



Determinant variables that predict the performance of professional soccer clubs in Ethiopian Primer League

Variables determinantes que predicen el rendimiento de los clubes de fútbol profesional en la Primera División de Etiopía

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Abstract

Introduction: Managing soccer clubs is a challenging and rewarding experience, requiring a combination of leadership skills and strategic decision-making.

Objective: This study investigated professional soccer club performance determinants in the Ethiopian Premier League. **Methodology:** A correlational analysis was conducted to examine the relationship between the variables and the performance of soccer clubs. Thirty-nine seven-point Likert scale questionnaires, deemed reliable ($\alpha = .91$), were used to collect data from a sample of 214 participants selected through a simple random sampling method. Frequencies, percentages, means, standard deviations, correlations, and multiple linear regression analyses (with a significance level of $P < 0.05$) were performed using SPSS version 26 software.

Results: There was a negative correlation between the performance of soccer clubs and fan influence ($r = (214) -.170, p < .05$); financing ($r = (214) -.394, p < .01$); club history ($r = (214) -.106, p > .05$); game situations ($r = (214) -.480, p < .01$); human capital ($r = (214) -.024, p > .05$); media ($r = (214) -.365, p < .01$); legal issues ($r = (214) -.406, p < .01$); and leadership and governance ($r = (214) -.139, p < .05$), respectively. Furthermore, eight predictors collectively explained 44.7% of the variance ($F(8, 214) = 22.537, p < .001$).

Discussion: The study reveals that factors like financing, game situations, media, and legal issues significantly influence soccer club performance, accounting for nearly half of its variability.

Conclusions: The study found that game situation, financial capability, and legal issues significantly impact football club performance, whereas human capital, fan influence, and club history exhibit greater variability.

Keywords

Determinants; performance; predict; soccer clubs.

Resumen

Introducción: La gestión de clubes de fútbol es una experiencia desafiante y gratificante, que requiere una combinación de habilidades de liderazgo y toma de decisiones estratégicas.

Objetivo: Este estudio investigó los determinantes del rendimiento de los clubes de fútbol profesional en la Premier League etíope.

Metodología: Se realizó un análisis correlacional para examinar la relación entre las variables y el rendimiento de los clubes de fútbol. Se utilizaron treinta y nueve cuestionarios de escala Likert de siete puntos, considerados confiables ($\alpha = .91$), para recopilar datos de una muestra de 214 participantes seleccionados a través de un método de muestreo aleatorio simple. Se realizaron frecuencias, porcentajes, medias, desviaciones estándar, correlaciones y análisis de regresión lineal múltiple (con un nivel de significancia de $P < 0,05$) utilizando el software SPSS versión 26.

Resultados: Hubo una correlación negativa entre el rendimiento de los clubes de fútbol y la influencia de los fanáticos ($r = (214) -.170, p < .05$); financiación ($r = (214) -.394, p < .01$); historia del club ($r = (214) -.106, p > .05$); situaciones de juego ($r = (214) -.480, p < .01$); capital humano ($r = (214) -.024, p > .05$); medios de comunicación ($r = (214) -.365, p < .01$); cuestiones legales ($r = (214) -.406, p < .01$); y liderazgo y gobernanza ($r = (214) -.139, p < .05$), respectivamente. Además, ocho predictores explicaron colectivamente el 44,7% de la varianza ($F(8, 214) = 22,537, p < .001$).

Discusión: El estudio revela que factores como la financiación, las situaciones de juego, los medios de comunicación y las cuestiones legales influyen significativamente en el rendimiento de los clubes de fútbol, lo que explica casi la mitad de su variabilidad.

Conclusiones: El estudio encontró que la situación de juego, la capacidad financiera y las cuestiones legales afectan significativamente al rendimiento de los clubes de fútbol, mientras que el capital humano, la influencia de los aficionados y la historia del club muestran una mayor variabilidad.

Palabras clave

Determinantes; rendimiento; predecir; clubes de fútbol.

Introduction

Soccer is one of the most globally recognized and profitable industries in the entertainment sector (Miragaia, Ferreira, Carvalho, & Ratten, 2019). This massive industry includes the people, activities and organizations involved in producing, facilitating and organizing sports activities. Soccer (soccer in the USA) is popular globally, with 211 FIFA members, 130,000 professional players, and more than 4,400 clubs worldwide (Tomlinson, 2014). In 2022, the soccer industry will generate 403 billion U.S. dollars (Gough, 2024). However, 54% of the total football money can be generated by the 'Big Five' leagues, including the English Premier League, the German Bundesliga, the Spanish Liga, the Serie A Italian and the French Ligue One (Drust & Slack, 2024). Furthermore, clubs invest significantly in player salaries and bonuses to maintain high-performance levels and attract top-tier players. For example, Manchester City F.C. allocated £213,044,000 for player salaries and bonuses in the 2024/25 season, showcasing their commitment to acquiring top talent (Gough, 2024). Thus, understanding the determinants of winning or losing is crucial for soccer clubs in making strategic decisions and in generating and investing in performance.

Professional soccer clubs' performance is dependent on several factors, including both quantitative and qualitative team dynamics. Key performance indicators such as shots on target, assists, and passing accuracy have been identified as critical factors in match outcomes, with winning teams demonstrating superior offensive play and strategic execution (Getnet, Melkamu, & Mengistu; Stafylidis et al., 2024; Zambom-Ferraresi, Rios, & Lera-López, 2018). Additionally, qualitative aspects like team cohesion, the role of the coaching staff, and the technical skills of players significantly impact overall performance, highlighting the importance of interpersonal dynamics within the team (Gajardo, Cidoncha, Morales, García, & Ponce, 2022). Furthermore, strategic leadership and distinctive capabilities are essential for fostering innovation and competitive advantage, which in turn correlate with financial success and sporting achievements (Arraya, 2022). Lastly, adopting a more direct style of play, characterized by fewer but more effective passes, has been shown to enhance performance outcomes (Kite & Nevill, 2017). These findings underscore the complex interplay between the statistical performance metrics and the human elements of soccer clubs. However, the outfield factors that determine the success of soccer clubs were not investigated.

The highest sporting success possible through game wins, table ranking, and, if applicable, international competition (Cruz, Schregel, & Zülch, 2022; Zülch, Palme, & Jost, 2020). Several fixed factors influence goals, including league structure, governing association rules, transfer processes, and player pools, as well as variable factors like players, training, coaches, staff, management, environment, and facilities. The challenge then becomes how to synergize and integrate all aspects of team management and support staff to achieve the most sustained sporting success. Player development, team performance, player and coach characteristics, team diversity, head coach quality, and youth performances all play a role (Cruz et al., 2022). One of the main themes is a squad of players and coaches who work together well and can succeed. Without a dedicated team culture and strategy, teams have a hard chance of recovering from such disadvantages (Zülch et al., 2020). Another factor that is not directly considered because of its low statistical significance but is still extremely important for future generations transitioning to professional ranks is youth development (Røynesdal, Toering, & Gustafsson, 2018). The development of young players within a team can significantly impact the long-term success and sustainability of a team's performance. Investing in youth development programs can ensure a pipeline of talented future players.

Furthermore, the determinants of performance in professional football clubs encompass a complex variant of determinants, including team cohesion, individual physical performance, strategic movements and the role of the coaching staff (Gajardo et al., 2022). Research indicates that team cohesion and the effectiveness of coaching significantly influence collective performance, with players emphasizing the importance of technical staff and skilled teammates differently based on gender (Gajardo et al., 2022; Maly et al., 2022). Strategic competitive behaviors, characterized by the frequency and intensity of movements, also impact performance outcomes, with a positive correlation between strategic intensity and results (Marquès, 2015). Collectively, these elements underscore the complexity of performance determinants in elite football, necessitating a holistic approach to team management and training (Perechuda, 2020b; Zambom-Ferraresi et al., 2018). Financial health, including revenue gen-

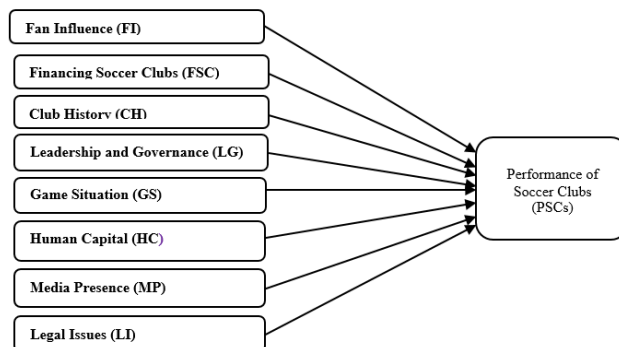


eration and expenditure management, plays a crucial role, as evidenced by studies indicating that clubs with better economic indicators tend to perform better on the field (Andrade Júnior & Piva, 2019). Financial aspects, including commercial revenues and sponsorships, significantly impact a club's ability to invest in talent and facilities, thereby enhancing performance (Marino, 2014; Samur, 2018). Additionally, the importance of team cohesion and the quality of coaching staff is highlighted, as these elements contribute to collective performance improvements (Gajardo et al., 2022). Furthermore, the effective management of intellectual capital, which includes the intangible assets of a club, is essential for maximizing overall value and performance. Thus, a holistic approach that integrates these diverse factors is vital for enhancing the competitive success of soccer clubs. However, due to their unique features, different leagues require distinct studies.

Numerous studies have explicitly studied the determinants of governance, financial management, club history, and human capital. External factors such as the playing environment, emotional states, and team dynamics play vital roles in shaping athletic performance (Dahl, 2013). The socio-economic context, including cultural and demographic variables, also affects international soccer performance, highlighting the importance of broader societal influences (Hoffmann, Ging, & Ramasamy, 2002). Club history and leadership play vital roles in shaping a club's identity and culture, which can affect player morale and fan engagement (Marino, 2014; Perechuda, 2020a, 2020b). Human capital, which encompasses player skills and psychological factors, is also critical, with studies identifying soccer intelligence and technical skills as key performance drivers. Lastly, media presence and legal issues can further influence a club's reputation and operational capabilities, ultimately affecting its competitive performance (Gallucci & Tipaldi, 2024; Marino, 2014). Furthermore, the concept of intellectual capital, which includes intangible assets like brand value and community engagement, is increasingly recognized as a determinant of a club's overall success and sustainability (Perechuda, 2020b). Effective governance and management structures are crucial to ensure sustainability and long-term success by aligning club operations with strategic objectives and regulatory frameworks (Gallucci & Tipaldi, 2024; Samur, 2018). Collectively, these off-field factors illustrate the complex interplay between personal, social, and economic elements in professional football. Overall, a successful football club must carefully manage various aspects beyond just player performance on the field. By effectively balancing all these factors, clubs can eventually enhance their overall competitiveness and sustainability. Ultimately, a holistic approach to club management is essential for successful soccer. Unlike previous studies, no previous study has compressively studied all these determinant variables.

Specifically, no study has determined the performance of Ethiopian Premier League (EPL) soccer clubs. Thus, a holistic approach that considers these determinants is necessary for improving EPL clubs' performances. No previous studies have investigated the determinants of performance in professional soccer clubs. However, the inception of league soccer in Ethiopia has indeed faced significant challenges, primarily due to inadequate resources and infrastructure, which severely hinder the sport's development. Studies indicate that insufficient budgets for competitions, lack of sports materials, and inadequate facilities are prevalent issues across various regions, including the South Wollo and North Showa zones (Abir, Ejigu, & Mesfin, 2017). Additionally, the Ethiopian Football Federation struggles with motivating players and coaches due to the absence of balanced incentives and regular salaries (Tadesse, Asgedom, & Taddese, 2023). The scarcity of youth training facilities and the lack of scientific methods for talent identification further exacerbate these challenges, limiting the potential for developing competitive athletes (Tufa, 2015). Consequently, a collaborative effort among stakeholders is essential to address these barriers and foster the growth of football in Ethiopia (Abir et al., 2017; Tufa, 2015). Therefore, a compressive study is needed to investigate the status, correlation, and prediction of the variables. This study aims to fill this gap by providing a more holistic investigation of EPL football clubs, integrating various dimensions such as fan influence, financing football clubs, leadership and governance, club history, legal issues, game situation, media presence, and human capital as independent variables and the performance of football clubs as dependent variables. This study examined how the determinants of soccer clubs interact within the Ethiopian context, offering new insights into how clubs can enhance their performance and competitiveness both locally and internationally. Figure 1 illustrates the conceptual framework of the study.

Figure 1. Conceptual framework of the study.



The conceptual framework provides a comprehensive overview of the various determinants that can predict soccer club performance. By analyzing these predictors, researchers and stakeholders can gain valuable insights into how to improve and optimize club performance. The following equation represents a multiple regression model used to predict a soccer club's performance. This model allows for a comprehensive analysis of how these variables affects overall performance, providing valuable insights for decision-making and strategic planning.

$$\text{i.e., PSC's} = \alpha + \beta_1 (\text{FI}) + \beta_2 (\text{FSC}) + \beta_3 (\text{CH}) + \beta_4 (\text{LG}) + \beta_5 (\text{GS}) + \beta_6 (\text{HC}) + \beta_7 (\text{MP}) + \beta_8 (\text{L}) + \text{EIT.}$$

PSC' = performance of soccer clubs

α : constant

FI: fan influence

FSC: financing soccer clubs

CH: club history

LG: Leadership and governance

GS: Game situation

HC: Human Capital

MP=Media Presence

LI: Legal Issues

The model depicts the extent to which the determinants of soccer club performance can predict soccer club performance. The value of β_1 , β_2 , β_3 , β_4 , β_5 , β_6 , β_7 , and β_8 is a coefficient showing the rate of change of FI, FFC, CH, LG, GS, HC, M, and LI for DIV PSC. The higher the coefficient value, the stronger the relationship between the determinants and the club performance. This model can be used to make informed decisions regarding resource allocation in soccer clubs based on their predicted performance.

This study, therefore, investigates the determinants influencing professional soccer clubs in the EPL. Specifically, it seeks to answer the following research questions: Is there a correlation between fan influence, financing of soccer clubs, club history, leadership and governance, game situations, human capital, media, and legal issues and the performance of EPL clubs? To what extent can fan influence, finance, club history, leadership and governance, game situations, human capital, media, and legal factors predict the performance of EPL soccer clubs?

Method

This study falls under the positivist paradigm, focusing on a singular and identifiable truth and reality (Evans et al., 2021). It uses objectivity to provide answers that are both technical and neutral and can be generalized. The deductive approach makes facts available by employing psychometric tests. In addition, correlation design is crucial in measuring the performance of football clubs, as it allows for

the comprehensive assessment of various dimensions impacting performance, which is "congruence" between epistemological and ontological viewpoints (Morse, 2020). This study involved quantitative research that involved describing research problems by analyzing trends, explaining relationships among variables, and collecting numerical data from a large sample using predefined instruments with questions and responses. Specifically, the researcher focused on detecting determinants of EPL performance, describing relationships, and predicting the performance of soccer clubs. The techniques employed in this study include correlation analysis, linear regression, and multiple regressions, each serving a specific purpose in data analysis. Correlational techniques are valuable for identifying and quantifying the strength and direction of relationships among all independent variables and the performance of soccer clubs.

The study was conducted following the tenets of the Helsinki Declaration (as revised in 2013), and it was approved by the Hawassa University College of Natural and Computational Research Ethics Review Committee (CNCS-REC002/24). Informed consent was obtained from the participants in written and oral forms explaining the methodology and rationale of the study.

Participants

The study population consisted of 480 males from 16 EPL clubs. To determine the appropriate sample size for a population of 480, Cochran's formula was used.

$$n_0 \frac{z^2 - p - (1 - p)}{e^2}$$

Where:

- ✓ n_0 is sample size for an infinite population
- ✓ Z is the standard score describing the confidence level (1.96 for 95% confidence level)
- ✓ p is the proportion of the population (0.5 to maximize the sample size)
- ✓ e = margin of error (5%, or 0.05)

$$n_0 \frac{(1.96)^2 - 0.5 - (1 - 0.5)}{(0.05)^2}$$

$$n_0 \frac{3.8416 - (0.25)}{0.0025}$$

$$n_0 \frac{0.9604}{0.0025} = 384.16$$

Therefore, $n_0 = 384$ and a finite population of the adjusted 480 players.

$$n \frac{n_0}{\left(1 + \frac{1-n_0}{N}\right)}$$

Where:

- ✓ n = adjusted sample size for a finite population
- ✓ N = total population size (480 players)

$$n \frac{384}{\left(1 + \frac{384-1}{480}\right)} = \frac{384}{1 + 0.7979} = \frac{384}{1.7979} = 213.7$$

Therefore, the sample size of this study was 214 players. Then, by distributing participants among the 16 clubs, the sample size can be proportionally distributed across the 16 clubs. If the clubs have roughly the same number of players, the distribution is as follows:

$$\text{Playersperclub} = \frac{214}{16} = 13 - 14 \text{ playersperclub}$$

Then, 214 were the sample size of players that would provide a statistically significant representation of the 480-player population with a 95% confidence level and a 5% margin of error. Then, 14 players from each club were selected through simple random sampling.

Table 1. Demographic characteristics of the participants

		Frequency	Percentage
Age of the Participants	18—22	16	7.57
	23—27	95	44.39
	28—32	78	36.44
	33—38	25	11.6
Nationality	Ethiopian	167	78.03
	Non-Ethiopian	47	21.96
Experience in EPL	1-3 years	31	14.48
	4-6 years	94	43.92
	7-9 years	65	30.37
	<-10 years	24	11.21

The study involved a sample of 214 soccer players from the EPL from 2022/23 to 2023/24 G.C., consisting of aged 16 (7.57%), 18-22; 95 (44.39%); 23-27; 78 (36.44%); 28-32; and 25 (11.63%), 33-38 were years old. Their citizenship status was 167 (78%) Ethiopian, 47 (21.96%), and their experience In the EPL, 1-3 years are 31 (14.48%); 4-6 years are 94 (43.92%); 7-9 years are 65 (30.37%); and 24 (11.21%) are more than 10 years for the national team.

Data collection

The Amharic version of the determinants of soccer club performance questionnaire contains 36 items of 7-point Likert scale questions adapted from (Getnet, Melkamu, & Mengistu, 2024). The questionnaires ranged from [1] (strongly disagree) to [7] (strongly agree). The points earned at the end of the session were used to evaluate the performance of the participating soccer clubs according to the EFF record office in 2023/24. The bilingual specialists translated and retranslated the questionnaire to ensure accuracy and cultural relevance. Additionally, the researcher gathered input from five expert groups: football instructors, statisticians, measurement and evaluation specialists, sports management, and EPL share company event organizer professionals to ensure the questionnaire covered all relevant aspects of football club performance. The feedback from these expert groups was used to refine and finalize the questionnaire before it was distributed to the participants. Moreover, pilot testing was conducted with a sample of 90 Amharic-speaking soccer players to assess the clarity and comprehensibility of the items. This ensured that the questionnaire was culturally appropriate and easily understood by the specific population. The pilot testing results were used to make necessary adjustments to improve the overall questionnaire quality.

Table 2. Instrument reliability

Factors	Items	α
Fan Influence (FI)	4	.910
Financing soccer clubs (FSC)	5	.806
Club History (CH)	5	.954
Leadership and governance (LG)	5	.912
Game situation (GSI)	5	.930
Human capital (HC)	5	.986
Media (M)	5	.888
Legal Issues (LI)	5	.930

The pilot test results show that the fan influence subscale consisted of 4 items ($\alpha = .91$), the financing football club subscale consisted of 5 items ($\alpha = .806$), the club history subscale consisted of 5 items ($\alpha = .954$), the leadership and governance subscale consisted of 5 items ($\alpha = .91$), the game situation subscale consisted of 5 items ($\alpha = .93$), the human capital subscale consisted of 5 items ($\alpha = .986$), the media subscale consisted of 5 items ($\alpha = .888$), and the legal issue subscale consisted of 5 items ($\alpha = .93$) met the standards of data analysis. These subscales were found to be reliable measures for assessing various aspects of club management. The high internal consistency of each subscale indicates the robustness of the measurement tool used in this study. The pilot testing results were used to make necessary adjustments to improve the overall questionnaire quality. The researchers conducted in-person data collection at a designated location for the soccer club from February 8 to February 28, 2024. During data collection, all participants were briefed on the purpose of the study, its benefits, and potential drawbacks.



Data Analysis

The reliability and normality of the distributions were checked using the Cronbach alpha and Kolmogorov-Smirnov tests. The results show all reliability with ($\alpha > .806$) and normally distributed (K-S $p > 0.05$), indicating that the data collected for the study met the necessary criteria for statistical analysis. These findings indicate that the results obtained are likely valid and generalizable. Therefore, later statistical analyses were adapted accordingly. The mean, standard deviation, correlation, and multiple linear regression analysis were used. These analyses were performed using IBM SPSS (version 26) with a significance level set at $p < 0.05$ to ensure the validity and generalizability of the results obtained.

Results

A total of 214 completed items were organized and presented in alignment with the ethical guidelines.

Table 3. KMO and Bartlett's Tests

KMO and Bartlett's test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.819
	Approx. Chi-Square	11404.977
Bartlett's Test of Sphericity	Df	630
	Sig.	.000

Table 3 presents the KMO measure of sampling adequacy (KMO = .819) and Bartlett's Test of Sphericity ($\chi^2 (630) = 11,404.98$, $p < .001$), which indicates that the data are suitable for factor analysis. This indicates that the KMO value is adequate, while Bartlett's test indicates that the correlation matrix is not an identity matrix, which is a guarantee to proceed with to assessing the determinants of performance.

Table 4. Descriptive statistics

	Mean	Std. Deviation
Fan Influence (FI)	3.6086	.73570
Financing soccer Club (FSC)	4.3598	.68249
Club History (CH)	3.5991	1.11793
Game Situation (GS)	4.4411	.60405
Human Capital (HC)	3.5411	1.05532
Media (M)	4.0879	.65959
Legal Issues (LI)	4.1551	.67347
Leadership and Governance (LG)	3.7364	.70310

Table 4 presents descriptive statistics computed for eight variables: fan influence ($M = 3.62$, $SD = 0.74$), financing soccer clubs ($M = 4.36$, $SD = 0.68$), club history ($M = 3.60$, $SD = 1.12$), game situation ($M = 4.44$, $SD = 0.60$), human capital ($M = 3.54$, $SD = 1.06$), media ($M = 4.09$, $SD = 0.66$), legal issues ($M = 4.16$, $SD = 0.67$), and leadership and governance ($M = 3.74$, $SD = 0.70$).

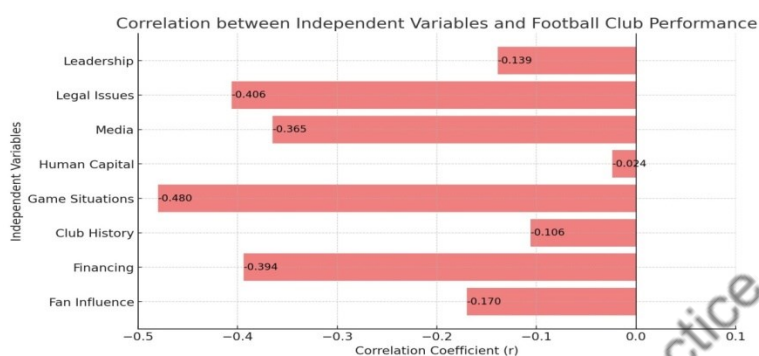
Table 5. Correlational analysis

	FI	FFC	CH	GS	HC	M	LI	LG	PFC
Fan Influence (FI)	1								
Financing soccer Club (FSC)	.355**	1							
Club History (CH)	.694**	.286**	1						
Game Situation (GS)	.279**	.798**	.251**	1					
Human Capital (HC)	.697**	.274**	.987**	.220**	1				
Media (M)	.530**	.890**	.592**	.682**	.588**	1			
Legal Issues (LI)	.570**	.774**	.650**	.800**	.621**	.827**	1		
Leadership and Governance (LG)	.839**	.497**	.855**	.381**	.871**	.739**	.731**	1	
Performance of soccer clubs (PSC)	-.170*	-.394**	-.106	-.480**	-.024	-.365**	-.406**	-.139*	1

** . Correlation is significant at the 0.01 level (2-tailed), * . The correlation was significant at the 0.05 level (2-tailed)

Table 5 presents the correlation analysis that examines the relationships between the performance of soccer clubs (PFC) and FI, FSC, CH, GS, HC, M, LI, and LG. There was a negative correlation between the performance of football clubs (PFC) and fan influence ($r = (214) -.170, p < .05$); financing ($r = (214) -.394, p < .01$); club history ($r = (214) -.106, p > .05$); game situations ($r = (214) -.480, p < .01$); human capital ($r = (214) -.024, p > .05$); media ($r = (214) -.365, p < .01$); legal issues ($r = (214) -.406, p < .01$); and leadership and governance ($r = (214) -.139, p < .05$), respectively.

Figure 2. Direction and degree of association



The correlation analysis in Figure 2 indicates the direction of the correlation matrices on the determinant variables and club performance, which is negative with a small to moderate degree of correlation. There is a moderate correlation between financing football clubs and PSC's ($r = (214), -.394, p < .01$), a moderate correlation between game situation and PSC's ($r = (214), -.480, p < .01$), a moderate correlation between media presence and PSC's ($r = (214), -.365, p < .01$), a moderate correlation between legal issues and PSC's ($r = (214), -.406, p < .01$), a small correlation between leadership and governance and PSC's ($r = (214), -.139, p < .05$), and a small correlation between fan influence and PSC's ($r = (214), -.170, p < .05$). Meanwhile, club history ($r = (214), -.106, p > .05$) and human capital ($r = (214), -.024, p > .05$) had an insignificant correlation with the PSC's.

Table 6. Regression Model for predicting soccer Club Performance

Model	Model Summary				
	R	R ²	Adj. R ²	Error Est.	P
1	.684 ^a	.468	.447	3.21825	.000

a. Predictors: (Constant); FI, FFC, CH, GS, HC, LG, LI, and M.

Table 6 presents the regression model used to determine the cumulative effect of the independent variable on the dependent variable. To determine the extent to which it predicts soccer club performance in EPL soccer clubs, a multiple regression analysis was used. The result shows that 44.7% of the variance in the performance of football clubs can be accounted for by eight predictors, $F(8, 214) = 22.537, p < .001$, with an adjusted R² of 44.7%, indicating a reasonably good fit. However, approximately 53.2% of the variance remained unexplained, and other important factors influencing performance were not included in the model.

Table 7. ANOVA was used for the regression analysis

Model		ANOVA ^a				
		SS	Df	MS	F	P
1	Regression	1867.389	8	233.424	22.537	.000 ^b
	Residual	2123.213	205	10.357		
	Total	3990.603	213			

a. Dependent Variable: FPFC

b. Predictors: (Constant); FI, FFC, CH, GS, HC, LG, LI, and M.

Table 7 presents the ANOVA results, which indicate that the regression model is statistically significant ($F(8, 205) = 22.537, p < .001$). This indicates that the independent variables significantly explain the variation in soccer club performance.

Table 8. Individual Effect in the Coefficient Regression Analysis

	B	Model		
		R2= 0.447,	t	P
Fan Influence (FI)	-1.310	-.223	-2.214	.028
Financing soccer Club (FSC)	3.313	.522	2.840	.005
Club History (CH)	-9.666	-2.497	-7.073	.000
Game Situation (GS)	-2.276	-.318	-2.816	.005
Human Capital (HC)	11.846	2.888	7.890	.000
Media (M)	-4.949	-.754	-3.928	.000
Legal Issues (LI)	-.543	-.084	-.549	.583
Leadership and Governance (LG)	.909	.148	.823	.412

a. Dependent Variable: PFC

Note: Adj. R2=Adjusted r square, β = Beta Coefficient, β = standardized beta coefficients, and P = significance level.

Table 8 presents the regression coefficient to determine the direction and effect of the single variables on the dependent variable. Looking at a single contribution of the predictors, the result shows that financing ($B = 3.313$, $\beta = 0.522$, $t = 2.840$, $p = .005$) and human capital ($B = 11.846$, $\beta = 2.888$, $t = 7.890$, $p < .001$) have significant positive effects on the performance of soccer clubs. Conversely, fan influence ($B = -1.310$, $\beta = -0.223$, $t = -2.214$, $p = .028$), club history ($B = -9.666$, $\beta = -2.497$, $t = -7.073$, $p < .001$), game situations ($B = -2.276$, $\beta = -0.318$, $t = -2.816$, $p = .005$), and media presence ($B = -4.949$, $\beta = -0.754$, $t = -3.928$, $p < .001$) negatively impact performance. Legal issues and leadership were not significantly related to performance in this model. These findings emphasize the need for soccer clubs to focus on enhancing their financial resources and human capital while also managing fan influence and media scrutiny.

Discussion

This study investigated the determinants of professional soccer club performance in the EPL. Although earlier studies on the determinants of soccer club performance were limited, primarily focusing on technical, tactical, and statistical metrics and geographical, cultural, historical, and natural aspects, they have not explicitly addressed the effect, relation, and prediction of how much soccer club performance affects different leagues. The descriptive statistics from Table 4 present the varying influences of different determinants on the performance of soccer clubs: game situation is the highest mean ($M = 4.44$, $SD = 0.60$), financing soccer clubs ($M = 4.36$, $SD = 0.68$), legal issues ($M = 4.16$, $SD = 0.68$), media presence ($M = 4.09$, $SD = 0.66$), club history ($M = 3.60$, $SD = 1.12$), human capital ($M = 3.54$, $SD = 1.06$), and fan influence ($M = 3.54$, $SD = 0.74$), respectively. These suggest that game environment, financing soccer clubs, legal complaints, and media presence were the highest performance determinants, whereas club history, human capital, and fan influence showed disparate variability. This is due to the current format of competition, ownership, poor monetary management, and the league level. Although studies by (Guebert, 2024) found game match-day conditions, home advantage and financially stable clubs are better equipped to invest in talent, infrastructure and operations, leading to improved performance; regulatory compliance and media exposure in enhancing club visibility and sustainability; player quality and coaching are crucial; disparities in talent recruitment and fan engagement can lead to mixed results; clubs leveraging their legacy for performance while others struggle despite their history. Our findings collectively emphasize disparate determinants of performance, similar to the exploratory support in previous studies.

The correlation analysis presented in Table 5 presents the relationships between various independent variables and EPL club performance during the 2023/24 season. There was a negative small to moderate degree of correlation between the financing of football clubs and the performance of soccer clubs, a moderate correlation between game situation and the performance of football clubs, a moderate correlation between media presence and the performance of football clubs, a moderate correlation between legal issues and the performance of soccer clubs, a small correlation between leadership and governance and the performance of soccer clubs, and a small correlation between fan influence and the performance of soccer clubs. In addition, club history and human capital were not significantly correlated with soccer club performance. These findings contradict findings on the relationship between human capital and soccer club performance, which is multifaceted, with evidence that investing



in human capital significantly enhances financial performance. Studies indicate that human capital, as a component of intellectual capital, positively influences return on assets, emphasizing the need for clubs to optimize their human resources (Pratama, Innayah, Esita, Winarni, & Setyawan, 2020). Human capital translates into performance, with newcomers performing better in supportive environments, particularly when joining teams with prior success (Schuth, Brosi, Folger, Chen, & Ployhart, 2023). Furthermore, governance mechanisms, such as family board representation, can enhance the benefits derived from human capital investments, indicating that effective management structures are crucial for maximizing player contract investments (Scafarto & Dimitropoulos, 2018). Lastly, team-specific human capital, encompassing both players and managers, has been shown to significantly impact team performance, highlighting the importance of both dimensions in achieving success (Gerrard & Lockett, 2018). Collectively, these findings underscore the critical role of human capital in driving the performance and profitability of football clubs (Dimitropoulos & Koumanakos, 2015). Therefore, clubs must prioritize this multitude of determinant variables.

Furthermore, the history and legacy of soccer clubs are deeply intertwined with their performance and financial sustainability, reflecting a rich tapestry of cultural significance and economic impact, an increased fan base, prominent teams like Manchester United, and lesser-known clubs, emphasizing their unique legacies and passionate fan bases (Mitchell, Reeves, & Tyler, 2013). Similarly, studies have indicated that high-quality players significantly enhance revenue through merchandise sales and sponsorships for a club's historical legacy and its current operational success (Plumley, Wilson, & Ramchandani, 2017). This multifaceted approach to understanding soccer clubs underscores the importance of both historical context and modern financial strategies in shaping their ongoing legacy (Dart, 2009; Eisenberg, 2006). Similarly, the performance and media presence of soccer clubs are intricately linked, influencing both financial outcomes and strategic decisions. Research indicates that clubs' media visibility, assessed through indices like the Media Visibility Index, significantly mediates the relationship between sporting performance and revenue generation, highlighting that clubs with better performance attract more media attention and, consequently, higher revenues (Aguiar-Noury & Garcia-del-Barrio, 2022; Garcia-del-Barrio & Rossi, 2024).

Furthermore, clubs increasingly prioritize media exposure alongside the traditional objectives of winning and profitability when recruiting talent, a shift in managerial focus toward enhancing popularity and visibility (Garcia-del-Barrio & Rossi, 2024). The role of social media is also pivotal, as clubs leverage these platforms to expand their global reach and engage with fans, which is essential in the modern digital landscape (McCarthy, Rowley, & Keegan, 2022). Overall, the interplay between performance and media presence is crucial for clubs aiming to maximize their economic potential in a competitive environment. The study reveals that financial resources may not directly improve performance in EPL clubs due to misallocation or poor investment strategies, adverse match conditions, media scrutiny, legal issues and leadership and governance negatively impacting performance; club history and human capital have less immediate impact; and fan influence has a small negative correlation with performance, suggesting that excessive pressure from fans can negatively impact player performance. The findings emphasize the need for effective management and strategic resource allocation to enhance the overall performance outcomes.

The multiple linear regression analysis results presented in Table 6 provide valuable insights into the predictors of performance for EPL football clubs during the 2023/24 season, revealing that approximately 44.7% of the variance is explained by eight predictors ($F(8, 214) = 22.537, p < .001$), whereas 53.2% remains unexplained, indicating the potential influence of additional, unmeasured factors on performance outcomes. Financing ($B = 3.313, \beta = 0.522, p = .005$) and human capital ($B = 11.846, \beta = 2.888, p < .001$) were identified as significant positive contributors, consistent with the existing literature emphasizing financial stability and talent development as critical elements for enhancing club performance. In contrast, several predictors negatively impacted performance, including fan influence ($B = -1.310, \beta = -0.223, p = .028$), club history ($B = -9.666, \beta = -2.497, p < .001$), game situations ($B = -2.276, \beta = -0.318, p = .005$), and media presence ($B = -4.949, \beta = -0.754, p < .001$). The negative impact of club history and game situations highlights the need for clubs to adapt to modern dynamics rather than relying solely on their legacy and recognize the significant role of external match conditions. Legal issues and leadership did not show significant relationships with performance, indicating areas for future exploration. The influence of fans, governance structures, and financing models has a significant impact on soccer clubs. Fan participation in ownership, as observed in the Big Five leagues, enhances



governance and aligns club operations with community interests, fostering a sense of belonging and loyalty (Sánchez, Barajas, & Sanchez-Fernandez, 2021). For instance, FC Sankt Pauli exemplifies how organized fan activism can create a vibrant democratic culture that extends influence beyond the club, promoting community empowerment (Totten, 2018). Conversely, the commodification of clubs under private ownership often sidelines local fan bases, prioritizing global market growth over social and cultural values, which can undermine long-term sustainability.

Furthermore, a blended governance model, integrating both non-profit and private elements, has been shown to balance financial and non-financial performance, thereby supporting local development while addressing the challenges posed by professionalization in football (Agostino & Thomasson, 2024). Overall, effective governance that incorporates fan influence is crucial for enhancing club performance and community engagement (Gallucci & Tipaldi, 2024). This fan engagement can be beneficial; excessive pressure can lead to anxiety and hinder on-field performance. Furthermore, this study emphasizes the importance of strategic resource allocation for financial management and human capital development, as well as dealing with fan influence and media scrutiny to improve EPL club performance.

This study investigated the determinants of EPL soccer club performance. A limitation of this study we highlight is the inability to generalize the results to the entire Ethiopian population because of the lack of a representative sample. Further investigations in the Ethiopian context must be conducted to determine the performance of football clubs by adding other factors like political integration, ownership, technical and tactical elements on the field, and other theories beyond resource theory (organizational performance). Another limitation pertains to the lack of analysis of the interrelationship between performance determinants and their impact on performance. However, long-term studies are needed to confirm the treatment effect, especially when additional variables are added. This study shows a negative correlation and has a small to moderate correlation; cumulatively, 47.7% predict the model fit on the performance of football clubs, whereas, at a single contribution of the predictors, financing and human capital can be positively predicted, whereas fan influence, club history, game situation, and media presence can have an inverse negative significant prediction; unlikely, legal issues and leadership and governance did not significantly predict the performance of football clubs. Clubs, club administrators, the Football Federation, event organizers, sponsors, researchers, academicians, and marketers may benefit from this fact. Future studies may explore including more variables that reflect the current format and trends. Our findings provide conclusive evidence that this phenomenon is associated with soccer club performance.

Conclusions

This study investigated the determinants of Ethiopian Premier League soccer club performance in 2023/24. The main results were that (i) the study revealed that game situation, financial capability, and legal issues significantly influence football club performance, while human capital, fan influence, and club history show more variability; (ii) there was a negative small to moderate degree of association on the performance of football clubs; and (iii) The regression model explained 44.7% of the variance in football club performance. (IV) Looking at a single contribution of the predictors, financing, and human capital can be positively predicted, whereas fan influence, club history, game situation, and media presence can have an inverse negative significant prediction on the performance of football clubs. Unlikely; legal issues, leadership, and governance did not significantly predict soccer club performance. Understanding these determinants of soccer club performance can help soccer clubs achieve better performance and sustainable achievement.

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