

Devising Key Performance Indicators for Benfica Campus

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DEVISING KEY PERFORMANCE INDICATORS FOR BENFICA CAMPUS

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Abstract

Considering the current scenario in European football, youth development may be the only way for some clubs to stay competitive. To this end, it is essential that clubs define strategies and implement aligned practices. In this work project, we devised 38 Key Performance Indicators, divided into 5 areas, to monitor the practices of SL Benfica's youth academy, Benfica Campus. Based on the measured KPIs, we conclude that, presently, SL Benfica has a competitive advantage in youth development. However, there are still opportunities to improve that should be explored, given the growing competition in the field.

Keywords: Sports Management; Football Strategy; Youth Football; Performance Indicators; Player Development.

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1. Introduction

Football is the people's game. It is the most popular sport in the World, whether considering overall spectators or just from a purely economic standpoint – as the revenues from broadcasting and sponsorships alone, are astronomical. (SportForBusiness 2017) This has been the case for decades now, and the future of football will always be heavily dependent on the next generation of players. They are the ones responsible for generating interest in the sport, especially amongst the younger generations, whose attention is increasingly more difficult to grasp. Without fans, the beautiful game as we know it will cease to exist. This is one of the reasons why youth development is so important to football, but there are much more. New talent is decisive for the future of the sport, but also for the supporters, the clubs, the players... and pretty much every relevant stakeholder involved. (ECA 2019)

Supporters will always want to see their club win consistently, and that requires talented players, so youth development clearly concerns them. But it goes beyond that, on a more profound, emotional level. Winning is great but doing so with a team filled with home-grown players is an even better feeling. It is a sense of joy and pride that strengthens the club's identity and the bond with its supporters. (ECA 2012)

For the clubs, it is even simpler: time is a factor that cannot be escaped: even the best players lose capabilities as they age. Which means that it doesn't matter how good their team is in the present - if a club desires to remain competitive in the future, they must focus on the next generations of top talent, and therefore on youth development. (ECA 2019) The main purpose of most clubs' youth academies is to produce talented players for the first team, while also contributing to their growth, as individuals. (Relvas et al 2010) And although sporting success is the priority of most clubs, the financial aspect is always an inevitable constraint, and here, youth development can have a big impact, through the reduction of risks. By delivering good players to the first team from the academy, clubs have less necessity to spend money in the

transfer market. Not only that, but they also have the possibility of increasing their revenues, by selling some of their home-grown talent. (Balliauw et al, 2021) So, even though a lot of clubs still see their own youth academy as “a cost center rather than a revenue driver”, (ECA 2021) the reality is that by investing money in their youth development, specifically in infrastructure, staff, and software, they will most likely profit in the long term. (Balliauw, et al. 2021)

One way to understand the importance of youth development is to look at what has happened in Germany, in the last two decades. After a substandard performance at the Euro 2000, the German Football Association realized there was a lack of talent production in the country and decided to act. First, they greatly invested in state-of-the-art youth development facilities. (Balliauw, et al. 2021) Then, they decided that Football Clubs were only given the license to play in the Bundesliga (the first tier of Germany’s league football), if they had their own Youth Academy, which would be under regular scrutiny of the DFL (Zulch, et al. 2021). The results were not felt immediately, as expected, considering that the “development process for an individual player can take anything up to 10 years or longer”, (ECA 2021) but the investment paid off: from 2006 onwards, Germany started reaching the semi-finals of every major football competition, and ended up winning the World Cup in 2014. Better training and facilities lead to better overall quality in football. (Balliauw, et al. 2021)

The prior example perfectly demonstrates the impact of investing in youth development and planning. Devising a strategy and executing it with adequate practices. Therefore, it is crucial to monitor said practices and making sure they are aligned with the defined strategy. In this sense, Key Performance Indicators can be a powerful tool, for Benfica Campus, or any other youth academy in the world.

2. Literature Review

Changes to Football's status quo and their impact on Youth Development

The importance of youth development to football has grown even larger in recent years, due to some critical changes in the sport's landscape. (Balassiano and Bullough 2021) Football has always been a global affair, seen and played by millions on every continent. But since the beginning of this century, the public interest has risen to unprecedented levels, and with that came money and immense opportunity: marketing deals, broadcasting rights, competition rewards and transfers all turned into tremendous revenue sources. The game became more commercial and entertainment oriented, forcing the clubs to act like actual companies, mainly focused on financial profit and performance. (Relvas, et al. 2010)

This, of course, impacts Youth Development in a big way. Some clubs see Academies as a business boost, through players' sales, and the only way to access top talent. For others, it is a double-edged sword: the pressure to succeed in the short-term means less chances for the younger players, which could end up harming their evolution. (Balassiano and Bullough 2021) The answer of each club to this problem will determine their strategy towards youth development, as it will be explained ahead.

The outside world evolved, and football evolved with it, by making changes in legislation that deeply impacted the status quo in the sport, including youth development. The first was the *Bosman Ruling* in 1995, which established that players could leave clubs for free at the end of their contract. This rule shifted the power to the players, who could leverage their contract situation to demand higher salaries or big signing bonuses. After this, there was another ruling that finally allowed European clubs to play as many EU players as they wished, when before their squads were limited to only 3 "foreigners" in European competitions. (Brand 2015) These

modifications gave players more freedom to transfer to a new country and consequently altered the market paradigm - suddenly opportunities arose for youth players, all over Europe.

The second big change was the *Home-grown rule* in 2006, which brought major restrictions to squad building, in most European leagues and in UEFA club competitions: squads were limited to 25 players (excluding under-21 players, who can be placed on a B list, unlimitedly) and out of these 25, 8 must be *home-grown*. UEFA defines *home-grown* players, which can also be referred to as “locally trained”, as players who were enlisted on the books of the current club, or another club within the same national association, for a minimum of 3 years, between the ages of 15 and 21. (UEFA 2019) So additionally, out of the 8 *home-grown* players, at least 4 must be “club trained”, while the others can be just “association trained”. (Mukherjee 2023)

According to UEFA, this rule was created to protect young players. After the *Bosman Ruling*, the bigger clubs started to accumulate the best players, widening the gap to other clubs. Not only did this harm the competition and the fairness of the sport, but it also decreased the incentives to develop youth players and give them playing opportunities. Therefore, with the *Home-grown rule*, UEFA intended to prevent the hoarding of players at richer clubs while promoting the development of young players, and the return of club’s ‘local’ identity. (UEFA 2019).

This effort proved to be successful and resulted in immediate changes in the recruitment patterns: clubs are now pursuing top players at younger ages and internationally, so they can qualify as *home-grown* by the time they reach the first team. The level of competition for talent in youth football is at an all-time high, and the players themselves have better access to learning experiences, by moving away from their comfort zone, improving their skills and their adaptability. (Balassiano and Bullough 2021)

The third and most recent change, was the introduction of *Financial Fairplay* to European Football, which determined that football clubs are forced to “live within their means”. (ECA 2012). In essence, this means that they must not spend more money than they earn, risking penalties, such as fines, transfers bans or disqualification, if they do so. This obligation to operate with greater “financial discipline” encourages clubs to focus and invest even more on their youth systems: as previously mentioned, by developing players for the first team, clubs reduce the need to invest on transfers, and gain the chance to balance out their finances by selling some of their talent. (Balassiano and Bullough 2021).

Key Performance Indicators (KPIs) in Football

Key Performance Indicators (KPIs) are a way to quantify and measure work, usually towards a defined objective. Measurement is a key aspect in management, as it assists in assessing the effects and value of each effort and resource. KPIs “create an analytical basis for decision making” and therefore contribute, firstly, to strategic business planning, and then afterwards, to process management. (KPIs org 2023) The use of KPIs provides organizations with useful options: one is to set quantifiable goals and then track the evolution on the road to them. Another one is to construct relevant comparisons, both internally – to understand which areas require improvement or investment – and externally, to benchmark with the industry’s standards. (KPIs org 2023)

In football, KPIs can also be an asset to the management of clubs and in improving footballing performance. But despite their usefulness, KPIs are still very underused, and more commonly applied on the business side of things: in financial management, clubs may use the operating profit as a KPI, to determine the profitability of daily operations, as well as the liquidity ratio, to evaluate the efficiency of the working capital’s distribution; in customer service, response time and customer complaints are the usual KPIs implemented to rate the level of delivery and customer satisfaction. Marketing and merchandising are other areas where KPIs are typically deployed. (English Football Association 2002) More recently, due to how easy it has become to gather data, some top teams are introducing KPIs to measure essential actions and boost tactical performance. The more common ones are metrics related to ball possession (e.g., pass completion %, verticality of passes, passes into the final third...), shots (e.g., on goal %, inside / outside the box, efficiency...), distance covered and expected goals (xG), a predictive model to estimate the probability of each shot resulting in a goal. All these indicators, combined with video analysis, provide the coaching staff with valuable insight to improve performance and achieve success.

Benfica Campus

Sport Lisboa e Benfica is a club from Lisbon, with around 280,000 active members. It is one of the 3 biggest clubs in Portugal, and competes in 27 different sports, having won multiple trophies in all of them. Regarding football, the most valued sport by the vast majority of members and supporters of clubs in Portugal and around the world, Benfica has won 37 national championships, 26 Portuguese cups, 3 Portuguese championships, 8 super cups, 7 league cups, 10 Lisbon championships, 18 cups of honor and 2 cups of European champions. (SL Benfica 2023)

In addition to this great history, Sport Lisboa e Benfica has grown in terms of infrastructure. Since the beginning of this century, the club has built a new stadium for the football team, and a new football academy (training complex), for the youth teams and the first team. *Estádio da Luz*, inaugurated in 2003, includes a synthetic pitch in front of the stadium, two pavilions for the various sports and a museum where the trophies won by all the teams are on display to the public. Benfica Campus, in Seixal, was inaugurated in 2006, and is now home to one of the most successful academies in the world. (SL Benfica 2023)

Just like every other organization, Sport Lisboa e Benfica had to create a strategic plan for its youth academy, assessing the current business environment and then defining its purpose, mission, and vision, creating values that will serve as a guide throughout the years. (SBA 2021) Benfica has all its principles clearly stated, which act as a road map for achieving the objective and vision they have set forth. The club refers to these principles as *Mystique Benfiquista*. They include ambition, commitment, humility, solidarity, eclecticism, inventiveness, and determination. All the staff members who work closely with the athletes daily are crucial to promoting these qualities. It is only by following these values, which are non-negotiable for all the members that work at the club, that the main mission of the academy (developing players

to reach the first team) will be accomplished, enabling the club to become a world reference in youth development. (SL Benfica 2023)

The club has 2 locations where their teams train and play, depending on the age and level of the players. From the U-9 to the U-14, athletes train and compete in *Campo dos Pupilos do Exército*. However, following a protocol signed in February 2023 between Sport Lisboa e Benfica and ULisboa, these age groups will cease to play in *Campo dos Pupilos do Exército* and move to *Cidade Universitária*. (ULisboa 2023) Then, from the U-15 all the way to the first team, the athletes train and compete (except the first team, which plays their home matches at *Estádio da Luz*) in Benfica Campus. (SL Benfica 2023)

Benfica Campus has modern infrastructures, designed to give athletes access to a great professional training environment, and numerous specialized departments in the various areas related to performance on and off the field. All to promote player development and enable the completion of a goal that benefits all parties: to become a professional player for Benfica's first team. In an overview, within the 19 acres owned by the club, there are 11 pitches (3 of artificial grass and 8 of natural grass), including the main one, where the B team plays their home matches, which has the capacity for 2721 fans. (Transfermarkt 2023) There are also other spaces such as a gym, changing rooms, physiotherapy rooms, staff offices, cafeterias, and leisure spaces where the athletes and staff can relax and fraternize. The organization prioritizes the human element from the perspective of an athlete's growth, offering academic and psychological support to every player who competes for Sport Lisboa e Benfica, but especially accompanying the (around 85) athletes who live on the Campus. (SL Benfica 2023)

The progress made by Sport Lisboa e Benfica in Youth Development has resulted in outstanding sporting and financial results, and Benfica Campus has been distinguished in 2015 and 2019 as the Best Academy in the World by the Globe Soccer Awards. In Benfica Campus, the main

factor used to measure success isn't the number of trophies won by the youth teams, but that is something which remains important. From the construction of the academy to 2023, the club has won 50 Lisbon District Championships at different levels, 15 national trophies and 2 international trophies won by the under-19 team, both in 2022. (SL Benfica 2023)

The first objective of SL Benfica's youth system is to detect, select and sign national and foreign talented players, with potential to one day reach the club's first team, which is why there is a whole department exclusively dedicated to prospecting and detecting talent around the world. (SL Benfica 2023)

The goal is to recruit players with high potential, to develop them from a young age and get ahead of rivals, thus gaining an advantage. For this purpose, Benfica has a vast network of scouts with defined observation regions, and several Training and Formations Centers (CFT's) spread throughout the national territory. These centers are linked to the scouting network and play a key role in Benfica's recruitment strategy: high potential players below the age of 12, who live far away from Lisbon, are recruited to play in these CFT's before transitioning to Benfica Campus, when they reach the U-13 echelon. By doing this, SL Benfica improves their control over recruitment at the national scale, while already getting the players accustomed to the clubs' methodology and culture, facilitating their integration. (SL Benfica 2023)

Currently, there are 5 Training and Formations Centers in Portugal, in calculated locations (Braga, Vila Real, Viseu, Aveiro e Faro), to ensure that the club can cover the entire national territory in the search for talent. Initiated in 2008, the project for the Training and Formations Centers represents a strategic decision that added value to the club's project. Multiple Benfica Campus' players who reached the first team were first introduced to the clubs' youth system through the CFT's. In total, the CFT's have delivered 139 athletes to Benfica Campus. (SL Benfica 2023)

Besides the scouting network and the CFT's, SL Benfica uses some additional methods to increase the chances of finding unknown talents. One being open tryouts, held consistently throughout the year (Appendix 1). Another procedure is the *Elite Training Camps*, which takes place at Benfica Campus, on a date previously defined by the club, for athletes between the ages of 12 and 18. The objective of this event is to openly show young people from all over the world the methodologies used by Sport Lisboa e Benfica in its youth system, through 4 hours of training given by qualified club coaches, while also obtaining an individual report of each athlete, so that the best players can be given the opportunity to join the academy. (SL Benfica 2023) Finally, Benfica also has a series of football schools, called *Geração Benfica*, mostly in Portugal, but also in Luxembourg and the USA, that follow the club's methodology. Here, players are observed and have a chance of joining the CFT's if they perform well. However, the main objective of these schools is to promote sports and develop players, in accordance with the club's values and principles. (SL Benfica 2023)

3. Competitor Analysis

Benchmarking

Benchmarking is used to improve an organization's performance, by identifying and then adopting or adapting the industry's best practices. It is usually comprised of four main steps: "identifying who to benchmark against; identifying what aspects of business to benchmark; collecting relevant data to enable processes and operations to be compared; comparison with own processes." (Hooley, et al. 2020)

Considering SL Benfica, it is important to identify competitors and analyze their vision, practices, and results. For this purpose, we conducted a competitor analysis, mostly based on studies by the European Football Association (ECA) on youth football. In their latest study ECA defined 12 areas, crucial for the success of youth academies, which are: physical care, cognitive care, finances, facilities, talent identification, productivity, strategic importance, competition, human capital, club buy-in, community connectivity and professional connectivity. ECA's study was developed through surveys and interviews, which helped identify the work processes used in Europe's top youth academies and measure the strength of their influence on daily operations. (ECA 2021)

For our competitor analysis, we chose clubs based on three criteria: 1) rivalry with SL Benfica in terms of recruiting and competing; 2) proven ability to develop players and deliver them to Europe's main leagues; 3) use of unique and successful methods in their youth systems, that may be adopted by Benfica Campus.

SPORTING CP

Sporting CP is the great historic rival of SL Benfica in the city of Lisbon. They too are a club who intends to produce talent for the first team and later generate transfer income.

In the early 2000s, Sporting CP was the leader in recruitment and development, managing to produce many top players in their academy, such as Luís Figo, Paulo Futre and the most outstanding of all, Cristiano Ronaldo. This success was very influenced by the work of Aurélio Pereira, the club's academy scouting coordinator between 1990 and 2019, who was seen as a pioneer in scouting and since that has been honored in different ways. (O Jogo 2012) However, since the construction and growth of Benfica Campus, Sporting CP has lost their competitive advantage in youth football, to Benfica.

Nowadays, the scouting network is a key part of Sporting's project. Players are recruited from across Portugal, and then eventually move to their facility in Alcochete. One of the main concerns of Sporting's academy is the cognitive development of their athletes, enhanced by the permanent contact between team managers, scouts, school representatives and guardians. There is a focus on the development of technical and tactical abilities, but also on the many factors that affect their performance on the pitch, like nutrition, recovery, and the ability to cope with social networks. (ECA 2021)

The goal of Sporting's academy is to produce 80% of the B team's squad and have at least 3 academy graduates in their main squad. (ECA 2021) Currently, 10 of the 33 players in the main squad were trained at the club, around 30% in total. (Transfermarkt 2023)

FC BARCELONA

FC Barcelona is one of the most successful football clubs in the world. Much of their recent success can be attributed to their youth academy, the famous *La Masia*. What is so special about *La Masia* is its importance for the club's philosophy. Football wise, their unique possession-based playstyle is the same across every Barcelona team, from the youngest youth teams to the first squad. The coaches are the ones who must adapt to Barca's playstyle, and not the other way around like in most other clubs. (Smith 2016)

There is also a political element concerning the academy and the entire club. Located in Catalonia, FC Barcelona aims to respect and honor the values of the region, from which they mostly recruit. It is estimated that in their youth teams, 70% of the players come from Catalonia, while the other 30% come from the rest of Spain (20%) and abroad (10%). (Woodman 2016)

Barcelona's philosophy has paid off, to say the least. Since the 2000s the club has developed several world class players, that brought the club multiple trophies, with Lionel Messi being the greatest example. And even though the success has not been the same in recent years, the club continues to invest €10 million per year into La Masia, as they believe it will serve as base for the club's long-term vision. (Maniar 2021)

AFC AJAX

AFC Ajax and SL Benfica share similar business models. Their academy also delivers several players to the first team, which are usually sold after performing well for a couple of a seasons, generating high transfer revenues, critical for the financial stability of the club.

Ajax's youth system has 4 essential pillars: 1) development of players; 2) use of former players to observe and provide insight; 3) international benchmarking; 4) forward preparation of the

next generation. (ECA 2021) The club seeks to extract the maximum performance from their athletes, from an early age: football wise, they focus on the tactical dimension, and players are placed in different positions to explore their characteristics and improve their understanding of the game; there is also a clear concern about the mental aspect, on and off the pitch, and players are even PR trained - communications and social media. (ECA 2021)

Their main goal is to produce players capable of playing at Champions League level, preparing them for every other inferior competition, but coach development is also an objective. (ECA 2021) The productivity of Ajax's academy has been incredible. In 2022 they were the club with the most academy graduates playing in Europe's top 31 leagues, with 85. In addition, they have been able to sell multiple players for transfer fees well above their market value. (CIES 2022)

OLYMPIQUE LYONNAIS

As France is a country with citizens of different ethnicities and religions, one of the main objectives of Olympique de Lyonnais is to create an environment within the club that promotes cultural and social diversity, as well as gender equality. According to ECA, "performance on the field of play, individual development, social responsibility, social and cultural diversity, and educational and civic initiatives are all part and parcel of the OL academy's everyday activities." (ECA 2021)

OL's main recruitment strategy revolves around institutional relationships created with various clubs located close to the city of Lyon. By doing this, they practically have a monopoly on the talent within the region: once a talented player surfaces, they can easily identify, monitor, and then sign him, if they appreciate his qualities and potential. However, the club's scouting department also focuses on the 3 most populated regions in France - Paris, Lyon, and Marseille,

and there are even 4 full-time scouts that exclusively observe international players. (Olympique Lyonnais 2023)

In OL's youth system, there is also a clear concern regarding the team transitions. The academy operates independently from the professional teams, and it's the sporting director who assumes the responsibility of deciding on the right moment for each player to transition from the academy to the B team. In addition, developing coaches for the first team is a secondary objective. (ECA 2021)

FC RED BUL SALZBURG

FC Red Bull Salzburg is a recent case study of success in youth football. With an exclusive budget earmarked for the club's youth development, they are now one of the top talent recruiters and developers on a worldwide scale. (ECA 2021)

The club's strategy is based on talent identification, development, and cognitive care. Regarding the field of cognitive performance, the club aims to be a pioneer and achieve results with the players and the entire staff. The human and academic elements are extremely valued in RB Salzburg's youth system. Athletes are accompanied by coaches and specialized staff to ensure their personal growth, in accordance with the club's values, which include accountability on and off the pitch. (ECA 2021)

To ensure the sustainability of the project and increase the chances of finding first team talent from all Europe, RB Salzburg forms teams of all generations. Unlike other academies, the CEO and the sporting director are always involved in player signings. Furthermore, RB Salzburg is one of the few clubs in the world that has a series of Key Performance indicators to measure and evaluate different departments of their youth system, making them an example to be followed by other clubs. (ECA 2021)

GNK DINAMO ZAGREB

GNK Dinamo Zagreb is Croatia's leading club when it comes to developing and nurturing football talent. 11 of the 24 players (46%) present in the last call-up of the Croatia national team have passed through the club's football academy, which demonstrates the quality of the work done in their youth system. (Transfermarkt 2023)

This is a club that invests around 10% of its total budget in youth development, with the main objective of delivering 2 players to the first team, every season. This strategy has resulted in positive outcomes: in 2011, 50% of the A team was made up of players developed at their youth academy. It is also worth mentioning that, like SL Benfica, Dinamo Zagreb's youth system heavily focuses on the personal and academic development of each athlete, by accompanying their school life and encouraging healthy practices in their daily lives. (ECA 2012)

Regarding the transition plan, from the youth teams to the A team, Dinamo's strategy is to place players on loan at a club that competes in the Croatian first division, NK Lokomotiva. In the last three seasons (including this one), Lokomotiva received a total of 10 players from Dinamo, 8 of them on loan and the remaining 2 for free. (Transfermarkt 2023)

RSC ANDERLECHT

RSC Anderlecht is the most titled football club in Belgium, having nearly double the amount of senior national championships than their rival, Club Brugge KV. Throughout their history, Anderlecht has always been concerned with developing top players, with the goal of reaching the main squad, and eventually generating significant revenues, by being transferred. (ECA 2021) Currently, 9 of the 26 (35%) players in the clubs' first team were developed at their own youth academy. (Transfermarkt 2023)

RSC Anderlecht's primary focus is talent identification and recruitment. Their main target are athletes from the Brussels area between the ages of 5 and 10, but they also possess a vast network of scouts across the country. When it comes to older age groups, their action zone is wider, as they look to bring in talented international players. One unique aspect of Anderlecht's youth system is that their own athletes have influence in the recruitment process, by providing insight about the best players they face throughout the season. (ECA 2021)

Figure 1: Benchmarking overview

	AJAX	ANDERLECHT	BARCELONA	DINAMO	LYON	SALZBURG	SPORTING	BENFICA
								
B TEAM	✓	✓	✓	✓	✓	✓	✓	✓
ACADEMY BUDGET ≥ 10%	✓	✓	✗	✗	✗	?	✓	?
FACILITY SHARING	✓	✓	✓	✓	✓	✓	✓	✓
EDUCATIONAL GOALS	✓	✓	✓	✓	✓	✓	✓	✓
LINK WITH THE FIRST TEAM	✓	✗	✓	✓	✗	✗	✓	✓
TRANSVERSAL PLAYSTYLE	✓	✗	✓	✗	✗	✓	✗	✗
DEFINED TRANSITION PLAN	✓	✓	✓	✓	✓	✓	✓	✓
INTERNAL COMPETITION	✗	✗	✓	✓	✓	✗	✓	✓
A SQUAD COMPOSITION	✗	✗	✓	✓	✓	✗	✓	✓
ACADEMY PLAYERS SALES	✗	✗	✗	✓	✗	✗	✗	✗
PLAYER PERFORMANCES	✗	✗	✗	✗	✗	✗	✗	✗
NATIONAL TEAM CALL-UPS	✗	✗	✗	✓	✗	✗	✗	✗
STAFF PROGRESSION	✗	✗	✗	✗	✓	✓	✓	✗

4. Risks associated with Youth Development

By now, we have seen that youth development brings football clubs several benefits. However, there are still some risks associated with investing in youth systems. The main risk is related to the pressure to succeed in the short term, which may cause a lot of clubs to invest in more experienced or complete players, ignoring their own home-grown talent. The lack of confidence of many clubs towards their Youth players has a lot to do with the fact that the transition from youth football to professional football comes with a lot of uncertainty: it is not uncommon for players who are seen as “future stars” at youth level to underperform in a more serious context, failing to ‘take the leap’ and meet expectations. (Relvas, et al. 2010). Football is not an exact science and thus this margin of error will always be present. In fact, now that clubs are competing for top talent at younger ages, when players are further away from being “finished products”, the margin of error is even higher, and this underachieving effect will be aggravated. Hereby, football clubs will inevitably spend resources (time, money...) on players that won’t get close to reaching the first team.

Another risk is related to the giant gap between “developer clubs” and the “sharks” of European football. There is a possibility of a club investing in the entire development process of a certain talented player, only for a richer club to poach him (using signing bonuses or high salaries to convince him) before he even performs in the first team. Again, in this scenario, the club spends its resources on a player without getting any significant competitive or financial reward.

Finally, there is an inherent problem, not only to youth development, but to the future of the sport itself, which is connected to the complex reshaping of our society as whole, caused by technology. In the past, children would spend their free time outside, playing with their friends. Nowadays, with all the technological devices available that bring instant entertainment to a click’s distance, it is much more common for children to stay inside, sitting still. Recent studies

have reported that the “majority of adolescents worldwide are not sufficiently physically active” (World Health Organization 2019). According to Pedro Mil-Homens, director of Benfica Campus, this lack of physical activity, which is obviously harmful to children’s health, may also threaten sports’ quality and continuity. Less exercise, and therefore less stimulation of muscles, joints, bones... means decreased development of said body parts, and in the long run, it could mean less football capabilities. In fact, as reported by Mil-Homens, this decrease in ability is already being felt in the present: there are fewer and fewer truly gifted young players with world-class potential. This gives rise to even greater disputes for talent in youth football and generates additional risk for clubs looking to invest in their youth system.

5. Youth Development Strategy

Considering all of youth development’s benefits and risks, clubs must make several decisions: optimize performance or maximize profit? Chase short-term success or prepare for long-term glory? Whatever each club’s answers to these questions are, it is vital that the decisions made are incorporated in their overall strategy, and coherent with a vision for the future.

The first question, regarding the balance between performance or profit, may seem strange, when we are talking about football. Why would a football club prioritize financial results over sporting success? In some cases, the reason is quite disheartening – as previously mentioned, football turned into a full-scale business, and for some people that’s all football is. It is increasingly common for clubs to be bought out by billionaires, looking to expand their asset portfolio. Decisions are made to guarantee a quick return on their investment, while being completely disconnected from the club’s culture and the supporters’ passion. (Carr 2015)

However, corporate greed is not the only reason to prioritize profit over performance. Just like every other organization, football clubs need capital to meet their financial obligations.

Therefore, sometimes they have no choice other than to forego their competitive ambition and sell their best players. On top of that, there is Financial Fairplay (FFP), preventing clubs from consecutively spending more than they earn. But unlike the case of corporate greed, where youth players tend to get overlooked, in the case of financial trouble, youth development can be a saving grace. FC Porto's 2021/2022 season is a prime example of this: while being under the heavy pressure of Financial Fairplay, and forced to sell their best player, Luis Diaz, Porto still managed to win the league, much due to the contribution of academy graduates, Vitorino and Fábio Vieira, who were then also sold, to balance the finances.

Ideally, a club would invest as much as possible in their sporting success, without ever compromising their financial security and longevity.

The second question – ‘short-term vs long-term’ – is perhaps the most important one in defining a club's strategy and attitude towards youth development. To be competitive and to create value, every club needs to build a good first team, with talented players. There are different steps involved in achieving this, depending on each club's vision, strategy and means. (Balliauw, et al. 2021)

If a club is striving for short-term success, their focus is mostly on players who are ‘finished products’, that don't require adaptation or development periods. To acquire them there are 3 options: the first is to buy players when they are at the peak of their careers and ready to provide instant impact; the second, is to buy players who are past their prime, still able to contribute a lot with their experience, but with lower market values or free-agents, due to age; the third is to loan in players who are good but are not satisfied with the minutes they are getting at their current club. The first option is evidently the more expensive, while the other two may jeopardize the club's future, forcing more acquisitions when the players retire (second option) or end their loan (third option). (Balliauw, et al. 2021)

On the contrary, if a club's goal is to create a long-term project, they ought to give more emphasis to young, high-potential players, who can develop and elevate the club to new heights. To do so, there are 2 options: the first is to acquire players aged between 16 and 21, who are already showing top quality in a competitive scenario, and that can become key players for the club in a few years; the second is to develop their own talents at their youth academy, from a young age, up until the first team. (Balliauw, et al. 2021) Again, the first option is more expensive, especially because players' market values are not only based on current output, but also on perceived potential and demand, among other factors. (Transfermarkt 2021) However, by acquiring players who have already made the transition to professional football, they reduce the margin of error and the chances of failure. The second option requires time and investment in infrastructures, scouting, recruitment, and development, but if done correctly, it can set up the club for long-term success. (Balliauw, et al. 2021)

It all comes down to budget allocation and timing. A certain amount of money invested in one 'finished product' player can improve sporting results, in the present. Notwithstanding, that same exact amount of money invested in talent identification, acquisition, and development can lead to the production and delivery of several home-grown players to the first team, in some years. An outcome, which is undoubtedly preferred in the future, but that carries more uncertainty in the present.

The key is to find the right equilibrium between buying "finished product" players, who can help reach instant results, and investing in youth development, to guarantee long-term success.

6. Aligning Management practices with Strategy

To envision and devise a strategy is indispensable for the success of a football club (ECA 2012), but it is not enough, for it is purely theoretical. What turns ideas into reality are management practices, which need to be aligned with the defined strategy. It does not matter that, in theory, a club intends to focus on youth development, if, in practice, young players are not being given opportunities in the first team. The desired philosophy must be cultivated, through the combined effort of every department in the club, together with the right management processes and tools. (Relvas, et al. 2010)

Considering how competitive youth football has become in recent years, especially in terms of recruitment, there are some resources which are basically mandatory for clubs who envision a project around youth development.

The first one is a wide scouting grid, able to detect talent in every region of the country, and even across Europe, given that foreign players can qualify as home-grown after being at the club for 3 years. Ideally, the scouting grid would be connected to a network of training centers, affiliated with said club. This would allow for the recruitment and development of a much higher number of players, increasing the chances of coming across talents with first-team potential.

Secondly, and perhaps the most obvious one, is up-to-date technology. There are already multiple software programs available that complement football analysis by providing additional data on players' technical and physical abilities. This can be used both in recruitment, to assist scouts in talent prediction / comparison, and in development, by tracking players' evolution. These tools do not guarantee success, but may help in reducing the margin of error, one of the main problems when evaluating young players. (Yeo 2021)

Then, at the center of the youth system, are infrastructures and operations. Top clubs must have high end academies, from the fields to the dressing room, but also the gym and all other utilized facilities. The operations, including maintenance and cleaning, need to be efficient in every way, with non-existent waiting times. The goal should be to provide the players with the best possible conditions, so that they can focus entirely on their development.

However, all these resources hold little value, if there is no know-how on how to use them properly and accordingly with the defined objectives. This implies that a great club is not just composed by great players and coaches, but also by highly qualified staff - scouts, directors, psychologists, physiotherapists... basically every single individual that participates in the athletes' development in any way or stage. (Balliauw, et al. 2021)

Finally, we need to consider another key intangible component, which is club culture. To maximize the probabilities of having youth players reach the first team, a club should aim to set up an optimal environment for them to develop. (Balliauw, et al. 2021) The development should not only be as a footballer – in terms of technical ability and physicality, but also as a person, considering that is what is expected of an academy. This means developing social skills, cognitive capabilities, general knowledge, and responsibility. (ECA 2012)

The first step towards an optimal environment for youth development is organizational structure. All areas of the club must be synchronized, with clear tasks and objectives. (Relvas, et al. 2010) One of the most decisive aspects is how clubs handle the transition to professional football, a defining phase in every footballer's career. Youth players need to be given playing opportunities, at the right times. This starts with the first team's squad building, by creating a balance between having valid options in every position, while still leaving room for prospects. Then, it comes down to hiring coaches who trust young talents and choose the right moments to give them playtime: players are much more likely to develop and show off their value when

inserted into a stable and positive setting. (Balliauw, et al. 2021) If a club does this consistently, it sends a message of confidence to their whole youth system, showing youngsters that their time will come if they are loyal to the club and work hard.

Still regarding the transition to professional football, there are additional procedures that can enhance the ones already mentioned. One is the creation of a B team, to provide players with enough minutes at a professional level and a more seamless transition to the first team. This should be complemented by an effective loan policy, so that players that have outgrown the B team can experience higher competition. They should be placed in a favorable context to develop, with aligned interests: the players get playtime, and the clubs raise their quality – every part benefits. A possible extra option is to have an agreement with a ‘feeder’ club, to facilitate the transit of talent between the clubs.

Ideally, the ultimate step to facilitate the transition process would be the use of the same tactics throughout the entire youth system, matching the first team. However, this one is quite controversial: doing it prepares the players and simplifies their adaptation to the professional level, but that is assuming that the first team’s tactics do not change for several years. This is very unlikely considering that each coach has its own tactics, and their continuity is highly dependent on results, meaning this procedure would be incredibly difficult to implement – the only two clubs who have done it successfully are FC Barcelona and AFC Ajax. The solution is to find a middle ground, by cultivating certain football principles that the club always looks for in players and coaches, while still leaving room for tactical nuances to promote the athletes’ versatility and adaptability to any system.

When a football club is able to combine all these elements, from strategy to management practices, youth development becomes a source of competitive advantage, that grants long-term sustainability. (Balassiano and Bullough 2021) Currently, there is not a better example of this

than Sport Lisboa e Benfica. Benfica's academy – Benfica Campus - is the most valuable in the world (CIES 2023) and has been distinguished as the best in 2015 and 2019, by Globe Soccer Awards. They also won the UEFA Youth League in 2022, after reaching the final for the 4th time. (UYL 2023) All these rewards are just a recognition of Benfica's work in Youth Development, but what really matters are the academy graduates: Rúben Dias, João Félix, Gonçalo Ramos, Florentino, António Silva... only looking at recent years. All these players were at Benfica Campus from a young age and climbed up to the first team, where they helped Benfica achieve their objectives. The first two, and others – like Renato Sanches and Gonçalo Guedes, were sold for high transfer fees, after winning trophies with the club. This indicates that the 'long-term sustainability' is both in football performance and financially: through their academy Benfica has continuous access to top talent (which would be impossible to obtain in the transfer market, due to inflated prices) and has the possibility of selling some of these players to balance finances.

Another direct benefit that this superiority in youth football brings is in recruitment. Academy quality matters to players because it is correlated with career trajectory, development, and market value. This points to the fact that the best prospects will want to go to the best academies – the ones with better training methods, reputation, strategy, and management. (Balliauw, et al. 2021) The fact that SL Benfica has recently signed Norwegian wonderkid Andreas Schjelderup, perfectly demonstrates this. Although only 18 years old, Schjelderup was already being followed by multiple top clubs, due to his high potential. He rejected an offer from FC Liverpool (which would grant a higher salary), to pursue his career at Benfica, as he believed it gave him better chances of becoming a world-class footballer. (Record 2023)

A good way to ensure the alignment between management and strategy is the use of Key Performance Indicators (KPIs) to monitor practices and guarantee that their outcome is contributing towards the defined vision.

7. Proposal

To improve our perception on Benfica Campus current situation, we conducted a SWOT analysis, which enabled us to assess their competitive position and then proceed with an adequate strategic plan.

Regarding the internal factors, we believe that Benfica Campus' has a very relevant set of strengths, that places them above their competitors. One being the infrastructures, which are state-of-the-art and praised internationally. Then, the advanced methodologies, applied by highly qualified professionals, promote an almost unparalleled development of athletes. Finally, Benfica Campus' reputation and success stories constitute a key asset, especially in recruitment. As one of the best (if not the best) academies in the world, Benfica Campus does not have any glaring weaknesses. Notwithstanding, there is always room for improvement, and one aspect where Benfica Campus can upgrade is in the use of Key Performance Indicators (KPIs), as more regular management practice.

Looking at external factors, we observe some opportunities arising due to changes in the industry scenario. The evolution in data science is undoubtedly something to be explored by Benfica Campus, and to be implemented in multiple procedures. Another possible opportunity is the inflation in the transfer market, which can very well work in favor of clubs who prioritize the production of talent over their acquisition, like SL Benfica. On the other hand, there may be some threats emerging. One of them is the interest of top clubs with high transfer budgets in prospects at increasingly younger ages. They might try to anticipate and 'steal' SL Benfica's talents when their market value is still low. Additionally, more clubs are investing and expanding their youth system – SC Braga is a good example – which might also represent a threat to Benfica's recruitment.

Considering all these circumstances, and upon the completion of a TOWS matrix (Figure 2), we believe that we can provide value to Benfica Campus by devising a series of Key Performance Indicators (KPIs), with multiple applications at management level.

Figure 2: TOWS Matrix for Benfica Campus

		Internal Factors	
		STRENGTHS Infrastructures; Methodologies; Reputation	WEAKNESSES Lack of Key Performance Indicators (KPIs)
External Factors	OPPORTUNITIES Market Inflation; Data Science	Increasing academy influence: save money in purchases, profit from sales.	Creation of KPIs to monitor the progress on each department.
	THREATS High budget clubs; Growth of other academies	Taking advantage of the quality and reputation to face richer clubs.	Utilizing the KPIs in the recruitment process, to display comparisons.

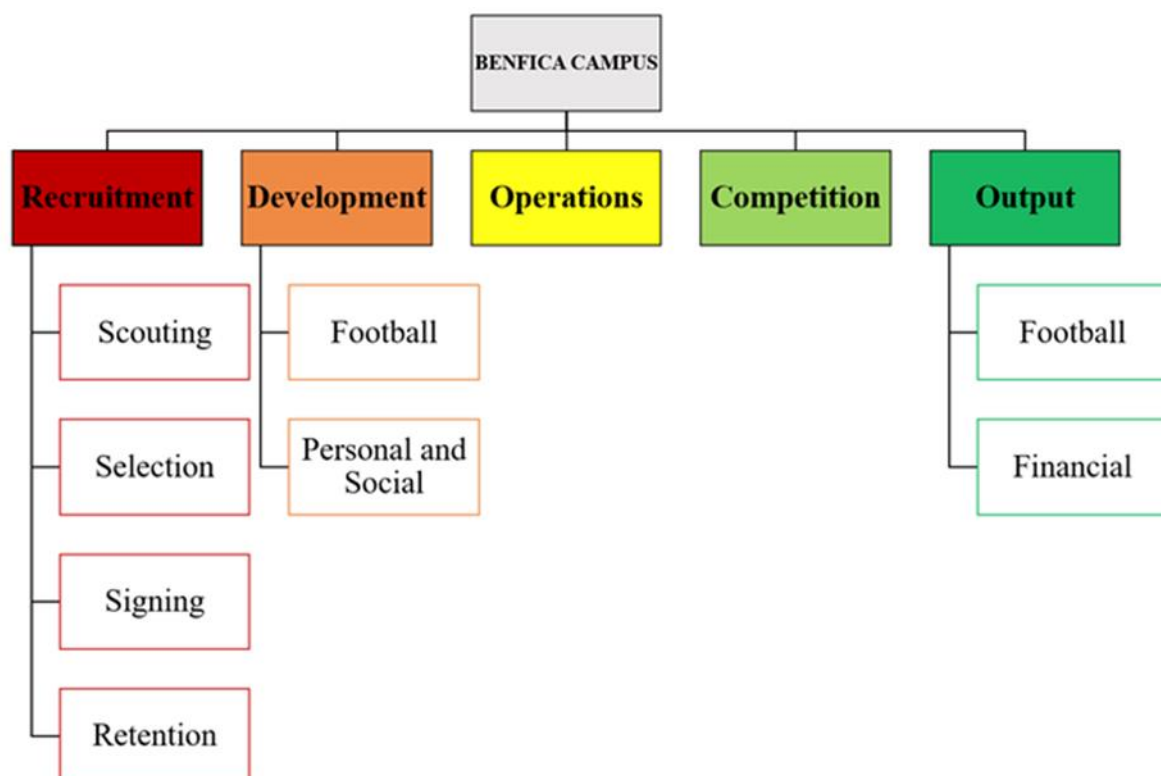
The evolution in data science creates an opportunity for the implementation of Key Performance Indicators, as it facilitates the process of information gathering. With these KPIs, Benfica Campus would be able to set quantifiable goals and then monitor the progress across every department. Comparisons could be made, both internally and externally (by benchmarking against industry's standards) to understand which areas require further improvement or investment. Finally, the KPIs could have an important role in resisting the threat posed by the clubs who are directly competing with Benfica for talent. By using KPIs in the recruitment process (specifically, in the signing and retention phases), they would be able to display, in numbers and directly to players, parents or agents, why SL Benfica is the right choice for their career.

8. Methodology

As previously mentioned, we started by conducting a SWOT analysis and the consequent TOWS matrix, so that we could offer Benfica Campus an adequate and insightful proposal, given their competitive position: we decided to devise a series of Key Performance Indicators (KPIs) to be implemented in the academy, at management level.

The initial proposal was presented to the director of Benfica Campus, Pedro Mil-Homens, and consisted in a draft version of Key Performance Indicators and their potential applications at the academy. Upon the acceptance of this idea, we had additional meetings with Pedro Mil-Homens, where we discussed the academy's organizational structure and processes, as well as the work previously developed by Benfica Campus in this field. Based on this knowledge, we devised a list of 38 KPIs, divided into 5 areas (and some sub-categories), in alignment with the academy's organizational structure (Figure 3).

Figure 3: KPIs structure



The 5 areas are Recruitment, Development, Operations, Competition, and Output. They are somewhat sequential, in the sense that first, athletes are recruited to play for SL Benfica, then they develop, while there are ongoing operations and competitions, and finally there is an output. Recruitment comprises 4 (also sequential) dimensions: scouting, selection, signing and retention. Development incorporates the athletes' growth both at a football level and at a personal and social level. Operations attends to the use of resources and day-to-day activities at Benfica Campus. Competition is simply the breakdown of the youth teams' competitive performance. And Output is the final product – the consequences of all the work in the previous areas – both footballing wise and financially.

To devise the 38 KPIs we tried to follow a set of general rules, in accordance with the English FA, so they should be: simple (easy to understand), measurable (easy to calculate), timebound (associated to a specific timeframe) and accurate (related to real events). Also, they were created with the intention of mostly using information already being gathered, to generate as little additional work as possible. (English FA 2002)

Additionally, there are some important nuances to consider. Firstly, although most of the KPIs are transversal, they were specifically designed for the circumstances of Benfica Campus, and tied directly with SL Benfica's strategy. Secondly, all these KPIs are intended for the management level, and not for any kind of in-depth football tactical analysis. Finally, we were not granted access to any type of confidential data, like scouting or development reports, due to how sensible and valuable this information is. Therefore, the only KPIs we were able to measure ourselves, for further analysis and comparisons, were mostly in the Competition and Output areas, given that the required data is of public knowledge.

9. Key Performance Indicators

Recruitment

Recruitment plays a crucial role within Benfica Campus' vision. It is one of the most challenging tasks for a football club, considering the competition from other national and international clubs, and the opportunity cost (high amount of players, high margin of error and limited resources). Scouting, Selection, Signing, and Retention are the four dimensions that constitute the Recruitment process and each one of them is essential to its global success.

Scout reports are a key aspect of this process. They indicate the potential level of the players observed, from D to A: D denotes disapproval towards the player's signing, while A denotes a player with the potential to succeed in the club's first team. Athletes with A or A/B ratings are rare and referred to as High Potential Players.

Recruitment - Scouting section

The first phase of the Recruitment process is scouting. At this stage, what is required is that the scouts and coaches observe as many games as possible (quantitative indicator) as a way of identifying the maximum number of high potential players (qualitative indicator) that the club subsequently filters and chooses which to recruit in the following stages. The more games the scouts observe (KPI 1) the greater the probability of finding and identifying high potential players (KPI's 2 & 3), who will continue to be followed and observed by club members until the decision to sign them is made.

KPI 1: Number of games observed by youth scouts, per season. **Measurement:** Counting every single youth game that was attended by Benfica's scouts. **Purpose:** Monitoring the extensiveness of SL Benfica's scouting.

KPI 2: Number of High Potential Players scouted, per season. **Measurement:** Noting every youth player that received a scouting rating of A or A/B. **Purpose:** Evaluating the quality of SL Benfica's scouting, given the talent availability.

KPI 3: Confirmation of scouted potential (%) **Measurement:** Considering development reports of players one year after they were signed to verify if their potential rating remains the same. Dividing the number of players whose rating remains the same by the total number of players under analysis. **Purpose:** Analyzing scouting quality based on the relation between predicted potential and actual performance. Also, getting a better perception of players adaptation and individual development during their first year in Benfica Campus.

Recruitment - Selection section

The second phase of the recruitment process is selection. After observing and analyzing several athletes, the club must decide which ones it believes are worth investing in. For this purpose, and with the goal of reducing the margin of error in the selection, the club organizes concentrated training sessions, to evaluate and compare the performance and potential of numerous selected athletes. It's important that these trainings occur often (KPI 4) to narrow down the players scouted (KPI 5) and contributing to the next stage of the recruitment process, signing (KPI 6).

KPI 4: Number of concentrated observation trainings per season. **Measurement:** Keeping track of every observation training promoted by SL Benfica's youth system throughout the season. **Purpose:** Monitoring the extensiveness of the selection process.

KPI 5: % of scouted players that join concentrated observation trainings. **Measurement:** Dividing the number of players invited to participate in concentrated observation trainings by the number of players referenced by Benfica's scouts. **Purpose:** Understanding the level of selection in the recruitment process.

KPI 6: % of players in concentrated observation trainings that are signed. **Measurement:** Dividing the number of players signed through concentrated observation trainings by the number of players participating in them. **Purpose:** Assessing the effectiveness of concentrated observation trainings and its role in recruitment.

Recruitment - Signing section

The third phase of the recruitment process concerns the signing of athletes. After observing and selecting the players the club wants, the next step is to sign them. In such a competitive environment and with rivals located in the same area, SL Benfica must be ahead in the "game". To do so, they must be able to identify players early – before January (KPI 7), and then be perceived as the best option among several clubs (KPI 8).

KPI 7: % of signed players whose scouting process started before January. **Measurement:** Dividing the number of signed players whose scouting process started in the first half of the season by the total numbers of players who are signed throughout the whole season (including the following summer). **Purpose:** Monitoring SL Benfica's capability of detecting talent early in the season, to stay ahead of its rivals when it comes to signings.

KPI 8: % of scouted high potential players which are signed. **Measurement:** Dividing the number of signed high potential players by the total number of high potential players referenced by Benfica's scouting. **Purpose:** Judging SL Benfica's ability to attract top talent after identifying it.

Recruitment - Retention section

Retention is the fourth and last stage of the recruitment process. Once a player is established and showing good performances at SL Benfica, the focus is on keeping him and working to maximize any untapped potential. The ability of a club to retain players in the face of persistent pressure and approaches from domestic and foreign rivals is essential. High potential players must be convinced to sign professional contracts after the age of 16 (KPI 9), and then have their contract renewed (if they maintain their level), to avoid any unwanted exits (KPI 10). Holding more talents than rivals in each generation (KPI 11) is key in the long-term.

KPI 9: % of High Potential Players who sign professional contracts. **Measurement:** Dividing the number of HPP that successfully signed professional contracts for SL Benfica by the total attempts. **Purpose:** Evaluating SL Benfica's capability of retaining High Potential Players.

KPI 10: Average contract length of High Potential Players **Measurement:** Adding all contract durations and dividing by the number of high potential players in Benfica Campus. **Purpose:** Establishing the level of contractual protection of SLB's High Potential Players.

KPI 11: % of High Potential Players per generation, in Portugal, who are playing for SL Benfica. **Measurement:** The first step is determining the number of high potential players (Level A or A/B) from a certain age group (birth year) in Portugal, by considering both Benfica Campus's development reports on their own players and scouting reports on players from other teams. Then, dividing the number of high potential players playing for SL Benfica, by the total number of high potential players playing in Portugal, from a certain age group. **Purpose:** Understanding if Sport Lisboa e Benfica holds most of the talent in a certain age group, when compared to its main rivals – FC Porto, Sporting CP, and SC Braga.

Development

Development is the main priority of SL Benfica's youth system. Everything else loses its worth if players are not being developed in a way that enables some of them to reach the first team, and all of them to become good citizens.

Development – Football section

Benfica Campus must be able to recognize, acquire and secure high potential players, but especially develop them, turning top prospects into top players (KPIs 12 and 13). That should be the focus of coaches at youth level (even more than winning), and thus that it is the best way to evaluate their work. However, development in football is somewhat subjective - excluding physical levels (KPI 14), the technical, tactical, and mental aspects are difficult to quantify in unequivocal terms. Therefore, the KPIs in this area are designed to analyze trends that may be influencing player development. For instance, if most players in a youth team are consistently having subpar performances (KPI 15), there likely is a problem: it could be coaching quality, player quality, wrong methodologies, or poor management.

One key stage of Benfica Campus' Youth Development System is the B Team, which gives SL Benfica the ability to hold a higher amount of talented young players and provide them with gametime at a professional level (Portugal's Second League), facilitating their evolution and increasing the chances of producing a player with first-team quality. That is why it is essential to monitor the use of the B team as a proper transition platform. High potential players must be given plenty of opportunities (KPI 16) in a stable environment, promoted by adequate squad building (KPI 17) and a similar playstyle to the first team. Additionally, talented players who are in the last stage of the development process, that have already outgrown the B team but still

don't have space on the first team, should be loaned out. These loans must be properly thought out, to ensure the player gets enough minutes to develop (KPI 18).

KPI 12: High Potential Realization Rate (%). **Measurement:** Considering all players who were classified as being 'High Potential' (A or A/B rating in development reports) when they signed professional contracts with SL Benfica and seeing how many of them still maintain the 'High Potential' status by the time they reach the B team (or the U-23 team). Dividing those who maintained their potential by the total number of players under analysis. **Purpose:** Examining the trajectory of High Potential players, to evaluate Benfica Campus' ability of turning top prospects into top players.

KPI 13: Number of High Potential Players (HPP) marked out to join the first team in the next two seasons. **Measurement:** Looking at each youth player whose potential report is of level A or level A/B, (from A to D) and identifying those who are expected to have the necessary qualities to join the first team in the next 2 seasons. **Purpose:** Appraising SL Benfica's preparation for the short/medium-term future.

KPI 14: Completion of physical development plans (%). **Measurement:** Calculating the % of youth players who are following specific physical development plans and reaching the goals defined at the beginning of the season: dividing the number of players who reach the defined goals by the total number of players under analysis. **Purpose:** Evaluating the quality of Benfica Campus' methodologies as well as players' individual efforts.

KPI 15: Player performance variation (%) in each trimester. **Measurement:** Monitoring match performance reports (coaches give individual ratings after each match) every trimester to understand what % of players are improving. Dividing the number of improved players by the total number of players. **Purpose:** Overseeing the evolution of players based on their ongoing output, which is indicative of coaching quality and individual effort.

KPI 16: Average number of games played by academy graduates in the B team, before the first team transition, in the last 4 seasons. **Measurement:** Adding up the total number of games played by each academy graduate in the B team, and then dividing by the number of academy graduates. **Purpose:** Inspecting the use of Benfica's B team. Trying to understand if there is a correlation between games played in the B and success in the transition to the first team.

KPI 17: Fulfillment of the squad building metric in the B team (%). **Measurement:** The first step is to consider the squad building metric defined by Benfica Campus, which is the following: 2 goalkeepers, 3 center backs, 3 fullbacks, 5 midfielders, 3 wingers and 2 strikers – 18 players with a potential of B or higher. Then, dividing the number of players that fulfill the requirements, by the total of desired players, 18. **Purpose:** Monitoring the squad building and the distribution of talent in the B team, towards the goal – long-term sustainability.

KPI 18: Average minutes played by academy players who are loaned out. **Measurement:** adding up all the minutes played by each academy player during their loan, and then dividing it by the total of loanees. **Purpose:** Assessing the effectiveness of the loans involving academy players.

Development – Personal and Social section

As an academy, Benfica Campus' mission goes beyond the football pitch. Athletes are prepared at a personal and social level in accordance with SL Benfica's principles and values. With this purpose in mind, Benfica Campus organizes several social actions and workshops throughout the season (KPI 19) to educate the players on diverse topics (e.g., financial education – Appendix 2). It is important to monitor these initiatives, to make sure they are being useful (KPI 20) and attended by the players (KPI 21).

In addition, there is a natural concern from parents regarding their children's school performance. It is common knowledge that only a few young athletes will be able to reach professional levels and make a career out of football. Therefore, it is essential that Benfica Campus accompanies and promotes their academic life, while monitoring their efforts (KPI 22). This is a key factor in the recruitment process, considering that the athletes' parents can play a big role in deciding what club to sign for.

KPI 19: Number of personal / social improvement workshops promoted by Benfica Campus, per season. **Measurement:** Taking note of every workshop throughout the season. **Purpose:** Overseeing Benfica Campus' contribution to youth players' personal development.

KPI 20: Average rating of satisfaction surveys following the workshops. **Measurement:** Giving satisfaction surveys to players after the workshops where they can rate them (0-10) and leave suggestions. Then, adding all the different ratings and dividing them by the total number of answers received. **Purpose:** Reviewing the usefulness of the workshops, from the players' perspective.

KPI 21: Athletes attendance in each workshop (%). **Measurement:** Dividing the number of players present at each workshop by the total number of players that were supposed to be at the workshop. **Purpose:** Keeping track of the athletes' commitment to their personal and social improvement.

KPI 22: Average school GPA of Benfica Campus' players. **Measurement:** Adding all the GPAs and dividing by the number of players. **Purpose:** Monitoring athletes' performance in school.

Operations

Operations refer to the day-to-day activities happening at Benfica Campus to make sure players are provided with the best conditions, so they can focus on their development and performance.

The KPIs in this area are designed to evaluate the efficiency of processes and the use of the available resources (KPI 23). The goal is to maximize the return on investments (KPI 24) and minimize waiting times or waste. These KPIs should also deliver insight on whether Benfica Campus should expand or invest more in staff, equipment, and infrastructure, as well as cost distribution (KPI25).

KPI 23: Resources utilization rate (%). **Measurement:** Dividing the flow rate through a certain facility or staff (players in the gym or in physiotherapy per hour; youth teams in a pitch or in a dressing room per day) by the capacity of said resource. **Purpose:** Analyzing the efficiency of resource use: understanding if there are any process bottlenecks or waste.

KPI 24: Average equipment life cycle. **Measurement:** Adding the lifespan of every equipment in each facility, and then dividing by the total amount of equipment under analysis. **Purpose:** Monitoring return on investment, as well as equipment modernity in Benfica Campus.

KPI 25: Operational cost per youth player. **Measurement:** Dividing half of Benfica Campus' total operational costs (considering a 50-50 split in costs with the first team) for the number of youth players on Benfica Campus. **Purpose:** Getting a better perception of Benfica Campus' cost distribution.

Competition

Competitiveness in youth football is a topic that has been much discussed over the last few years. In Benfica Campus, the main objective of team directors and coaches is to develop athletes in such a way that they can reach their maximum potential and possibly reach the first team. However, that does not mean that competition is undervalued: it is a part of the mission to instill a winning mentality in players, and accustom them to fight for titles, at Benfica. Having said that, the results of Benfica's youth teams at competitions are always good indicators of players / coaching quality and a way to compare with rivals, at national (KPI 26) and international (KPI 27) levels. Additionally, the performance in these competitions may influence the recruitment process – players want to join clubs with a winning reputation.

As previously mentioned, the B team is essential for the success of SL Benfica's youth development project. It is a transition platform, where the context should promote player development. Therefore, the placement in the second league (KPI 28) provides helpful insight on the team's management and on the ability of players and coaches.

KPI 26: Number of National Youth Championships won, per season. **Measurement:** Accounting how many National Youth Championships are won by Benfica each season, out of the possible three (U-19, U-17, and U-15). **Purpose:** Assessing Benfica's internal success at youth level.

KPI 27: Performance in the UEFA Youth League – number of final fours reached in the last 5 seasons. **Measurement:** Keeping track of the amount of UEFA Youth League final fours (semi-finals) reached by Benfica's U-19 in the previous 5 seasons. **Purpose:** Understanding whether Benfica's youth system is maintaining its international prestige, by comparison with other top European clubs.

KPI 28: B team's placement in the second league. **Measurement:** Taking note of Benfica B's position in the second league's table, at the end of the season. **Purpose:** Monitoring the B team's performance to get insights on players' quality and maturity, as well as making sure it is being used as a proper platform of development and transition.

Output

The output section is comprised of a series of indicators, split into football and finances, designed to analyze the finished "product" of the work developed by SL Benfica's youth system.

Output – Football section

Regarding the football perspective, what matters is examining how much Benfica Campus is contributing to the success of SL Benfica's first team. This contribution can be measured in terms of transitions (KPI 29), which is currently the main indicator at the academy, but also in terms of preponderance in the squad (KPI 30) and impact in matches (KPI 31). We consider that it is of little value to develop players from a young age all the way up to the first team, if then none of them is actively helping the club achieve their objectives. Hence, the focus on minutes played.

To further understand and compare the worth of Benfica Campus' product, it is relevant to analyze the academy's influence in the top 5 leagues (KPI 32) and in Portugal's National Team (KPI 33). Again, all these KPIs can be useful in the recruitment process, to showcase the trust SL Benfica places in its youth players and the positive consequences that has on their careers.

KPI 29: Number of academy players that have completed the transition to the first team, per season. **Measurement:** Accounting each Youth player that fully integrates the first team squad throughout the season and plays a minimum of 4 games. **Purpose:** Assessing the success of the youth system's main goal, through the quantification of transitions to the first team, per season.

KPI 30: Main squad composition: % of first team players developed at Benfica Campus. **Measurement:** Dividing the number of players in the first team which were academy graduates, by the total of players in the squad. **Purpose:** Monitoring the contribution of Benfica Campus to the composition of the first squad.

KPI 31: Average minutes played by academy graduates for the first team, per season. **Measurement:** Adding up all the minutes played by each academy graduate in the first team, and then dividing it by the total of academy graduates. **Purpose:** Understanding the role and importance of academy graduates to the first team.

KPI 32: Number of academy graduates in the top 5 leagues. **Measurement:** Following UEFA's home-grown criteria accounting all the academy graduates who are currently playing in Europe's top 5 leagues. **Purpose:** Evaluating the quality of Benfica Campus' "product", as well as the contribution of Benfica Campus to the players' careers.

KPI 33: % of Portugal National First Team which are Benfica Campus' academy graduates. **Measurement:** Dividing the number of Benfica Campus' academy graduates in the National Team, by the total of players in the Portuguese National Team. **Purpose:** Determining the contribution of Benfica Campus to the development of Portuguese football.

Output – Financial section

Even if generating revenue is not the main objective, it's important to consider the financial dimension of Benfica Campus. Firstly, to understand if the academy is a profitable enterprise by itself (KPI 34) and secondly to examine its contribution to the clubs' finances, with the transfers of home-grown players (KPI 35). Furthermore, it makes sense to understand what the academy's influence on the players' market value (KPI 36) is and assess the financial worth of Benfica Campus' product (KPI 37), by comparison with other top European clubs.

Finally, considering all the resources invested by the club into each youth player (money, time, and opportunity cost), it is important that SL Benfica can generate some revenue from those players who sign professional contracts but end up not transitioning to the first team (KPI 38).

KPI 34: Benfica Campus annual profit. **Measurement:** Accounting all of Benfica Campus' annual revenues and spendings. **Purpose:** Assessing Benfica Campus financial profitability.

KPI 35: Revenues generated through Benfica Campus' athletes in the last 5 seasons
Measurement: Adding up every sum of money received through deals in the transfer market involving Benfica Campus' athletes, in the last 5 seasons. This includes transfers and loans.
Purpose: Understanding Benfica Campus' contribution to SL Benfica's financial situation.

KPI 36: Market value evolution of academy graduates. **Measurement:** Noting the market value of every youth player in the moment they complete the transition to the first team. Then, doing the same at the end of that same season. Subtracting the first value from the last, to calculate the difference. **Purpose:** Monitoring the perceived value of Benfica's academy graduates, as well as Benfica Campus' influence on players' market values by comparing it to other academies.

KPI 37: Total added market value of all SL Benfica's homegrown players. **Measurement:** Using UEFA rules regarding homegrown players (players who were at the club for at least 3

years, between the ages of 15 and 21) to account for every Benfica homegrown player and then calculate the total sum of their market value. **Purpose:** Estimating the value created by Benfica Campus throughout the years in a way that enables comparisons with every other academy in the world.

KPI 38: Total revenue generated with youth players ‘dismissed’ from the B team in the last three seasons. **Measurement:** Accounting for every youth player that signs a professional contract and joins the B team but ends up leaving the club instead of transitioning to the first team, in the last 3 seasons. Then, adding up all the revenues from those sales (or exits). **Purpose:** Evaluating SL Benfica’s ability to recuperate their investment by selling players in secondary markets.

10. Results: Analysis and Recommendations

Following the creation of the 38 KPIs, we measured all those who had the required data available to the public, to compare and analyze the performance of Benfica Campus in the defined metrics. The results were mostly positive and indicate that not only is SL Benfica fulfilling their vision and objectives, but they are also ahead of both their rivals, only falling short of Sporting CP in a few categories.

Regarding the competition at youth level, SL Benfica is outperforming their rivals. Internally (Table 1 – KPI 26), Sporting CP dominates the younger age groups (U-15) but that does not translate to the older, more important age groups, where SL Benfica is doing better. This points to a certain superiority in the development department. In the UEFA Youth League (Appendix 3 – KPI 27), SL Benfica has also been more successful, reaching two final fours in the last 5 seasons, which is the club's objective. Benfica's performance in the UYL may be influencing the club's ability to recruit talented players abroad like Cher Ndour and Diego Moreira.

Table 1: KPI 26 results

KPI 26 - Youth National Championships Winners					
	17/18	18/19	19/20*	20/21*	21/22
U-15	Sporting	Sporting	-	-	Sporting CP
U-17	SL Benfica	SL Benfica	-	-	Sporting CP
U-19	SL Benfica	FC Porto	-	-	SL Benfica

* Competition cancelled due to the pandemic.

Looking at the output section, Benfica Campus' overall results are impressive, both in football and finance. In the last four seasons, Sporting has more transitions to the first team (Table 2 – KPI 29) than Benfica (14 vs 8, respectively), but Benfica has much more consistency (2 transitions every season, which is the academy's goal), hinting at the fact that there is clear plan in place to achieve this goal, which includes adequate squad building. In addition, having more transitions does not mean that there is a greater influence of the academy in the first team. By analyzing the main squad composition (Appendix 4 – KPI 30) we can verify that academy

graduates make up a larger portion of Benfica's main squad (33%) when compared to Sporting (28%). The difference in the academy's impact is even more evident if we consider the average minutes played in the first team (Table 3 – KPI 31), where Benfica's academy graduates have almost double the number of Sporting's (1576' vs 829'). These results show that Benfica Campus is contributing significantly to the success of SL Benfica's first team in the current season, being that academy graduates have important roles in the squad.

Table 2: KPI 29 results

KPI 29 - # of First Team Transitions				
	19/20	20/21	21/22	22/23
FC Porto	4	0	0	3
SL Benfica	2	2	2	2
Sporting CP	7	2	1	4

Table 3: KPI 31 results

KPI 31 - Average Minutes Played by Academy Graduates*			
	FC Porto	SL Benfica	Sporting CP
# of Academy Graduates	6	8	9
Total Minutes Played	7504	12604	7457
Average Minutes Played	1250,7	1575,5	828,6

* In the current season – as of May 3, 2023.

Another way to measure the output of Benfica Campus is to look at the academy graduates' careers outside of Benfica. Firstly, regarding the composition of the National Squad (Appendix 5 – KPI 33), SL Benfica is the second largest contributor (27%), only behind Sporting (31%). In the number of academy graduates in the top 5 leagues (Table 4 – KPI 32), Benfica is again behind Sporting (13 vs 18), but by considering the market values we verify that, in average, Benfica's academy graduates in the Top 5 leagues are much more valuable than Sporting's (€31M vs €19M). Therefore, Sporting may be exporting more to the Top 5 leagues, but Benfica's "product" is much more valuable. In fact, when we add the market values of every home-grown player (Appendix 6 – KPI 37) we realize that currently Benfica Campus is the number one academy in the world, with a combined market value of €670M, way ahead of Sporting (€399M) and Porto (€350M).

Table 4: KPI 32 results

KPI 32 - # of Academy Graduates in the Top 5 Leagues			
	# of Players	Market Value (M)	Average MV (M)
FC Porto	7	178,5	25,5
SL Benfica	13	402,6	30,97
Sporting CP	18	341,2	18,96
Total	38	922,3	

To understand the influence of Benfica Campus on academy graduates' market values, we measured its evolution during the season of transition for each player. (Table 5 – KPI 36)

Benfica's youth players' market values usually grow a lot more than their rivals, throughout their first season in the main squad. For instance, if we compare António Silva (SL Benfica) and Gonçalo Inácio (Sporting CP), two talented young center-backs who are starters for their teams, we verify that António's market value increase (€23.7M) was much higher than Inácio's (€8M) during their first season. Based on these results, we conclude that Benfica Campus influences market values, as their players are perceived as more valuable. This is probably due to the academy's reputation of producing top players in recent years, which caused foreign clubs to "trust Benfica's product". Being developed at Benfica Campus is almost like a seal of quality, that decreases the margin of error for buying clubs.

Table 5: KPI 36 results

KPI 36 - Market Value Evolution of Academy Graduates					
Season	Club	Player	Starting value (M)	End value (M)	Difference
20/21	FC Porto	João Mário	0,8	4	3,2
		Francisco Conceição	0,6	8	7,4
	SL Benfica	<i>Gonçalo Ramos</i>	<i>0,675</i>	<i>8</i>	<i>7,325</i>
		<i>Morato</i>	<i>1,5</i>	<i>2</i>	<i>0,5</i>
	Sporting CP	Gonçalo Inácio	1	9	8
21/22	SL Benfica	<i>Paulo Bernardo</i>	<i>1,5</i>	<i>5</i>	<i>3,5</i>
		<i>Henrique Araújo</i>	<i>0,5</i>	<i>5</i>	<i>4,5</i>
	Sporting CP	Rodrigo Ribeiro	1	3	2
22/23	FC Porto	Danny Namaso	2	3	1
		Gonçalo Borges	1,3	2	0,7
		Bernardo Folha	0,75	1	0,25
	SL Benfica	<i>António Silva</i>	<i>0,3</i>	<i>24</i>	<i>23,7</i>
		<i>João Neves</i>	<i>0,4</i>	<i>2,5</i>	<i>2,1</i>
	Sporting CP	Dário Essugo	1	2	1
		Mateus Fernandes	0,5	1,5	1
		Youssef Chermiti	-	3	3
		Flávio Nazino	0,5	1	0,5

From analyzing the revenues generated through Benfica Campus' athletes in the last 5 seasons (Table 6 - KPI 35) we understand that the academy is contributing greatly to the clubs' financial situation. Even without knowing the exact annual costs SL Benfica is having with their academy, we can assume that it is profitable, considering that the transfers of just two academy graduates – João Félix and Rúben Dias - have generated a revenue of almost €200M, way above the amount any club has invested in their youth system in the last 5 seasons (for comparison, FC Barcelona spends around €10M annually, with La Masia). This KPI also provides insight into Benfica's strategy, which has changed throughout the years. Before, a lot of youth players were sold without getting many opportunities in the first team – Bernardo Silva and João Cancelo are good examples. This changed, and academy graduates (Renato Sanches, Gonçalo Guedes, Rúben Dias, João Félix...) started contributing a lot more to Benfica's first team, which resulted in both competitive and financial success. More recently, the club also began a new approach of selling academy graduates who were never able to transition to the first team (or that did but ended up losing their space), with the goal of reducing the squad and salary costs.

Table 6: KPI 35 results

KPI 35 - Revenues Generated through Benfica Campus Athletes in the last 5 seasons		
	Description	Revenue generated (M)
João Carvalho	Sale	15
André Horta	Sale	5,7
Alfa Semedo	Loan + Sale	1,9
João Félix	Sale	127,2
Gedson Fernandes	2 Loans + Sale	11
Bruno Varela	Sale	1
Yuri Ribeiro	Sale	?
Rúben Dias	Sale	71,6
Florentino Luís	Loan	1,5
Ivan Zlobin	Sale	1
Nuno Tavares	Sale	8
Jota	Sale	7,5
Diogo Gonçalves	Sale	2
Tomás Tavares	Sale	2
Nuno Santos	Sale	1
Ferro	Sale	0,55
Ilija Vukotic	Sale	0,5
	TOTAL	257,45

In fact, as previously mentioned, it is important that SL Benfica recuperates some of its investments in youth players who did not evolve as expected. By evaluating the total revenue generated with youth players “dismissed” from the B team (Table 7 – KPI 38), we conclude that due to the financial limitations of the “smaller” Portuguese clubs, the national secondary market is almost non-existent, which forces Benfica to sell players below their market value. A possible solution could be to place these players in peripheric leagues while keeping a % of their economic rights, to profit in the future. Jota (Celtic FC), Duk (Aberdeen FC) and Dantas (Paok FC) are already successful examples of this strategy.

Table 7: KPI 38 results

KPI 38 - Total revenue Generated with youth players dismissed from the B team in the last 3 seasons					
Player	Club	Market Value (M)	Sale (M)	Difference	
Luis Duk	Aberdeen	0,2	0,47	0,27	Future Sale %
Godfried Frimpong	Moreirense	0,35	?	-	No Info
João Ferreira	Watford	0,4	2,5	2,1	Future Sale %
Ilija Vukotic	Boavista FC		0,5	0,5	Future Sale %
Úmaro Embaló	Fortuna Sittard	1,5	1	-0,5	Future Sale %
Jair Tavares	Hibernian	0,225	0	-0,225	Future Sale %
Fabinho	St Truiden	0,35	0	-0,35	Future Sale %
Tiago Araújo	GD Estoril Praia	0,45	0	-0,45	Future Sale %
Fábio Duarte	Vilafranquense	0,75	0	-0,75	No Info
Pedro Álvaro	GD Estoril Praia	0,3	0	-0,3	Future Sale %
Miguel Nóbrega	Rio Ave FC	0,225	0	-0,225	Future Sale %
Gonçalo Loureiro	FC Penafiel	0,1	?	-	No Info
Diogo Mendes	Maritimo SC	0,35	?	-	No Info
David Tavares	FC Famalicão	0,6	?	-	No Info
CJ dos Santos	Inter Miami	0,15	?	-	No Info
Ronaldo Camará	Monza	0,65	?	-	No Info
Pedro Ganchas	FC Paços Ferreira	0,4	?	-	No Info
	TOTAL	7	4,47	-2,53	

We must also look at the management of the B team, a critical stage in Benfica’s youth system. Firstly, it appears that there is no direct relation between the number of games in the B team (Appendix 7 – KPI 16) and the success of transitions to the first team. It is something which is dependent on the player - some will have more maturity and quality sooner than others, and on the context of the first team. Notwithstanding, the B team experience is clearly helpful to the players’ development, so for most of them, it is best not to skip growth stages (the players with

successful early transitions are always very talented: João Neves and António Silva, for instance – Appendix 8).

Therefore, it is essential that the B team provides an environment where players can develop and show their quality. This is where some problems start to arise. As of May 8, 2023, Benfica's B team is 14^o in the Second League. Bad seasons in the B team happen occasionally as seen in the table (Appendix 9 -KPI 28), due to player cycles (the more talented ones leave the B team after a season or two), but this year, the issue is more profound: from our perspective, the team has a very different playstyle compared to the first team and the squad building metric (KPI 17) is not being fulfilled, considering that very few players are showing the potential to transition to the main squad. This could be connected to a problem in another KPI – the average contract length of high potential players (KPI 10), taking into account that some of the talented players in the B team (Diego Moreira, Martim Neto, Cher Ndour, Luís Semedo...) finish their contract at the end of the season and are allegedly moving to other clubs. In our opinion, there are at least two possible measures to solve these problems. The first is to hire a coach for the B team who shares similar tactical ideas with the first team coach, so that the playstyle can be the same and the players get used to it. The second is to try to predict which young players with professional contracts are more likely to reach the first team and renew their contracts before they are approached by clubs with higher budgets.

In addition, we examined the effectiveness of the loans involving Benfica Campus' academy graduates, which is the next stage for players who have outgrown the B team but still don't have space on the first team. Looking at the minutes played (Appendix 10 – KPI 18), the averages may seem satisfactory, but the reality is that good loans are covering up bad loans for instance, in the 20/21 season Nuno Santos played 1804' minutes in a loan at Boavista FC, while Florentino Luís only played 262' minutes in a loan at AS Monaco (Appendix 11). As explained before, the loans must be carefully chosen, as clubs should have incentives to provide the

players with plenty of game time. At AS Monaco, Florentino was competing for a spot in the starting eleven with Aurelien Tchouameni and Youssouf Fofana – why would Monaco give chances to Florentino, who was loaned out, instead of the other two, who were their own players and had similar (or better) quality? This is just an example, but there have been more cases in recent seasons (Henrique Araújo at Watford FC, Jota at Real Valladolid FC, Tomás Tavares at Deportivo Alavés...) These types of contexts may be harmful for players' development and should be avoided at all costs. We think that, ideally, Benfica Campus' academy graduates should be loaned out to clubs inside the Portuguese League, so that the transition to the main squad is more seamless. Also, the limited number of national loans should be used on the players with the highest potential.

Finally, we have some extra recommendations about the devised Key Performance Indicators, for Benfica Campus or for further research on this topic. The first is for them to define leading indicators in each area – the most decisive KPIs, to be closely monitored by the academy director. The second is to search for correlations between different KPIs, to understand how the performance in one area may be affecting the performance in other areas. One example is the impact of succeeding in youth competitions on recruitment: is there a correlation between the performance in the national championships (KPI 26) and the ability to sign high potential players (KPI 8)? Or is this last KPI (8) more influenced by the opportunities given to academy graduates in the first team (KPI 31)? Another example is the impact of development on output: is there a correlation between the completion of development plans (KPI 14) and the number of transitions to the first team (KPI 29)? Investigating these correlations could provide valuable insight.

It is our belief that implementing these Key Performance Indicators and practices may allow Benfica Campus to monitor the different activities in their youth system and help fix small flaws to maintain the clubs' competitive advantage in youth development.

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12. Appendix

- Appendix 1 - Tryouts flyer.



- Appendix 2 - Financial education workshop.



- Appendix 3 - KPI 27 results.

KPI 27 - Performance in the UEFA Youth League					
	17/18	18/19	19/20	20/21*	21/22
FC Porto	<i>Semi-Finals</i>	<i>Winners</i>	-	-	Group Stage
SL Benfica	Group Stage	Ro16	Runners-up	-	Winners
Sporting CP	Ro16	-	-	-	Quarter-Finals

* Competition cancelled due to the pandemic.

- Appendix 4 - KPI 30 results.

KPI 30 - Main Squad Composition			
	FC Porto	SL Benfica	Sporting CP
Total # of Players	28	24	32
# of Academy Graduates	6	8	9
% of Academy Graduates	21%	33%	28%

- Appendix 5 - KPI 33 results.

KPI 33 - National Team Composition (Home-Grown Players)		
	# of Players	% Players
FC Porto	5	19%
SL Benfica	7	27%
Sporting CP	8	31%
Total Squad	26	100%

- Appendix 6 - KPI 37 results.

KPI 37 - Total Added Market Value of All Home-Grown Players		
	# Players	Total Value
FC Porto	71	350
SL Benfica	104	670
Sporting CP	97	399

- Appendix 7 - KPI 16 results.

KPI 16 - Average Games Played in the B team Before First Team Transition	
# of Games Played	219
# of Players	8
Average Games Played	27,4

- Appendix 8 - Number of games in the B team before transitioning – related to KPI 16.

	BEFORE 18/19	18/19	19/20	20/21	21/22	22/23	TOTAL
António Silva	-	-	-	-	2	2	4
João Neves	-	-	-	-	-	11	11
Paulo Bernardo	-	-	2	17	10	A	29
Henrique Araújo	-	-	-	28	26	A	54
Gonçalo Ramos	-	5	20	12	A	A	37
Felipe Morato	-	-	15	28	A	A	43
Renato Sanches	34	-	-	-	-	-	34
Rúben Dias	55	A	A	A	-	-	55
João Félix	29	A	-	-	-	-	29

- Appendix 9 - KPI 28 results.

KPI 28 - B team's placement in the Second League						
	17/18	18/19	19/20	20/21	21/22	22/23*
FC Porto	7°	9°	13°	16°	10°	8°
SL Benfica	13°	4°	15°	8°	5°	14°
Sporting CP	18°	-	-	-	-	-

* In the current season – as of May 8, 2023.

- Appendix 10 - KPI 18 results.

KPI 18 - Average Minutes Played by Academy Loanees			
	20/21	21/22	22/23*
# of Academy Loanees	8	9	6
Total Minutes Played	11452	14831	8161
Average Minutes Played	1431,5	1647,9	1360,2

* In the current season – as of May 3, 2023.

- Appendix 11 - Minutes played by academy graduates loaned in the 2020/21 season – related to KPI 18.

	Minutes Played	Club
Florentino Luís	262	AS Monaco
Nuno Santos	1804	Boavista FC
Tomás Tavares	238	<i>Deportivo Alavés</i>
Alfa Semedo	2216	Reading FC
Jota	728	<i>Valladolid CF</i>
Pedro Pereira	2629	FC Crotone
Ferro	180	<i>Valencia CF</i>
Tiago Dantas	528	FC Bayern

* This table does not include every loan.