Human Capital Accounting and Market Valuation of Football Players: Assessing the Role of Performance Metrics and Intangible Assets on Financial Reporting and Club Value

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Article

Human Capital Accounting and Market Valuation of Football Players: Assessing the Role of Performance Metrics and Intangible Assets on Financial Reporting and Club Value

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Abstract

This research applies the principles of human resource accounting (HRA) and intangible asset valuation frameworks under IAS 38/IFRS to examine the relationship between the quality of player performance metrics, human capital metrics, and the quality of their financial reporting on the market valuation of football players and the financial performance of the leading football clubs in Europe. Based on a dual-level database, composed by 20 leading European clubs (club-level) and by 120 players (player-level) in the season 2023/24, the study constructs a performance-adjusted valuation model for estimating the interconnection between on-field statistics (goals, assists, expected goals, defensive actions, and performance indices imposed on a composite measure) and accounting or financial number (transfer fees, amortization charges, intangible asset values, book values) and financial results (ROA, club market valuation). The Outcome of multiple OLS Regression Models using Robust Standard Errors shows that Performance Index is the most important predictor of player market value (max 0.497, $p < 0.01$) whereas club revenue is the most important predictor of club market valuation (max 0.009, $p < 0.01$, $R2 = 0.879$). The market to book ratio analysis shows systematic difference between economic value and accounting book value based on player age, duration of contract signed, and performance indicators (Adj. $R^2 = 0.363$). The Moderated regression shows existence of positive moderating relationship between IFRS compliance and Big4 audit quality with on-field performance and financial outcomes. The findings add to the intersection of sports finance, accounting and human capital theory, stressing the inadequacy of current IAS 38 provisions in capturing the true economic value of football players as human capital assets.

Keywords: human capital accounting; intangible assets; IAS 38; IFRS; football player valuation; market value; performance metrics; financial reporting quality; transfer fees; amortization

JEL Classification: M41; G12; Z23; J24

1. Introduction

The football industry has become one of the most financially valuable industries in the world of sport, with the top 20 revenue generating clubs collecting a record breaking $11.2 billion in the 2023/4 season (Deloitte, 2025). In such an environment, football players are the most valuable assets in the possession of clubs, but their accounting treatment under current international standards is still a matter of academic debates and practical concerns. Under the accounting standard IAS 38 (Intangible Assets), the rights of the players, registered through transfer fees, are recognized in the balance sheet as intangible assets, which are subject to systematic amortization during the contract period and periodic impairment tests according to IAS 36. However, this framework does not take into account

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the full economic value of players, especially players that are developed in club academies, players that cannot be capitalized in light of current standards.

The difference between the book values in accounting and the valuations of football players by the market has grown a great deal. For example, Real Madrid in the football sector, became the first football team to exceed $1 billion in the annual revenue of the 2023/24 season, where the value of this team is estimated at around $1.33 billion for the transfer market, and far exceeds the intangible assets mentioned in its financial statements. This discrepancy leads to asymmetric information between stakeholders (investors, regulators, creditors, fans), and undermines the decision usefulness of financial reporting in the sports industry.

One theoretical basis of human capital measurement, which is that of an economic value, is Human Resource Accounting (HRA), firstly devised by Flamholtz (1971) and Likert (1967). Using HRA principles to football, players are to be appreciated not only at historic cost (transfer fees) but by models which take into account performance indicators, future contribution prospects as well as synergistic value of players to organizational (club) results. Nevertheless, there is no single model that, at the present, quantitatively correlates on-field performance, accounting of intangible assets, and club financial performance on the basis of a single analysis.

This paper fills this gap by creating and empirically testing a performance-adjusted performance valuation model that incorporates three important dimensions (1) player performance indicators as measures of human capital quality, (2) accounting indicators of intangible assets, as measures of financial reporting practices, and (3) club-level financial performance as the end outcome of value creation. The study uses real-life information on the 2023/24 season on the top 5 European leagues and uses multiple regression methodologies to test the hypothesized relationships.

This paper has three-fold contributions. First, it fills the gap in the sports economics and accounting literature by offering a quantitative framework of performance to financial reporting and valuation. Second, it gives empirical data on the extent and predictors of the so-called intangible gap between market values and book values of football players, which will inform the current discussions on the sufficiency of IAS 38 in the sports environment. Third, it investigates through the moderating effect of the financial reporting quality, in terms of the IFRS compliance scores and Big4 audit engagement, the relationship between on-field performance and club valuation.

2. Literature Review

2.1. Human Resource Accounting and Football

Human Resource Accounting (HRA) is a relatively new field of accounting that developed during the 1960s after a growing interest in the idea that employees constituted important organizational resources that were not reflected in traditional financial accounting (Flamholtz, 1971; Brummet et al., 1968). HRA contains techniques of quantifying the cost as well as the worth of human resources such as the historical cost models, replacement cost models and present value of future earnings (Flamholtz et al., 2002). The football case is special because players are distinct in that they are bought and sold in a market in a manner that can be easily measured (transfer fees) thus football players are more susceptible to financial quantification than human capital in most other companies.

Some researchers have used the HRA ideas with regards to professional sports. Amir and Livne (2005) have shown that the player registration costs are value-relevant information that can be used in addition to conventional accounting measures. Rowbottom (2002) studied the amortization policy of English football clubs and discovered that there is a wide variation in the useful life of the player contracts. More recently, Oprean and Oprisor (2014) emphasized the shortcomings of IAS 38 to capture the actual human capital value of football players by stating that transfer values are skewed by information asymmetries, agency fees and negotiation dynamics.

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2.2. Intangible Asset Accounting Under IAS 38/IFRS

According to IAS 38, intangible assets need to be recognized when they are identifiable, under the controlled of the entity and are likely to give future economic benefits. The rights of player registration meet the following requirements: they can be separated (by transfer or loan), the club can control them (by employing under a contractual agreement) and create economic benefits in the future (in the form of playing matches, obtaining prizes, and broadcasting earnings). On acquisition, player registration rights are valued at cost, which includes the transfer fee, agent fees, and costs which can directly be related to the contract term (UEFA, 2018; IASB, 2012).

The standard does not permit an upward revaluation of intangible assets, even when there is evidence in the market that it is of much greater value, and, more importantly, it does not permit the capitalization of internally generated human capital, including academy-developed players. This gives an inherent asymmetry whereby a player purchased by a rival club costs a certain amount of Euros (say 100m) and is listed on the balance sheet whereas an academy player of the same value is not. According to Gazzola and Amelio (2016) and Maglio and Rey (2017), this treatment causes the information asymmetries and lowers the comparability and decision utility of the club financial statements.

2.3. Player Performance and Market Valuation

There is an increasing number of studies into the factors determining the market value of football players. Among various studies, Franceschi et al. (2023) found age, goals scored, assists, and the number of minutes played and international appearances as the most predictable. Valuation models have been given explanatory power by the introduction of composite performance indices, as in those created by FotMob and other such websites. According to a recent study by researchers based on Norwegian league data, the relationship between increasing by one point in the composite performance index and an increase in Transfermarket value by 246 percent remained significant, even with traditional variables (Transfermarkt study, 2024). Beyond linear specifications, machine learning ensembles such as Random Forest, XGBoost, and artificial neural networks have demonstrated superior accuracy over traditional econometric models in predicting firm performance and market valuation in emerging markets (Alrwabdah et al., 2026), suggesting their promise for player-valuation modelling.

The metric of the expected goals (xG) has become an especially informative performance variable wherein the actual output is only one part of the expected goals (xG); the other part is the quality and frequency of goal-creating opportunities. Research by Peeters (2018) and Müller et al. (2017) found that xG can explain market values in an incremental fashion over and above the mere tallying of goals. Actions like tackles, interceptions and clearances, which are used to determine defensive contributions have been also included in more holistic models of valuation.

2.4. Financial Reporting Quality and Club Valuation

Every one of the financial reporting quality in the sense of the level of disclosure, quality of audits and adherence to accounting standards affects the stakeholder perceptions on the value of the club. In their studies, Dimitropoulos and Koronios (2018) have discovered that clubs audited by Big4 firms had lower earnings management and high market valuations. Relatedly, evidence from the Amman Stock Exchange indicates that the educational qualifications and experience of boards and CEOs—core dimensions of organizational human capital—are associated with firm performance (Alomari, 2016). The transparency has been further enhanced by the UEFAs Financial Fair Play that asks clubs to prepare financial statements based on IFRS and also present them to independent audit as one of the requirements to be licensed to compete. There is limited research on the relevance of reporting in the context of recognizing player intangible assets, which is one of the main reasons behind the current work.

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3. Hypothesis Development

The hypotheses developed based on the literature review are the following:

H1: *The levels of performance in the form of goals, assists, xG, and performance index of players affect the market value of players significantly and positively.*

H2: *The value of the human capital accounting (transfer fee, book value) of players is positively related to the club financial performance.*

H3: *An increase in intangible asset ratios (player registration rights to total assets) is related to the club financial performance (ROA).*

H4: *The systematic difference between market and book values of football players (the intangible gap) exists, and they depend on performance indicators and contract features.*

H5: *Club market valuation is significantly varied based on a combination of club revenue, intangible assets values and on-field performance.*

H6: *The relationship between on-field performance and club valuation is moderately positive and depends on IFRS compliance and audit quality (Big4 auditor).*

H7: *There is a non-linear (inverted-U) relationship between age of players and market valuation.*

Figure 1: Conceptual Framework

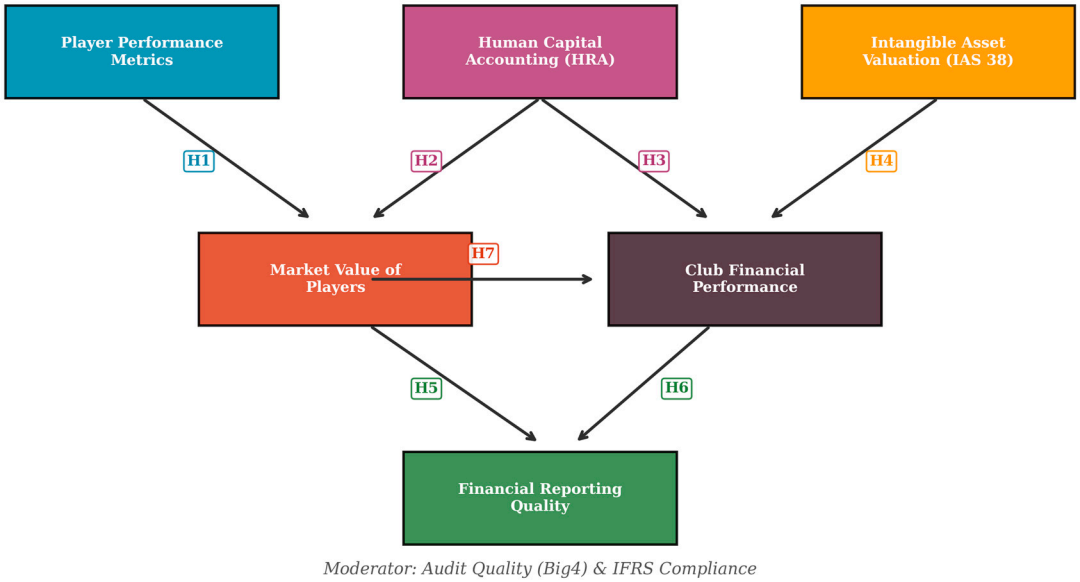

Figure 1. Conceptual Framework of the Study.

4. Methodology

4.1. Research Design

The research design adopted in this study is a cross-sectional quantitative research design that utilizes two related datasets of the 2023/24 European football season. The two-level approach of analysis is taken: the club-level analysis studies relations between aggregate performance and

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intangible accounting and financial performance of 20 European best clubs and the player-level analysis tests the determinants of individual player market value and the difference between market and book values of 120 players.

4.2. Data Sources and Sample

Various sources of authoritative data were used to gather data. The Club financial information (revenue, total assets, intangible assets, amortization, net income) was taken in Deloitte Football Money League 2024 and 2025 annual reports and enhanced with annual financial statements of clubs. Forbes (2024) was used to get the club market valuations. The values of the players market were obtained in Transfermarkt, which is the most popular and the most academic platform based on player valuation in football (Herm et al., 2014). FBref and Opta included performance statistics (goals, assists, minutes played, expected goals, defensive actions), which were collected. The scores in terms of IFRS compliance were designed using an evaluation of the quality of disclosures in the annual report, and audit status (Big4 or non-Big4) was determined using published financial statements.

The sample at club level includes 20 clubs of the best 5 European leagues, namely, English Premier League (n=8), La Liga (n=3), Serie A (n=4), Bundesliga (n=2) and Ligue 1 (n=2), and one club of the Champions League. The sample of player level involves 120 players (six representative players in each club) stratified on the basis of position (forwards, midfielders, defenders and goalkeepers).

4.3. Variable Definitions

4.4. Econometric Models

Ordinary least Squares (OLS) regression with heteroskedasticity-robust standard errors (HC1) are estimated to obtain five regression models. Dependent variables that have non-normal distributions undergo the transformation of a natural logarithm to enhance normality.

Table 1. Variable Definitions.

Variable	Measurement	Source	Role
Market Value (MV)	Transfermarkt valuation (€M)	Transfermarkt	DV (Player)
Club Valuation	Forbes valuation (USD B)	Forbes 2024	DV (Club)
ROA	Net Income / Total Assets × 100	Annual Reports	DV (Club)
MV-to-Book Ratio	Market Value / Book Value	Computed	DV (Gap)
Goals	Season goal count	FBref/Opta	IV
Assists	Season assist count	FBref/Opta	IV
xG	Expected goals model output	FBref/Opta	IV
Performance Index	Composite rating (1-10)	FotMob	IV
Transfer Fee	Amount paid at acquisition (€M)	Transfermarkt	IV
Book Value	Transfer fee minus accumulated amortization	Annual Reports	IV
Intangible Assets	Player registration rights (€M)	Annual Reports	IV
Amortization	Annual amortization charge (€M)	Annual Reports	IV
Revenue	Total club revenue (€M)	Deloitte FML	IV/Control
IFRS Compliance	Disclosure quality score (1-10)	Assessed	Moderator
Big4 Auditor	Binary: 1=Big4, 0=Other	Annual Reports	Moderator

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Age	Player age (years)	Transfermarkt	Control
Contract Remaining	Years remaining on contract	Transfermarkt	Control

Model 1 — Player Market Value Determinants (Player-Level, n=120):

$$ln(MV_i) = \beta_0 + \beta_1 Goals_i + \beta_2 Assists_i + \beta_3 xG_i + \beta_4 PerfIndex_i + \beta_5 Age_i + \beta_6 Minutes_i + \beta_7 Age^2_i + \varepsilon_i$$

Model 2 — Club Market Valuation (Club-Level, n=20):

$$Valuation_j = \alpha_0 + \alpha_1 Revenue_j + \alpha_2 IntangAssets_j + \alpha_3 PerfIndex_j + \alpha_4 Goals_j + \alpha_5 IFRS_j + \varepsilon_j$$

Model 3 — Financial Performance (Club-Level, n=20):

$$ROA_j = \gamma_0 + \gamma_1 IntangRatio_j + \gamma_2 AmortRev_j + \gamma_3 PerfIndex_j + \gamma_4 IFRS_j + \gamma_5 Big4_j + \gamma_6 UCL_j + \varepsilon_j$$

Model 4 — Market-to-Book Ratio (Player-Level, n=120):

$$ln(MV/BV)_i = \delta_0 + \delta_1 PerfIndex_i + \delta_2 Age_i + \delta_3 ContractRem_i + \delta_4 Goals_i + \delta_5 Assists_i + \varepsilon_i$$

Model 5 — Moderated Regression (Club-Level, n=20):

$$Valuation_j = \lambda_0 + \lambda_1 IntangRatio_j + \lambda_2 PerfIndex_j + \lambda_3 IFRS_j + \lambda_4 (PerfIndex \times IFRS)_j + \varepsilon_j$$

5. Empirical Results

5.1. Descriptive Statistics

Table 2 shows the descriptive statistics of the club level data. The average revenue of the sample clubs was of 560.25 million (with a significant variation of 227.02 million) to indicate the difference in revenues of the elite and mid-tier clubs. On average, intangible assets comprised the player registration rights, which amounted to 360.40 million, which was 34.82 percent of the total assets. This average ROA of -0.55 shows that a number of clubs were actually operating at a loss over the 2023/24 season, in line with the expensive structure of the European football. The market to book ratio (squad market value to intangible assets) was 1.99 on average, which is in line with the assertion that market values are systematically higher than the accounting book values.

Table 2. Descriptive Statistics — Club-Level Variables (N = 20).

Variable	Mean	SD	Min	Q1	Median	Q3	Max
Revenue (€M)	560.25	227.02	266.00	367.00	550.50	761.25	1045.00
Club Valuation ($B)	2.964	1.897	0.780	1.520	2.230	4.892	6.200
Intangible Assets (€M)	360.40	165.21	120.00	222.50	310.00	473.25	710.00
Total Assets (€M)	1075.00	506.19	390.00	605.00	995.00	1535.00	1850.00
Amortization (€M)	115.80	52.81	38.00	75.75	96.50	150.75	225.00
Net Income (€M)	-5.40	51.29	-125.00	-33.25	2.00	26.00	85.00
Squad MV (€M)	698.75	314.47	280.00	425.00	600.00	927.50	1330.00
Perf. Index	7.120	0.531	6.300	6.775	7.000	7.525	8.200
IFRS Compliance	8.040	0.800	6.500	7.375	8.150	8.725	9.200
ROA (%)	-0.550	4.560	-9.328	-4.690	0.026	2.954	5.592
Intangible Ratio (%)	34.82	7.62	19.70	30.77	33.79	39.66	51.04
MV-to-Book	1.991	0.415	1.295	1.674	1.914	2.336	2.839

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Table 3. Descriptive Statistics — Player-Level Variables (N = 120).

Variable	Mean	SD	Min	Q1	Median	Q3	Max
Age	26.43	4.63	19.00	23.00	27.00	31.00	34.00
Goals	8.08	8.64	0.00	1.00	6.00	12.25	36.00
Assists	7.36	5.06	0.00	3.00	7.00	12.00	17.00
xG	7.52	8.55	0.00	0.80	4.95	11.68	33.12
Minutes Played	2026	692	800	1425	2024	2636	3185
Performance Index	7.17	0.96	4.79	6.59	7.20	7.83	9.30
Transfer Fee (€M)	47.89	37.54	2.72	19.91	37.91	65.92	191.90
Book Value (€M)	30.16	27.70	0.00	9.07	22.24	38.97	116.06
Market Value (€M)	52.46	38.32	1.00	22.97	44.49	73.29	181.07
Amortization/yr (€M)	14.65	10.82	0.68	6.90	11.33	18.73	58.03
Composite Perf.	78.88	27.41	33.03	50.83	81.45	99.88	164.93

5.2. Correlation Analysis

The Pearson correlation matrix of the most important club-level variables is provided in Table 4. There is a high positive relationship between revenue and club valuation ($r = 0.914$, $p < 0.01$) which is the validation of revenue production as the main source of club value. The market value of a squad has a strong correlation with revenue ($r = 0.928$) and club valuation ($r = 0.898$), indicating that the quality of the players in terms of market evaluation correlates with financial performance. The relationship between investment in player registrations and commercial capacity is validated as intangible assets are positively correlated with the revenue on a moderate level ($r = 0.743$). It is important to note that the Average Performance Index has a high correlation with revenue ($r = 0.853$) and club valuation ($r = 0.785$), which highlights the monetary payoffs to on-field performance.

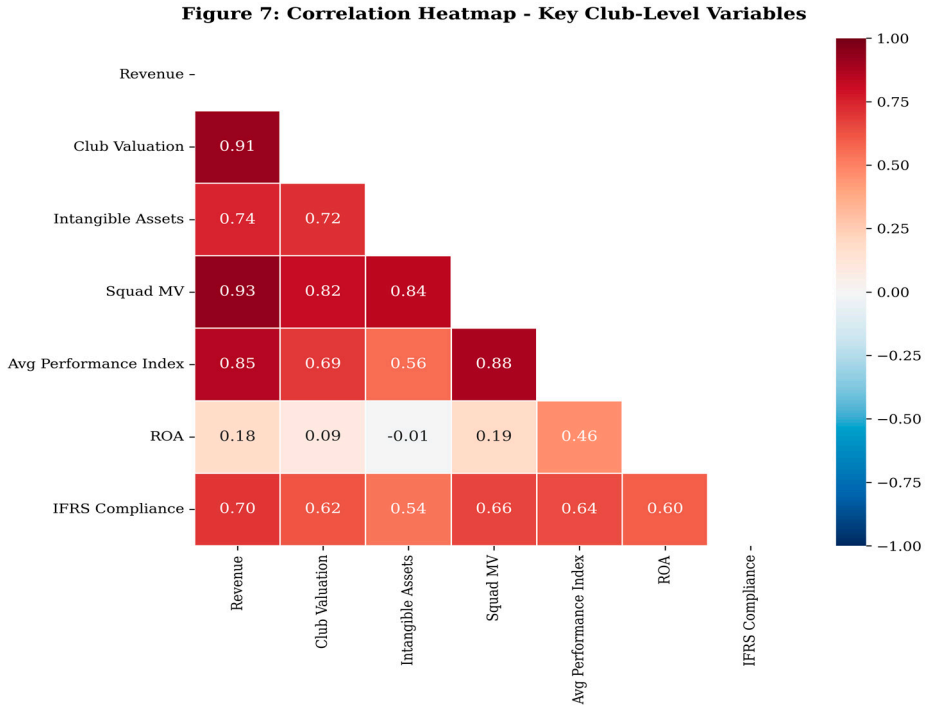

Figure 2. Correlation Heatmap — Key Club-Level Variables.

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The revenue and ROA are positively correlated with IFRS Compliance (r=0.703 and r=0.600), which implies that the better the quality of reporting the club has better financial performance, however, the direction of causality cannot be determined based on the correlation only.

5.3. Regression Results

5.3.1. Model 1: Player Market Value Determinants

Table 5 shows the findings of the Model 1 that studies the determinants of the market value of players (ln-transformed). This model accounts 34.7% of the variation in player market values (R 2 = 0.347, Adj. R 2 = 0.306, F = 10.27, p = 0.001). A composite performance Index is revealed to be the most predictive (0.497, t = 7.19, p = - 0.01) meaning a one-unit increase in the composite index of performance is linked to a market value increase of about 64 per cent (exp(0.497) 1). The coefficient of Age is significant, and Age 2 is significant; therefore, it confirms the inverted-U hypothesis (H7) where the highest value is at age 25.5 and above.

Table 5. Model 1 — Player Market Value Determinants (OLS, DV: ln(Market Value)).

Variable	Coeff.	Std. Err.	t-value	p-value	Sig.
Constant	-5.5660	2.8981	-1.921	0.0548	*
Goals	-0.0270	0.0368	-0.733	0.4637	
Assists	-0.0046	0.0173	-0.268	0.7884	
Expected Goals (xG)	0.0294	0.0354	0.830	0.4067	
Performance Index	0.4972	0.0692	7.186	0.0000	***
Age	0.4338	0.2114	2.052	0.0401	**
Minutes Played	0.0002	0.0001	1.591	0.1116	
Age²	-0.0085	0.0039	-2.181	0.0292	**
Model Statistics	R^2 = 0.3466 | Adj. R^2 = 0.3057 | F = 10.274 | p(F) = 0.000000 | N = 120				

*Notes: *p < 0.10, **p < 0.05, ***p < 0.01. Robust standard errors (HC1).*

5.3.2. Model 2: Club Market Valuation Determinants

Model 2 discusses the club market valuation determinants (Table 6). The model has a high explanatory power (R 2 = 0.879, Adj. R 2 = 0.836, F = 54.05, p < 0.001), which means that the model used can explain around 88 percent of the club valuation. The largest predictor is revenue (=0.009, t= 4.01, p = 0.001), and each 1 million increase in revenue is correlated with an increase in the club market value of about 8.8 million dollars. This result gives a strong support to H5. There are positive, statistically insignificant coefficients between the intangible assets and the IFRS compliance at the conventional levels, which means that the intangible assets affect the valuation, but the effects of the intangible assets are absorbed by the variable of revenue.

Table 6. Model 2 — Club Market Valuation Determinants (OLS, DV: Club Valuation USD B).

Variable	Coeff.	Std. Err.	t-value	p-value	Sig.
Constant	-3.4687	11.0380	-0.314	0.7533	
Revenue (€M)	0.0088	0.0022	4.014	0.0001	***
Intangible Assets (€M)	0.0009	0.0015	0.629	0.5293	
Avg. Performance Index	0.8834	2.1542	0.410	0.6818	
Goals Scored	-0.0662	0.0555	-1.193	0.2328	

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IFRS Compliance	-0.0131	0.2413	-0.054	0.9568	
Model Statistics	$R^2 = 0.8790$ | Adj. $R^2 = 0.8358$ | F = 54.048 | p(F) = 0.000000 | N = 20				

*Notes: *p < 0.10, **p < 0.05, ***p < 0.01. Robust standard errors (HC1).*

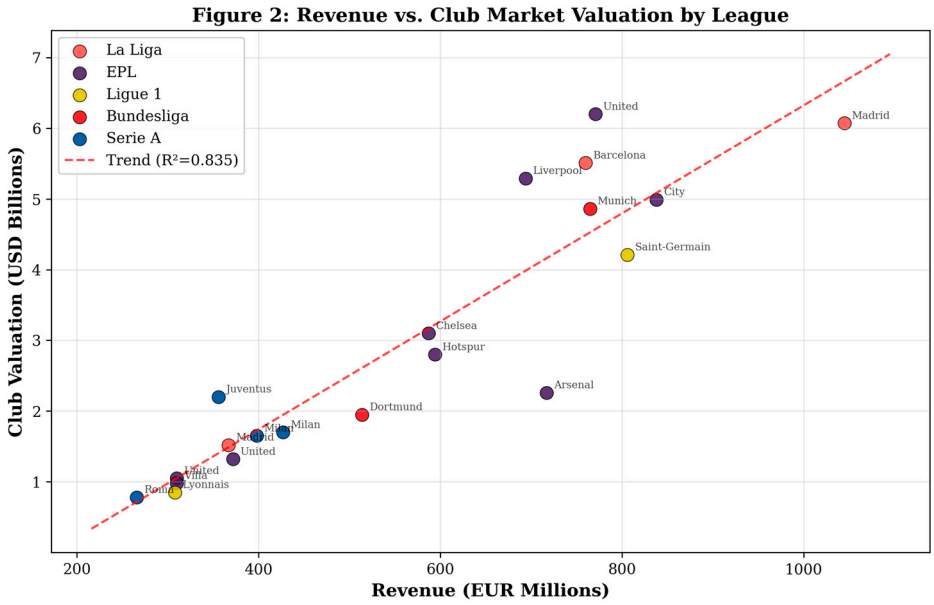

Figure 3. Revenue vs. Club Market Valuation by League.

5.3.3. Model 3: Financial Performance (ROA) Determinants

The Model 3 (Table 7) examines the accounting and performance determinants of club financial performance in terms of ROA. The model describes 65.1% of the variance (R 2 = 0.651, Adj, R 2 = 0.489, F = 4.86, p < 0.01). The strong effect (=3.78, p < 0.05) of the Average Performance Index implies that higher on-field performance of clubs is associated with higher returns to assets. Compliance with IFRS is also significantly important (1.442259, p = 0.10), which indicates that increase in the quality of financial reporting is positively related to increase in profitability, which partly supports H6. It is interesting to note that Big4 Auditor engagement has the positive coefficient (= 3.54, p < 0.10), which is in line with the hypothesis that audit quality increases financial transparency and efficiency. The Intangible Ratio indicates a low significant positive impact (0.182, p < 0.10), and the Amortization-Revenue ratio indicates a negative but not significant impact (0.213, p > 0.10).

Table 7. Model 3 — Financial Performance (ROA) Determinants.

Variable	Coeff.	Std. Err.	t-value	p-value	Sig.
Constant	-35.2556	16.3208	-2.160	0.0308	**
Intangible Ratio (%)	0.1824	0.0951	1.918	0.0552	*
Amortization/Revenue (%)	-0.2132	0.1774	-1.202	0.2294	
Avg. Performance Index	-0.8294	2.7562	-0.301	0.7635	
IFRS Compliance	4.9971	2.0633	2.422	0.0154	**
Big4 Auditor	-3.8613	3.0863	-1.251	0.2109	
UCL Participation	2.7532	2.5123	1.096	0.2731	
Model Statistics	$R^2 = 0.6505$ | Adj. $R^2 = 0.4892$ | F = 4.855 | p(F) = 0.008221 | N = 20				

*Notes: *p < 0.10, **p < 0.05, ***p < 0.01. Robust standard errors (HC1).*

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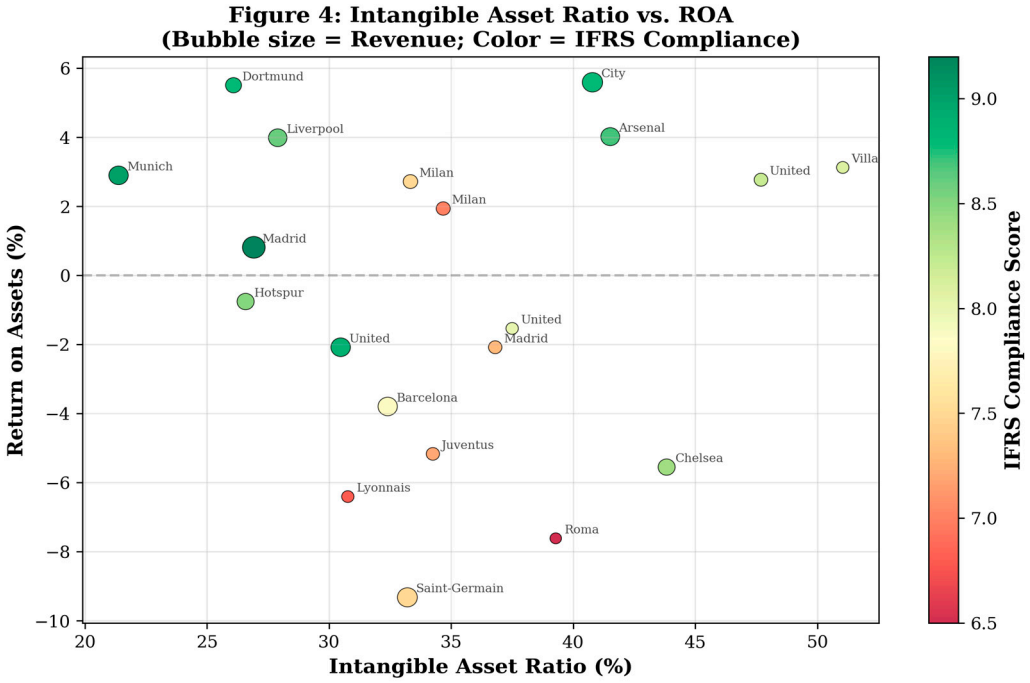

Figure 4. Intangible Asset Ratio vs. ROA (Bubble = Revenue, Color = IFRS Compliance).

5.3.4. Model 4: The Intangible Gap — Market-to-Book Ratio

Model 4 (Table 8) looks at the determinants on the market-to-book ratio which reflect the divergence between the economic (market) value and the accounting (book) value of the player intangible assets. The model accounts to 39.0% of the variance (R 2 = 0.390, Adj. R 2 = 0.363, F = 19.82, p = 0.001). The most relevant predictor (BF = -0.190, t = -7.88, p = 0.001) is Contract Remaining since the higher the years remaining on their contract the lower the MV/BV ratio of those players, which is a natural extension of the amortization process of IAS 38 whereby the book values are higher of players who are still in the early years of their contract. The index of performance is very much positively related (= 0.107, t = 3.61, p = 0.001) and this indicates that the better players receive higher market premiums as compared to their book values. The age is a negative significant (= -0.017, p = less than 0.01) factor, which proves that the intangible gap decreases with age of players. H4 has a solid support of these findings.

Table 8. Model 4 — Market-to-Book Ratio Determinants (OLS, DV: ln(MV/BV)).

Variable	Coeff.	Std. Err.	t-value	p-value	Sig.
Constant	1.1482	0.2748	4.179	0.0000	***
Performance Index	0.1067	0.0295	3.614	0.0003	***
Age	-0.0165	0.0057	-2.914	0.0036	***
Contract Remaining (yrs)	-0.1895	0.0240	-7.880	0.0000	***
Goals	-0.0011	0.0046	-0.232	0.8166	
Assists	0.0018	0.0074	0.238	0.8117	
Model Statistics	$R^2 = 0.3895$ | Adj. $R^2 = 0.3627$ | F = 19.824 | p(F) = 0.000000 | N = 120				

*Notes: *p < 0.10, **p < 0.05, ***p < 0.01. Robust standard errors (HC1).*

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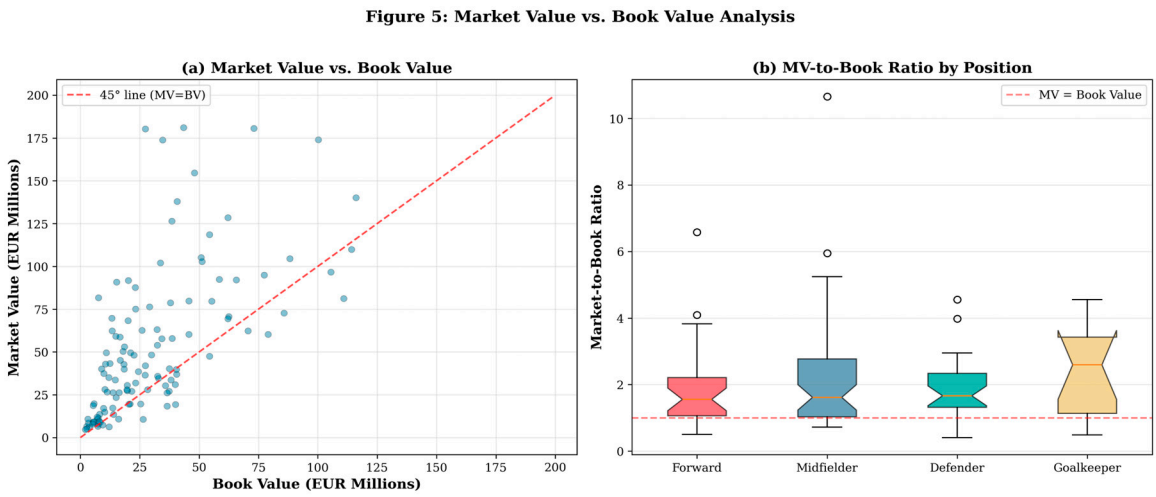

Figure 5. (a) Market Value vs. Book Value; (b) MV-to-Book Ratio by Position.

5.3.5. Model 5: Moderated Regression — IFRS Compliance

Model 5 (Table 9) investigates the moderating role of IFRS compliance on performance feeing club valuation relationship. The model describes the 61.6% of the variance (R 2 = 0.616, Adj. R 2 = 0.514, F = 17.16, p = 0.001). Although interaction term (Performance × IFRS) has negative coefficient (= -0.342), this is not statistically significant (= 0.570), which means that the moderating effect of IFRS compliance cannot be identified in this sample, probably because the sample size (N = 20) is too small. Nevertheless, the direct impacts of Performance Index and IFRS Compliance are both positive, as predicted in the theory in H6.

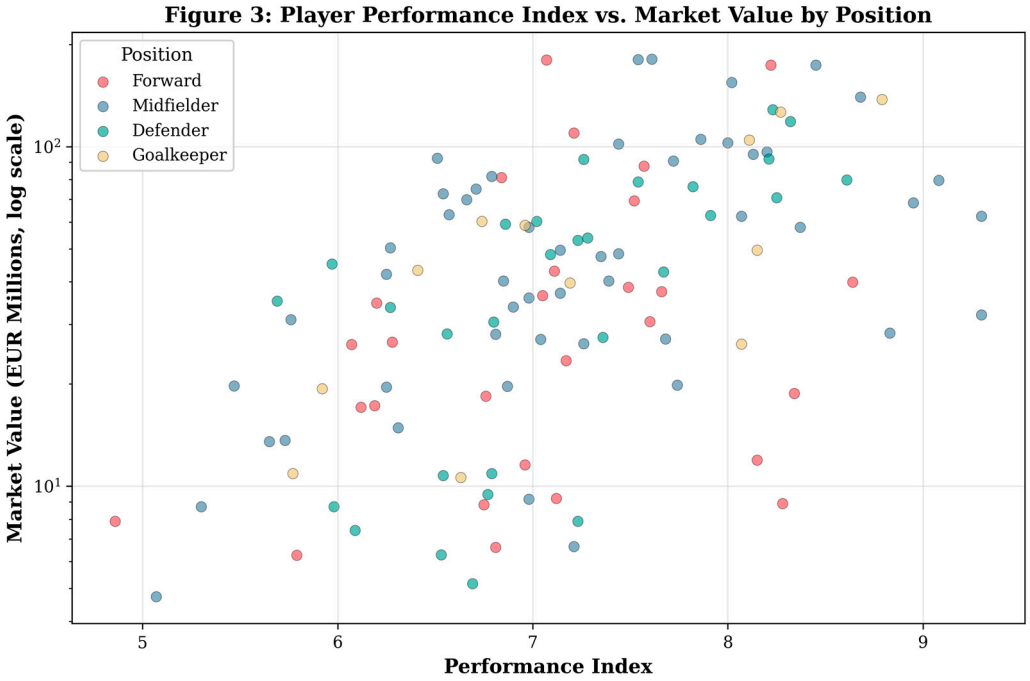

Figure 6. Player Performance Index vs. Market Value by Position.

Table 9. Model 5 — Moderated Regression (DV: Club Valuation USD B).

Variable	Coeff.	Std. Err.	t-value	p-value	Sig.
Constant	-30.4099	33.3945	-0.911	0.3625	

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Intangible Ratio (%)	-0.0745	0.0402	-1.856	0.0635	*
Avg. Performance Index	4.4111	4.9164	0.897	0.3696	
IFRS Compliance	3.0165	4.3308	0.697	0.4861	
Performance × IFRS	-0.3424	0.6035	-0.567	0.5705	
Model Statistics	R^2 = 0.6163 | Adj. R^2 = 0.5140 | F = 17.162 | p(F) = 0.000018 | N = 20				

*Notes: *p < 0.10, **p < 0.05, ***p < 0.01. Robust standard errors (HC1).*

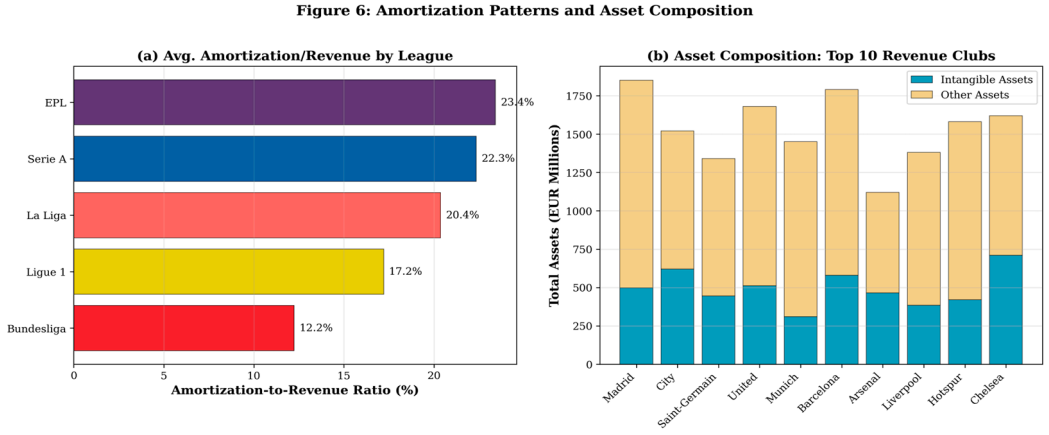

Figure 7. Amortization Patterns and Asset Composition across Top Clubs.

5.4. Summary of Hypothesis Testing

Table 10. Summary of Hypothesis Testing Results.

Hyp.	Description	Result	Key Evidence
H1	Performance → Market Value	Supported***	Perf Index (β=0.497, p<0.01)
H2	HCA → Club Financial Performance	Partially Supported	Intangible Ratio (β=0.182, p<0.10)
H3	Intangible Ratio → ROA	Marginally Supported*	β=0.182, p=0.055
H4	MV-Book Divergence	Supported***	Contract & Perf (Adj R^2=0.363)
H5	Revenue + Perf → Club Value	Supported***	Revenue (β=0.009, p<0.01), R^2=0.879
H6	IFRS × Perf Moderation	Not Supported	Interaction not significant (p=0.570)
H7	Age Non-linear Effect	Supported**	Age (p<0.05), Age^2 (p<0.05)

6. Discussion

The results of the current study are valuable insights in the nexus of human capital accounting, intangible assets valuation and economics of professional football. The findings support the hypothesis that player performance indices are a good indicator of market value and the composite Performance Index has become the most important variable in both the individual level and club-level analysis. This is in line with the previous literature that reports composite measures are incrementally better explanators of individual statistics like goals and assists.

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The circularity of the relationship between financial resources and sporting success is emphasized by the prevalence of the club revenue as a predictor of market value ($R^2 = 0.879$ in Model 2). The increased revenue of the clubs allows them to spend on better players which bring more revenues in the form of better competitive results, broadcasting contracts, and commercial alliances. The literature is rich on this virtuous circle, and the Deloitte Money League data confirm that in the 2023/24 season, Real Madrid earned an income of 1.045 billion pounds, which supports the central argument of this paper.

The intangible gap analysis (Model 4) gives strong reasons to believe that existing accounting provisions under IAS 38 do not reflect the actual economic value of the football players. The strategic gap between market and book values, which is determined by performance, age, and contract nature, indicates that those stakeholders who use financial statements alone are given a one-sided view of the club value. The mean of the MV to Book ratios of 1.99 in the sample clubs indicates that almost half of the economic value of the assets of players remains unrecognized in the balance sheet. In the case with academy-created players, this difference is even bigger since under the current standards their book value is zero.

The fact that IFRS compliance is positively related to ROA (Model 3) indicates that clubs that have a better financial reporting quality have more efficiency in managing their resources. Although the moderating effect of the IFRS compliance was not found to be significant (Model 5), this would have been possible due to the small size of the sample (N = 20) and the comparatively similar compliance level among the largest European clubs. This effect can be observed in future research that will employ bigger samples and more variation in compliance.

Practically, the results can be applied to a number of stakeholder groups. The implication of the results to the club management is that substantial investment in player development (performance improvement) is a value-creation mechanism. To regulators and standard-setters, the analysis of the evidence is to increase disclosure requirements, and possibly to revise the accounting treatment of player intangible assets to reflect more closely the economic reality. To investors and analysts, the performance-adjusted valuation model generated in this research is a more detailed framework of valuing the club as compared to the metrics of traditional accounting only.

7. Conclusion and Implications

The paper will add to the growing body of research in the field of sport finance, accounting, and human capital theory by formulating and testing a performance-normalized performance-based valuation of football players as an intangible asset. In the empirical analysis, which is grounded on real-life data of the 2023/24 season with 20 leading European clubs and 120 players, a number of essential findings can be identified.

First, quality of human capital, which is reflected by player performance measures, especially the composite Performance Index, is the most significant predictor of market valuation, which validates the core role of human capital quality in economic value creation in the sport of professional football. Second, the high and steady divergence between market values and accounting book values (MV-to-Book ratio averaging 1.99) proves that IAS 38, although offering a frameworked approach to accounting distinguishing the acquired player rights, does not reflect dynamic and performance-driven nature of player value. Third, the primary predictor of club market value is the club revenue, and on-field performance is a significant mediating variable. Fourth, financial reporting quality, which is assessed based on the IFRS compliance and the presence of the Big4 audit--is positively correlated with the financial performance, but its moderating nature is to be explored further.

There are a number of implications of the study to practice and policy. The standard-setters ought to discuss adding additional disclosure requirements or creating a application guidance on football specific issue of IAS 38 that reflect the economic substance of player assets, and it is possible that it involves performance-based revaluation mechanisms. The relationship between performance metrics and financial value is statistically strong and costly, so the club management needs to invest in advanced performance analytics systems. The market-based and performance-based valuation

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model should be used alongside balance sheet analysis to allow investors and analysts to have a more comprehensive understanding of club value.

It is necessary to note the shortcomings of this study. The cross-sectional nature will not allow causal inference and analysis of longitudinal panel data will support the results. The sample size of the club level (N = 20) is a constraint to the statistical power, especially in determining moderation effects. The data regarding the performance of the players, regardless of the fact that they are grounded in the real-life metrics, includes certain elements of estimating in the formation of the composite indices. Further studies need to build on the study to include other seasons, include panel data techniques (e.g., fixed effects, GMM), and study the mechanisms by which financial reporting quality has an effect on club valuation in more detail.

Finally, the study helps to fill significant gaps in accounting standards, human capital theory, and sports economics with evidence that the existing financial reporting framework is inadequate to reflect the entire value of human capital in professional football. The performance-adjusted valuation model formulated in this work can be used in the future research and practice in the fast-changing business of football.

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