

THESES OF THE DOCTORAL (PhD) DISSERTATION

**ACCOUNTING AND FINANCIAL AUDIT OF PLAYING RIGHTS,
METHODS FOR MEASURING EFFICIENCY AND EFFECTIVENESS**

Réka Szabóné Szőke

Supervisor:

Prof. Dr. Bács Zoltán

Professor



UNIVERSITY OF DEBRECENI

Doctoral School of Management and Business

Debrecen, 2026

1. BACKGROUND, OBJECTIVES, AND HYPOTHESES OF THE RESEARCH

According to a 2025 EUROSTAT study, the production of sports-related goods and services in the European Union contributed 627.5 billion euros to GDP in 2019, accounting for approximately 3.37% of the EU's total GDP. Of this amount, €251.4 billion is attributable to typical products, representing 1.36% of total GDP. In addition, related products contribute 376.1 billion euros to the EU's GDP, accounting for 2.04% of gross domestic product (KOKOLAKAKIS - KLEISSNER, 2025). Based on the decline in 2020–2021 and the recovery in 2022–2023, the direct and indirect contribution of sports to GDP will most likely return to the 3–3.5% range by 2024, but the exact figure will only be known upon the release of the next Eurostat report, expected in 2027. However, the role of sports is not limited to production and employment indicators. Through the development of human capital, the improvement of health, the enhancement of work capacity and productivity, and the strengthening of social cohesion, it also contributes indirectly to economic growth and the sustainability of welfare systems.

In this context, particular emphasis is placed on the accounting treatment of football clubs' player rosters as a specific form of human capital. Economic literature has long addressed the valuation of intellectual and human capital, but to this day, no uniform, generally accepted practice has emerged regarding the form in which intellectual capital should appear within a company's organizational structure. In football, the knowledge, skills, and abilities associated with players directly influence a club's revenues (ticket sales, sponsorship, merchandising, broadcasting rights), yet the accounting treatment of player rights raises numerous questions. In the Hungarian regulatory environment – in accordance with the MLSZ Club Licensing Regulations – only costs directly related to players acquired for a transfer fee under contracts longer than one year may be capitalized as intangible assets (MLSZ, 2025h), while home-grown players and those with shorter-term contracts mostly remain “hidden” on the balance sheet, even though the cost structure of their training and competition is similar to that of purchased players, and their sale can generate revenue for the club.

The practical problem addressed in this paper is that the leaders of football clubs and external stakeholders (owners, investors, lenders, regulators) require accounting information that reliably and comparably reflects the economic value of the player roster, while current financial statements do not reflect part of the player assets – particularly home-grown players – at all or only partially.

From a theoretical perspective, the root of the problem lies in the tension between the capitalization criteria linked to the accounting concept of an asset and the principle of prudence, and the value-creating role of human capital in an economic sense. Current Hungarian and international standards allow for the capitalization of reliably measurable player rights tied to contractual entitlements; however, the value of home-grown or short-term contract players – who constitute a significant portion of a club’s assets and future income-generating capacity – remains “invisible” in accounting terms. This situation raises questions, even at a theoretical level, regarding the practical applicability of the concept of assets, the measurability of human capital, and the requirement for a true and fair presentation.

Based on a review of the literature and available empirical studies, a research gap can be identified; the accounting and financial management of player rights has been examined primarily at the theoretical level and through international examples, while there is a lack of systematic empirical analyses pertaining to Hungarian first-division clubs, furthermore, there has been little exploration of the differentiated presentation of accounting practices associated with various player statuses (home-grown, purchased, free agents, loaned) and their correlation with sports performance and economic performance.

The main objective of my research is therefore, on the one hand, to explore the relationship between intangible assets reported as “player registration rights” and the economic performance of football clubs, their sporting results, and their operational frameworks; on the other hand, to identify a methodological approach suitable for reliably estimating the value of player assets not included on the balance sheet, and to demonstrate how this can be realistically presented in the financial statements. I am convinced that reporting the actual

economic value of the player roster is essential for preparing financial statements that accurately reflect the real financial, asset, and income position of football clubs in an economic environment where sports play an increasingly significant macroeconomic and social role.

During my university years, attending local soccer matches was a source of relaxation for me, my interest in football clubs dates back all the way to 2015. I began researching this topic as a master's student and later as a doctoral candidate, within my field of interest, accounting – and specifically intangible assets – held the greatest appeal.

The main objectives of the research

1. O1: My goal is to analyse the financial and performance data of football teams competing in NB I during the 2015/16 to 2024/25 seasons.
2. O2: My goal is to conduct an efficiency analysis of these football teams.
3. O3: In examining the player rosters of teams competing in NB I over the last three seasons, my goal is to investigate whether there is a correlation between roster composition and financial and sporting performance. My goal is also to analyse clusters formed based on player composition.
4. O4: My goal is also to examine whether the omission of certain players from the balance sheet – which is to be prepared as part of the financial report – accurately reflects the company's assets.

Research Hypotheses

1. H1: There is a relationship between sports performance, operating budgets, and other economic data, such as:
 - H1a: total revenue,
 - H1b: total expenses,
 - H1c: intangible assets,
 - H1d: net income,
 - H1e: funding for spectacular team sports.

2. H2a and H2b: Teams that achieve higher rankings in NB I operate more economically efficiently. Economic efficiency is closely linked to sports performance and the operational framework.
3. H3a, H3b, and H3c: There is a relationship between player composition and sporting performance. If the proportion of purchased players is higher, the team performs better. The scale efficiency indicators of companies belonging to clusters formed based on player composition differ significantly from one another.
4. H4: Home-grown players should be included in the balance sheet to ensure a reliable and accurate overall picture; cost-based valuation is the only appropriate method for measuring their value. To determine their true economic value, continuous cost measurement from the youth development stage is necessary, using management accounting.

For the sake of transparency, I have compiled a table (Table 1) that outlines the research objectives, the related hypotheses, and the methods used in the study.

Table 1: The relationship between the objectives, hypotheses, and methods used

Objectives	Hypotheses	Methods
O1: My goal is to examine the strength of the relationship between the economic and sporting performance of the football clubs operating teams in Division I of the National Championship over the past 10 seasons (between 2015/16 and 2024/25)	H1a: There is a correlation between total revenue and how well the teams have performed in the NB I league. Teams with higher revenue achieve better standings.	multifactorial and multivariate analysis of variance, Spearman's rank correlation
	H1b: There is a correlation between total expenditures and how successfully teams have performed in the NB I league. Teams in the top division have higher total expenditures.	
	H1c: There is a correlation between the value of a team's playing rights and how well the teams have performed in the NB I league. Teams with higher-valued playing rights perform better.	
	H1d: There is a correlation between taxable income and how well teams have performed in the NB I league. Teams with higher taxable income perform better on the field.	
	H1e: There is a correlation between support for spectacular team sports and how well teams have performed in the NB I league. The teams that receive higher CIT funding are the ones that perform well.	
Objectives	Hypotheses	Methods
O2: My goal is to examine the economic efficiency of the football clubs in my database over the past nine years	H2a: Clubs that achieve higher rankings in NB I operate more efficiently than smaller clubs with weaker sporting performance.	traditional DEA

(2016–2024), as well as their relationship to athletic performance and the operational framework.	H2b: Economic efficiency is closely linked to athletic performance and the organizational framework. Organizations that are more economically efficient tend to perform better athletically.	multifactorial and multivariate analysis of variance, Spearman's rank correlation
O3: My goal is also to examine the strength of the relationship between the player composition and athletic performance of the football clubs operating teams in the NB I division over the last three seasons (2022/23, 2023/24, 2024/25). My goal is also to analyse the economic and sports-related data characteristic of clusters formed based on player composition.	H3a: There is a significant correlation between the composition of the team and its performance.	multifactorial and multivariate analysis of variance
	H3b: If higher the proportion of players acquired through transfers, the teams perform in the NB I league better.	Spearman's rank correlation
	H3c: The scale efficiency indicators of companies belonging to clusters formed based on player composition differ significantly from one another.	cluster analysis
O4: My goal is also to examine whether the omission of certain players from the balance sheet – which is to be prepared as part of the financial statements – accurately reflects the company's assets.	H4: Cost-based valuation is the only appropriate method for valuing home-grown players; their inclusion in the balance sheet is necessary to ensure a reliable and accurate overall picture. To determine their true economic value, continuous cost tracking from the youth level onward is required, using management accounting.	case study, expert interview

Source: Compiled by the author, 2026

2. DESCRIPTION OF THE DATABASE AND APPLIED METHODS

In the course of my research, I conducted both secondary and primary research. The examination and analysis of this topic can be divided into two main areas. On the one hand, I used statistical calculations to examine the relationship between football clubs' financial data and their on-field performance; on the other hand, I developed accounting principles and procedures related to player registration rights.

2.1. The study database

My database can be divided into two main sections; one contains primarily financial statement data and sports results. I have already addressed the concept of home-grown players and the problem of their exclusion from the balance sheet in my review of the literature; thus, my other database is primarily based on team rosters and other financial or sports results.

I used my first database to test Hypotheses H1 and H2. This database contains 14,430 data points, comprising data from 22 teams across 9 fiscal years and 10 sports seasons. The observation unit is the club-fiscal year (195 observation units) and, for sports results, the club-season (216 observation units). The data collection is comprehensive, criterion-based, and longitudinal, as I included all men's football clubs that spent at least one season in NB I during the period under study; in other words, it represents full coverage of NB I clubs meeting the selection criteria. In Hypothesis H1, I examine the relationship between teams' sports results and operational frameworks, as well as total revenue, total expenses, property rights, net income, and the amount of approved subsidies for spectacular team sports. In the case of Hypothesis H2, I analyse the relationship between economic efficiency, athletic performance, and operational frameworks. For Hypotheses H1 and H2, I created a database consisting of data from companies operating men's soccer teams in the National Championship Division I between 2016 and 2024. This database includes teams that played at this level even just once during this period. In the results chapter, the variables presented by year cover this period, while the teams are the enterprises under examination. Starting

with the 2015–16 season, the top division consists of 12 teams, whereas the league previously had 16 teams. Following the 2014/15 season, several teams (Győri Eto FC, PMFC-Matias, Kecskeméti TE, Nyíregyháza Spartacus FC) were excluded due to licensing issues. The teams examined are shown in Table 2. In this table, I have marked in red those teams that finished in a relegation spot during the given season, and I have omitted the periods when the club in question did not compete in NB I. The analysed period covers 10 football seasons but 9 fiscal years. The football season begins on 1 July and runs through 30 June of the following year. The accounting reporting period, however, differs from this, for these teams, with one or two exceptions, it runs from 1 January to 31 December. Thus, the proportion of missing data is around 1–2%. The number of actual data points included in the analysis to test Hypothesis H1 is 2,340, while for Hypothesis H2 it is 2,925, and I coded 7 variables for these analyses.

Table 2: League standings for the teams studied from the 2015–16 to the 2024–25 seasons

Season Name of club	2024/ 2025	2023/ 2024	2022/ 2023	2021/ 2022	2020/ 2021	2019/ 2020	2018/ 2019	2017/ 2018	2016/ 2017	2015/ 2016
Balmaz Kamilla Gyógyfürdő	-	-	-	-	-	-	-	11	-	-
Békéscsaba 1912 Előre	-	-	-	-	-	-	-	-	-	12
Budafoki MTE	-	-	-	-	12	-	-	-	-	-
Budapest Honvéd	-	-	11	9	10	5	4	4	1	8
DVSC/DVSC-TEVA	9	5	3	7	-	11	3	5	8	3
DVTK	6	7	-	-	11	9	10	10	10	9
ETO FC Győr/Győri ETO FC	4	-	-	-	-	-	-	-	-	-
Fehérvár FC/MOL Fehérvár FC/MOL VIDI FC/Videoton FC	11	4	10	4	3	2	2	1	2	2
Ferencvárosi TC	1	1	1	1	1	1	1	2	4	1
Gyirmót FC Győr	-	-	-	12	-	-	-	-	12	-
Kaposvári Rákóczi FC	-	-	-	-	-	12	-	-	-	-
Kecskeméti TE	12	6	2	-	-	-	-	-	-	-
Kisvárdai Master Good	-	11	6	2	5	8	9	-	-	-
Mezőkövesd Zsóry FC	-	12	7	10	8	4	6	9	9	-
MTK Budapest	5	8	-	11	7	-	11	-	11	4
Nyíregyháza Spartacus FC	8	-	-	-	-	-	-	-	-	-
Paksi FC	3	2	5	6	4	10	8	7	5	7
Puskás Akadémia FC	2	3	4	3	2	3	7	6	-	11
Szombathelyi Haladás/Swietelsky Haladás	-	-	-	-	-	-	12	8	6	5
Újpest FC	7	10	8	5	6	6	5	3	7	6
Vasas FC	-	-	12	-	-	-	-	12	3	10
ZTE FC	10	9	9	8	9	7	-	-	-	-

Source: Compiled by the author based on MLSZ data, 2026

Újpest FC prepared its financial statements in 2016, and Kaposvári Rákóczi FC did so in 2019, covering the same period as the season, however, the former later reverted to the period from 1 January to 31 December. I naturally took this into account during my review.

I also considered the fact that Budafoki MTE Labdarúgó Kft. was established in 2017. The reporting period and the soccer season do not overlap; for example, I associated the 2016 financial statement data with the 2015/2016 season, meaning I considered the closing year of the given season to be the reporting period. This is why I collected the sports results for a total of 22 teams over 10 seasons, but only the financial statement data for 9 years, as the financial data for 2025 is not yet available.

Table 2 shows the final standings for each season. The clubs finishing in 11th and 12th place are relegated to NB II every season, while the top two finishers in that division are promoted to NB I. Some teams have changed their names; for these teams, I have listed all the names that appeared during this period.

The sources for my first database were 200 balance sheets and income statements downloaded from the e-reporting website, official team data available on the MLSZ website, and the lists of spectacular team sport subsidies. For each season and for every team, I compiled the amounts of requested and approved spectacular team sports subsidies. I downloaded the submitted Sports Development Programs and the approval decisions available on the clubs' official websites. I verified these and compared them with the MLSZ TAO list. I investigated which teams have a prominent academy, talent center, or regional center, as well as the geographical locations of the individual entities. In addition to the data from the reports and the TAO amounts, I created variables for the analysis by examining the following for each team:

- Did the team compete in NB I that year? (“NB I”)
- Did the team get promoted to NB I that year? (“Promoted”)
- Did the team get relegated from NB I that year? (“Relegated”)
- What was the team’s final ranking in NB I that year? (“NBI #”)
- Geographically, does the organization operate in the capital, a county-level city, a city, or another municipality? (“Location”)
- Does it have a Prominent Academy, Talent Center, or Regional Center, or none of the above? (“Classification”)

I adapted my other database to test Hypothesis H3; this is a more limited database containing 1,391 records, organized on an availability basis. In Hypothesis H3, I examine the composition of the teams' rosters, their sporting results, their operational frameworks, and the relationships among these factors. From a methodological perspective, this analysis is more limited than the H1-H2 analysis, as the productivity indicator was only available for the three seasons between 2022/23 and 2024/25. Consequently, the conclusions drawn based on H3 can be generalized more narrowly in terms of time and the scope of the organizations examined than the results obtained for H1–H2, which apply to the entire group of NB I clubs examined and a longer period. My database contains data covering 16 teams over 3 seasons, meaning a total of 48 observations in terms of the club-season observation unit. The final dataset included in the analysis consisted of 400 observations (drawn from an even larger database containing 1,793 records), and I coded 10 variables. By “player composition,” I mean the structure of the teams' rosters — that is, how the club's registered players at a given point in time can be categorized according to key criteria, and what the proportions of these categories are. In examining this, I distinguished the following dimensions based on origin:

- Home-grown players, those who have been developed within the club's youth system and have been promoted to the senior squad from there without the payment of a transfer fee.
- Players permanently acquired from another club, i.e., those whose playing rights the club acquires from another club in exchange for a transfer fee.
- Players arriving on loan, whose playing rights are owned by another club, but who play for the club in question for a specified period under a loan agreement, for the host club, typically only the loan fee and salary costs are recorded.
- Free agents whose previous contracts have expired or been terminated by mutual agreement, and who are therefore not under contract with another club and can be signed by the new club without the payment of a transfer fee.

My goal was to identify clusters and analyse their characteristics. My database is based on data from the last three seasons (2022/23, 2023/24, 2024/2025) from the MLSZ database, as well as productivity metrics beyond sports performance, also from the MLSZ database. For my first database, I collected data on 22 teams, while in this case I collected data on 16 teams, and only those that competed in NB I during these three seasons. I was able to conduct the analysis for these last three seasons because the productivity metric was only available for these seasons. I did not assign the data from the financial statements to these seasons, as the 2025 financial statements are not yet available. I did not find two years to be sufficiently representative, so this may be the subject of a future study, where the relationship with the financial statement data can also be examined. I compiled data for each season on the squad sizes of the 16 teams, as well as the proportions of players who were purchased, home-grown, or free agents. I also examined how many players joined each team and how many left during the seasons analysed. In addition to the MLSZ database, I obtained information regarding these roster figures and the status of each player from transfermarkt.com. On transfermarkt.com, I also found the estimated market value of the given team (Market Value). In addition, I looked up the estimated market values of the departing and arriving players. The variables assigned to Hypotheses H1 and H2 are also listed here.

I have also compiled productivity metrics for the 16 teams over the past three seasons into my database. It is important to note that some teams participate in the productivity system at the club group level, so I included a variable in my analysis to indicate whether a given organization is part of a club group. For example, in the case of DVSC, the club group consists of DVSC Futball Szervező Zrt., DVSC LA Létesítményfenntartó Nonprofit Kft., and DVSC Labdarúgó Akadémia Nonprofit Kft. However, this variable did not influence my results, so I did not address it separately.

2.2. Methodology used in the study

I used several statistical methods in the study. These include:

- analysis of variance,

- Spearman's rank correlation,
- boundary analysis,
- cluster analysis,
- statistical distribution.

Analysis of variance can be used to determine whether the mean values of a dependent variable with a high level of measurement differ significantly across groups of one or more independent variables with a low level of measurement. Its application reveals whether there is a significant difference between group means. The calculation is based on comparing the explained (between-group) and unexplained (within-group, residual) variances. Our goal is to explain the variability of the dependent variable. The total variability of a given variable is given by the sum of the squared deviations from the mean. The significance level of the analysis of variance is indicated by the p-value determined by the F-statistic. According to the null hypothesis of the F-test, the group means are equal, meaning that the independent variable(s) have no effect on the dependent variable; in other words, there is no significant relationship between the two (or more) variables. The sum of squares of deviations represents the total variance of the dependent variable. Within this, the sum of squares assigned to the factors indicates what proportion of this total variance can be explained by the effects of the explanatory variables in the model, and this proportion is expressed by the coefficient of determination. The coefficient of determination indicates the extent to which the dependent variable is determined by changes in the independent variable (SZÜCS, 2002). The sum of squared errors, on the other hand, represents the portion of variance attributable to other influencing factors not included in the model, as well as to random fluctuations (BENE, 2024). In my calculations, I primarily performed the multivariate and multifactorial (MANOVA) Pillai test, followed by the two-way ANOVA test for further examination of these factors. The Pillai trace test is one of the most commonly used test statistics in multivariate analysis of variance (MANOVA). It examines whether one or more independent variables significantly influence the joint distribution of multiple dependent variables. In the case of the two-way ANOVA test, we have one dependent and one independent variable, and we examine their relationship. I tested for normality of the

dependent variables using the Shapiro-Wilk test for each group, as well as through visual inspection of Q-Q plots. For several variables, I significantly rejected the assumption of normality; therefore, when examining pairwise relationships, I used the nonparametric Spearman's rank correlation instead of the parametric Pearson correlation. The independence of the observations stems from the logic of data collection. A row represents a club-year/club-season unit, meaning that a given unit appears only once in the database. The study does not assume any dependence between clubs; the sampling is unpaired. During the analysis, I tested the homogeneity of the variance-covariance matrix using the Box M test and checked for multicollinearity using VIF indicators. Since these conditions were not fully met in all cases, I applied Pillai's Trace test for the multivariate analysis, which is considered a robust procedure and provides reliable results even with minor deviations from the conditions.

In a **correlation analysis**, we examine the strength and direction of the relationship between two variables. In this case, we are interested in determining to what extent the two variables move in tandem or in opposite directions. For example, whether higher or lower values of one variable are associated with higher or lower values of the other variable. During correlation analysis, it is also possible to examine the relationship not only between quantitative but also between ordinal variables (BENE, 2024). The correlation coefficient is the most characteristic measure of linear relationships (SZÜCS, 2002). The correlation coefficient measures the linear relationship between variables, indicating the clustering of data points around a straight line (FREEDMAN et al., 2005). My data are not normally distributed, so I used rank correlation analysis. Spearman's rank correlation compares sequences based on the ranking of cases. If one variable moves up in the sequence and the other variable does as well, then there is a positive relationship between the two variables. If their movements are opposite, then the relationship is negative. The rho value can be used for ordinal data, which means that they can be ranked but are not necessarily measurable with precision. In Spearman's rank correlation, the rho value can range from 1 to -1; the closer it is to 1 or -1, the stronger the relationship; a value around 0 indicates a lack of

relationship. In his presentation, Oláh (2021) presents the following interpretations of Spearman's rank correlation, which I also applied in my study:

- 0,00-0,19 "very weak"
- 0,20-0,39 "weak"
- 0,40-0,59 "moderate"
- 0,60-0,79 "strong"
- 0,80-1,00 "very strong"

I used **boundary value analysis** to measure the performance of sports enterprises. Among boundary value analysis methods, we can distinguish between parametric and nonparametric, as well as deterministic and stochastic approaches. Given the economic characteristics of production processes, non-parametric methods offer the greatest flexibility, while stochastic models prove to be more flexible in terms of assumptions regarding data quality (FENYVES, 2014). Data Envelopment Analysis (DEA) is a non-parametric method based on linear programming, developed by Charnes, Cooper, and Rhodes (1978) to measure relative production efficiency. The essence of DEA is that, by simultaneously considering multiple inputs and multiple outputs, it determines how efficiently a given observation unit converts its input resources into output performance and compares this with the performance of the other units in the sample. In traditional DEA models, two basic orientations can be distinguished: the input-oriented model examines how much inputs could be reduced while maintaining a given level of output, while the output-oriented model examines how much outputs could be increased while maintaining a given level of inputs. In addition, we distinguish between models with Variable Returns to Scale (VRS) and Constant Returns to Scale (CRS). Scale efficiency can be calculated precisely as the ratio of the results of these two models: the ratio of CRS efficiency to VRS efficiency indicates the extent to which a firm operates at its optimal scale. The choice of input and output variables used in the DEA model was motivated by my desire to first capture the financial efficiency of the clubs through the relationship between the resources used

(expenses) and the economic results generated (revenue, net income). If scale efficiency is less than 1, it means that the enterprise is not operating at an optimal scale and is characterized by either increasing or decreasing returns to scale (FENYVES, 2014). A value close to 1 is considered efficient.

A maximum of 12 clubs may compete in the NB I division in a single season. This means that the DEA model runs with a lower number of elements compared to certain recommendations, which I consider a methodological limitation. At the same time, this limitation is a systemic characteristic stemming from the structure of the Hungarian NB I, which cannot be eliminated by increasing the sample size. I therefore view the model as a tool for measuring relative efficiency within the NB I field for a given year, and I interpret the results with the appropriate caution.

Cluster analysis is a multivariate, exploratory statistical method designed to classify observation units into homogeneous groups by simultaneously considering multiple variables, such that observations within clusters are as similar to one another as possible, while ensuring the greatest possible divergence between different clusters (EVERITT et al., 2011). When applying cluster analysis, the first step is to select the relevant variables, which should be standardized so that no single variable dominates the distance calculation. The basis for grouping is the measurement of distance or similarity between observations (SZŰCS, 2002). Several criteria are available for determining the optimal number of clusters (SAJTOS-MITEV, 2007). The groups identified as a result of cluster analysis can later be used in further analyses, so cluster analysis is not merely a standalone method but also an important starting point for complex statistical analyses. In cluster analysis, to ensure the direct comparability of variables with different units of measurement and orders of magnitude, I normalized the relevant input variables using min-max scaling between 0 and 1, so that all variables were on the same scale in the clustering. Clustering was therefore performed on standardized data, and I calculated the silhouette index based on these standardized values to determine the optimal number of clusters.

Statistical distributions show how the data under examination is distributed across different value categories. Relative frequency expresses the proportion of occurrences of individual values or value groups relative to the total number of elements, usually in percentage form (HUNYADI-VITA, 2008). An important tool in analysing distributions is cumulative relative frequency, which shows what percentage of the elements are found up to and including a given value. This becomes particularly important when analysing the unevenness of a distribution, as it forms the basis for calculating concentration measures (SZÚCS, 2002). The purpose of a concentration analysis is to determine the extent to which the sum of the values of the examined measure is concentrated among a small number of statistical units. The Lorenz curve is used to graphically represent concentration; it compares the cumulative relative frequency of statistical units with the cumulative proportion of the measure (ÁCS-LACZKÓ, 2008). Quantile distributions are closely related to concentration analyses, as they effectively illustrate the degree of inequality. A quantile distribution refers to a partition of the statistical population in which the statistical units are sorted according to the values of the examined measure and divided into groups of equal size. Quantiles are thus thresholds that divide an ordered data set into equal parts, such as quartiles (division into four equal parts), deciles (division into ten equal parts), and percentiles (division into one hundred equal parts) (SPIEGEL, 1995).

I used expert interviews in the course of the research. The expert interview method is particularly suitable for uncovering practical experiences, decision-making criteria, and background information that do not appear, or appear only partially, in formal documents, as well as for aiding the interpretation and validation of quantitative results. The main criterion for selecting interviewees was that they have comprehensive knowledge of soccer clubs from operational, organizational, and economic perspectives, and that they have direct decision-making responsibility for management and accounting issues related to players. Accordingly, I sought out club executives and financial professionals who:

- hold a leadership position at a top-tier club or one directly affiliated with it,

- deal with player signings and budgeting on a daily basis and are familiar with the clubs' financial reports,
- participate in the development or implementation of the club's youth development strategy.

Club executives and financial experts were very cooperative, both in granting interviews and in sharing documents not officially released to the public; however, at their request, I am ensuring their anonymity regarding both the content of the information they provided and their identities. Anonymity is warranted not only for ethical reasons, but also because the financial and contractual terms related to the players are considered trade secrets. The interviews were conducted in a semi-structured format. I used a pre-prepared set of questions (accounting practices, financing youth development, player policy, cost control, regulatory environment and its limitations), while also allowing room for spontaneous comments and questions. The interviews lasted between 30 and 180 minutes, often split into two parts, which allowed me to revisit questions raised in the previous conversation that required clarification. I present the relevant data regarding the expert interviews in Table 3.

Table 3: Methodology of the expert interviews

Code	Role	Date of interview	Total interview length	Mounting method	Method of analysis
I1	Chief Financial Officer	10.12.2025. 25.01.2026.	180 minutes	transcript	thematic analysis
I2	Head of Department	17.11.2025. 10.12.2025.	100 minutes	transcript	thematic analysis
I3	Head of Department	20.11.2025.	60 minutes	transcript	thematic analysis
I4	Chief Operating Officer	08.12.2025.	30 minutes	transcript	thematic analysis

Source: Compiled by the author, 2026

I used deductive thematic analysis to process the interviews. In line with the research questions, I employed predefined main themes (accounting practices, youth development strategy, player policy, cost control, regulatory policy) and categorized the individual text segments under these themes. I performed this manually, comparing the statements of individual interviewees in a tabular arrangement organized by topic. The main objectives of the thematic analysis were to:

- identify, in practice, what arguments and experiences support or oppose discounted cash flow, market-based, and cost-based valuation,
- shed light on the extent to which club managers consider the balance sheet recognition of home-grown players to be realistic,
- and confirm or qualify the quantitative results (particularly in the case of Hypothesis H4—the preference for the cost-based approach).

I incorporated quotes from the interviews and synthesized findings into the empirical chapters of the dissertation; their primary use was to compare methods for valuing home-grown players (DCF, market-based, cost-based) and to provide a professional foundation for the proposed cost-based model.

3. MAIN FINDINGS OF THE THESIS

In my opinion, the importance of sports' economic role is no longer in question today. We must address current problems, issues, and trends. In the case of soccer players, intellectual capital can be viewed as an opportunity that encompasses the knowledge, experience, game intelligence, and creativity inherent in the player. It becomes a resource when these abilities are actually utilized on the field, both in training and in matches. If a team possesses this intellectual capital in sufficient quantity, composition, and quality (for example, good situational awareness, tactical discipline, and quick decision-making), it represents a clear strength for the team. If, however, this capital is lacking, or if the players and coaching staff do not utilize it properly, it can easily become a weak point in the team's play and a factor limiting performance, both in terms of sports and economics.

Based on the theoretical and empirical analyses presented in my dissertation, it can be concluded that the accounting treatment and financial valuation of football players' registration rights is a complex issue that involves legal regulations, accounting standards, the specific characteristics of sports economics, and the theoretical foundations of human capital valuation. The research revealed that although playing rights are among the most valuable assets of professional football clubs, their accounting treatment faces significant limitations and contradictions within the regulatory frameworks of Hungary, international standards, and UEFA alike. Current practice, in fact, only explicitly allows for the capitalization of player rights that have been acquired, purchased, and have capitalizable costs, while other player rights remain invisible on the balance sheet. While this approach is consistent with the principle of accounting conservatism and the requirement of reliable measurability, it significantly distorts the information content of financial statements and makes it difficult to assess the clubs' actual financial position and value-creating capacity. My research objective was to demonstrate that the failure to disclose rights related to certain players in Hungarian corporate balance sheets provides incomplete information to the company's internal and external stakeholders regarding the value of an asset that drives the entire business.

My objective **(O1)** was to examine the strength of the relationship between the economic and sporting performance of the football clubs operating teams in the National Championship Division I over the past 10 seasons (between 2015/16 and 2024/25). In this context, my **hypothesis H1a** was that there is a relationship between total revenue and how successfully the teams performed in Division I of the National Championship. Teams with higher revenue achieve better standings. To support my hypothesis, I performed multivariate and multivariate analysis of variance as well as Spearman's rank correlation calculations, just as I did for the other sub-points of my H1 hypothesis. The strongest factors influencing revenue trends were participation in NB I and the team's final ranking there, as confirmed by Spearman's correlation. The factor effect of whether a team played in NB I was 36.81%, while that of its final ranking there was 35.73%. Clubs competing in the top division are in a more advantageous revenue position, as the prestige of the league and media attention grant them access to more diversified revenue sources. Central subsidies, television broadcasting rights, and sponsorship are all available on more favorable terms in the first division. For sponsors, these clubs offer a more attractive opportunity to achieve their brand-building goals, as the intensity of media coverage and the size of the audience are significantly higher. More successful teams generate greater audience interest, which is reflected in ticket and season ticket sales as well as in merchandising revenue. As a result, sporting success and financial performance reinforce each other. The correlation coefficient is 0.63 for participation in NB I, while it is -0.67 for final standings. The latter means that the lower a team finishes, the lower its revenue level. ***Based on all this, I accept my H1a hypothesis.***

According to my **H1b hypothesis**, there is a correlation between total expenditures and how successfully teams performed in the NB I league. Teams in the first division have higher total expenditures. These two factors also had the greatest impact on expenditures (participation in NB I: 34.58%, NB I ranking: 32.23%), a finding confirmed by the correlation coefficients (0.63 for participation in NB I and -0.68 for NB I ranking). For clubs setting higher competitive goals, the structure and magnitude of expenditures also differ significantly from those of clubs finishing lower in the standings or being relegated. For a

club to reach the top tier and maintain its position, it needs to sustain a higher level of player roster, which is reflected not only in transfer costs but primarily in the costs of salaries and payroll taxes, as better players expect higher compensation. The costs of operating the sports infrastructure, the professional quality of the coaching staff, the institutional framework for youth development, and the costs of competition also rise proportionally with professional expectations. In addition, marketing activities generate significant costs. Overall, therefore, achieving higher sporting performance necessarily entails higher costs, which means that more successful clubs typically devote greater financial resources to their operations. ***I accept my H1b hypothesis.***

Based on my analyses related to **Hypothesis H1c**, there is a correlation between property rights and how successfully teams performed in the NB I league. Teams with higher property rights perform more successfully. These two factors have the strongest influence on property rights (27.41% for performance in NB I, NB I ranking 48.43%), a finding also confirmed by the correlation analysis. In this case, the Spearman's rho correlation coefficient indicated a weaker relationship compared to previous findings, with the highest value (-0.486) observed for NB I ranking. The significant relationship demonstrated between the size of the portfolio of rights with monetary value and sporting success confirms the assumption that investments in player rights directly contribute to the club's competitiveness and performance. Clubs with higher book value player rights typically achieve better league standings. Based on the analysis of variance, it can be concluded that the ranking achieved in NB I has the greatest impact on the portfolio of player rights. Correlation analyses also support this relationship, confirming that sporting objectives and investments in player rights are closely linked in top-tier Hungarian football. ***I accept my H1c hypothesis.***

My **hypothesis H1d** posits that there is a correlation between taxable income and how successfully teams performed in the NB I league. Those with higher taxable income perform better in the standings. The analysis of the relationship between taxable income and athletic performance reveals a contradictory picture, which sheds light on the unique financial logic of football clubs. The ranking achieved in NB I has the greatest impact (72%) on after-tax

profit, although the correlation is very weak at -0.242, suggesting that clubs achieving better rankings do not necessarily achieve higher after-tax profits; in fact, they often achieve lower ones. This apparent contradiction stems from the fact that clubs with high sporting ambitions are willing to accept lower profitability, or even losses, in the short term in order to achieve their goals, as building the squad necessary for better league performance and ensuring the right operating conditions require significant expenditures. All of this highlights that in professional football, financial performance and on-field success do not necessarily go hand in hand, and clubs often consciously prioritize achieving sporting goals over short-term profitability. Based on the results obtained, ***I do not accept my H1d hypothesis.***

According to my **hypothesis H1e**, there is a relationship between support for spectacular team sports and how successfully teams performed in the NB I league. Teams that receive higher TAO support perform more successfully. ***I do not accept this hypothesis (H1e).*** Based on the results of the analysis of variance, the factors with the greatest influence are participation in NB I (46.59%) and region (36.37%). The correlation coefficients for these are 0.32 and -0.23, respectively. The examination of the presumed relationship between support for spectacular team sports and sporting success led to a surprising result, which refutes the common assumption that clubs receiving higher TAO support necessarily deliver better sporting performance. According to the analysis of variance, the amount of TAO funding is primarily explained by participation in NB I, accounting for nearly 50 percent of the variation, which is natural, given that top-tier clubs are structurally entitled to greater funding. The club's geographic location also has a significant explanatory power of 36%, suggesting that status as a capital city, county-level city, city or municipality influences the availability and amount of funding, presumably due to differences in the local economic environment, corporate base, and supporter base. However, correlation analyses show only a weak relationship, and a negative correlation is observed for the territorial variable, indicating that clubs operating in smaller settlements may receive proportionally less support. All of this suggests that while TAO funding is an important source of revenue, its amount does not directly determine sporting success, as the efficiency of funding utilization,

the strategic decisions of club management, and local conditions are at least as decisive as the size of the funding itself.

My objective (**O2**) was to examine the economic efficiency of the soccer clubs in my database over the past nine years (2016–2024), as well as their relationship with sports performance and the operational framework. My analysis related to **Hypothesis H2a** focused on evaluating the performance of football clubs using boundary analysis, which I examined using the Data Envelopment Analysis (DEA) method (Table 4), while to test Hypothesis H2b, I again used multivariate and multivariate analysis of variance and Spearman's rank correlation (Table 5). My Hypothesis H2a posits that enterprises achieving higher rankings in NB I operate more economically efficiently compared to smaller, less competitive football enterprises. I do not accept this hypothesis (H2a) because my results show that smaller teams, which are at the bottom of the table or have just been relegated from the NB I league, operate more efficiently than top-tier teams. The least efficient organizations during the period under review were FTC Labdarúgó Zrt, which won the most league titles, and Honvéd Futball Club Kft. The average SE (scale efficiency) value for teams competing in NB I is 0.937, while for those not competing it is 0.945. ***Thus, I reject my H2a hypothesis.*** The results also show that clubs operating in the capital or in cities with county-level status are less economically efficient. The more ambitious, top-tier clubs consciously accept higher costs and the lower efficiency that comes with them, as their primary goal is not economic optimization but maximizing sporting success. In contrast, smaller clubs with more modest resources incorporate stricter cost controls into their operations and strive for more efficient management, as maintaining operations and preserving financial stability are their primary concerns. The impact of geographic location on efficiency can also be attributed to several factors. Clubs operating in the capital and county-level cities typically face higher operating costs, such as higher rent, greater infrastructure costs, and more expensive labor, which in itself reduces their efficiency. At the same time, these clubs often have greater revenue potential. In contrast, clubs operating in smaller towns have more limited revenue opportunities, forcing them to minimize costs and use resources more efficiently.

Table 4: Annual scale efficiency indicators (2016–2024)

Name of Club	2016	2017	2018	2019	2020	2021	2022	2023	2024	Average
BALMAZÚJVÁROS	1,00	0,82	1,00	0,73	0,81	1,00	0,79	0,80	1,00	0,88
BÉKÉSCSABA	1,00	1,00	0,98	0,89	0,88	0,91	0,73	0,97	1,00	0,93
BUDAFOKI MTE	n.a.	0,96	1,00	1,00	1,00	1,00	0,68	1,00	1,00	0,95
DIÓSGYÖR	1,00	0,92	0,79	0,99	0,97	0,99	1,00	1,00	0,96	0,96
DVSC	1,00	1,00	1,00	0,95	0,96	0,79	0,79	0,95	0,96	0,93
ETO	0,81	1,00	0,99	1,00	1,00	0,77	0,89	0,98	0,86	0,92
VIDEOTON	0,75	0,93	1,00	1,00	1,00	0,93	0,86	0,86	0,93	0,92
FTC	0,77	0,83	0,98	0,92	0,94	0,79	0,84	0,62	0,73	0,82
GYIRMÓT	1,00	0,98	0,85	0,96	0,88	1,00	0,98	0,95	1,00	0,96
HONVÉD	1,00	0,89	0,88	0,70	0,66	0,74	0,81	1,00	0,99	0,85
KAPOSVÁR	0,98	1,00	1,00	1,00	0,83	0,47	1,00	1,00	n.a.	0,91
KTE	1,00	1,00	0,88	0,82	0,75	0,79	0,87	1,00	1,00	0,90
MEZŐKÖVESD	1,00	1,00	1,00	0,97	0,93	0,98	0,98	0,98	1,00	0,98
MTK	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
NYÍREGYHÁZA	1,00	0,99	0,99	1,00	1,00	1,00	1,00	1,00	1,00	1,00
PAKS	1,00	0,98	0,96	1,00	0,91	0,90	1,00	1,00	1,00	0,97
PUSKÁS	1,00	0,95	1,00	0,99	0,99	0,86	0,93	1,00	0,94	0,96
HALADÁS	1,00	0,88	0,88	1,00	0,94	0,92	0,98	0,92	n.a.	0,94
ÚJPEST	0,86	0,96	0,99	0,93	0,99	0,84	1,00	0,97	0,98	0,95
KISVÁRDA	0,98	1,00	0,93	1,00	1,00	1,00	1,00	1,00	1,00	0,99
VASAS	1,00	0,95	0,99	0,96	0,95	0,96	1,00	1,00	0,92	0,97
ZTE	0,99	0,99	1,00	0,99	0,94	0,97	1,00	0,98	0,99	0,98
Average	0,96	0,96	0,96	0,95	0,92	0,89	0,92	0,95	0,96	0,94

Source: Compiled by the author, 2026

In **Hypothesis H2b**, I posited that economic efficiency is closely linked to sporting performance and the organizational framework. More economically efficient organizations perform better in terms of sporting performance. However, ***the empirical results clearly refute this assumption (H2b)*** and highlight that there is no significant statistical correlation between the two performance dimensions. Although the analysis of variance shows that nearly 40 percent of the variance in efficiency indicators is explained by the team's ranking in NB I, and an additional 30 percent by the fact of relegation, the extremely low, practically near-zero values of the correlation coefficients indicate that these relationships do not reflect a linear connection. The values of the correlation coefficients are presented in Table 5.

Table 5: Correlation coefficients for efficiency, sports performance, and the operational framework

	Efficiency	Size efficiency	Year	NB I	Relegated	Promoted	First Division position	Area	Academy classification
Efficiency	1,00	0,05	-0,05	-0,09	-0,12	-0,03	-0,01	0,09	0,03
Size efficiency	0,05	1,00	0,09	-0,10	0,12	0,13	0,22	0,15	0,07
Year	-0,05	0,09	1,00	0,01	0,00	0,01	-0,01	-0,01	0,42
NB I	-0,09	-0,10	0,01	1,00	-0,35	0,28	-0,72	0,06	0,13
Relegated	-0,12	0,12	0,00	-0,35	1,00	-0,10	0,16	-0,05	-0,05
Promoted	-0,03	0,13	0,01	0,28	-0,10	1,00	0,27	0,00	-0,07
First Division position	-0,01	0,22	-0,01	-0,72	0,16	0,27	1,00	-0,01	-0,11
Area	0,09	0,15	-0,01	0,06	-0,05	0,00	-0,01	1,00	0,16
Academy classification	0,03	0,07	0,42	0,13	-0,05	-0,07	-0,11	0,16	1,00

Source: Compiled by the author, 2026

Another objective **(O3)** was to examine the strength of the relationship between the player roster and sporting performance of the football clubs operating teams in the NB I division over the last three seasons (2022/23, 2023/24, 2024/25). My goal was also to analyze the economic and sports-related data characteristic of clusters formed based on player composition. For these analyses, I used multivariate and multivariate analysis of variance, Spearman's rank correlation, and cluster analysis. Table 6 presents the correlation coefficient values I obtained during the study.

Table 6: Correlation coefficients for player composition

	Homegrown	On loan	Free transfer	Transfer fee paid	Productivity ranking	NB I	Elite academy	Relegated	Promoted	NB I position
Homegrown	1,00	-0,38	-0,49	0,15	-0,59	-0,36	0,50	-0,13	0,17	0,23
On loan	-0,38	1,00	0,04	-0,33	0,05	-0,08	0,21	0,16	0,14	0,10
Free transfer	-0,49	0,04	1,00	-0,57	0,66	-0,05	-0,38	0,13	-0,05	0,26
Transfer fee paid	0,15	-0,33	-0,57	1,00	-0,21	0,40	-0,03	0,05	-0,34	-0,47
Productivity ranking	-0,59	0,05	0,66	-0,21	1,00	0,27	-0,57	0,08	-0,16	0,03
NB I	-0,36	-0,08	-0,05	0,40	0,27	1,00	-0,21	0,23	-0,49	-0,69
Elite academy	0,50	0,21	-0,38	-0,03	-0,57	-0,21	1,00	-0,16	0,23	-0,05
Relegated	-0,13	0,16	0,13	0,05	0,08	0,23	-0,16	1,00	-0,11	0,25
Promoted	0,17	0,14	-0,05	-0,34	-0,16	-0,49	0,23	-0,11	1,00	0,40
NB I position	0,23	0,10	0,26	-0,47	0,03	-0,69	-0,05	0,25	0,40	1,00

Source: Compiled by the author, 2026

My **hypothesis H3a** was that there is a significant relationship between player composition and sporting performance. I then sought to demonstrate (**H3b**) that teams perform better in the NB I league when the proportion of purchased players is higher. ***I accept my hypotheses H3a and H3b.*** The correlation coefficient values are presented in Table 6. The relationship between player roster composition and sporting performance is one of the most important empirical findings of this dissertation, confirming the assumption that clubs' transfer strategies directly influence their league performance. Both the analysis of variance and the correlation analyses confirmed that a significant relationship exists between player composition and sporting performance. The results clearly demonstrate that clubs with a higher proportion of purchased players in their rosters achieve significantly better league standings than those that rely primarily on home-grown, free-agent, or loaned players. A moderate positive correlation can be observed between the proportion of purchased players and performance in NB I (0.4), while I found a moderate negative correlation with the team's final ranking in NB I (-0.47), which means that the higher the proportion of purchased players, the better the team's final ranking. This relationship makes logical sense, as clubs active in the transfer market typically acquire players who are already playing at higher levels, as opposed to young, still-developing home-grown players or loan players who provide a short-term solution. The proportion of home-grown players, on the other hand, shows a different pattern. The strongest correlation was between the productivity ranking (-0.59) and clubs with prominent academies (0.5). The latter is natural, as these clubs consciously invest in youth development, and their strategy includes nurturing their own players and integrating them into the senior squad. The very weak correlation values observed for loaned players suggest that this method of acquiring players shows no consistent correlation with either sporting results or the operational framework.

According to my **H3c hypothesis**, the scale efficiency indicators of firms grouped into clusters based on player composition differ significantly from one another. The results suggest that the structure of player acquisition alone does not determine a club's economic

efficiency or the development of its scale efficiency. This confirms the earlier finding that there is no clear, direct relationship between economic efficiency and player roster strategy in top-tier Hungarian soccer. ***I reject my H3c hypothesis.***

I also conducted a concentration analysis of property rights for the past three fiscal years, from 2022 to 2024. I found that the value of property rights was highly concentrated in each of those years.

My objective **(O4)** was also to examine whether the omission of certain players from the balance sheet, which is to be prepared as part of the financial statements, accurately reflects the company's assets. I wanted to demonstrate the extent to which the omission of home-grown players from the balance sheet distorts the presentation of the company's actual financial position, and what valuation methods can be applied to account for this specific form of human capital. According to the formulated hypothesis **(Hypothesis H4)**, the cost-based approach is the only appropriate method for measuring the value of home-grown players, and including these players on the balance sheet would be essential to ensuring the reliability and accuracy of the financial statements. Based on empirical studies and in-depth interviews with professional managers, ***I accepted this hypothesis (H4).***

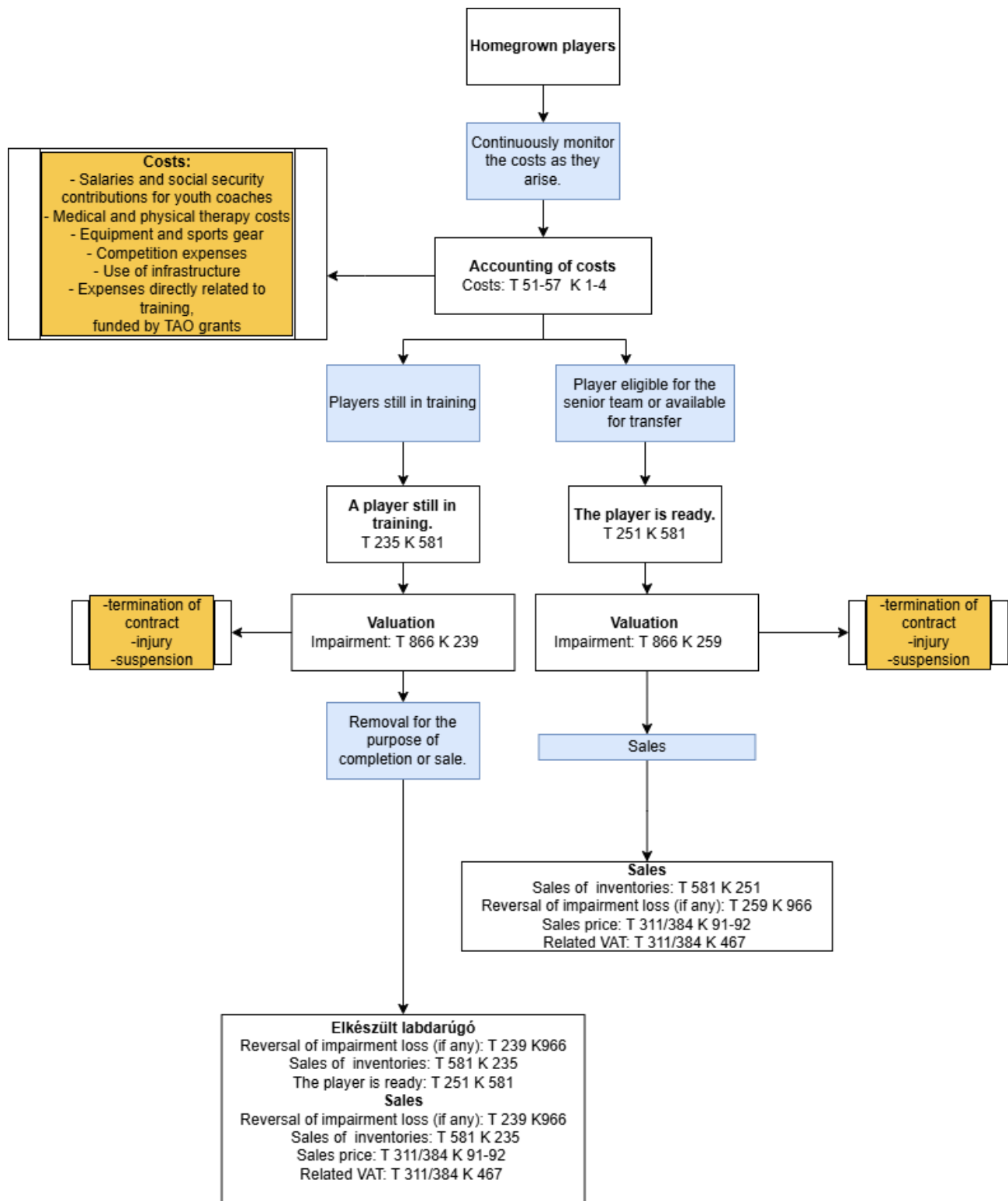


Figure 1: Possible accounting treatments for home-grown players

Source: Compiled by the author, 2026

I have developed a standardized accounting model for recognizing home-grown players who are not currently reflected on the balance sheet (Figure 1). Interviews with club executives and financial experts (I1–I4), as well as the results of concentration analyses, clearly indicated that the discounted cash flow model and market comparison-based valuation used in international practice cannot be applied with sufficient reliability in the operating environment of Hungarian football clubs. In contrast, cost-based valuation – built on documentable and verifiable youth development and training costs – offers a realistic alternative for determining the value of home-grown players. The approach I propose adapts the cost accounting and inventory valuation logic of manufacturing enterprises: it treats players in training as work in progress, and home-grown players who have been signed and promoted to the first team as finished goods produced in-house. The acquisition cost attributable to a player is determined by the total of individually identifiable, direct expenses incurred during training (coaching, infrastructure use, competition fees, equipment, etc.), which can later serve as the basis for planned depreciation. Although this method does not reflect the player’s current market value, it makes the club’s resources invested in player development visible, reduces the amount of hidden assets, and substantially increases the informational content of financial statements.

Another research objective is to examine the accounting treatment of revaluing player rights to their market value, given that UEFA regulations do not permit this. Additionally, I will analyse the effects of the “five-Hungarian” rule, which takes effect starting with the 2025/2026 season, under this rule, NB I clubs must have at least five Hungarian players on the field at all times during every league match, at least one of whom must be a U21 player (born after 1 January, 2005).

Overall, it can be concluded that, based on the results, better sporting performance in NB I is associated with higher revenues, greater expenditures, and a higher book value of player rights; however, it does not necessarily go hand in hand with better after-tax profits or economic efficiency. DEA analyses showed that top-tier clubs that are successful on the field typically operate less efficiently, while smaller teams achieve more efficient

management through stricter cost control. An analysis of player composition confirmed that clubs relying on a higher proportion of purchased players achieve better league standings, while a model built on home-grown players is more closely linked to youth development strategies and productivity. Regarding the accounting treatment of player rights, it can be concluded that current regulations distort the information content of financial statements, as the value of certain players does not appear on the balance sheet. Based on professional interviews, cost-based valuation is the only method that can realistically be applied in these cases. The research also highlighted that the prohibition on market value adjustments under UEFA regulations currently poses a significant barrier to reflecting the true economic value of player rights on the balance sheet and, at the same time, identifies an important direction for future research.

4. NEW OR NOVEL RESULTS OF THE THESIS

The aim of this doctoral dissertation is to clarify accounting and financial issues related to football players, thereby promoting the presentation of a true and fair view in financial statements. During the research, by taking into account the legal, regulatory, and other regulatory environments related to playing rights, domestic and international literature, as well as the results of my empirical studies, I identified the following new or novel findings:

(1) I consider it a novel finding that, based on my empirical analyses, I have demonstrated a significant correlation between the economic data of football enterprises and their sporting performance. Clubs that generate higher revenue – which is accompanied by higher costs – are, overall, more successful in sporting terms. Teams with higher-valued intellectual property rights also achieve better rankings; however, higher after-tax profits do not correlate with better rankings. At the same time, the level of support for spectacular team sports does not have a significant impact on the development of sporting performance.

(2) I consider the result obtained during the efficiency analysis (cost-benefit analysis) of football enterprises to be a new finding, according to which clubs that perform less well in terms of sports performance in NB I typically operate more efficiently in financial and economic terms. In other words, a better sports performance ranking does not necessarily go hand in hand with a more efficient use of available resources.

(3) I consider it a new finding that there is no statistically significant correlation between economic efficiency indicators and sporting performance in the sample examined. Efficiently managed clubs do not necessarily achieve outstanding league results, and conversely, sports-wise successful clubs are not necessarily the most efficient managers.

(4) I consider my conclusions drawn from the analysis of player composition to be a new finding, namely that the structure of the player roster significantly influences sports performance. I have demonstrated that clubs with a higher proportion of purchased playing rights within their player roster are, overall, more successful in terms of sports performance than those that rely primarily on home-grown, free agents, or loaned players.

(5) I consider it a novel finding that, based on the results of the cluster analysis, I determined that the clubs' scale efficiency indicators cannot be meaningfully differentiated based on player composition. In other words, the structure of the player roster does not explain the differences observed in scale efficiency.

(6) I consider it a new finding that I have systematized the various cases of player rights and their accounting treatment, and on this basis, I have developed a system of flowcharts illustrating a unified decision-making logic; and that, relying on the flowcharts and my empirical findings, I have proposed an accounting solution applicable within the framework of current regulations that makes the value inherent in home-grown players more visible to users of the financial statements.

5. PRACTICAL USE OF THE RESULTS

The findings of this research can be directly applied in several distinct professional fields: in decision-making by football club owners and management, in professional roles (such as sports directors and coaches), in accounting and financial practices, and by policymakers shaping sports policy in the development of the legal framework.

The practical utility of the relationship between economic data and sports performance: Based on the findings of my analysis, I have demonstrated that higher revenue and the associated higher cost levels are generally associated with better sports performance. This underscores the critical role of revenue-generating strategies. Investment in financial assets (player acquisitions) proved to be a key factor from a sports performance perspective, while high net income alone does not guarantee a better league ranking. This helps clubs formulate financial management goals aligned with long-term sports performance rather than profit maximization. The fact that the volume of support for spectacular team sports has no significant impact on sporting results may also encourage a review of support policies and club strategies, highlighting the fact that it is not the amount of support but how it is used that is decisive.

The practical applicability of the efficiency analysis results: The boundary analysis revealed that clubs performing less well in the league often operate with more efficient resource utilization. This can be applied in benchmarking practices, as clubs can choose not only successful competitors but also efficient ones – even if they are less successful in sporting terms – as models. For owners and management, this indicates that sporting and economic goals must be evaluated separately, and a KPI system must be developed that takes into account not only league standings but also the ratio of results.

Consequences of the lack of a link between financial efficiency and sporting success: The absence of a statistically verifiable correlation helps decision-makers evaluate club performance more realistically. Good financial efficiency does not automatically translate to a top league position, and vice versa. This may provide grounds for rethinking expectations, incentive systems, bonus structures, and performance-based contracts. It also

helps investors and lenders assess risks, as they can see that economic rationality and on-field success are two separate matters.

Conclusions regarding the sporting significance of player composition: The findings regarding squad structure can be directly applied to decision-making and squad planning by sports directors. I have demonstrated that a player roster built on a higher proportion of purchased playing rights is generally associated with better sports performance than models relying primarily on home-grown, free agents, or loaned players. This helps clubs strike a balance between youth development and investments in the player market and make rational decisions regarding the appropriate allocation of resources between the academy and player acquisitions.

Results of the relationship between economies of scale and player composition: According to the results of the cluster analysis, there is no significant differentiation in clubs' economies of scale based on player composition. For management, this indicates that the main areas for improving scale efficiency lie in organizational structure, internal operational processes, infrastructure utilization, and revenue-generating capacity, rather than primarily in modifying the player roster.

Applicability of the flowcharts and recommendations developed for the accounting treatment of player rights: The detailed accounting flowcharts prepared for various scenarios involving player rights provide direct methodological guidance for clubs' accounting and financial reporting practices. They enable the establishment of uniform procedures, which increases the comparability and transparency of financial statements in both the domestic and international markets. My proposal for reporting the value of "invisible" players, even within the current regulatory framework, helps clubs ensure their financial statements provide a more accurate and reliable overall picture. This not only provides investors and owners with a better basis for decision-making but can also serve as a starting point for legislators and professional organizations to further develop sport-specific accounting regulations.

In summary, my research helps make the management, sports strategy, and accounting practices of football clubs more informed and coordinated. The goal is for financial statements to provide a truly reliable and complete picture of a football club's operations.

6. BIBLIOGRAPHY

Ács P. – Laczkó T. (2008): Területi különbségek a hazai egészségturizmus kínálatában. Területi Statisztika, 48 (3). : 344-356.

Bene M. (2024): Adatelemzés R-ben. Typotex Kiadó (ISBN: 978-963-493-288-8)

Cooper, J. O. – Heron, T. E. – Heward, W. L. (2007): Applied Behavior Analysis in Residential Settings: Use of a Mobile Application to Support Parental Engagement in At-Home Educational Activities Elérhető: <https://www.scribd.com/document/490095700/Cooper-et-al-2007> (letöltve: 2025.08.10.)

Kokolakakis, T. – Kleissner, A. (2025): EU Sport Satellite Account: Research into estimating the economic value of sport in the EU. Elérhető: <https://ec.europa.eu/eurostat/documents/3888793/22121382/KS-01-25-041-EN-N.pdf/c8266460-9f1a-affd-f288-d2669de405d2?version=1.0&t=1756987715084> (letöltve: 2025.12.05.)

Everitt, B. S. – Landau, S. – Leese, M. – Stahl, D. (2011): An Introduction to Classification and Clustering. Elérhető: https://www.researchgate.net/publication/285381578_An_Introduction_to_Classification_and_Clustering (letöltve: 2025.08.10.)

Fenyves V. (2014): Vállalati teljesítményértékelés pénzügyi mutatók és a DEA felhasználásával. szám 40 (2014): Acta Scientiarum Socialium: 135-147.

Freedman, D. – Pisani, R. – Purves, R. (2005): Statisztika. Typotex Kiadó (ISBN: 963-954-863-4)

MLSZ (2025h): Klublicenc Szabályzat 2025/26 Elérhető: https://dokumentumtar.mlsz.hu/file/dokumentumtar/4299/file/klublicenc-szabalyzat_2025-26.pdf (letöltve: 2025.12.10.)

Oláh S. (2021): Rangkorreláció előadás sorozat. ELTE Elérhető: <https%3A%2F%2Fzemleni.elte.hu%2Frangkor.pdf&tabId=1505102543&cLen=748196&chunk=true> (letöltve: 2025.06.04.)

Sajtos L. – Mitev A. (2007): SPSS Kutatási és adatelemzési kézikönyv. Alinea Kiadó (ISBN: 978-963-9659-08-7)

Spiegel, M. R. (1995): Statisztika elmélet és gyakorlat. Panem Kft. (ISBN: 963-545-029)

Szűcs I. (2002): Alkalmazott statisztika. AGROINFORM Kiadó és Nyomdai Kft (ISBN: 963-502-761-6)

7. PUBLICATIONS RELATED TO THE THESIS THEME (in the case of a public debate, a certified list of publications)



Nyilvántartási szám: DEENK/212/2026.PL
Tárgy: PhD Publikációs Lista

Jelölt: Szabóné Szőke Réka

Doktori Iskola: Gazdálkodás- és Szervezéstudományok Doktori Iskola

MTMT azonosító: 10051770

A PhD értekezés alapjául szolgáló közlemények

Folyóiratcikkek, tanulmányok (8)

1. Szabóné Szőke, R., Bács, Z.: Sportsiker vagy pénzügyi stabilitás? Játékostranszfer-stratégiák a magyar labdarúgásban.
Jelenkori Társadalmi és Gazdasági Folyamatok. 21 (1), 139-152, 2026. ISSN: 1788-7593.
DOI: <http://dx.doi.org/10.14232/jtgf.2026.1.139-152>
2. Szabóné Szőke, R.: "Látni a láthatatlant? Mért a mérhetetlent?": avagy a humán erőforrás számviteli és pénzügyi kérdései.
Controller Info. 1K, 283-292, 2017. ISSN: 2063-9309.
3. Szabóné Szőke, R.: Játékosjogok nyilvántartása a számvitelben és kapcsolódó menedzsment kérdések.
Taylor: Gazdálkodás- és szervezéstudományi folyóirat. 28, 68-74, 2017. ISSN: 2064-4361.
4. Herczeg, A., Szabóné Szőke, R.: Adózási specialitások Magyarországon a sportszervezetek versenyképessége tükrében.
Taylor: Gazdálkodás- és szervezéstudományi folyóirat. 8 (4), 45-53, 2016. ISSN: 2064-4361.
5. Bács, Z., Szabóné Szőke, R.: Egy vállalkozás magyar, nemzetközi és UEFA szerinti beszámolójának összehasonlítása, különös tekintettel a játékosjogokra versus sportcontrolling.
Controller Info. 3 (2), 2-7, 2015. ISSN: 2063-9309.
6. Szabóné Szőke, R., Bács, Z., Dékán Tamásné, O. I., Dékán, T.: Information content of a sports undertaking's statements serving different purposes: particularly with reference to the player rights.
Apstract. 9 (1-2), 119-133, 2015. ISSN: 1789-221X.
DOI: <http://dx.doi.org/10.19041/APSTRACT/2015/1-2/21>
7. Becsky-Nagy, P., Dékán, T., Szabóné Szőke, R., Bács, Z.: The relevance of sports financing.
Apstract. 9 (1-2), 19-22, 2015. ISSN: 1789-221X.
8. Szabóné Szőke, R., Kondorosi, F.: A társasági adókedvezmény sporttámogatási rendszere, vezetői döntést támogató információk.
Controller Info. 2 (2), 2-5, 2014. ISSN: 2063-9309.





Konferenciaközlemények (1)

9. Szabóné Szőke, R., Dékán, T.: Presentation of sporting player's rights in Hungarian and International accounting.
Analele Universitatii din Oradea : Stiinte Economice = Annals of University of Oradea. Economic science. 24, 959-967, 2015. ISSN: 1222-569X.

További közlemények

Folyóiratcikkek, tanulmányok (4)

10. Bartha, É. J., Pfau, C., Szabóné Szőke, R., Müller, A. É., Bácsné Bába, É.: A csoportos órát tartó fitneszedzők képzettségének vizsgálata debreceni fitneszklubokban.
Régiókutatás Szemle. 6 (2), 15-22, 2021. ISSN: 2559-9941.
DOI: <http://dx.doi.org/10.30716/RSZ/21/2/2>
11. Pfau, C., Bartha, É. J., Bácsné Bába, É., Szabóné Szőke, R., Müller, A. É.: Debreceni csoportos órát tartó fitnesz termék szolgáltatás kínálatának felmérése.
International Journal of Engineering and Management Sciences. 6 (2), 35-48, 2021. EISSN: 2498-700X.
DOI: <http://dx.doi.org/10.21791/IJEMS.2021.2.4>
12. Szabóné Szőke, R., Pfau, C., Bartha, É. J., Müller, A. É., Bácsné Bába, É.: A debreceni top 9 fitnesz szolgáltató vállalkozás gazdasági elemzése.
Economica. 11 (3-4), 26-36, 2020. ISSN: 1585-6216.
DOI: <http://dx.doi.org/10.47282/economica/2020/11/3-4/8707>
13. Fenyves, V., Bácsné Bába, É., Szabóné Szőke, R., Kocsis, I., Juhász, C., Máté, E., Pusztai, G.: Kísérlet a lemorzsolódás mértékének és okainak megragadására a Debreceni Egyetem Gazdaságtudományi Kar példáján.
Neveléstudomány. 5 (3), 5-14, 2017. ISSN: 2063-9546.
DOI: <http://dx.doi.org/10.21549/NTNY.19.2017.3.1>

A DEENK a Jelölt által a Tudóstérbe feltöltött adatok bibliográfiai és tudománymetriai ellenőrzését a tudományos adatbázisok és a Journal Citation Reports Impact Factor lista alapján elvégezte.

Debrecen, 2026.04.22.

