

Algorithmic Scouting and Predictive Analytics in Football the Case of Brighton and Hove Albion

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Abstract—Football is no longer just about what happens on the pitch. At the highest level, it has also become a huge financial market where players are bought, developed and sold for millions of pounds. Clubs have to manage wages, transfer spending and financial regulations while still trying to build a competitive team. Signing the wrong player can be a very expensive mistake. For many years, clubs mainly relied on scouts, managers, agents, reputation and personal judgment when making these decisions. While these methods are still important, they can also be affected by human bias and incomplete information.

This paper looks at whether algorithmic scouting and predictive analytics can improve the way football clubs identify and value players. Brighton & Hove Albion has been selected as the main case study because the club has become well known for using data as an important part of its recruitment process. Brighton has managed to sign several players at relatively low prices and later sell them for much higher fees.

However, looking only at Brighton's biggest successes would give an incomplete picture. To make the analysis more balanced, this study looks at six significant player transactions between 2018 and 2024. These include four major successes, one more moderate profit and one clear financial loss. The five players with identifiable purchase prices generated a combined return of approximately 310.9%. When Ben White's £50 million academy-developed sale is included, the consolidated figure rises to approximately 395.8%.

The results show that data can give clubs a useful advantage when searching for undervalued players, but it cannot predict everything. A player's performance after moving to a different league depends on many factors that are difficult to measure. The study also considers the impact of the Premier League's Profitability and Sustainability Rules (PSR), particularly the way player sales and academy-developed players are treated in club accounts.

I. INTRODUCTION

Football today is not just about what happens during the 90 minutes of a match. Professional clubs also have to make decisions involving millions of pounds, and one of the biggest areas of spending is the player transfer market. A club might spend a large amount of money on a player, give them a long-term contract and then discover that they do not perform as expected. If this happens, the club can be left with an expensive player who is difficult to sell.

Traditionally, these decisions were largely based on scouting reports, recommendations from agents, previous reputation and the opinions of managers and recruitment staff. A scout might watch a player several times and decide that they have the ability to succeed at a higher level. A manager might also prefer a player because they fit a particular style of football. These judgments can obviously be useful, but they are still based heavily on human opinion.

The growth of football analytics has changed this process. Clubs now have access to large amounts of information about player performance. Metrics such as expected goals (xG), expected assists (xA), progressive passes, pressing statistics and other forms of positional data can be used to compare players. This means clubs do not necessarily have to rely only on what a scout sees during a match.

Brighton & Hove Albion is one of the most interesting examples of this approach. Tony Bloom became the club's majority owner in 2009 and is also associated with the sports analytics company Starlizard. Under his ownership, Brighton developed a recruitment strategy that placed significant importance on data and statistical analysis.

The club began looking for players who might be undervalued by the wider transfer market. Instead of always competing for established and expensive

players, Brighton could search for talent in less fashionable leagues and develop those players over time. The results have attracted a lot of attention. Players such as Moisés Caicedo, Marc Cucurella and Alexis Mac Allister were bought for relatively modest amounts and later sold for substantially higher fees.

There is, however, a problem with only looking at these successful transfers. If a recruitment system is judged only by its biggest successes, it can appear much more reliable than it actually is. Every investment strategy has unsuccessful decisions, and football recruitment is no different.

This is why this study includes Alireza Jahanbakhsh, whose transfer to Brighton resulted in a significant loss. Yves Bissouma is also included as an example of a transfer that produced a profit but was not on the same scale as Brighton's biggest successes.

Financial regulations are another important part of this discussion. The Premier League's Profitability and Sustainability Rules place restrictions on the losses clubs can make over the relevant assessment period. This means that player sales can have a major effect on a club's financial position.

The accounting treatment of transfers is particularly interesting. A player's transfer fee is generally spread over the length of their contract through amortisation, while profits from a sale can be recognized when the player is sold. Academy-developed players can be even more valuable from an accounting perspective because their acquisition cost is usually very low or zero.

This paper therefore looks at Brighton's recruitment strategy from both a sporting and financial point of view. Rather than assuming that algorithms can predict the future perfectly, the aim is to understand whether data-driven recruitment can create a financial advantage and where the limitations of this approach become visible.

II. LITERATURE REVIEW

2.1 Information Asymmetry and Market Inefficiencies in Sports Commerce

In theory, an efficient market should eventually reflect all available information in the price of an asset. The football transfer market does not always work like this. Different clubs have access to different information, players perform in different leagues and not all types of performance receive the same amount of attention.

For example, a player producing strong numbers in a less prominent European league may not have the same market value as a player producing similar numbers in the Premier League. This does not necessarily mean that the first player is worse. It may simply mean that fewer clubs, scouts and fans are paying attention to them.

Media attention and reputation can also influence how players are valued. A player who becomes popular after a few high-profile matches may suddenly become much more expensive, even though their longer-term performance may not justify the increase.

Data can help clubs deal with some of these problems. Müller, Simons and Weinmann (2017) studied data-driven methods of estimating football player market values and found that detailed performance information can provide useful information when valuing players.

This does not mean that an algorithm can automatically identify every future star. Instead, it gives recruitment teams another source of information. A player who might not stand out to a traditional scout can become interesting once their underlying statistics are compared with those of other players.

This is one of the main reasons data has become more important in modern football recruitment.

2.2 Bounded Rationality and Cognitive Biases in Human Asset Valuation

Human decision-making has its own problems. People can make mistakes even when they have good intentions and plenty of experience. Kahneman (2011) discusses several cognitive biases that can affect decision-making.

One example is recency bias. A club might become too interested in a player because they have recently performed extremely well. Another is confirmation bias. Once a recruitment team becomes convinced that a particular player is suitable, they may pay more attention to information that supports their opinion and overlook information that does not.

In football, these mistakes can be expensive. If a club spends £30 or £40 million on a player who does not fit the team's tactical system, it may be difficult to recover that investment. The club still has to pay the player's wages and may eventually have to sell them for less than the original fee.

Data can reduce some of this subjectivity. Metrics such as xG, xA, progressive actions, pressing statistics and

passing involvement allow clubs to compare players using measurable information.

At the same time, the people using the data can still make mistakes. Choosing which statistics to focus on is itself a decision. So analytics should not be viewed as a replacement for human judgment. It is better understood as another layer of information that can support the recruitment process.

2.3 Algorithmic Arbitrage and Value Generation

The basic idea behind algorithmic arbitrage is fairly simple. If a club can find an asset that the wider market is undervaluing, it may be able to buy that asset before its price increases.

Michael Lewis's *Moneyball* (2003) made this idea famous in baseball. The Oakland Athletics used statistics to identify players whose contributions were not being valued properly by other teams. This allowed them to compete with clubs that had much larger budgets.

Football has similar opportunities. Some players receive less attention because they play in smaller leagues or because their contributions are not particularly visible to fans.

For example, goals and assists are easy for people to notice. Defensive positioning, pressing, progressive actions and other less obvious contributions are harder to judge simply by watching a match.

Research by Zaytseva and Shaposhnikov (2023) also discusses how different types of actions can be valued differently in football. This creates opportunities for clubs that can analyze performance in greater detail.

Brighton's recruitment model appears to follow this general principle. The club has been willing to look outside the most obvious markets and sign players before their reputation and market value increase significantly.

If the player then performs well in the Premier League, their value can rise very quickly. Brighton can then decide whether to keep the player for sporting reasons or sell them for a large profit.

2.4 Regulatory Incentives: The Profitability and Sustainability Rules

Financial regulation has also changed the way clubs think about player trading. Peeters and Szymanski (2014), when studying UEFA's Financial Fair Play regulations, found that financial restrictions can influence the way football clubs operate.

The Premier League's Profitability and Sustainability Rules create similar financial considerations. Clubs have limits on the losses they can make over the relevant three-year assessment period.

The accounting treatment of transfers makes this especially important. A transfer fee is generally amortised over the player's contract. If a club buys a player for £20 million on a five-year contract, the accounting cost is normally spread over those five years.

When the player is sold, however, the profit can be recognized much more quickly. This can create a strong financial incentive to develop players whose value increases over time.

Academy players are particularly interesting in this context. Since the club did not have to pay a significant transfer fee to acquire them, their recorded book value can be very low.

Ben White is a useful example. He joined Brighton's academy after being released by Southampton and eventually moved to Arsenal for a reported £50 million. This is financially different from a situation where Brighton buys a player for £10 million and sells them for £50 million.

III. METHODOLOGY

For this study, I used a comparative case-study approach focused on Brighton & Hove Albion. I selected Brighton because the club has developed a strong reputation for using data and statistical analysis in its recruitment process.

The analysis focuses on six significant player transactions between 2018 and 2024. I deliberately did not choose only Brighton's biggest profits. The purpose was to include different outcomes so that the results would not depend entirely on the club's most successful transfers.

The financial performance of each transfer is calculated using the following formulas:

Net Capital Gain = Sale Price – Purchase Price

ROI (%) = (Net Capital Gain ÷ Purchase Price) × 100

The main transfer figures come from Transfermarkt, with comparisons against available financial disclosures and contemporary business reports where possible. Transfer fees can sometimes differ between sources because of bonuses, add-ons and other contractual conditions, so the figures should be treated

as reported values rather than exact internal accounting figures.

One of the main methodological concerns in this study is survivorship bias. My original sample focused on four major Brighton successes: Moisés Caicedo, Marc Cucurella, Alexis Mac Allister and Ben White.

Those transfers produced extremely high returns, but using only these examples would make Brighton's recruitment process look almost perfectly successful. That would not give a fair picture.

I therefore added Yves Bissouma and Alireza Jahanbakhsh. Bissouma represents a more normal profitable transaction, while Jahanbakhsh represents a major unsuccessful investment.

Even with these additions, the sample is still limited. Brighton has made many other transfers during this period, including loans, smaller signings and deals where the full financial details are not publicly available. A complete study would need access to Brighton's entire transfer history, internal scouting information, contract details and the actual models used by the recruitment department. That information is not publicly available. Therefore, the six transfers in this study should be seen as a selected sample rather than a complete audit of Brighton's recruitment system.

IV. DATA ANALYSIS AND FINDINGS

4.1 Empirical Data Matrix

The following table shows the six selected Brighton transactions.

Asset (Player)	Purchase Price (£)	Sale Price (£)	Net Capital Gain (£)	ROI
Moisés Caicedo	£4.5M	£115.0M	£110.5M	2,455.6%
Marc Cucurella	£15.4M	£62.0M	£46.6M	302.6%
Alexis Mac Allister	£7.0M	£35.0M	£28.0M	400.0%
Yves Bissouma	£15.0M	£25.0M	£10.0M	66.7%

Alireza Jahanbakhsh	£17.0M	£5.0M	-£12.0M	-70.6%
Ben White (Academy / Free Transfer)	£0.0M	£50.0M	£50.0M	Undefined*
Priced Transactions Subtotal (excluding White)	£58.9M	£242.0M	£183.1M	310.9%
Full Six-Transaction Total (including White)	£58.9M	£292.0M	£233.1M	395.8%

Ben White's ROI cannot be calculated normally because the recorded acquisition cost is zero. His £50 million sale is therefore treated as a realised gain rather than a percentage return.

The 395.8% figure combines five priced transactions with a zero-cost transaction. It should therefore be understood as a consolidated capital-yield figure rather than a standard ROI.

4.2 Analysis of Financial Yield

Looking at the five players with identifiable purchase prices, Brighton spent approximately £58.9 million and received around £242 million from their eventual sales. This produced a net capital gain of £183.1 million and a combined return of approximately 310.9%.

That is a very large return, but the individual transfers show why the overall number needs to be looked at carefully.

Moisés Caicedo has the biggest effect on the result. Brighton reportedly paid around £4.5 million for him and eventually received approximately £115 million when he moved to Chelsea. This produced a net gain of £110.5 million.

Caicedo's gain alone represents around 60% of the total net gain from the five priced transactions. This means that the overall result is heavily influenced by one exceptionally successful transfer.

Marc Cucurella and Alexis Mac Allister also generated significant profits. Both players were acquired for relatively modest fees compared with the amounts Brighton later received from their sales.

Yves Bissouma produced a smaller profit. His return was nowhere near the level of Caicedo's, but it was still positive.

Alireza Jahanbakhsh provides the opposite example. He arrived at Brighton after having a very successful period in the Dutch Eredivisie. His numbers suggested that he could become an effective attacking player at a higher level. However, his time in the Premier League did not work out in the way Brighton would have hoped.

The club eventually sold him for less than the original purchase price, resulting in a significant financial loss. This is an important part of the analysis because it shows that strong statistics cannot guarantee a successful transfer. Data can tell a club what a player has done, but it cannot perfectly predict what they will do in a completely different environment.

Ben White is also different from the other players in the sample. His transfer was not a normal example of buying an undervalued player from another club and selling them for a profit. White was developed within Brighton's academy after joining the club without a transfer fee.

His eventual £50 million sale therefore represents the value created through player development rather than conventional transfer-market arbitrage.

4.3 Distribution of Outcomes and the Limits of a Success-Only Sample

The six transfers produce a very wide range of results. Jahanbakhsh represents a 70.6% loss, while Caicedo represents a return of more than 2,400%.

This difference is important because it shows that data-driven recruitment does not mean that a club can predict the future perfectly.

Instead, Brighton's approach can be thought of as a type of portfolio strategy. The club can identify several players who appear to be undervalued. Some of those players might produce moderate returns, some might fail, and occasionally one might become extremely valuable.

This is similar to the wider statistical approach associated with Tony Bloom's work in sports betting. The idea is not that every individual decision will be correct. The aim is to make enough decisions with

positive expected value that the overall results become favourable over time.

The earlier four-transfer analysis produced an 874% return. While the calculation may be correct for that particular group of players, the number looks very different once unsuccessful and less spectacular transfers are included.

Adding Bissouma and Jahanbakhsh gives a more balanced sample. The five priced transfers generate a combined return of around 310.9%, while including Ben White's zero-cost development produces the consolidated figure of approximately 395.8%.

The lower return compared with the original sample does not mean that Brighton's system failed. It simply shows that the biggest successes do not represent every outcome produced by the recruitment process.

V. DISCUSSION

5.1 Business Implications for Sports Franchises

Brighton's strategy is particularly interesting because the club does not have the same financial resources as Europe's biggest football clubs.

A club with a smaller budget cannot regularly compete for the world's most expensive established players. Instead, Brighton has been able to take a different approach by searching for players before their market values become very high.

If the club identifies a player early, develops them and later sells them to a larger club, the transfer market itself becomes an important source of revenue.

This changes the way a footballer can be viewed. From a sporting perspective, the player is part of the squad and is expected to help the team win matches. From a business perspective, however, the same player can also become a financial asset whose value changes over time.

Brighton's biggest transfers demonstrate how significant this can be. A player who costs only a few million pounds can eventually be worth tens or even more than one hundred million pounds.

The money generated from these sales can then be reinvested into the squad. In this way, one successful transfer can help finance several future recruitment decisions.

PSR makes this strategy even more relevant because clubs need to manage their financial results. Large player sales can generate substantial accounting profits.

However, it would be too simple to say that PSR is the reason Brighton has been successful. The club's results also depend on scouting, player development, coaching and decisions about when to sell.

Data is therefore only one part of the overall business model.

5.2 Systemic Limitations of Digital Valuation Models
The Jahanbakhsh transfer highlights one of the biggest weaknesses of statistical recruitment.

Football data can tell us a lot about what a player has already done. We can measure their goals, assists, passing, pressing, ball progression and many other aspects of their performance.

The problem is that recruitment is ultimately about the future.

A player might have excellent statistics in one league but struggle after moving to another. This can happen for many reasons. They may have to adjust to a different tactical system, a different style of football or a different level of physical intensity.

There are also factors that are much harder to measure. A player may struggle to settle into a new dressing room. They might not have the same relationship with their teammates or manager. The expectations placed on them may also be much higher after a big transfer. These things are difficult to include in a statistical model.

Jahanbakhsh is a useful example because his previous numbers gave reasons to believe that he could succeed. However, his Premier League career did not develop as expected.

This does not mean the data was useless or necessarily wrong. The data described what he had already achieved. It simply could not account for every factor that would affect his future performance.

This is why I think the best way to view analytics is as a tool for improving decisions rather than a way of removing uncertainty completely.

5.3 Comparative Context: Liverpool FC and the Broader Data Movement in Football

Brighton is not the only major football club to make extensive use of data.

Liverpool FC is another well-known example. Ian Graham, who worked as Liverpool's Director of Research, has discussed how the club used analytics and statistical modelling to support recruitment decisions between 2012 and 2023 (Graham, 2024).

The interesting difference between Brighton and Liverpool is how they use the information.

Brighton has become well known for buying players, developing them and eventually selling them for large profits. This makes player trading an important part of the club's financial model.

Liverpool has generally used analytics to help build a highly competitive first-team squad. Players such as Mohamed Salah, Sadio Mané and Virgil van Dijk were recruited with the aim of helping Liverpool compete for major trophies.

This shows that the same basic idea can be used for different purposes.

For Brighton, selling a player at the right time can be extremely valuable. For Liverpool, keeping an exceptional player may be more valuable because of what that player can contribute on the pitch.

So analytics itself is not the business strategy. It is a tool that can support different strategies depending on the club's financial position and objectives.

VI. CONCLUSION

This study looked at Brighton & Hove Albion's use of data-driven recruitment and, more specifically, the financial results that can come from identifying, developing and selling players.

One of the main aims was to avoid looking only at Brighton's biggest successes. If only the most profitable transfers are included, the recruitment system can appear almost perfect. Including less successful examples gives a more realistic picture.

The five transfers with identifiable purchase prices involved approximately £58.9 million of investment and produced around £183.1 million in net capital gains. This gives a combined return of approximately 310.9%. When Ben White's £50 million academy-developed sale is included, the consolidated figure rises to approximately 395.8%.

These are significant results, but they should not be taken to mean that algorithms can predict which players will become successful with certainty.

The biggest reason for this is the large variation between individual outcomes. Caicedo generated an extraordinary return, while Jahanbakhsh resulted in a substantial loss. This shows that even players who look like good investments based on their previous statistics can fail to produce the expected results.

Data can improve the recruitment process because it allows clubs to compare players using much more information than was available in the past. It can also help clubs find players who might not yet have attracted widespread attention.

However, football is still ultimately a human activity. Players have to adapt to new leagues, teammates, coaches, tactics and expectations. These factors cannot always be predicted from historical statistics.

The financial environment also plays an important role. The Premier League's Profitability and Sustainability Rules make profitable player sales particularly useful to clubs trying to maintain financial stability. Academy players can be especially valuable because their low acquisition cost can result in a large accounting gain when they are sold.

Brighton's success should therefore not be explained simply as an algorithm finding cheap players. It is the result of several things working together: data analysis, scouting, player development, coaching, financial management and decisions about when to sell.

There are also limitations to this study. Six transfers are not enough to measure Brighton's entire recruitment operation. The sample is still selective, and publicly available transfer data does not give access to the club's internal models or the complete information available to its recruitment department.

A stronger study in the future could analyse every Brighton first-team transfer over a much longer period. It could also compare Brighton with other clubs of a similar financial size that use different recruitment strategies. Access to Brighton's internal scouting data would make it possible to examine whether the players identified by the club's models actually had higher expected values before they were signed.

Overall, Brighton provides an interesting example of how football recruitment has changed. The club's transfer results suggest that using data can create significant opportunities in the market, especially for clubs that cannot compete financially for established stars. At the same time, the unsuccessful transfers show that better information does not remove uncertainty.

The main lesson is therefore not that algorithms can predict football perfectly. It is that they can help clubs make more informed decisions and potentially find opportunities that traditional methods might miss. The

final outcome still depends on the player, the club and a large number of factors that no model can completely predict.

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