgium but does not have an elite professional league. This central location means Belgian clubs face competition and challenges in keeping their best players in Belgium, with many of Europe's top clubs located within close proximity. The three non-Belgian clubs credited with the most players developed (and subsequently appearances and minutes) are PSV Eindhoven, Lille, and Ajax, with both the cities of Eindhoven and Lille on the Belgian border. Of the 89 players who have spent time in an academy outside Belgium, Netherlands (37), England (22), and France (18) are the most prominent. No Belgian players have spent time in a Spanish academy, and only two developed in Germany, but one player with Belgian-Greek parents developed at AEK Athens (Viktor Klonaridis) and has one under-20 cap for Belgium up to summer 2023.

Financial challenges for the Belgian system

Football clubs in Belgium, as well as many football clubs worldwide, face financial challenges. Maintaining the financial stability of clubs is essential for their long-term success and their continued ability to operate. Previous studies have shown historically that several factors have influenced the financial landscape of Belgian football clubs, which has come in the form of both opportunities and threats (Magee, 2006). Plumley et al (2019), explain that one of the central factors contributing to financial stability challenges is the relatively small market size of Belgian football. Belgium is a small country compared to football powerhouses like England, Spain, France, or Germany. All of which are located in relatively close proximity to Belgium. The smaller fan base which leads to smaller television revenues along with less lucrative sponsorship deals. This means that Belgian clubs often have less revenue to work with. With this, they face greater difficulties in competing financially with clubs from larger markets. Belgian clubs have produced players who have gone on to become stars in top European leagues. However, the downside is that these clubs have to sell their most promising young players to more financially powerful clubs in other countries and are less likely to command the large fees those clubs may sell those players on for. For example, Genk received

c. €8m from Chelsea for Kevin De Bruyne in 2012, while Chelsea received c.€22m two years later from Wolfsburg, who in turn received c.€75m from Manchester City in 2015. While these transfers generate revenue, they are a fraction of the future market value and also weaken the competitive strength of the Belgian league on a broader scale (Solberg and Haugen, 2010).

Not qualifying for the Champions League can have a significant financial impact on a club. Clubs participating in the Champions League earn substantial revenue through various streams, including television rights, sponsorships, and matchday revenue (Plumley & Flint, 2015). Menery (2018), states that this can result in a decline in the club's overall revenue, which can affect its ability to attract top talent, pay competitive salaries, and invest in infrastructure and youth development. With only one place for automatic qualification to the UEFA Champions League available for Belgian clubs, and not always guaranteed depending on rankings/performance, it is challenging for more than one club to reap its benefits. If clubs from some nations underperform and reduce their ranking, they may find themselves excluded from guaranteed qualification for future editions of the Champions League (Dantas et al, 2020). For the Royal Belgian Football Association, developing policies which reward clubs for bringing through more Belgian players is an interesting option, whilst adhering to EU rules about employment laws based on nationality. Further research looking at the pathway from grassroots/localised talent academies within each local region or province could be beneficial to understand more about the pathway prior to players joining elite club academies. Recent history shows from the data that elite players from Belgium are prepared to leave the Belgium system as a youth player (and still represent Belgium internationally). Therefore, whether the football association can facilitate cross-nation development pathways is another option to explore. This may not benefit Belgian clubs, if some of their brightest talents are being developed elsewhere but may help in developing those at the very top of the system in the youth set-up.

Implications for National Associations

The analysis from a nation operating outside of the 'Big 5' European leagues is important to generate broader discussion on development systems, as they are operating with limited resources and a reduced level of access to UEFA competitions compared to other clubs/leagues. The benefits include greater insight for the Royal Belgian Football Association, by understanding where in the Belgian system players develop, where players migrate out of

the Belgian league system, and how this compares to other similar sized systems. This data provides invaluable information for the national federation to look at how they could support clubs in fostering elite player development. Investigating the ‘outputs’ from Belgian clubs and leagues to assess the volume from the overall talent system provides data that can help them discuss their talent pathways, and resources as they help their clubs align with UEFAs regulations.

For UEFA, this provides data regarding the impact of their regulations concerning the protection of home-grown opportunities and financial compliance from nations outside of the five major leagues. Understanding player migration patterns across European players from a broader range of leagues also creates discussion for potential strategies for creating a more equitable development environment, such as implementing policies that ensure fair play and equal opportunities for young players. For the Royal Belgian Football Association, understanding where the players that are eligible for the national team develop, and transition is vital when looking at long term investment in grassroots programmes, funding into academies/clubs or any changes in youth training regulations. For the RBFA’s relationships and work with their member clubs’ academies, understanding how some clubs have optimised player development pathways (or not) can be further investigated. This can be through the lens of the economic and commercial impact of investing in effective talent pathways and enhancing club profitability through successful player transfers. Societally too, the research findings could influence attitudes toward the minor leagues and the importance of diverse talent development pathways in football, and young athletes' access to development opportunities and long-term career prospects.

For UEFA, much has been written on the efficacy of the home-grown rules, and the associated ‘protection’ of playing opportunities, and greater understanding of the opportunity within leagues and club types across the European landscape is important to challenge and refine strategies for clubs and federations when looking to enhance player development at a macro level. Policy at national level is not consistent between nations, however all operate under the regulations at the European levels, and greater financial support and access to the elite competitions for clubs in the minor leagues could have a ripple effect on the broader football ecosystem, including the economic and social impact on local communities. More research into the ‘minor’ European leagues would help them understand the nations and pathways they oversee.

Limitations of the study

One potential limitation to this area of the research is that the Belgium nationality coding only represents players that were born in Belgium or qualify to play for Belgium internationally. It is not able to consider players that were born in Belgium or qualify for Belgium but may choose to play for the country of their parents or grandparents' origin beyond the 2022-23 season (or vice-versa). Belgium is a diverse country with people of many different nationalities and backgrounds, it is possible that some Belgian born players with dual-heritage may choose to represent the country of their parental origins or switch after playing for the under-age teams. For example, during the FIFA World Cup in 2022, semi-finalists Morocco had many European born players in their squad of Moroccan origin, and, as of 2023, there are nearly 700,000 Moroccans living in Belgium and players of dual heritage may choose not to play for Belgium internationally (Vanthomme et al, 2021).

Conclusion

The paper aimed to (i) retrospectively examine the player development pathways of all professional Belgian players over the past decade and (ii) quantify the opportunities (using minutes played) and pathways in the 15 minor European leagues outside the 'Big 5' for comparative analysis from different player development systems.

There are 111 different nationalities represented in the Jupiler Pro League (JPL), and the league boasts a diverse array of talents coming prominently from France, Senegal, Netherlands, and Congo DR. Anderlecht emerged as the club credited with the most players from their academy and the clubs producing the most players in the Belgian system were also the "ever-present" clubs, and most likely to qualify for the UEFA competitions i.e., the most successful, and this mirrors the development pathways seen in Spain, and Netherlands (Bullough et al, 2016). A significant number of players have developed at some stage in Belgian clubs not regularly competing in the JPL, or qualifying for European competitions, although there were many examples of players moving academies in their formative years (138 players had more than one academy credited). The differences in players development outputs may reflect a disparity of resources among clubs and academies with clubs such as Anderlecht and Club Brugge having received more Champions League revenue than others. The revenues generated by Belgian clubs is, however, significantly less than other European clubs, including clubs like PSV Eindhoven on the border, who have seen more Belgian players pass through their academy than 13 of the 25 Belgian clubs in the sample for this study.

The budgets, access to European competitions and overall exposure of the 'Big 5' European leagues is attractive to players from outside those five nations, and the migration of players has implications for both Belgian football and the global footballing landscape. A considerable number of Belgian players have migrated upwards, with 215 players migrating into one of those 5 leagues, or the Eredivisie in the Netherlands. Having Belgian players competing in the best leagues, and European competitions is beneficial for the national team, and moving players out has the potential to free up spaces in Belgian clubs in the Pro League. Belgium is not as reliant as other European nations on their own league to develop players (like the five nations that recorded more than 80% of their players' minutes in their own domestic league - Turkey, Italy, Scotland, Czech Republic, and Poland). Belgium recorded the second highest proportion of minutes (22%) from their players in the 'Big 5' leagues (outside the five nations that host those leagues). This is a likely contributing factor why Belgium have been 'punching above their weight' internationally, with the elite player development talent pathways in Belgium regularly producing players with the necessary quality to play regularly in Europe's best clubs and competitions.

The results provide an overview of the development 'system' from a footballing nation that has been performing well on the international stage over the last decade. Belgium performs well in comparison to other European nations, particularly the movement of players into the 'Big 5' European leagues. There is a relatively low volume of 'home-grown' appearances and minutes played as a proportion of all opportunities in the Belgian domestic league (ranked 13th out of 15 leagues). Belgian footballers recorded the 3rd highest volume in Europe's 'Big 5' leagues behind Portuguese and Dutch players and were also prominent in the squads of the 'elite' clubs in those leagues. The implications for player development in football is a greater understanding of the development pathways in smaller leagues, and how this can inform talent identification and management strategies in other contexts. The discussion offers practical recommendations for clubs, coaches, and governing bodies, and suggests areas for future research to build on the findings.

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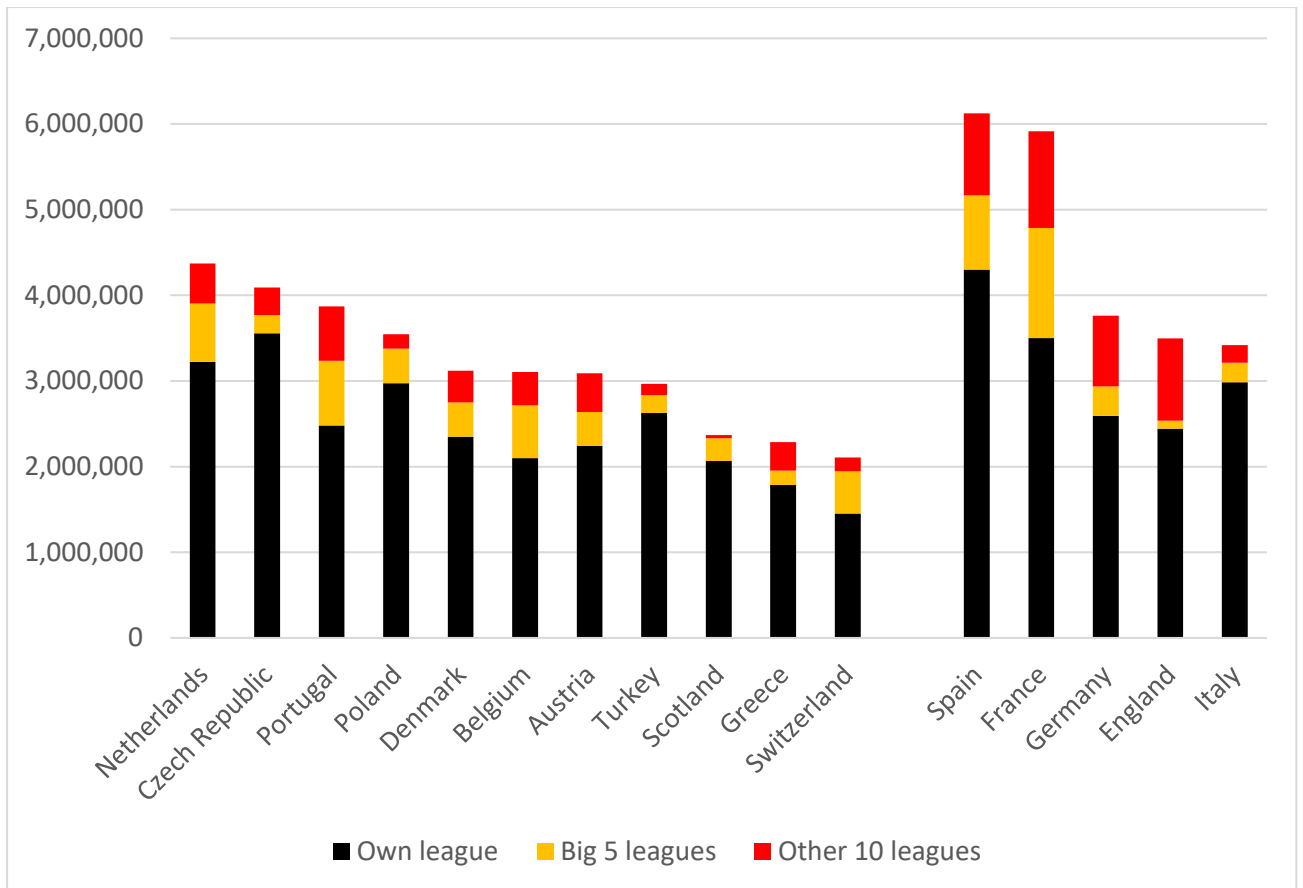
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Table 1 Ten-year playing statistics by nation

	APPEARANCES MADE				MINUTES PLAYED			
	Own league	Big 5 leagues	Other 10 leagues	TOTAL	Own league	Big 5 leagues	Other 10 leagues	TOTAL
Austria	32,215	5,646	6,824	44,685	2,242,977	393,954	451,305	3,088,236
Belgium	29,763	9,184	5,944	44,891	2,097,504	616,454	390,527	3,104,485
Czech Rep	50,490	3,031	4,446	57,967	3,555,018	213,667	321,127	4,089,812
Denmark	33,780	5,855	5,341	44,976	2,349,718	401,085	369,140	3,119,943
Greece	26,162	2,408	4,639	33,209	1,785,306	167,585	331,695	2,284,586
Netherlands	48,246	9,820	6,806	64,872	3,223,986	680,929	466,296	4,371,211
Poland	43,557	5,617	2,496	51,670	2,973,075	403,593	169,191	3,545,859
Portugal	35,742	10,877	9,101	55,720	2,479,874	754,184	635,855	3,869,913
Scotland	29,165	3,893	537	33,595	2,066,095	265,477	36,523	2,368,095
Switzerland	20,648	6,883	2,429	29,960	1,452,201	492,290	160,770	2,105,261
Turkey	39,668	3,258	1,914	44,840	2,625,026	210,986	128,953	2,964,965
England	34,407	1,431	13,531	49,369	2,443,085	93,635	958,396	3,495,116
France	50,887	18,589	16,394	85,870	3,500,301	1,286,277	1,128,021	5,914,599
Germany	37,953	4,826	11,734	54,513	2,590,703	347,329	823,411	3,761,443
Italy	43,817	3,348	3,069	50,234	2,985,850	226,171	205,633	3,417,654
Spain	63,728	12,521	13,661	89,910	4,301,166	865,244	957,429	6,123,839

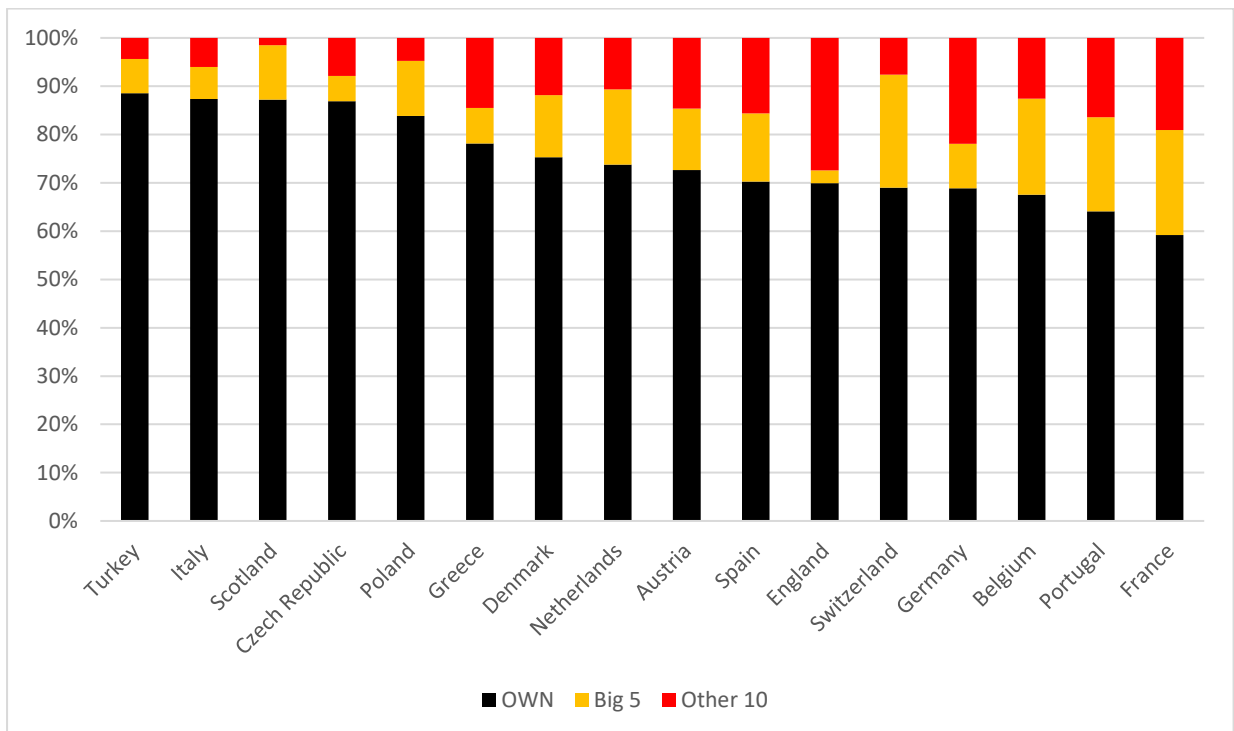
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Figure 1 Aggregated minutes played by nationality (2013-2023)



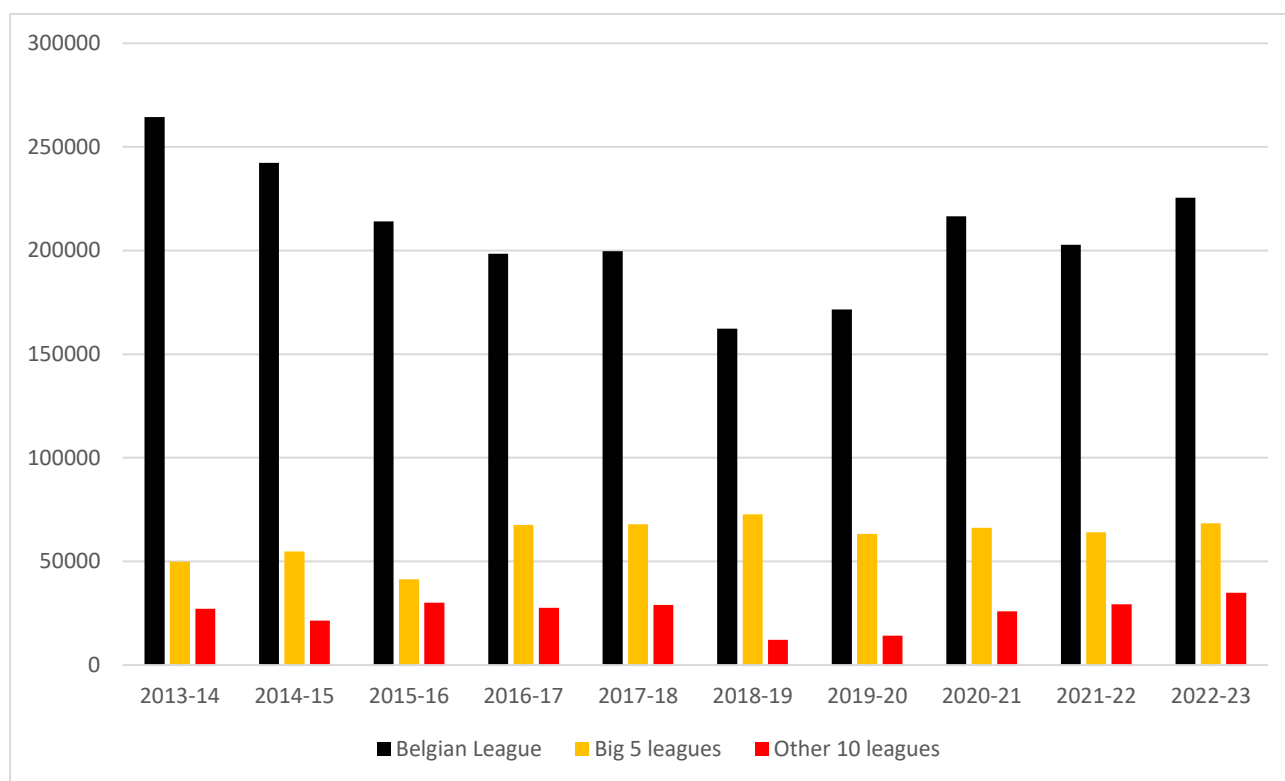
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Figure 2 Proportion of minutes played by nationality 2013-14 to 2022-23



Source: Authors own work

Figure 3 Minutes played by Belgian players 2013-14 to 2022-23



Source: Authors own work

Table 2 Playing data in domestic league by those eligible to play for the national team

	% Apps	% Minutes
Czech Republic	75.8%	76.9%
Austria	68.4%	69.0%
Denmark	61.9%	62.6%
Poland	58.3%	57.7%
Spain	58.0%	58.0%
Netherlands	56.4%	56.8%
France	48.3%	48.6%
Scotland	48.2%	48.2%
Switzerland	46.9%	48.1%
Germany	43.2%	43.5%
Turkey	42.2%	40.9%
Portugal	41.6%	42.3%
Greece	41.4%	41.1%
Italy	40.0%	40.5%
Belgium	36.3%	36.4%

England 32.6% 33.0%

Source: Authors own work

Table 3 All players, appearances, and minutes by academy graduates

Club Type	Club	No. Players	All 16 leagues		Top 5 leagues	
			Apps	Mins	Apps	Mins
1	Anderlecht	111	8,491	580,515	3,442	220,533
1	Standard Liege	84	5,383	372,123	1,444	85,226
1	Club Brugge	73	4,363	302,569	724	45,519
1	Genk	61	5,926	418,995	2,395	169,111
1	Gent	37	2,676	182,858	993	68,820
2	Mechelen	34	1,093	66,039	112	13,255
1	Charleroi	32	1,677	112,302	249	14,437
2	Cercle Brugge	26	1,550	103,290	268	18,405
2	Lokeren	25	1,563	113,206	86	3,907
2	Sint Truiden	23	1,134	85,801	156	13,939
3	Lierse	22	1,374	95,675	714	51,402
3	OH Leuven	21	625	40,205	198	13,981
1	Zulte Waregem	18	824	50,641	201	12,524
3	Westerlo	16	681	47,553	120	9,133
2	Waasland Beveren	15	800	59,270	44	2,590
1	Oostende	15	555	35,591	18	900
3	Beerschot	15	1,303	95,855	439	28,729
3	Mouscron Peruwelz	14	774	53,098	79	3,871
2	Eupen	10	468	33,058	169	12,581
2	Antwerp	10	494	36,834	38	2,539
1	Kortrijk	8	268	15,433	30	1,809
3	Excel Mouscron	8	720	50,958	56	2,868
3	RFC Seraing	5	50	2,686	-	-
3	Mons	3	235	18,850	9	543
3	Union Saint-Gilloise	2	11	673	9	641
4	Other Belgium	97	7,068	490,021	2,662	170,280
4	Other Non-EU	1	27	2,226	-	-
5	Other European	89	6,209	419,816	3,447	216,940

Source: Authors own work

Table 4 Most prominent academies by club type

Club Type	Clubs (seasons)	No. Players	Appearances	Minutes
Ever present (10 seasons)	Anderlecht, Charleroi, Club Brugge, Genk, Gent, Kortrijk, Oostende, Standard Liège, Zulte Waregem (all 10)	439 players Top 3 clubs: Anderlecht (111) Standard Liege (84) Club Brugge (73)	30,163 Top 3 clubs: Anderlecht (8,491) Genk (5,926) Standard Liege (5,383)	2,071,027 Top 3 clubs: Anderlecht (580,515) Genk (418,995) Standard Liege (372,123)
Majority (6-10 season)	Mechelen (9) Sint-Truiden (8)	143 players Top 3 clubs:	7,102 Top 3 clubs:	497,498 Top 3 clubs:

	Waasland-Beveren (8) Eupen (7) Antwerp (6) Cercle Brugge (6) Lokeren (6)	Mechelen (34) Cercle Brugge (26) Lokeren (25)	Lokeren (1,563) Cercle Brugge (1,550) Sint Truiden (1,134)	Lokeren (113,206) Cercle Brugge (103,290) Sint Truiden (85,801)
Minority (1-5 season)	Excel Mouscron (5) OH Leuven (5) Westerlo (4) Beerschot (2) Lierse (2) Mouscron-Péruwelz (2) Union SG (2) R.F.C. Seraing (2) Mons (1)	106 players Top 3 clubs: Lierse (22) OH Leuven (21) Westerlo (16)	5,773 Top 3 clubs: Lierse (1,374) Beerschot (1,303) Mouscron Peruwelz (774)	405,553 Top 3 clubs: Beerschot (95,855) Lierse (95,675) Mouscron Peruwelz (53,098)
Other Belgian leagues	N/A	97 players	8,344	488,872
Other EU clubs	89 players, from 39 clubs over 6 leagues (England, Germany, France, Italy, Netherlands, Greece)	89 players Top 3 clubs: PSV Eindhoven (20) Lille (7) Ajax (6)	6,209 Top 3 clubs: PSV Eindhoven (1,682) Lille (965) Ajax (661)	419,816 Top 3 clubs: PSV Eindhoven (118,095) Lille (65,069) Ajax (52,871)

Source: Authors own work

Table 5 Position played by Belgian players

POSITION	No.	%	TOTAL		Average	
			Apps	Mins	Apps	Mins
Goalkeeper	67	9%	4,352	378,257	65	5,645
Defence	225	31%	13,654	1,036,652	61	4,607
Midfield	283	39%	18,678	1,228,599	66	4,341
Forward	145	20%	8,207	460,977	57	3,179
TOTAL	720		44,891	3,104,485	62	4,312

Source: Authors own work